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Water, arroyos, and blackouts: Exploring political ecologies of water and the state in Barranquilla

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Eau, *arroyos* et pannes d'électricité :
Exploration d'écologies politiques de l'eau et de l'État à Barranquilla

Qu'est-ce que l'étude locale de l'eau nous révèle sur l'État? Et qu'est-ce que l'étude de l'État nous révèle sur l'eau locale? Cette thèse explore ces questions à travers l'histoire récente de Barranquilla, la principale ville de la Colombie caribéenne. L'histoire commence dans les années 1980, lorsque des réformes majeures touchant l'eau sont entreprises à l'échelle locale et à l'échelle nationale, et finit au début de la présente décennie. Aujourd'hui, les coupures d'eau sont récurrentes dans les quartiers non privilégiés et la population se plaint systématiquement des coûts élevés de l'eau et des coupures fréquentes.

Nous rapprocherons des concepts de l'écologie politique, des études d'infrastructure et de l'anthropologie de l'État dans le but de nous concentrer sur trois problématiques : les réformes concernant les politiques de l'eau, les infrastructures de l'eau (approvisionnement en eau, assainissement et drainage) et les protestations pour l'eau. Ainsi, les concepts mobilisés dans cette thèse seront les relations de pouvoir, l'infrastructure et l'État. La première problématique, concernant les réformes politiques à Barranquilla, élargit les idées sur-la thématique de la production de l'eau pour la révéler comme étant un processus politique qui reflète d'amples tensions dans la société urbaine. À partir de celle-ci, nous révélons une lacune dans la littérature: la plupart des analyses d'écologie politique se concentrent sur l'implantation de politiques et de réformes de l'eau (et la reproduction subséquente d'asymétries de pouvoir), sans pour autant traiter des luttes et des tensions que chaque réforme politique entraîne à l'intérieur des partis politiques à l'échelle locale. Les directives et les recommandations provenant de la Banque Mondiale et du gouvernement central de la Colombie ont convergé avec les politiques locales sur la réforme de la gouvernance de l'eau dans le contexte de Barranquilla. Ainsi, les partis politiques, les coalitions temporaires, les dissidences, et les dynamiques électorales ont profondément influencé ce qui en résulte.

La deuxième problématique, les infrastructures d'eau, porte sur les débats concernant l'agentivité non-humaine, la matérialité et l'infrastructure. Cette thèse contribue à ces débats dans les aspects qui vont suivre. Nous argumentons qu'il est important de reconnaître et

d'analyser le lien entre l'eau et les infrastructures d'électricité. Dans le contexte des villes du Sud, alors que plusieurs infrastructures sont caractérisées comme étant en détérioration chronique et manquant de maintien, les infrastructures ont tendance à être profondément interdépendantes parce que si l'une tombe en panne les autres suivront probablement. Dans le cas de Barranquilla, la pluie provoque des crues soudaines – de par l'absence d'un drainage convenable – et l'excès d'eau endommage les infrastructures d'électricité qui sont à priori en mauvaise condition. Subséquemment, les pannes d'électricité affectent les stations de pompage causant ainsi des coupures d'eau. En étant conscients de cette interconnexion, cette thèse analyse les façons dont la matérialité de l'eau et des infrastructures influencent les développements sociospatiaux tout en étant une source imprédictible.

La troisième problématique, la contestation, se concentre spécifiquement sur les manières dont les résidents interagissent avec les agences locales de l'État pour revendiquer les asymétries de pouvoir liées à l'eau. Cette section s'intéresse à l'anthropologie, en mettant en évidence l'importance d'étudier l'État de manière ethnographique : en analysant les pratiques quotidiennes des bureaucraties locales pour voir comment les imaginaires de l'État sont forgés. Cette section s'intéresse aux approches de l'écologie politique qui analysent les façons dont l'État, à travers les pratiques quotidiennes, se consolide et se constitue en relation avec la nature et les infrastructures. La thèse contribue à ces débats en étudiant les pratiques quotidiennes des intermédiaires entre l'État et les populations marginalisées. Il s'agit ici d'un groupe d'habitants dont le travail est de bâtir des ponts entre les bureaucraties de l'État et les locaux, dans la contestation des politiques de prestation de services d'eau et d'électricité. Bref, l'objectif est d'explorer le domaine régulatoire dans lequel la contestation quotidienne a lieu.

Mots-clés

Eau, *flashfloods*, électricité, relations de pouvoir, infrastructure, État, Colombie

Water, *arroyos*, and blackouts:
Exploring political ecologies of water and the state in Barranquilla

What does the study of local water reveal about the state? And what does the study of the state reveal about local water? This thesis explores these questions through an account of the recent history of Barranquilla, the main city of the Colombian Caribbean. The story starts in the 1980s, when major water reforms were undertaken at the local and national levels, and finishes in the start of the present decade. Today, frequent water cuts are common in underprivileged neighbourhoods and the population systematically complains about water's high prices and frequent cuts.

I bring together scholarship from political ecology, infrastructure studies, and the anthropology of the state in order to focus on three issues: water policy reforms, water infrastructure (water supply, sanitation and drainage), and water contestations. As such, the organizing concepts of this thesis are power relations, infrastructure, and the state. The first issue, policy reform in Barranquilla, expands on ideas about the production of water as a political process reflecting wider tensions in urban society. I contribute to literature on power relations by putting local party politics at the centre of the analysis. By electoral politics, I refer to the campaign and party dynamics that surround the elections by which people choose their representatives at regular intervals. Political ecology analyses focusing on the implementation of water policies (and the subsequent reproduction or reworking of power asymmetries), seldom portray the struggles and tensions that each policy reform entails within political parties and among professional politicians at the local level. Directives and recommendations from the World Bank and the Colombian central government converged with local electoral politics in the context of Barranquilla's water governance reform. As such, party politics, temporary coalitions, dissidences, and electoral dynamics deeply influenced the outcome.

The second issue, water infrastructure, speaks to debates on non-human agency, materiality, and infrastructure. This thesis contributes to these debates in the following ways. I argue that it is important to recognize and analyse the entanglement between water and electricity infrastructure. In the context of southern cities, where many infrastructures are characterized by

long term breakdown and poor maintenance, infrastructures tend to be deeply intertwined because if one breaks down the others will probably follow. In the case of Barranquilla, rain forms flash floods- in the absence of proper storm drains - and excess of water damages electricity's poorly maintained infrastructure. Subsequently, electricity outages affect pumping stations causing water cuts. Being conscious of this interconnectedness, this thesis analyses the ways in which water and infrastructure's materiality influence socio spatial developments and are a source of unpredictability.

The third issue, contestation, focuses specifically on the ways in which residents interact with local state agencies to contest existent water power asymmetries. It speaks to scholarship on anthropology, highlighting the importance of studying the state ethnographically: analysing everyday practices of local bureaucracies to see how the imaginaries of the state are forged. It also speaks to political ecological approaches that analyse the way in which, through everyday practices, the state is consolidated and constituted in relation to nature and infrastructure. The thesis contributes to these debates by studying the everyday practices of intermediaries between the state and marginalized communities. That is, of a group of people whose work is to build bridges between state bureaucracies and local neighbours, in the contestation of water and electricity allocation policies. With this the thesis aims to explore the regulatory ground in which everyday contestation stands.

Key words

Water, flashfloods, electricity, power relations, infrastructure, state, Colombia

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Acronyms and Abbreviations

ANDI	*Asociación de Industriales de Colombia* (Colombia Industrial Association)
Asobancaria	*Asociación Bancaria y de Entidades Financieras de Colombia* (Banking and Financial Entities Association of Colombia)
Asoganorte	*Asociación de Ganaderos de la Costa Atlántica (*Association of ranchers from the Caribbean Region*)*
Camacol	*Cámara Colombiana de la Construcción* (Construction Association)
CINEP	*Centro de Investigación y Educación Popular* (Center for Research and Popular Education)
DANE	*Departamento Nacional de Estadisticas* (National Department of Statistics)
DNP	*Departamento Nacional de Planeación* (National Planning Department)
Electranta	Public electricity utility
Electricaribe	Private electricity utility of Barranquilla
ELN	*Ejército de Liberación Nacional* (National Liberation Army)
EPMB	*Empresas Públicas Municipales de Barranquilla* (Municipal Public Companies of Barranquilla)
ES	*Energía Social* (Social energy), subsidiary of Electricaribe that sells electricity to subnormal neighborhoods.
FARC	*Fuerzas Armadas Revolucionarias de Colombia* (Colombian Revolutionary Armed Forces)
Fedemetal	*Federación Colombiana de Industrias Metalúrgicas* (Metal Industries Association)
Fenalco	*Federación Nacional de Comerciantes* (Merchants Association)
Fonvisocial	*Fondo Distrital de Vivienda de Interés Social* (District Social Housing Fund)
Inderena	*Instituto Nacional de los Recursos Naturales Renovables y del Ambiente* (National Institute of Renewable Natural Resources and Environment)
INSFOPAL	*Instituto de Fomento Municipal* (National Institute of Urban Development)
JACs	*Juntas de Acción Comunal* (Community Action Boards)
SSPD	*Superintendencia de Servicios Públicos Domiciliarios* (Superintendence of Household Public Services)
Triple A	Private water utility of Barranquilla

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Introduction

1.1 OVERVIEW

A few days after I arrived to Barranquilla, in August 2013, I was invited to a barbeque at one of the gated communities situated at the city's northern neighborhoods and inhabited mainly by young couples. As many upper class gated communities in Colombia's warmer cities, this one comprised two apartment buildings, landscaped gardens, a big pool, and a "spa area", consisting of a sauna, a steam room, two sets of bathrooms, and several showers. Suddenly, the conversation went silent as neighbors watched two Afrocolombian women, both domestic workers at one of the building's apartments, passed by the pool corridor, heading for the spa area. Quickly, some expressed their concern at the possibility that the two *muchachas* were going to use the sauna or steam room. Another explained that they were taking a shower. As most domestic workers in the buildings did not have regular access to water in their own homes, they took advantage of the showers in the "spa area" to shower before returning to their neighborhoods after work. The group agreed to touch the subject at an upcoming homeowners' meeting, to forbid maids from entering the swimming and a spa area.

It wasn't the first discussion about water that I witnessed that week in Barranquilla, Colombia's fourth-largest city. For among taxi drivers and in the media, debates surrounding the poor quality of water supply in some neighborhoods (water cuts and extremely high tariffs) were taking place. And people were not only talking about water supply, but also about rainwater, the nearly daily storms from July to December and the *arroyos* that rain fosters. *Arroyos* are the colloquial term for flash floods. That is, torrential streams of urban runoff that flood certain city streets during the rainy season. These result mainly from the city's topography, which is characterized by a double declination (from west to east, towards the Magdalena River and from southeast to northwest, towards the sea), the rapid and unplanned urban development, and the absence of storm sewers in some sectors of the city. There are currently fourteen streets that become *arroyos peligrosos* ("dangerous flash floods") in the rainy season. These are marked by the

municipality, with a traffic sign that warns about the formation of "flash floods". In addition to wiping out everything in their path, especially vehicles and trees, *arroyos* damage electricity networks causing blackouts. Thus, besides talking about water supply, rain, and *arroyos*, people were also talking about electricity. The lack of investment in electricity infrastructure (e.g. distribution lines, cables, substations and transformers) produces systematic and extended outages in some parts of the city in times of rain. This, in turn, triggers water cuts in many neighborhoods, by cutting electricity to pumping stations.

My purpose in this thesis is to unearth the flows of water in Barranquilla to see what they reveal about the state, and to explore the everyday practices of the state to see what they reveal about the city's water. For this, I present an account of the recent history of Barranquilla, the main city of the Colombian Caribbean. I begin in 1985 when the World Bank launched a development project to extend water supply in Barranquilla and strengthen the water utility. I document the subsequent failure of the project and describe the deep economic crisis of the utility, which triggered a series of sanitary emergencies. In 1990, for example, it left all residents without water for eight days. Later on, a series of legal reforms were implemented and the utility was finally sold to private investors. I then continue throughout the 1990s, a decade marked by the arrival of displaced communities in the context of armed conflict, which led to the rapid urbanization of the city's southwestern frontier. These were also the years in which studies and projects were undertaken to control some of the city's *arroyos*. I conclude with an analysis of the last decade (2002-2014) that has been characterized by intense contestation concerning water's high prices and frequent cuts.

I analyze how, in Barranquilla, mechanisms of access to (and exclusion from) water supply and drainage, are evidence of state power, and of power relationships. I concentrate on the role of water development projects and water reforms in the perpetuation or reworking of these power relationships. I contribute to literature on political ecology by putting local party politics at the center of the analysis. Political ecological analyses that focus on the implementation of water policies and reforms (and the subsequent reproduction of power asymmetries), seldom document electoral politics. That is, they rarely portray the struggles and tensions that each policy reform entails within political parties at the local and national level. Directives and

recommendations from the World Bank and the Colombian national government converged with local party politics in the context of Barranquilla's water governance reform. As such, party politics, temporary coalitions, dissidences, and electoral dynamics deeply influenced the outcome.

Secondly, I trace the relationships between *arroyos*, electricity, and water supply. I argue that it is important to recognize and analyze the entanglement between water and electricity infrastructure. In the context of southern cities, where infrastructure is frequently characterized by long term breakdown and poor maintenance, different types of infrastructure tend to be deeply intertwined because if one breaks down the others will probably follow. In the case of Barranquilla, in the absence of proper storm drains, rain forms flash floods and excess of water damages poorly maintained electric infrastructure. Subsequently, electricity outages affect pumping stations causing water cuts. Being conscious of this interconnectedness, this thesis analyses the ways in which water and infrastructure's materiality influence socio spatial developments and are a source of unpredictability.

Finally, I study the everyday practices through which residents of Barranquilla contest existent water power asymmetries. These everyday practices, such as the domestic workers' use of the pool's shower, make visible power relationships and the ways in which they are contested. I focus on the ways in which residents interact with local state agencies to challenge water distribution. For this, I study the everyday practices of intermediaries between the state and marginalized peoples. That is, of a group of people whose work is to build bridges between state bureaucracies and residents, in the contestation of water and electricity bills. I build on the anthropology of the state, highlighting the importance of studying the state ethnographically. That is, by analyzing everyday practices of local bureaucracies to see how the imaginaries of the state are forged. I also draw on political ecological approaches exploring the way in which the state is consolidated and constituted in relation to nature and infrastructure.

This study contributes to recent scholarship on water governance in Colombia from a historical perspective (Acevedo Guerrero, Furlong, & Arias, 2015; Furlong, 2013), through the analysis of constitutional reforms (Harris & Roa-García, 2013; Roa-García, Urteaga-Crovetto, &

Bustamante-Zenteno, 2015), or from the perspective of community organizations in peri-urban areas (Roa-García, Brown, & Roa-García, 2015). The study of the recent history of Barranquilla and the struggles of new neighborhoods, which were formed in the context of internal displacement, for access to public services also contributes to the academic debate on the urban legacies of war in Colombia (Carrillo, 2009; Naranjo, 2004). Although there is significant scholarship on forced displacement in the country, it focuses mainly on the rural areas and towns in which communities lived before displacement (see Memoria Histórica, 2015; Ibáñez & Vélez, 2005; Steele, 2011). This thesis contributes to this debate by concentrating on the southwestern sector of Barranquilla, the place that received the majority of displaced population that arrived to the city in the period between 1985 and 2014. In studying the processes of access to water in this sector, the thesis contributes to the understanding of the effects of armed conflict in the construction of relations of power and citizenship in the city.

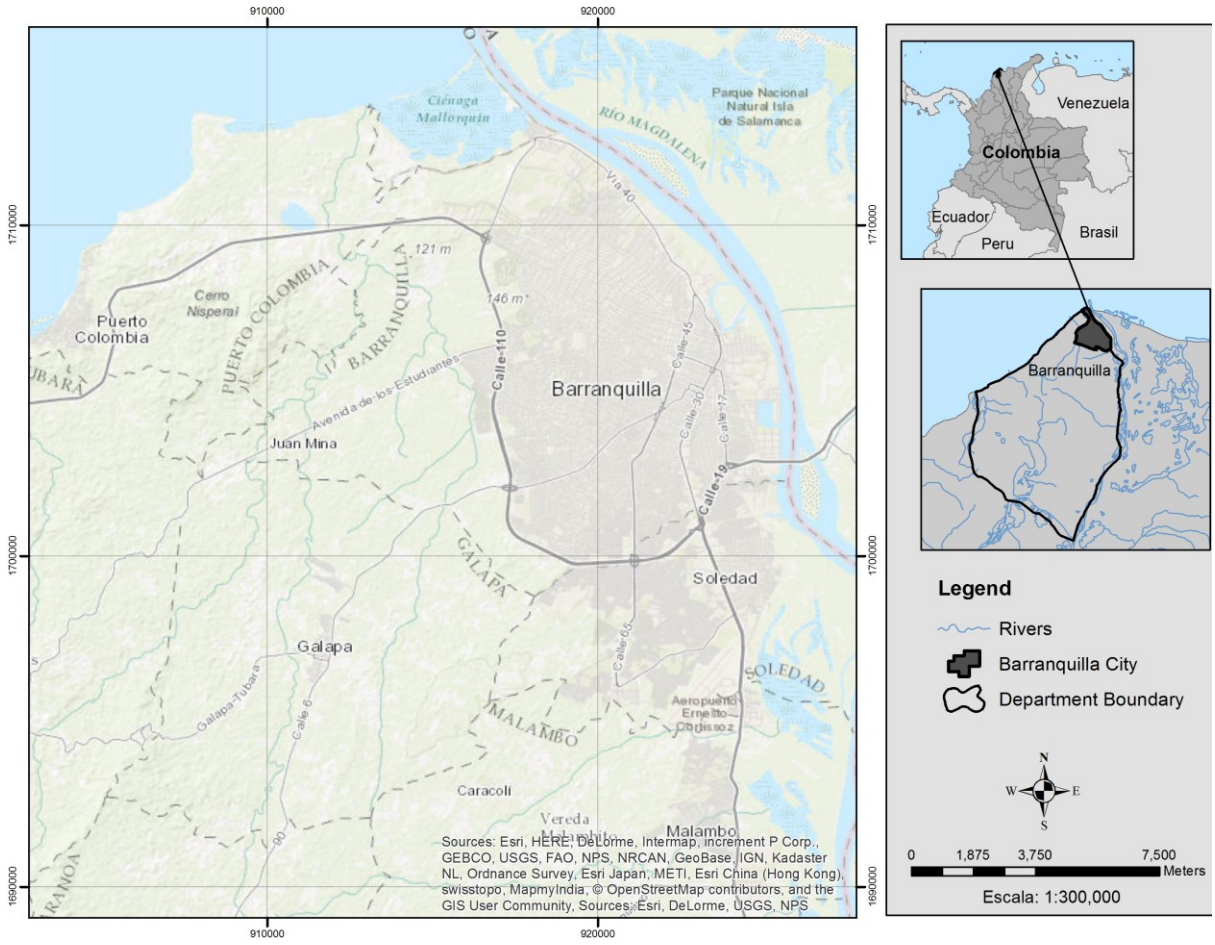
In a broader scale, this thesis contributes to the understanding of the interactions between urban water flows, infrastructure, and society, in the context of rapid unplanned growth and uneven development in cities of the global south. It speaks to three current debates in geography. Firstly, it expands ideas on the role of water development projects in reworking power relations or reproducing existing forms of exclusion (Bakker, 2013; Budds, 2013; Budds & Sultana, 2013). Secondly, it expands on approaches to infrastructure's role in cultivating or delimiting state power (Meehan, 2014; Meehan & Molden, 2015; Von Schnitzler, 2017). Thus, it highlights the role of drainage, a generally overlooked water infrastructure (Karvonen, 2011).Thirdly, the study contributes to theory on how water's materiality is critical to urban political processes. This is an important debate given the calls by scholars to avoid treating nature as a passive substrate on which politics acts (Bakker & Bridge, 2006; Braun, 2005; Braun & Whatmore, 2010; Walker, 2005).

1.2 CONTEXT: BARRANQUILLA AND ITS MANY WATERS

Barranquilla is the current capital of the department of *Atlántico* and the largest city of the Colombian Caribbean coast (see Map 1). It has a population of 1,386,865 inhabitants (DANE, 2008). Most of this population identifies as *mestizo* or *blanco* – and 13,2 percent identifies as Afrodescendant (DANE, 2005). The city lies next to the delta of the Magdalena River, 7.5 km away from its mouth at the Caribbean Sea[1]. The area where Barranquilla is located is characterized by a double declination: from west to east, from the mountains of the Cordillera Oriental in Colombia (i.e., toward the Magdalena River); and another, from southeast to northwest, which is the course that takes the Magdalena River into the sea. From the first decades of the twentieth century, as Barranquilla became urbanized, some streets of the city became susceptible to flash flooding during the rainy season[2]. Flash flooding took place when storms of great intensity and short duration fell on the city and rapidly gathered runoff which transformed into streams. Colloquially, these flash flooding events started being known as *arroyos* (Arroyos de Barranquilla, 2014b; Bernal Forero, 1991).

[1] The Magdalena River is the principal river of Colombia. It flows northward about 1,528 kilometres through the western half of the country. The headwaters of the Magdalena River are in the south of Colombia. The river reaches the Caribbean Sea at the city of Barranquilla (Karnstedt, 2004).

[2] Although flash floods can be caused by dam breaks and/or mudslides, they are most often caused by extremely heavy rainfall from thunderstorms. What differentiates them from other types of flooding, is that they begin within 6 hours, and often within 3 hours, of the heavy rainfall (Karvonen, 2011; National Weather Service, 2008).



Map 1 – Barranquilla in Colombia
Source: Prepared by the author.

During the first three decades of the twentieth century, the city was the main sea and fluvial port of the country. Barranquilla was then Colombia's fastest growing city in terms of population, and its per capita income was one of the highest in the country (Meisel, 2009). The growth of the city opened an important market that stimulated industrial development (Meisel, 1994). With respect to the provision of services, the local government created a public utility in charge of water and sanitation called *Empresas Públicas Municipales de Barranquilla (EPMB)* in 1925[3] and a public electricity utility *Electranta* in 1929 (Varela Barrios, 2007).

[3] From its creation until the 1960s, the EPMB was also in charge of the tramway, the slaughterhouse, the public market, and the management of the department of parks and recreation (Varela Barrios, 2007).

In order to secure the necessary funds to extend water supply, the city negotiated a loan with the Central Trust Company of Illinois, which in turn required to co-manage the utility, to "ensure independence from local politics and the proper management of the funds" (Bilbao, 2009, p. 39). Thereby, the lending institution gained direct influence on the appointment of the managing board until the municipality was able to fully reimburse the loan, during the 1960s. Barranquilla's EPMB performed well under this co-management agreement during the first half of the twentieth century (Cuervo, 1991).

From the 1940s, however, the city plunged into economic decline. In 1942 the city of Buenaventura on the country's pacific coast, took the place of Barranquilla as Colombia's main port for international cargo. The decline of the seaport led to an industrial recession in Barranquilla (Meisel, 1994, 2009). Despite economic stagnation in the 1950s and 1960s, urban population continued to grow due to internal migration. People from rural areas of the Atlántico department continued to come to Barranquilla in search of better job opportunities, however they rarely found any in the formal sector (Torres, 2009).

Throughout the 1980s, in the context of Colombia's armed conflict, groups of displaced persons, displaced by right-wing paramilitary armies from their homes in small towns or rural areas, started settling in and around Barranquilla. From 1985 to 2014, 124,035 displaced persons settled in Barranquilla (Unidad de Víctimas, 2016). Most of these groups built informal settlements in the city's southwest sector[4]. In Barranquilla these informal settlements are frequently referred to as *invasiones* ("invasions"). By 2000, more than half the city's population lived in informal settlements (FONVISOCIAL, 2000, p. 52). Moreover, a large number of houses were located in *zonas de alto riesgo* ("high risk areas"), that is, on geologically unstable land subject to landslides, flood prone areas, or in areas destined for the construction of electrical substations (FONVISOCIAL, 2000).

[4] Since the 1980s Barranquilla has been divided into four city-level administrative divisions called *localidades* ("sectors"): North, Riomar, Southwest, and Southeast (POFT, 1997).

As the city expanded and the investment on drainage infrastructure was very low, *arroyos* became a growing problem. The urbanization reduced the absorption ability of the land and runoff during storms transformed into fast flowing fronts of water and debris (Ávila, 2012). Between the 1970s and the 1980s, the city hired three different groups of experts to evaluate and find solutions for the city's *arroyos*. In 1975, a "technical and economic study" was contracted to the firm "Senior & Viana and Paternostro and Medina CONASTEC". In 1982, the city hired the engineering firm called "Arzuza Engineers", to conduct a new study on drainage. During the same year, the International Cooperation Agency of the Japanese Mission, JICA did another *arroyo's* study. Broadly, all these studies recommended the construction of a municipal drainage system, which was deemed too costly and therefore infeasible (Arroyos de Barranquilla, 2014b).

Regarding the provision of water supply, with the end of the co-management contract between the local government and the Central Trust Company of Illinois during 1960, the local government began playing a more important role EPMB. The mayor was in charge of choosing the manager of the utility and some of the board members. This coincided with other factors such as the successive waves of internal migration, the growth of informal settlements, and the city's industrial recession (Bernal Forero, 1991). Towards the mid-1980s, EPMB's performance was very poor: the city had a very low number of installed water meters and the utility measured the consumption of only 29 percent of the city's households, and as mentioned, the city lacked storm sewers. EPMB, was also accumulating debts with providers and employees (Varela Barrios, 2007).

In 1985, the World Bank proposed to finance a project to extend water and sanitation infrastructure and improve EPMB's administrative and operative efficiency. The signing of the loan was conditional on tariff adjustments and the increasing of utility revenues. The project which was planned for six years started in 1985. By 1991, the project's final year, the World Bank accused EPMB of mismanagement and of systematically violating commitments regarding tariff increases (Bernal Forero, 1991). At the time, the water and sanitation supply in the city was precarious. As explained by Bernal Forero (1991, p. 86): "The water utility is going

through a crisis. EPMB has reached a point where it has stopped supplying water in several occasions, due to a lack of cash to buy chemicals to treat the water".

Politicians and organizations calling for an urgent reform of Colombia's utility sector in the early 1990s used Barranquilla's utility crisis to make their point (Cuervo, 1991). Thus, sweeping reforms were made to the governance of water services in Colombia through Law 142 of 1994. These included directives for the creation of corporations and the promotion of private-sector participation. In 1993, a year before the law came through, Barranquilla's EPMB was capitalized and a mixed ownership corporation called *Triple A* was established. In 1996, the majority of Triple A's shares (82 percent) were sold to the Spanish company, Aguas de Barcelona.

After the 1994 reform, the federal and local governments invested to extend water supply infrastructure to the city's southwest sector. In terms of coverage, according to the 2005 Census, 99.5 percent of the city inhabitants have access to water supply, and 98.3 percent to sanitation (DANE, 2005). However, many people having access to these services criticize their poor quality. During the period between 2002 and 2014, there have been continuous protests in the southwest sector due to high water tariffs, frequent service cuts, and lack of water pressure (Cepeda Emiliani, 2011; Torres, 2009).

Residents of Barranquilla also continue to have problems with *arroyos*. Despite the fact that some drainage infrastructure has been built in the city center and in the wealthier northern sector, southern sectors of the city still lack drainage systems. Storm water keeps meeting with solid waste and sediments, accumulating in asphalt roads, and transforming into *arroyos*, flooding streets, and obstructing movement, dragging cars, buses and persons with it[5]. Water in *arroyos* also causes blackouts by damaging poorly maintained electricity infrastructure. Blackouts, in turn, trigger water cuts as pumping stations, used to pump water from a reservoir into the water supply system are left without electricity. For example, in December 2012, 68 neighborhoods of the city's southwest were left without water for a week due to an extended electricity outage

[5] During the last twenty years forty-three people have died by falling and drowning in *arroyos* or in car accidents caused by *arroyos* (Redacción el Heraldo, 2012).

in a water treatment plant (Redacción el Heraldo, 2012). Later, in May 2013, an "electrical emergency" that affected a pumping station, left more than 500 people in the southwest sector without water for two days (Redacción Nacional, 2013). Similarly, in October 2013, another "electrical emergency" in one of the city's pumping stations, left approximately forty neighborhoods in the city's southwest without water for two days (Redacción el Heraldo, 2013).

During my fieldwork in Barranquilla I witnessed the ways in which residents of the southwest sector established community organizations such as the network of utility users of the Caribbean region and the outraged committee against Electricaribe and Triple A. Communities also organized numerous mass demonstrations, occupations of offices and road blockages. Likewise, systematically and persistently, residents contested water related injustices through formal complaints and legal actions against the utilities or the regulatory agencies.

1.3 PERSPECTIVES ON AFRO-BARRANQUILLA

Scholars from different disciplines have studied black history and black Colombian populations, their point of departure being that the color – and the racial reference to which color alludes – is not an objective characteristic borne by individuals, but a product of historical interaction among populations. For Dixon and Burdick (2012, p. 2), "being black", has different meanings according to geographic and historical context.

> For us, "being black", black identities or blacknesses refer to bundles of ideas and meanings held by particular actors in particular societies about people who are socially defined as black or afro-descended. Blackness is variously a form of consciousness among black people, a deliberate project to produce such consciousness, and ideas about blacks held by nonblacks.

Colombia has the second largest population of Afro-descendants in Latin America, after Brazil (Morrison, 2012; Wade, 2012). The process of slavery in Latin America began in 1518 and lasted until 1880. The Colombian Caribbean, specifically Cartagena, a city 119 km away from

Barranquilla, became the main port and center of slave trade in South America since it was the site of arrival and distribution of the enslaved men and women brought from Africa (Maya Restrepo, 2000). Most of the enslaved population, however, was sent to work in gold mines which were located on the Pacific coastal region (Ng'weno, 2012; Wade, 2012). After the abolition of slavery, the majority of the Afro-descendant population continued to be the target of multiple discriminations. Authors such as Appelbaum (2003) and Wade (2012) have explained how during the nineteenth and twentieth century, Colombians mapped racial hierarchy onto the country's different regions by developing a racialized discourse that associated certain regions with progress and "whiteness" while some other regions characterized as "black" or "indigenous" were associated with disorder and danger. Located mainly in the Caribbean and Pacific coasts, Afro-descendants have been historically marginalized in terms of infrastructural investment, socioeconomic development and political power (Wade, 2009, 2012).

The country therefore hosts multiple forms of blackness which have been produced by specific political arrangements and power relations (Dixon & Burdick, 2012; Wade, 2012). In general, however, the socioeconomic conditions of Afro-Colombians are evidence of high racial inequalities. 2005 census data shows that the life expectancy for Afro-Colombian men is lower than the national average by 5.5 years for men and 10.5 for women. Infant mortality for Afro-Colombian girls is higher than the national average (44 deaths per thousand births compared to a national average of 19), and unemployment is higher for Afro-Colombians than for non- Afro-Colombians (6 percent versus 3 percent) (Wade, 2012).

Black political mobilization in Colombia has been registered since the 1970s. While during the first decades mobilization was led by urban groups inspired by the US Civil Rights Movement, this changed during the early 1990s with the mobilization of rural communities of the Pacific coast. Working with the support of national academia and the Church, rural communities from the Pacific coast established temporary alliances with indigenous groups and negotiated collective rights, mobilizing around ancestral black identity. Soon after, and in a context of Latin American recognition of multiculturalism, a new law promised land titles for black communities in the Pacific coastal region. There is an important body of scholarship about Afro-Colombian

communities and their struggles in the Pacific coast of the country (Appelbaum, 2003; A. Escobar, 2003; Restrepo, 2013). These communities have mobilized mainly around land titling processes, recognizing themselves as an ethnic group. They were particularly affected during the war and have been resisting displacement from their ancestral lands since the mid-1990s (A. Escobar, 2003).

Afro-Colombians from the Caribbean coast have followed very different historical trajectories. Many live in cities, and *blackness* is not something with which they necessarily identify[6]. Colombia's most recent Census done in 2005 included the question "Do you identify yourself as black Colombian, Afrocolombian, or *raizal*[7]?" As was mentioned, 13.2 percent of the total population of Barranquilla identify as Afrocolombian or black (DANE, 2005). Census figures have been criticized by Afrodescendant organizations and academics who sustain that these statistics are not representative of the Afrodescendant population in Colombia, especially in the Caribbean coast (Paschel, 2013). It is argued that, when asked, Caribbean urban populations decided not to choose this category due to the stigma and the legacies of racism in the country (Madrid Vergara, 2015).

Elizabeth Cunin (2003a; 2003b), Peter Wade (2005, 2009), and Joel Streicker (1995) have explored the ways in which racial and class assessments overlap and are interrelated in the contemporary urban Caribbean. Cunin (2003a) narrates how, one of her interviewees in Cartagena, explained that he was "almost white" because he worked as taxi driver: "to drive tourists, you must be fair-skinned". On the contrary, another considered that he was *moreno* (brown) because: "*morenos* are well-suited for working as street vendors. Here in the inner city we are all *morenos*. It's not like in those beautiful quartiers there, Bocagrande, Manga, as they have status, they are more fair-skinned".

[6] There has been mobilization around the Palenque de San Basilio, a Palenque village in the department of Bolivar conformed by Afrodescendant rural communities which identify as an ethnic group. Authors such as Meertens have also documented individual cases of *tutelas* (legal actions brought by citizens in the defense of their constitutional rights) which have fought everyday racial discrimination. For example, a young woman alleged she was denied entry into a music club in Cartagena because she was black: the Constitutional Court decided in her favor.
[7] *Raizales* are members of black communities from the islands of San Andres and Providencia.

These authors have argued that, in the urban Colombian Caribbean relations between "black" and "white" are not troubled as long as everyone stays in "their place": the former as members of low-income communities working as domestic workers, gardeners or laborers, the latter as upper-middle classes and political-economic elites. The status of *muchachas*, domestic workers who also work as nannies in upper middle-class and privileged neighborhoods, exemplifies some of the subtleties of race relationships in Caribbean cities. Their employers often describe them as "part of the family", as they live under the same roof and take care of their children. However, as both Cunin (2003a; 2003b) and Wade (2005, 2009) have pointed out, employers' relation to the black women who work for them as domestic workers tend to be paternalistic, based on the awareness of the place that everyone, according to their color, should occupy.

1.4 METHODOLOGY

This thesis is based on nine months of fieldwork, done in two trips to Colombia in 2013 and 2014. The fieldwork included archival work, interviews with state functionaries and utility managers, attendance to sessions in the National Congress and community gatherings in Barranquilla's southwest sector, and a two-month ethnography of a non-official complaints office where the inhabitants of southwestern of Barranquilla seek help to write and file processes against utilities. I likewise gathered secondary data including bibliographic research and reviews of relevant policy reports and documents. Next, I present an overview of the reviewed sources and describe the way in which these were incorporated into the analysis.

1.4.1 Archive of the Colombian National Congress (Bogotá): legislative analysis

Laws, decrees, resolutions, court rulings, constitutional sentences, and other national regulations relating to public services, were gathered within the context of the project "Utility governance in Colombia", directed by Professor Kathryn Furlong. Together with Jeimy Arias, we built a database comprising every regulatory change for the water sector (water supply, sanitation, and drainage) in Colombia from 1909 to 2012. Different archival sources were reviewed, such as national newspapers and the *Diario Oficial* (Official Journal), which contains the state's laws,

decrees and national resolutions. This database was complemented with local regulations from Barranquilla and Atlántico relevant for the study period.

The regulatory changes for water supply in Colombia served as context for the research. Given that Colombia is a centralist state, with strong federal regulatory agencies, the wider institutional context through which programs in Barranquilla were developed and regulated was relevant. Changes in regulation with respect to the extension of public services to informal settlements were also traced in national and local regulations, and contributed to the understanding of local and national politics in what concerned the extension of infrastructure.

1.4.2 Archive of Colombia's National Library - Biblioteca *Nacional de Colombia* (Bogotá): newspaper analysis

Four newspapers were reviewed over the period studied (1985-2014): the two main national newspapers (*El Espectador* and *El Tiempo*) and the two local ones (*El Heraldo* and *La Libertad)*. News, editorials, and opinion columns relevant to the research questions were identified. That is, news and editorials that provided information on state initiatives with regard to water supply, drainage and electrical infrastructure. Information was also gathered on the responses of the different scales of government (federal, departmental and local), to crises such as extended service interruptions for electricity and water.

This exercise had several purposes. First, through a careful reading of the national newspapers, plans and responses of the national government concerning Barranquilla's water supply were documented. Second, through the revision of Barranquilla's newspapers I collected information about the ways in which residents put pressure on the state in the context of high tariffs, water and electricity cuts, and *arroyos*. Third, through this exercise I also documented malfunction events caused by *arroyos* as well as their various implications, with the purpose of detailing the geography of the unequal entanglement between people, storm water, blackouts, and water cuts.

1.4.3 Archive of the Biblioteca Piloto del Caribe (Barranquilla): The 1985 Barranquilla World Bank Project

In these archive I found a file with documents related to the "Barranquilla World Bank Project". These comprised the World Bank's official documents and reports concerning the start of the project; staff appraisals; and the final report concerning the failure of the project. There were also internal reports written by successive local and municipal governments on the project, communications between the local government and the national government, and reports from EPMB on how the loan funds were spent.

This information was important to build a timeline of the project and to identify the moments in which the decisions that led to its failure were made. Likewise, this information was analyzed in order to understand (1) the different positions with respect to the project: within the government in its different scales, among the city's economic elites, within the EPMB union, and within the World Bank; and (2) the relationships between local and national politicians, economic elites, EPMB's engineers and union, and the World Bank. The documentation also allowed me to discern which World Bank recommendations were implemented and which were not, as well as the sectors of the city that were systematically left out of the infrastructure extension programs.

1.4.4 Archive of the Chamber of Commerce of Barranquilla (Barranquilla): The 1985 Barranquilla World Bank Project and the sale of EPMB

The archive of the Chamber of Commerce of Barranquilla has a special section on public services. This is because the Chamber of Commerce which gathers all the economic elites of the city are proud to have played a very important role in the sale of EPMB following the failure of the World Bank project in 1991. Through press coverage, internal mail, and written statements by the various business personalities that were part of the Chamber of Commerce, this archive presents a view of the World Bank project through the perspective of the city guilds.

The revision of these documents allowed me to complement the historical narrative about the World Bank project, about its failure, and the subsequent sale of EPMB. Likewise, it was an important source to understand the ideological differences between the most powerful economic actors of the city and some of the political elites. These archive evidences how, even if in many other areas their interests overlapped, in what concerned water distribution there were serious disagreements between economic elites and ruling parties.

1.4.5 Open ended interviews: state functionaries and utility managers (Barranquilla)

By interviewing functionaries and managers with different backgrounds, a diversified set of opinions was gathered on the subjects of water supply, electricity, and the everyday practices of residents to obtain water. These interviews involved utility managers and staff, regulators, and local politicians. Likewise, interviews with retired managers of utilities were conducted, in order to listen to perspectives and narratives of people who were involved in the history of public services in the city. Also, due to their retirement, these former managers had more time to give interviews and were frequently more comfortable with making critical assessments because they had no conflicts of interest. Finally, an interview was conducted with the journalist who covers issues related to public services in Barranquilla for El Heraldo, the city's most important and oldest newspaper. The information that this journalist provided was key during the fieldwork. It was through her contacts that I achieved a rapprochement with community leaders (as it will be seen in the next section).

Each of these interviewees agreed to be recorded and quoted with his/her complete name and position within the respective utility/state agency. It is important to mention that, in the case of utility managers (from Triple A and Electricaribe), they asked to be interviewed in the company of their press agents. During these interviews, the managers consulted with their press agents, before answering the questions.

This set of interviews served three purposes: first, through interviews with managers and government technocrats I complemented the narrative on the World Bank project and the sale

of EPMB. Second, through interviews with officials and regulators I complemented the repertoire of negotiation strategies and pressure techniques put in place by the southwest residents. Lastly, interviews with utility engineers helped me understand the interconnections between water and electricity infrastructures, and the ways in which malfunction unfolds.

1.4.6 Attendance to community meetings (Barranquilla)

With the help of local news editor, Alexandra de la Hoz, from the newspaper El Heraldo, I was able to meet the presidents of the *Juntas de Acción Comunal* JACs ("community action boards") of the southwestern neighborhoods Evaristo Sourdis and Carrizal. JACs are communal organizations composed voluntarily by the residents of a neighborhood to address common matters[8].

Not only did they agree to talk to me about the situation of public services in their respective neighborhoods, but they also invited me to attend their meetings. In these meetings they discussed issues related to unexpected cuts in water and electricity, utility bill debts, and accidents with electrical infrastructure. After the meetings I had the opportunity to discuss with some of neighborhoods' residents, who opened the doors of their houses to discuss not only public services, but also their daily work routines, neighborhood struggles, perspectives about state institutions, and expectations for the future. On the basis of these narratives I explored everyday strategies to contest water and electricity distribution, as well as imaginaries of the state.

1.4.7 Attendance to a National Congress Debate (Bogotá)

In November 2013, I attended a congressional debate on public services in the department of Atlántico, organized by Senator Jorge Robledo, from the leftist party Polo Democrático. The

[8] A Junta de Acción Comunal JAC is a communal organization composed voluntarily by the residents of a neighbourhood, which join forces on the basis of the exercise of participatory democracy. Each JAC has around 30 members (Constitución de Colombia, 2002).

debate took place in the Fifth Senate Commission[9]. During this debate, topics of major importance for this thesis were discussed, such as the quality of services in Barranquilla, the historical presence of precarious infrastructure in the southwestern sector of the city, and the views of the different political parties and the national government on these problems.

1.4.8 *Oficina de quejas y reclamos* ("complaints office") (Barranquilla)

The initial design of this research included a survey to document the strategies with which the inhabitants of the southwest of Barranquilla have accessed and contested water asymmetric distribution throughout the recent years. However, early in the fieldwork, I realized that communities were not keen on discussing these strategies with outsiders, mainly due to the debts that many accumulate with the utilities, which can be a source of embarrassment. I therefore attempted an ethnographic approach which would foster a longer engagement with community processes.

Through the JAC meetings in *barrio* Evaristo Sourdis I met Agustín, who started the *oficina de quejas y reclamos* ("complaints office") a place where he served as an intermediary in the filing of processes against the city's utilities. After a couple of meetings with Agustín, he invited me to spend some time in the complaints office, to better understand its operation. I spent two months documenting everyday activities in the office. I was also able to discuss with local residents about their access to services in the city. Besides these observations, I held a number of open-ended interviews with Agustín and his office partner Sabas. These were important for the analysis of the state through its localized practices.

1.5 DESCRIPTION OF THE THESIS

Chapter 1 sets the theoretical framework through which the thesis explores the contemporary history of Barranquilla. It brings together scholarship from political ecology, infrastructure, and

[9] The Fifth Senate Commission is composed of 13 members of the Senate and 19 members of the House of Representatives and legislates on issues surrounding agricultural regimes; ecology, environment and natural resources; land adjudications and reclamations; marine resources; mines and energy; and autonomous regional corporations.

the anthropology of the state, in order to focus on three organizing concepts: power relations, infrastructure, and the state. The chapter presents three theoretical contributions. In the first place, underscores local partisan politics as one that is rich in nuances and hosts different positions with respect to the distribution of water in the city. It argues that in political ecology analyses, political parties and institutions of local government are often seen as a united front, with no great differences among them. Second, the chapter draws from literature on infrastructure and argues that urban infrastructures, specifically in cities in the global south where maintenance routines are not consistent, are interrelated. This means that if one fails, it is possible that others will fail as well. The malfunctioning of infrastructure is therefore an analytic place from which to study infrastructure as a political terrain. Finally, this chapter contributes to the literature on the state by bringing together two sets of literature. Scholarship on anthropology, highlighting the importance of analyzing everyday practices of local bureaucracies to see how the imaginaries of the state are forged and political ecological approaches that analyze the way in which the state is consolidated and constituted in relation to nature and infrastructure.

Chapter 2 presents a chronological narrative about the implementation and the subsequent failure of the Barranquilla World Bank project in the period between 1985 and 1995. The chapter's purpose is to analyze how water and power distribution were reworked and consolidated in the context of the project. The analysis highlights the tensions triggered by the water project at the national and local level. It also evidences the complexity of local and central governments, their competing interests, and the fact that these changed over time. It focuses on local party politics and how it interacted with the national government, economic elites, unions, and the World Bank in the context of the development project. It shows how political alliances, electoral campaigns, and party routines played a particularly important role in the process of water reform.

In Chapter 3, I engage with infrastructure. I document the different ways in which water flows meeting, shaping, and clashing with electricity infrastructure. Water moves inside pipes in some neighborhoods of Barranquilla. Storm water floods asphalt roads - that lack storm drains – forming *arroyos*. *Arroyos*, in turn, disrupt and ruin poorly maintained electrical infrastructure

causing e outages. These outages trigger water cuts due to lack of electricity in some of the city's pumping stations. Chapter 3 argues that claims about water infrastructure need to be conscious of the entanglement between water and electricity infrastructures. This entanglement should inform accounts on cities of the global south.

Chapter 4 is an ethnographic account of the complaints office. It argues that this office serves as a place where the idea of the state is constructed, and where important information about the state is exchanged and opinions about policies, and local and national officials are forged. This office is also a place of production of socionatures: where urban water and electricity distribution are challenged and reworked. The chapter contends that ethnographical accounts of the state can be complemented with water regulation analysis. This ethnographic portrait of the Colombian state will be added to the analysis of the contentious recent history of water projects and reforms (Chapter 2) and to the study of water infrastructure as a terrain where state projects are reproduced and contested (Chapter 3). As such, this thesis aims to do justice to the multilayerdness and complexity of the state. Chapter 5 concludes this thesis.

2. Conceptual Approach

What does the study of local water reveal about the state? And what does the study of the state reveal about local water? This thesis explores these questions through an account of the recent history of Barranquilla, the main city of the Colombian Caribbean. The story starts in the 1980s, when major water reforms were undertaken at the local and national levels, and finishes in the year 2014. Today flash floods and water cuts are still common in underprivileged neighborhoods and the population systematically protests about water's high prices.

This chapter establishes the theoretical framework through which the dissertation explores these interrelated issues and histories. I bring together scholarship from political ecology, infrastructure studies, and the anthropology of the state in order to focus on three issues: water policy reforms, water infrastructure (water supply, sanitation and drainage), and water contestations. As such, the organizing concepts of this thesis are power relations, infrastructure, and the state.

The first issue, policy reform in Barranquilla, expands on ideas about the production of water as a political process reflecting wider tensions in urban society. As several scholars of political ecology have shown, power relations have an influence on who will have access to, or control over water or other components of the environment. I contribute to this literature by putting local electoral politics at the center of the analysis. Political ecology analyses focusing on the implementation of water policies and reforms (and the subsequent reproduction or reworking of power asymmetries) seldom portray the struggles and tensions that each policy reform entails within political parties at the local level. Directives and recommendations from the World Bank and the Colombian central government converged with local politics in the context of Barranquilla's water reform. As such, party politics, temporary coalitions, dissidences, and electoral dynamics deeply influenced the outcome. With this analysis I also follow calls by Kathryn Furlong (2015, p. 152) to study municipal government as heterogeneous, diverse, "comprised of multiple and competing interests, rather than as a unitary actor".

The second issue, water infrastructure, speaks to debates on non-human agency, materiality, and infrastructure. Political ecology draws attention on water's corporality, its specific properties, and how these might influence socio-spatial developments. In turn, scholarship on infrastructure examines infrastructure as a political terrain in which power relations are formed, reproduced, and contested. This thesis contributes to these debates in the following ways. I argue that it is important to recognize and analyze the entanglement between water and electricity infrastructure. In the context of southern cities, where infrastructure is characterized by long term breakdown and poor maintenance, infrastructure tends to be deeply intertwined because if something breaks down other things will probably follow. In the case of Barranquilla, rain forms flash floods- in the absence of proper storm drains - and the excess of water damages electricity's poorly maintained infrastructure. Subsequently, electricity outages affect pumping stations causing water cuts. Being conscious of this interconnectedness, this thesis analyzes the ways in which water and infrastructure's materiality influence socio spatial developments and are a source of unpredictability.

The third issue, contestation, focuses specifically on the ways in which residents interact with local state agencies to contest existing unequal distribution of water[1]. It speaks to scholarship on anthropology, highlighting the importance of studying the state ethnographically: analyzing everyday practices of local bureaucracies to see how the imaginaries of the state are forged. It also speaks to political ecological approaches that analyze the way in which the state is consolidated and constituted in relation to nature and infrastructure. The thesis contributes to these debates by studying the everyday practices of intermediaries between the state and people. That is, of a group of people whose work is to build bridges between state bureaucracies and local neighbors in the contestation of water allocation policies. With this, it aims to explore the regulatory ground in which everyday contestation stands.

The above arguments are developed in three sessions. Section 1.2 focuses on the concept of power relations. It also engages with literature on the role of water development projects in

[1] By concentrating mainly on the mobilization through official channels (that is, through complaints and processes placed on regulatory offices and courts) this thesis leaves out many other spontaneous and organized contestations (roadblocks, vandalizing of utility offices, public demonstrations) that are rich in their diversity and merit to be studied in depth separately.

the reproduction of uneven power relations and with calls by Furlong (2015, 2016) to expose the heterogeneity within the local government. This section argues that political ecological accounts tend to present local electoral politics as homogeneous, unidirectional and without depth or dissent, and suggests that electoral conjunctures and party politics should be included in the analysis.

Section 1.3, provides the theoretical framework on non-human agency and infrastructure. This involves engaging in ongoing debates with respect to (1) water's agency and unruliness; (2) infrastructure as a theoretical tool and political terrain; and (3) sociotechnical systems of malfunction and disrepair. I contend that, due to infrastructural ruination and systematic malfunction in many cities of the global south, water infrastructure should be analyzed in their entanglement with electricity infrastructure. This is because if drainage fails, electricity might fail too - and without electricity water supply might collapse.

In Section 1.4, I turn to the state. There, I examine two approaches to the study of the state: the analysis of everyday bureaucracies and the creation and consolidation of the "state effect". I follow with an account on the role of the state in rearranging the socio-natural environments and the distribution of water. Finally, coinciding with recent calls by Malini Ranganathan and Carolina Balazs (2015), I argue that the analysis of everyday state bureaucracies would benefit from accounts of the regulatory state. In the case of water supply, my analysis of everyday contestation is enrichened by an exploration of national and local regulations pertaining to water.

2.1 POWER RELATIONS AND WATER POLICY REFORMS

2.1.1 Water and power relations in the literature

The theoretical framework for this research begins with works that focus on the networks between social and natural objects (Latour, 1993), and that analyze water via the lens of socio-nature (Swyngedouw, 1999, 2004). This means that water is studied as a historical-geographical process in which society and nature are inseparable, socially produced, and transformable (Budds, 2009; Swyngedouw, 1999, 2004). In this direction, political

ecological analyses are empirical, research-based explorations that seek to explain linkages in the condition and change of social-environmental systems, with explicit consideration of relations of power (Rademacher, 2015; Robbins, 2004).

Urban political ecology has sustained that urbanization is not the end of nature, but rather its transformation. Mathew Gandy (2002), for example, argues that the city is not defined by the absence of nature, but that it is fully part of nature, with nonhuman nature everywhere present in uneven geographies. He introduced the concept of metropolitan natures, which not only refers to spaces internal to a city - its water systems, highways, parks, pollution and waste - but also to transformations outside of its borders, as urbanization is achieved through the extension of networks that bring the raw materials of the city from far away areas.

The metabolic metaphor, which alludes to the basic process of bodily functioning, is often used to underscore the complex interactions between social and biophysical systems that allow the city to function. Drawing on Latour's (1993) notion of networks, Gandy (2004) sustains that the study of metropolitan natures must be based on hybridized, rather than linear, notions of urban metabolic systems. To develop a hybridized reading means to understand the relationships between nature and society in urban space as mutually constitutive:

> Nature is not conceived as an external blueprint or template but as an integral dimension to the urban process, which is itself transformed in the process to produce a hybridized and historically contingent interaction between social and biophysical systems. (Gandy, 2004, p. 364).

This hybridized reading evidences the circulatory processes through which nature becomes urbanized. Water from a river, for example, becomes potable water as social and biophysical processes interweave to produce new forms of metropolitan nature.

In this vein, water implies a series of connections between the body and the city, between social and biophysical systems. But it also implies segregations as it reflects wider tensions in urban society and cannot be separated from processes of gender, race, and class formation (Gandy, 2004). In a similar path, Swyngedouw (1999) has analyzed water as a hybrid,

showing how water embodies biochemical and physical properties, cultural and symbolic meanings, and socioeconomic characteristics. Borrowing Latour's metaphor about Ariadne's thread[2], Swyngedouw portrays the hybridization of water:

> If I were to capture some water in a cup and excavate the networks that brought it there (…) these would narrate many interrelated tales, or stories, of social groups and classes and the powerful socio-ecological processes that produce social spaces of marginality; chemical, physical, and biological reactions and transformations, the global hydrological cycle, and global warming, machinations, and the strategies and knowledges of dam builders, urban land developers, and engineers; the passage from river to urban reservoir; and the geopolitical struggles between regions and nations. In sum, water embodies multiple tales of socio-nature as hybrid. (Swyngedouw, 1999, p. 445)

Reconceptualising water as a socio-nature enabled Swyngedouw and other political ecologists to move away from thinking of water as a resource that is external to social relations, towards one in which social relations are embedded.

Swyngedouw (2004) returns to Latour's metaphor to follow water (as Ariadne's thread) through the hybrid spaces of the city of Guayaquil, Ecuador. Here he traces how water - and water supply systems - becomes politicized, as various groups contend for access to, or are excluded from, the water network. Guayaquil has an abundance of water and a scarcity of water. Water flows through the city in large quantities, but parts of the city have little and what little they can get is expensive. Consequently, he sustains, the production of urban natures is uneven, deeply political and highly contested. There are urban environmental processes that negatively affect some social groups while benefiting others. For this reason a socioenvironmental perspective needs to always consider power relations. That is, the question of "who gains and who pays" (Swyngedouw, 2004, p. 11). Power geometries - formed by human and nonhuman actors and the socionatural networks carrying them - ultimately decide who will have access to, or control over resources or other components of

[2] Latour underscores the importance of studying *collectives*. That is, the associations of humans and non-humans. He argues that there is *"an Ariadne`s thread that would allow to pass with continuity from the local to the global, from the human to the nonhuman. It is the thread of networks of practices and instruments, of documents and translations"*(Latour, 1993, p. 121).

the environment. These power geometries, in turn, shape the particular social and political configurations and the environment in which they live (Swyngedouw, 2007a).

Swyngedouw's (2007b) analysis of Spain's hydro-social development between 1939 and 1975 serves to illustrate the two concepts of socio-natures and power geometries. He sustains that dams, as productions of socio-nature through technical and natural arrangements, are not socially or politically neutral, but express and re-constitute physical, social, cultural economic, and/or political power relations. Parts of nature become enrolled in and reconstituted through the networks of power that animate this process. The production of specific fascist techno-natural assemblages that merged nature, technology, and social networks of power, contributed to the maintenance of Francisco Franco's rule. Consequently, every political project is also an environmental project and vice versa.

An analysis of water policies based on a political ecological approach considers power relations. As Swyngedouw (2007b) and Kaika (2005) illustrate, as soon as water was identified as a potentially major resource for energy purposes or irrigation, a dominant political-economic elite emerged around its mobilization and transformation. In the process, particular networks of power were developed and became consolidated: these relations simultaneously produced an interconnected group of elites, and a series of mechanisms of water exclusion and water stratification.

It is also worthwhile to review the concept of the hydrosocial cycle. Swyngedouw (1996, p. 80) interprets hydrologists' conceptualization of water (the hydrological cycle[3]) as an overly mechanized and deterministic reading of complex physical processes. As a complement to the hydrological cycle concept, he and other authors such as Bakker (2003, 2010) and Budds (2009) started using the term hydrosocial cycle, emphasizing the fact that water connects individuals not only materially but also politically and socially. Bakker (2003) uses the hydrosocial cycle to illustrate, for example, the nuances of scarcity. Acknowledging that water is scarce, according to the hydrological cycle, tells little about the human use of natural

[3] The concept of hydrologic cycle can be explained like this*:* Water evaporates from the oceans and the land surface, is carried over the Earth in atmospheric circulation as water vapour, precipitates again as rain or snow, is intercepted by trees and vegetation, provides runoff on the land surface, infiltrates into soils, recharges groundwater, discharges into streams, and ultimately, flows out into the oceans from which it will eventually evaporate once again (Linton, 2008, p. 630).

resources, which can only be defined in relation to human needs, practices, institutions, and technologies. Whether or not water is scarce depends on factors such as population density and distribution, sanitary habits, power relations, and cultural uses. Scarcity, then, is dependent on the hydrosocial, in addition to the hydrological cycle. The task, as Linton (2008, p. 647) argues, is to put the hydrosocial cycle to work in helping promote social justice and environmental sustainability wherever intervention in the hydrologic cycle has produced inequitable or uneven access water services.

2.1.2 Power relations at different scales

The study of power relations has been important in understanding hydrosocial relations at different scales. While some authors have studied the delineation of water distribution asymmetries through international development projects, and subsequent policy reforms, others have studied the contestation of inequities through the everyday actions of residents of informal neighborhoods in the city.

Focusing on a transnational scale, researchers have made calls to study the ways in which water development projects, designed in the north to provide and manage water in the global south, reproduce or contest unequal power relations. This debate draws on analyses on how conventional development paradigms attempt to render technical the politics of inclusion/exclusion (Bakker, 2013; Ferguson, 1994; Li, 2007). In his study of the Thaba-Tseka project in Lesotho, Ferguson (1994), for example, shows how development projects reduce poverty to a technical problem depoliticizing questions of resource allocation, while at the same time contributing to the expansion of bureaucratic state power.

Water development has been at the center of the development agenda and authors like Loftus (2009) have showed the ways in which many development interventions have not worked as expected. Often based exclusively on technical, scientific expertise, these projects have focused on administrative and technological actions and reforms (Budds, 2009; Loftus, 2009). In this vein, Budds and Sultana (2013) and Bakker (2013) call for an approach in which development projects focused on water are not understood simply as a series of mechanisms to provide water to underserved people, but as means of reworking power

relations in new ways or of reproducing existing forms of inequalities. They sustain that, through supposedly technical interventions, economic, and political interests are usually pursued:

> (…) these interventions are organized around water, yet water is not the focus but rather the means through which interests are pursued and particular hydrosocial arrangements are produced: the economic viability of World Bank loans, the political ambitions of Chilean elites, a sanitized urban landscape, a thriving development industry based on water technologies, or the construction of new water infrastructure. (Budds & Sultana, 2013)

Bakker (2013) does an archival inquiry of the World Bank urban water policies (from 1960-1989) that evidences heterogeneity in the agendas and projects concerning urban water policy within the Bank itself. Her study concludes that the model of water governance promoted by the Bank - organized at the municipal level - encountered systematic obstacles due to weakness of the municipal governments. Along similar lines, Budds (2013) analyses the unfolding of Chilean water reform through the confluence of interests of military, technocratic, and business elites, in the midst of the Pinochet dictatorship. These elites joined forces so that the country would establish market based policies and private rights to water in the pursuit of particular political agendas.

Through a different scalar approach, and with a more ethnographical methodology, authors like Gandy and Nikhil Anand make calls to study the contestation of water uneven distribution by focusing on the ways through which residents of the city's informal settlements access water. Gandy (2008, p. 125) has documented how Mumbai's informal settlements have emerged as a "microsphere of negotiation" between various residents and state agencies. These negotiations have culminated in agreements to upgrade basic services and to provide greater security of tenure.

Moreover, Anand (2017b, p. 68) calls for an approach that moves beyond "dualistic theorizations" of haves and have-nots, that are common in literature on cities of the global south, in order to "better attend to the more dynamic and heterogeneous social and political processes through which cities and citizens are made". He then focuses on the everyday

practices through which residents' access water in the city. The author explores the ways in which residents in some neighborhoods make different kinds of pressure to make water flow. Water can be mobilized by exerting pressure on plumbers and water utility's engineers, asking (or paying them) them to fix a connection or alter a water meter; or exerting pressure on politicians, for example, by negotiating the family or community's future votes. This author sustains that through the mobilization of "electoral politics", residents of informal settlements put pressure on state bureaucracies to obtain water and make "resilient and powerful settlements in the city" (Anand, 2011, p. 545). He is also conscious that, due to power asymmetries built on the basis of race, religion and class, some residents do not get the opportunity to negotiate but are able to survive in the city despite the absence of municipal water pressure, by using pumps and other equipment to build clandestine water connections (Anand, 2011, 2012, 2017b).

2.1.3 Political ecology: where are the politicians?

The above section explored political ecological contributions to hydrosocial relations. I draw on this group of literature to study processes of water governance and reform in the city of Barranquilla. As such, my reading of water policy reform is based on a political ecological approach that considers power relations. It also remains aware of the fact that water governance and development are political processes, although they are often portrayed as merely technical issues. While the thesis speaks to this literature it also aims to tackle an angle which is seldom documented in political ecological analysis: the role of local electoral or party politics in the consolidation or contestation of water distribution.

The study of Barranquilla's water shows the ways in which conflicts in political and electoral local life influence water governance. However, many case studies, drawing from political ecology, assume the cohesion among elites, municipal governments, and political parties (and other participants of local politics). Swyngedouw's (2004) work on the urbanization of water in Guayaquil - from the nineteenth century onwards - describes how particular power relations developed and became consolidated. These power relations produced an interconnected group of elites and a series of mechanisms of water exclusion and water

stratification. In fact, Swyngedouw (2004) sustains that the elites never go without water, while water - as Kaika (2005) describes - becomes a potential basis for elite formation.

In a similar direction, Swyngedouw (2007b) describes how the remaking of Spain's hydro-social landscape was part of an effort to create a physically and politically integrated national territorial scale, and thus eradicate the desires of regional elites, consolidating a unique central elite. Within literature on development and water's policy reforms, Budds's (2013) work on the Chilean case argues that water reform constituted a means of consolidation of economic and political interests that linked the military, the technocrats (graduated from the Chicago School of Economics), and the country's main business groups.

All these studies document the existence of rather consolidated and coherent elite networks. In the cases of Chile governed by Pinochet and Spain governed by Franco, both lengthy dictatorships, certain coherence within elites and governments is expected. But even in the study of Guayaquil, Ecuador - a city and country characterized by political effervescence, electoral instability, and contestation[4] - politicians are portrayed as a homogeneous group without significant ideological differences, merged with economic elites, all of them composing what is essentially a single and autonomous actor.

On the other hand, authors focused on more grounded, everyday water politics have highlighted the importance of "electoral politics" and "microspheres of negotiation" (Anand, 2011, 2017b; Gandy, 2008). Still, they do not account for the heterogeneity and messiness of local party politics or for the influence that its changing dynamics has on water governance. These studies describe negotiations, recognizing the different motivations, interests, and situations of different groups within the community. However, within these negotiations, politicians are described as a single group, a somewhat opaque unity without ideological motivation that exchanges bureaucratic favors in exchange for votes. In his ethnography of a community organization in Mumbai, Anand (2017b, pp. 134-157) narrates the way in which, after a disagreement over water distribution in the settlement, the leaders of the organization decide to protest against the councilors whose bureaucratic support they had secured with votes over the years. In response to this defiance, the councilors threaten

[4] For studies on Ecuadorian parties, social movements and electoral history, see de la Torre (1997) and Petras and Veltmeyer (2005)

to break the promises made during the election season. While the author's account of the community organization is rich in nuances and motivations, his account on the city council makes no reference to the existence of perceptible differences or convictions among its members. Chapter 2 of this thesis tackles this issue as it aims to theorize the heterogeneity and messiness of electoral dynamics both among local elites and within the municipal government.

With this purpose, I draw four lessons from Furlong's (2015, 2016) work on the implementation of water governance reform in Ontario, Canada. The first one relates to the complexity of local government, which is composed by different branches and offices that in turn host their own diversity. The second one relates to how - in the context of water governance reform - tensions within local government might be exacerbated and become evident. Thirdly, municipal governments harbor internal factions and positions that often change over time. Finally, the author also points to the fact that, when it comes to the study of water governance, analyses risk misreading municipal governments as consistent "containers" and unitary actors.

With these lessons in mind, I remain conscious of the diversity and oscillations within municipal governments. In addition to the municipal government per se, I argue that attention needs to be paid to electoral junctures and to the fluid relationships - coalitions, confrontations - between local functionaries or electoral leaders, and national functionaries or members of the central government. Water reform in Barranquilla was carried out after a World Bank Project that started in 1985. But, instead of a linear, coherent, trajectory of intervention by the Bank, with the municipal government following its lead, what we see is disorder and improvisation on the part of the local authorities. During this period, the municipal government asked the Bank for more time and vehemently requested for new deadlines, stalling on the implementation of the Bank's recommendations. In 1991, one year before the end of the project, both the City Council and the local mayor decided not to adopt the recommendations of the Bank. Ultimately the national government had to pay the debt.

Chapter 2 documents six years of messy party politics, electoral campaigns, union interventions, and negotiations between municipal authorities and the national functionaries. Instead of defined elite, with the leverage to define or consolidate water distribution, the

chapter describes multiple scissions within political and economic elites and the emergence of new electoral forces that complicated the political picture. It argues that when examining water governance and the implementation of policy reforms, political ecology must include a reflection on local politicians and municipal party life as one that is not homogeneous or static, where different ideas concerning water projects emerge, clash, and converge.

2.2 WATER'S AGENCY AND INFRASTRUCTURE

2.2.1 Biophysical agency

Within political ecology there has been a consistent concern for engaging with the active capacities of biophysical processes. Walker (2005), for example, notes that in some political ecology the social and discursive politics of access to and control over resources take center stage while the biophysical ecological implications receive little explicit attention. He argues that in much contemporary political ecology the concerns of ecology become questions of politics and citizenship struggles, while the connections of these struggles to the biophysical environment remain unexamined. With a similar argument, Braun (2005, p. 645) sustains that, while there is consensus about the importance of nature in the study of the city, it is often unclear what nonhuman nature adds to these accounts except the presence of a "static stock of things that are necessarily mobilized in the urbanization process". This author uses the example of water to explain his point. Although there is a lot written about water with a political ecological approach, there is no mention to its specific properties (and how these might influence the socio-spatial development of cities):

> Water flows. It reacts with certain chemicals and dissolves others; often these dissolved chemicals are visible, and diffuse rapidly. Water evaporates when warmed, condenses when cooled, and, expands when it freezes. It obstructs movement and enables movement, it serves as a pathway for viruses and bacteria, but is also used to cleanse. It seeps into porous materials, but flows across those that are nonporous. Do these properties matter to the material form of the technological networks and bureaucracies that control its movement, or to the narratives, hopes and fears that circulate around it? Can water be mobilized in just any old way? Must the real actors in urban sociology and political ecology be always already social? (Braun, 2005, p. 645).

Bakker and Bridge (2006) share Braun's (2005) concern. Although they recognize that work by authors like Swyngedouw (2004) references the biophysical environment, accomplishing a certain decentering of agency, this is not enough. In this vein, they argue that an explicit recognition of materiality implies an acknowledgement that the biophysical environment is not composed of "pre-given substrates" that may facilitate or constrain social action. Instead, the biophysical environment is the "historical product of material, representations and symbolic practices". There is thus a need to take seriously the question of how the different materiality of resources may be sources of unpredictability, unruliness and resist human intentions. Therefore, political ecology should account for a coproduction of socionatures in which humans and nonhumans alike participate "albeit unevenly, and subject to dynamic and evolving constraints" (Bakker & Bridge, 2006, p. 19).

One of the authors that makes explicit emphasis on active capacities of biophysical processes is Karen Bakker. Bakker (2003, 2010) approaches urbanization as simultaneously natural and social: constituted by (and constitutive of) political ecological processes. This implies a view of urbanization that does not reduce urban nature to "green spaces," but rather focuses on the material flows - such as excreta, water, wastes - that move through the city, and the different governance processes, power relations, infrastructure, and subjectivities through which these are mediated. Drawing on Benton (1989), Bakker (2003) sustains that the fact that biophysical properties of the nonhuman worlds are often intransigent must be considered. In this vein, she documents how water's biophysical characteristics, make it difficult to commodify. In analyzing these biophysical properties (or the materiality of water) Bakker (2003) characterizes water as an inherently "uncooperative commodity".

Understanding why water is such an uncooperative commodity requires explicit reference to its materiality. By materiality Bakker (2003) refers to an understanding of nature as "a subject of political economic processes, whose specific biophysical characteristics shape the social relations of production, simultaneously enabling and constraining its own production". Specific constraints imposed by different biophysical characteristics of natural resources will give rise to specific uses in their appropriation into production. In turn, water is a "flow resource", not easily bounded above or below ground, through which externalities (pollution, for example) are easily diffused. Water may also serve multiple uses

simultaneously, and perform several functions through the hydrological cycle (upstream users can greatly affect downstream users). Besides, since it is a flow resource, property rights are more difficult to establish and boundaries are often unclear. Another biophysical characteristic of water that underlies its uncooperativeness as a commodity is its density; water is one of the heaviest substances mobilized by human beings to survive. Although water is cheap to store, it is expensive to transport. Finally, the significant differences between water sources (and the negative ecological effects that mixing water from different sources might entail), prevent inter-basin transfers. Water supply is then localized and because of this might tend to monopolistic control.

Due to the fact that it's a flow resource, water supply is merely one aspect of the urban hydrological cycle, while sanitation - the provision of facilities and services for the safe disposal of human urine and feces - is a second one, and drainage – the removal of excess rain from paved streets – is a third one. As a flow resource, water is also the supreme integrator; that is, given water's ability to dilute and transport pollutants, the nature of the impacts of water use by one user on another is often difficult to discern (Bakker, 2010).

Paul Robbins (2007) is also concerned with highlighting biophysical agency. In his study on turf grass in the US, he argues that lawn must be assumed not as an ecological product of human action, aesthetics, or economics, but instead as an environmental actor that forces behaviors, adaptations, and adjustments not only on individuals, but on whole municipal economies, and on the practices of firms that feed, grow and tend them: "Neighbors respond to the needs of Poecea, not to shareholders, as they stare over their back fences at our brown patches and dandelions" (Robbins, 2007, p. 135). The lawn is thus autonomous, as it follows its own rules and takes advantage of socio-political circumstances (even as it is itself taken advantage of by other actors). At the same time that lawn grasses are obediently served by homeowners, the explosive growth of grass provides opportunities for those in the lawn care industry. Simultaneously, the habits of grasses may present obstacles and problems for firms who would try to profit from them (these firms are then forced constantly to adapt and alter their strategies to the variable needs of the grass).

2.2.2 Why study infrastructure?

While some literature is concerned with the agency of biophysical nature, another group of scholarship has been asking a broader question: not only about the role of nature but about the role of the non-human world in general. Madeleine Akrich (1992) has called for studies that "move constantly between the technical and the political". Latour (1992), in turn, aims for more balanced accounts of society, that stop focusing solely on humans, and start theorizing from a point of view that includes "the non-human masses". Similarly, Braun and Whatmore (2010) make calls to take "the stuff of politics seriously", as "things" help constitute the relations through which communities live. "Things" have agency and power, they can influence relationships between people, and they can animate and act upon communities (Akrich, 1992; Bennett, 2010; Braun & Whatmore, 2010). Under this premise, Bennett (2010, p. 37) coined the concept of "thing-power", which alludes "the moment of independence possessed by things".

This debate on non-human agency is enriched by scholarship on infrastructure. Roads, water, electricity, gas supply, sewage, telephone lines, plugs, ports, and bureaucratic forms: infrastructure is social-material assemblage building relations between bodies and things (Anand et al., 2012; Larkin, 2013).

Susan Leigh Star (1999) reminds us that infrastructure is inseparable from the environment and that it makes part of larger structures. Additionally, she recalls that it is learned through a community of practice: it is naturalized among the community that uses it every day. It is transparent; as it does not need to be invented every time is used. Akrich (1992) describes how infrastructure becomes naturalized in the daily life of its users such that it tends to become mundane and invisible. In this vein, it is "stabilized" and only becomes visible upon breakdown (Star, 1999).

Meaning different things to different people infrastructure is relational (Star, 1999), socially constructed (McFarlane & Rutherford, 2008), and at the same time productive of social and political relations (Von Schnitzler, 2008, 2017). Infrastructure is "not neutral" (McFarlane & Rutherford, 2008). Differences and inequality among social groups are reproduced through the material shaping of infrastructure (Appel, Anand, & Gupta, 2015; McFarlane &

Rutherford, 2008). It connects and disconnects (Anand, 2012; McFarlane & Rutherford, 2008), coevolving with cities as it helps delineate power asymmetries. As such, it contributes to the configuration of the identities of some neighborhoods and communities (Kooy & Bakker, 2008; McFarlane & Rutherford, 2008). Using Premnagar, one of Mumbai's districts, as a case study, Anand (2012, 2017b) evidences how power geometries are created and reproduced through everyday management of public infrastructure. Through the absence of legal water infrastructure, the district residents are marginalized due to relationships of power based on religion and class.

Infrastructure not only helps delineate power relations, but also assigns specific roles to different groups of people (Akrich, 1992; Loftus, 2006; Von Schnitzler, 2008, 2015). Akrich (1992) explores the electrification of the Ivory Coast to analyze how infrastructure has political reach: as the state, that previously had little material contact with some regions, extends its reach. Families who receive the service for the first time will have to start paying monthly bills on time. Hence, the electricity grid helps to control the "moral behavior" of these regions. However, Akrich (1992) also warns that, for this moral control to work, it is also necessary to persuade the community to play the roles that are being proposed within the infrastructure.

Loftus (2006) presents another case study where infrastructure is invested with political power. He describes how prepaid water meters in Durban, South Africa, have the power of regulating daily rhythms of life (when and how much water can be consumed). Prepaid water meters assign specific behaviors to communities that will have to be disciplined and economically active in order to calculate and afford their consumption. Von Schnitzler (2008, 2017) argues that the South African state includes and connects black communities through the prepaid water meter. However, this inclusion is conditioned: in order to be included you will have to incorporate to the "ethics of civil duty", to pay and calculate your water consumption.

Von Schnitzler (2008, p. 900) takes the analysis a step further and argues that, in the context of the apartheid as a recent state project, the prepaid meter is "inscribed with political histories". The anti-apartheid struggle was one for inclusion and along these lines, the meter de-politicizes the struggle: the communities will be included but as long as they pay, and it

is the meter who will disconnect them. The prepaid water meter is, in this sense, a piece of infrastructure with a political life of its own. It is imported to countries and travels around the world being harnessed into different projects (Von Schnitzler, 2013, 2017). In the specific context of post-apartheid South Africa, infrastructure itself has become a political terrain for the negotiation of inclusion or citizenship (Von Schnitzler, 2008, 2013, 2017). Inquiring about the ways in which political projects from the past are inscribed in objects, von Schnitzler's work (2008, 2013, 2017) also recalls how infrastructure is "built on an installed base" (Star, 1999, p. 382). As such, infrastructure is made by and constitutive of diverse political rationalities (Anand, 2017b) and inherits characteristics from past political projects (Collier, 2011).

But what happens when a community is not convinced of playing the roles invested in infrastructure? As it was mentioned, Akrich (1992, p. 208) highlighted the importance of persuasion as a requisite for infrastructure to become stabilized (without persuasion infrastructure might "remain a chimera"). Cupples (2011) presents the case study of Nicaragua where, in a context of economic crisis and mistrust in the state, the community resisted the roles inscribed in electricity meters and undermined them through material interventions to distort consumption measurements. In this way, they have managed to prevent the stabilization of infrastructure. But not only humans can de-stabilize infrastructure since, being than "more than human creations" (Anand, 2012), it can be troubled by non-human agency and breakdown (as will be explored in the next section).

In conclusion, as von Schnitzler (2015) and Larkin (2013) sustain, infrastructure is multilayered and works on different registers. They can connect and disconnect people, things, flows, and ideas. They delineate power geometries, can act as symbols and political tools, or become invested with economic and political power. This thesis aims to study infrastructure in Barranquilla, as a terrain where political roles are inscribed: through which power relations are reproduced but also contested. With this focus I aim to extend my analysis beyond the exclusive study of "human masses". Through the study of pipes, grids, meters, and drains, I intent to get a glimpse of the city's past - as infrastructure in Star's (1999, p. 382) terms "doesn't grow de novo" - and of the forthcoming state projects, since - as Anand (2012) and Gupta (2015) remind us - infrastructure is also about aspiration and imaginations of the future.

2.2.3 Breakdown and entanglement in the southern city

Heeding calls to consider the biophysical properties of water and to investigate infrastructure as a generative site of power geometries, this thesis follows water as it meets, shapes, and clashes with infrastructure. Potable water moves inside pipes in some neighborhoods of Barranquilla. Storm water floods asphalt roads - that act as storm drains in some parts of the city. Chapter 3 describes the ways in which storm water forms flash floods that, in turn, disrupt and ruin poorly maintained electricity infrastructure causing electricity outages. These blackouts produce water cuts due to lack of electricity in some of the city's pumping stations. As such, the thesis also draws from scholarship on breakdowns and disrepair.

Infrastructure is fragile, unsteady, and comes apart (Anand, 2015a, 2015b, 2017b; Graham & Thrift, 2007 ; Trentmann, 2009). Since it is composed by historically diverse groups of objects, designs, and technologies, it is incoherent (Anand, 2015a; Von Schnitzler, 2017). Hence, at the mercy of the agency of humans and biophysical nature, it seldom performs as planned (Anand, 2015a, 2015b; Cupples, 2011). Malfunction is then systematic (Graham & Thrift, 2007), as infrastructure is always leaky (Anand, 2015b) and in constant decay:

> Moisture gets in. Damp hangs around. Ice expands joints. Surfaces wear thin. Particles fall out of suspension. Materials rot. Insects breed. Animals chew. All kinds of wildlife war with all kinds of fabric. Humans make errors. Each process of dilapidation does its special harm and releases new 'wastes'. (Graham & Thrift, 2007 p. 5)

Infrastructure's vulnerability and the resources to repair it are unevenly distributed (Trentmann, 2009). The fact that malfunction has not been studied more has to do with the lack of studies in the urban south. Quoting Robinson (2005), Graham and Thrift (2007) argue that southern urbanisms must be included in urban studies, and sustain that in southern cities urban life is achieved through constant "improvisation" and repair. Furlong (2014) goes a step further and argues that, in order to study infrastructure in the south, some of the premises of the debate should be questioned. In the southern context, for example, some infrastructure is seldom "stabilized", and as such, it seldom becomes "transparent" or "invisible". In a state of persistent disrepair, infrastructure is constantly being tampered with

and reworked on. Star (1999) reminded us that infrastructure is learned through a "community of practice" (naturalized through everyday use). In the urban south, the community of practice does not learn about use, but about disrepair and malfunction (Furlong, 2014). Thereby, the communities are not the "users" or clients of the utility, but instead they are "co-producers" (Trentmann, 2009) and indispensable in coping with, administrating, and reproducing disruption (Furlong, 2014).

The analysis conducted in this thesis engages with this literature. However, it additionally argues that this analytical framework could be strengthened through an engagement with entanglement. I contend that in the urban south, where some areas lack public infrastructure and the existing infrastructure is frequently poorly maintained (and is prone to breakdown), basic infrastructure (such as water and electricity) should be studied as an entanglement. This is, because if one infrastructure fails it will risk triggering the breakdown of other infrastructure. Chapter 3 demonstrates how water (water supply, sanitation, and drainage) and electricity infrastructure are intertwined in daily life and should be studied together, as part of the same entwined story, instead of as separate infrastructure.

2.3 THE STATE: AS SEEN FROM VARIOUS ANGLES

2.3.1 How to study the "state" ethnographically?

How shall the state be defined? And how shall we study the state? This section presents a discussion of a body of literature that aims to answer these two questions. Beginning with the first question, many authors start by defining what the state is not. Firstly, the state is not an "it". Not a discrete and coherent unity (Gupta, 1995), nor a heavy entity that defines the conditions under which other institutions work (Sharma & Gupta, 2006). It is not an "inert structure" that precedes the communities it governs (Mitchell, 1999), nor a "thing, system, or subject" (Brown, 1995).

In this line of thought, there is no boundary between the state and society and there are no communities outlying the state (Mitchell, 1999). Conversely, what we call the state is a multilayered, disaggregated, contradictory, and translocal ensemble of people, complex social practices, and institutions (Gupta, 1995; Mitchell, 1999; Sharma & Gupta, 2006). The

institutions that build the state are seldom coordinated, host multiple layers of authority, and were constructed through particular historical conjunctures (Gupta, 1995).

What we, in our daily routines are used to calling "the state" is made visible - and comes to be imagined - through localized practices carried out by local institutions (Gupta, 1995; Sharma & Gupta, 2006). These institutions work in precise spaces with precise discourses, rules, and functions (Brown, 1995). The state thus, is built through procedurialism (Gupta, 1995; Sharma & Gupta, 2006). State procedurialism refers to the banal repetition of bureaucratic practices and the, almost mechanical, following of precedents (Sharma & Gupta, 2006). Behind each of these practices, there are paper trails and situated knowledges (Gupta, 1995). State procedurialism is repeated systematically for a variety of audiences and at different scales. And it is through procedurialism that state institutions are reproduced "across time and space" (Sharma & Gupta, 2006).

It is through these organized and precise practices - procedurialism - that the "effect of the state" - that is, the idea that there is an entity called the state apart from society - is created. The state, argues Mitchell (1999) is then an effect: it is the effect of a number of practices and procedures that make it look like a solid unit. These practices also lend the state certain "superiority" through the dividing line between state and society is drawn and redrawn. Through procedurialism, the state is imagined as an almighty apparatus, that is both outside the community and able to contain and control it (Mitchell, 1999).

It is important to recall that it is through procedurialism that power inequalities are delineated, produced, and maintained (Anand, 2017a; Sharma & Gupta, 2006) and that other features of rule are revealed: supervision, surveillance, schedules, programs (Mitchell, 1999), monitoring, counting, assessing, managing (Scott, 1998). To this extent, the imaginaries that people form about of the state are based on their particular dealings with particular bureaucracies (and also on cultural media accounts such as newspaper articles and politician's discourses) (Gupta, 1995). These imaginaries vary according to the manner in which communities are positioned vis-à-vis class, race, and gender formation processes (Gupta, 1995; Sharma & Gupta, 2006).

Being multilayered, the state is shaped by internal conflicts and incoherent programs. These fissures and contradictions within practices and institutions can be exploited by communities to subvert power inequities through political actions and activism (Gupta, 1995). However, the importance of writing and literacy in everyday state procedures presents important barriers to unprivileged communities in the south. Upper class and middle class men are often better situated to lodge complaints and profit from state programs (Sharma, 2006; Sharma & Gupta, 2006). Sharma sustains that, in order to challenge and alter social inequalities, communities must know how to "wield the pen": "wielding the pen implie[s] having the knowledge required to negotiate the world of the powerful: the men, officials, and people with salaried jobs" (Sharma & Gupta, 2006, p. 14).

With this discussion as background, we can address the second question: how to study the state? As has been mentioned, this thesis avoids reading the state as a congruent and static "container" of society (Agnew, 1994) This thesis also takes distance from studies that privilege the analysis of official histories, presidents and other major characters, or grand events. Instead, it takes an ethnographical approach to the state. This entails the elaboration of institutional ethnographies of specific state bureaucracies through the analysis of their daily practices. In these observations, several details should be noted: (1) the relationships between the bureaucracies and the communities that they are supposed to serve; (2) the practices of bureaucrats and their personal histories; and (3) everyday conversations between bureaucrats, communities, and other present observers (these include debates and controversies about the state policies and programs) (Gupta, 1995; Sharma & Gupta, 2006).

This approach responds to calls to focus on the broad base of the bureaucratic pyramid: that is, on land record keepers, school teachers, agricultural functionaries, and so on (Gupta, 1995). This broad base also includes bureaucracies dealing with the tasks of rule and surplus extraction (Sharma & Gupta, 2006), as well as mapping, surveying, and other measures that expand institutional legibility and control over communities (Scott, 1998). As such, the municipal courts, notary offices, and revenue agencies are examples of agencies that give concrete shape and form to the abstraction (or effect) that is the state.

As the processes involved can be repetitive, mechanical, and unremarkable, the work of the state comes to appear as apolitical. However, as Ferguson (1994) and Sharma and Gupta

(2006) argue, it is precisely through these practices that the political is rendered possible - hence the importance of studying them as they exert rule and government. When examining, for example the law, focus must be placed on the seemingly trivial details of the legal process as well as the particular social practices surrounding it (Latour, 2009; Mitchell, 1999). These are the practices that produce the idea that the law exists outside of society in the form of a superior, over-arching framework, or in Mitchell's (1999) words "the state effect".

Everyday encounters between community members and bureaucrats tell us about the effects of the state on the daily lives of people. Through their conversations, we can approach the imaginaries of the state that they are forging: that is, the discursive construction of the state (Gupta, 1995). What do people think about the state? These perspectives are forged by the particular histories and everyday encounters with state functionaries, processes, benefits, pursuits, or and exclusions (Sharma & Gupta, 2006). Since these images will vary according to the context of each person, it is important to situate the constructions of the state with respect to the specific economic, social, and historical background in which they take shape (Gupta, 1995).

There are two other important reasons to study the state ethnographically. First, through the study the state in its disaggregated form and its many bureaucracies, research de-emphasizes the state's purported power and refrains from reifying it as the maximum seat of power (Gupta, 1995; Mitchell, 1999; Sharma & Gupta, 2006). Through the study of its institutions and dispersed networks, research will also highlight the roles played by other actors - communities, social movements, etc. - in their dealings with bureaucracies. Secondly, the study of bureaucratic everyday life underscores the reasons and the ways in which inter- and intra-bureaucratic divisions are stabilized (Sharma & Gupta, 2006).

In sum, an examination of the state from below, concentrating on its bureaucratic base, is an analysis of the daily life of its institutions and bureaucratic practices. This view allows one to appreciate the ways in which the state is built (and rebuilt) on a daily basis, the manner in which it is demarcated from other institutions, the manner in which the line between state and society is drawn, and the effects of state building in the life and in the struggles of particular communities.

2.3.2 The state, nature, and infrastructure

Section 1.4.1 defined the state as a myriad of practices, institutions, and networks that reproduces power asymmetries on a daily basis. What happens if we include nature and infrastructure in the analytical frame?

Different studies have analyzed the diverse ways in which state projects seek to mobilize and shape biophysical natures. These analyses have shown how states demonstrate their power via the transformation of socio-natures (Mitchell, 2002). In "Environmentality" Agrawal (2005) portrays the strategies employed by the colonial state to create the "nature" it wanted to "preserve" in Kumaon (northern India). He describes how official policies, during the beginning of the twentieth century, tried to bring forests under centralized control, creating and instituting entirely new procedures to control, manage, and exploit the landscapes it deemed valuable. Because England, the colonial authority, needed wood, the state "remade nature" and forests through surveys, demarcation, planning, and the division of land into particular categories of protection.

State remaking of nature is hardly unique to colonialism. In a recent research, geographer Leila Harris (2012) explains how, through a series of environmental transformations (in agro-ecology and water access) and through parallel infrastructural work (construction of dams and irrigation channels) consecutive Turkish governments have been contributing to the creation of the "state effect". Communities with new access to irrigation felt, for example, that they had become part of the "state". The state, in this sense, is built in places: and at the same time it produces them (Harris, 2012; Meehan & Molden, 2015). In the case of Turkey, the transformation of waterscapes led to the transformation of some of the imaginaries about the state. In a context of historical mistrust and tensions towards "the state", the state was able to engender a feeling of being "remembered" or "included" in some communities through improved irrigation systems (Harris, 2012). The work of Alatout (2008) also focuses on the co-production of nature and state power. Though the study of the Israeli discourses and policies concerning water scarcity he contends that technical constitution of "freshwater" resources has been central to the definition of territory and the national state building. According to Bridge (2014), a geographic approach has been more concerned with questions about how the state and "nature" have been constructed than with

questions about what they are. The "interesting questions for critical geography", he sustains, have been about "the formative processes through which resources and states are generated as 'effects'".

That "the state effect" can be redrawn through the reworking of relationships to nature through infrastructure was also seen in Section 2.2.2. Through the exploration of the urban South Africa case study it was seen how prepaid water meters are invested with state logics of responsibility and economic solvency. By limiting water connection to those who pay, they are productive of power relations and in turn they construct places of stateness (Loftus, 2006; Von Schnitzler, 2008). Everyday experiences of the state in informal neighborhoods are thus often shaped by infrastructural preoccupations "waiting lists for housing, latent threats of evictions, leaking pipes, inaccessible infrastructure, and illicit electricity connections" (Von Schnitzler, 2017, p. 4).

Within the state remaking of nature, everyday bureaucratic practices remain important as they reproduce unequal access to resources (Agrawal, 2005; Anand, 2017b; Harris, 2012; Meehan & Molden, 2015). Through the reproduction and/or reworking of unequal power relations, an infrastructural project – such as a dam or a water supply extension - can change the imaginary that people have of the state: "meanings associated with the state are sedimented in relation to past histories and geographies but also recast in relation to recent developmental and environmental changes" (Harris, 2012, p. 34). Still, the fact that these practices are important does not mean that they are rationally ordered and internally consistent. It is important to note that like in other areas, such as representation or surveillance (policing, violence), in what concerns environmental or resources issues, the state is not necessarily coherent. There is not a single blueprint for environmental decisions and the state effect is achieved through a group of non-always coherent programs and plans (Meehan & Molden, 2015).

This thesis heeds calls to continue exploring the interfaces between what we call the state, the environment, and infrastructure. Specifically, analytical frameworks that study the state can learn three lessons from the literature on political ecology and socio-natures. The first lesson is the importance of multiple scales. This is because the scale dynamics (from the local to the transnational) are important in debates about how the relationships between the

state and nature are formed (Harris, 2012). The second relates to the importance of biophysical agency and the role it plays in everyday state formation (Harris, 2012; Meehan & Molden, 2015). Underscoring the non-human dimensions of state power is important for advancing analytical frameworks that study the state beyond the "human masses". Here, it is important to remember the work of Karen Bakker (2003, 2010), in which the biophysical properties of water were key in determining how state politics and reforms were actually enacted. It is also worthwhile to recall the centrality of infrastructure as both "object and medium" of making claims on the state (Von Schnitzler, 2017). Finally, the study of state practices, in relation to the environment, helps understand the unevenness of resource access and the consolidation of asymmetric power relations.

In sum, there is a need to unearth the practices that constitute the state and how they relate to the production of new socio-natures. It is important to study the ways through which state practices transform biophysical nature, as well as the ways in which the state practice is produced through everyday relations with biophysical nature.

2.3.3 The state as seen from different angles

This thesis engages with literatures on the ethnographic study of the state. That is, the study of the state through the everyday workings of local bureaucracies and how they help to construct the "state effect" or the idea that there is an entity called the state apart from society. It also draws on political ecological approaches which analyze of the co-production of the state, biophysical nature, and infrastructure. That is, studies on the ways in which the "state effect" is achieved through the transformation of biophysical nature and through infrastructural interventions. Bringing these two approaches together, the thesis approaches the state ethnographically, through localized bureaucratic practices, but at the same time remains aware of the ways in which these practices delineate water uneven distribution as well as water's own agency in the transformation of state practice. It accounts for water's unpredictability and unruliness.

By putting these two groups of literature together, I intend to study the state from its bureaucratic practices, through ethnography and, at the same time, to be aware of its

"effects" on a wider scale. On the one hand, I carry out an ethnography of the state in its daily practices and routines. On the other hand, I explore the regulation and the infrastructural projects that cement an unequal distribution of water in the city. As such, the ethnographic account will be complimented by an analysis of local and national water regulations, including laws, decrees, resolutions, court rulings, constitutional sentences, and local regulations pertaining to urban water governance (Chapter 4).

It is worth mentioning that, instead of focusing on a local bureaucracy, the thesis gives an account of an unofficial intermediary office. An intermediary office is a place where several men and women, who are not employees of the state, serve as intermediaries between the official local bureaucracies and the city's poorest residents. Through this, I aim to tackle the difficulty experienced by certain marginalized communities as they try to make their way through the local bureaucracies in the face of a state that seeks to exclude by requiring literacy, for them to "wield the pen" (Sharma & Gupta, 2006). With the help of intermediaries, residents of Barranquilla's non-privileged neighborhoods learn how to "wield the pen together". In this way, intermediary offices constitute an interesting place to study everyday state practices as they bring together many people in their attempts to access the state, learning about their stated constitutional "rights" and developing skills to understand and navigate the local bureaucracies, which are often the gatekeepers to these rights. With this, I also follow the approach advised by Gupta (1995, p. 392): "There is obviously no Archimedean point from which to visualize the state. Only numerous situated knowledges".

The value of this approach grew out of the fieldwork. At the complaints office, people learn about water regulations in order to find inconsistencies and denounce the utilities and/or the state for breaches of any law or regulation. As such, in order to understand the everyday conversations and activities of the intermediary office, a thorough analysis of current utility regulations and their precedents was essential.

2.4 CONCLUSIONS

This chapter mobilized the concepts of "power relations", "infrastructure", and "the state" to set the theoretical framework for an inquiry about policy reform, water infrastructure, its distribution - and how these are contested. For this, the chapter engaged with literatures on political ecology, critical infrastructure, and the state.

This thesis draws from political ecology by attempting an empirically based analysis with consideration of the city's power relations. It documents the ways in which water is accessed in informal neighborhoods and remains conscious of the fact that water governance and water development initiatives are deeply political and always reproduce or contest unequal power relations. This analysis builds on concepts like socio-nature, to avoid thinking of water as a resource that is external to social relations, and understand it as one in which social relations are embedded. It also builds on the concept of the hydrosocial cycle, which emphasizes the fact that water connects individuals not only materially but also politically and socially. This thesis engages with political ecology while warning about the lack of detail with which political ecological analyses study professional politicians and electoral politics. Thus, in its account of Barranquilla's water distribution the thesis will focus on the heterogeneity – and different ideologies - within the municipal government and electoral forces.

The thesis also engages with works on water infrastructure as a political terrain. Specifically, it brings three types of literature: (1) literature that highlights the importance of nature in the study of the city, with specific mention to its specific properties and the ways in which these might influence the socio-spatial development of cities; (2) literature on infrastructure, which studies infrastructure as relational, socially constructed, and productive of social and political relations; and (3) literature on malfunction, that is on the fragile, unsteady, and flaky character of infrastructure. While considering the biophysical properties of water and investigating infrastructure and its malfunction as a generative site of power asymmetries, this thesis will shed light on the interconnectedness between water and electric infrastructure.

Finally, the thesis converses with literature on the state. In so doing, it brings two approaches two the state into conversation. Firstly, it brings institutional ethnographies of specific state bureaucracies through the analysis of their daily practices. These ethnographies observe the relationships between the bureaucracies and communities, the practices of bureaucrats and their personal histories, and everyday conversations between bureaucrats, communities, and other observers. Secondly, it draws on accounts on state remaking of nature and infrastructure. These accounts analyze the diverse ways in which state projects mobilize and shape biophysical natures and, in turn, the ways in which the transformation of nature through infrastructure leads to the transformation of the imaginaries about the state. This thesis contributes to these strands of literature by studying the everyday practices of intermediaries between the state and marginalized peoples. That is, of a group of unofficial intermediaries whose work is to build bridges between state bureaucracies and local neighbors, in the contestation of water allocation policies. With this, it aims to explore the regulatory ground in which everyday contestation stands.

3. Fifty Public Standpipes

In 1985, Barranquilla had a population of 927,233 inhabitants (DANE, 1985), of which approximately 400,000 were living in the city's southwest (World Bank, 1985c). At that time, southwestern Barranquilla was populated by internal migrants, specifically smallholder and landless farmers that came to the city during the 1960s and 1970s in search of job opportunities (Arias Trujillo, 2011; Torres, 2009). All thirty-five southwestern neighborhoods lacked water supply, sewer connections, and proper drainage. Two had built public standpipes, which were managed by communal organizations and charged about COP $50 ($0.78 in constant 2016 USD[1]) per family/per month. However, all the other neighborhoods in the area purchased water from vendors - for about COP $1,200 ($18.8 in constant 2016 USD) family/per month – spending around 8.9 percent of their monthly income in water[2] (World Bank, 1985c; T. Escobar, Reales, & Solorzano, 1985).

In this context, the Barranquilla World Bank Project aimed to help the Public Utilities of Barranquilla (EPMB) expand water services to southwestern Barranquilla (Word Bank, 1985b; World Bank, 1985c). Anticipating the duration (and possible delays) of the works, which included a new storage tank, a pumping station, and distribution networks, the project included a short-term solution: it would install fifty public standpipes during the first months of implementation to complement the two existing ones. According to the initial plans, the location of the standpipes and their management would depend on communal organizations and EPMB would provide treated water to them at a subsidized price (Word Bank, 1985b; World Bank, 1985c).

This chapter tells the story of the Barranquilla World Bank Project and the fifty public standpipes - that were never built. It describes the urban water development project starting

[1] All monetary conversions in this thesis are based on historical US dollar rates published by the Banco de la Republica, Capitulo 11, Tasas de Cambio, Cuadro II.46. Due to inflation, the purchasing power of the dollar has changed over time, so in order to compare dollar values from one year to another, these were converted from nominal (current) dollar values to constant 2016 US dollars using real price measures according to measuringworth.com.

[2] According to 1985 census (DANE, 1985), low-income families had an average income of COP $13,558 ($213 in constant 2016 USD) per family/per month.

in 1985, when EPMB received the first allocation of funds from the World Bank and finishes in the mid-1990s, after the project was suspended due to EPMB's non-compliance with the agreements. The chapter's purpose is to analyze how water/power distribution were reworked and consolidated in the context of the Barranquilla World Bank Project. Drawing on the work of Furlong (2015, 2016), this analysis will remain conscious of the tensions triggered by the water project at the national and local governments. It will also evidence the complexity of local and central electoral politics, the political parties, their competing interests, and the fact that these changed over time. The World Bank project stands as both an object of enquiry and a lens through which we can better understand Barranquilla's water/power distribution.

This is of interest as it focuses on electoral politics, a subject rarely touched by the political ecology literature. This literature tends to pay little attention to the heterogeneity and messiness of electoral politics when studying water/power distribution. The implementation of water policies is frequently portrayed as the imposition of a set of measures by an essentially uniform group of political and economic elites. I argue that, during the execution of the World Bank project, different and heterogeneous groups - local and central governments, regulatory agencies, political parties and movements, labor unions, and economic elites - engaged in multiple negotiations and dialogues. Thus, instead of a linear trajectory of intervention by the World Bank, followed by the implementation of new water policies, what we see is improvisation on the part of the local and central authorities, and contention between different interests and groups at multiple scales.

I analyze a series of different reactions, positions, and interests. Some members of the local government and factions of political parties proposed to ignore the problems of the southwestern sector, as its neighborhoods were outside the municipal boundary, and agreed to receive the World Bank funds to use them for the improvement of water supply in the city's northern neighborhoods. Others wanted to use the World Bank funds in electoral campaigns, exchanging water infrastructure for votes. The industrial and commercial sector resisted the project, as it involved the installation of water meters on their property. Finally, a new political movement was forged in the struggle for access to water services, and for the correct implementation of the World Bank project in the southwestern neighborhoods.

Two ideas emerge from the analysis of these conflicting positions. The first one has to do with the role of water's materiality. In this context of contention, consensus and change were catalyzed through specific aspects of the water's materiality. The decisions regarding the project were only taken when the pollution of the Magdalena River, the city's water source, reached levels so high that the chemicals used to treat the city's water became insufficient. During this period, the whole city was left without water and the competing interest groups agreed on the need to make reforms. Here I follow calls by Bakker and Bridge (2006) and Braun (2005), to draw attention to water's materiality as it influences socio spatial developments. As Bakker (2003) reminds us, water is a flow resource, through which externalities and pollution are easily diffused.

The second idea concerns the non-linearity of water policies and water development projects. Setbacks were part of Barranquilla's water reform process. Many southwestern neighborhoods gained access to water supply, sanitation, and drainage in the early 1990s only to lose it several years later due to changes in the composition of the local government. The new government's policy changes led to the neglect of the infrastructure projects already in progress. As such, water development projects are iterative rather than unidirectional; they are not free of setbacks linked to electoral and political conjunctures. In the same vein, this historical analysis of local politics allows us to see how seemingly contradictory policies were undertaken at the same time. In Barranquilla, for example, the sale of utility assets and the entry of the private sector into utility management (the mass layoff of EPMB's workers) coincided with considerable state investments in water infrastructure [3]. As such, southwestern residents saw the municipal government's presence as simultaneously contracting (selling the public utility) and expanding (undertaking water supply investments). This situation complicates the idea of a unidirectional transition from public to private ownership.

I develop these ideas in four sections, ordered chronologically. The first section analyses Barranquilla's political and social characteristics during the early 1980s, the state of the public water utility, and the goals and terms of the Barranquilla World Bank project. The

[3] Although proponents of private sector participation in water management in the Global South argued that it would indirectly benefit the poorest sectors by helping the government save resources to finance other essential services, evidence shows that the majority of investment in water supply has come from public sectors, even where contracts involving private sector participation were signed (Furlong, 2010, p. 60).

second part narrates the subsequent failure of the project. It traces the historical processes that shaped its implementation, focusing specifically on electoral campaigns, the water supply crises, and local debates concerning the future of the utility. The third section explores the aftermath of the project. It narrates how works to extend water services to the southwest were finally undertaken, a decade after the projected date. The final section offers some concluding remarks and reflections on water development projects and their interactions with local politics.

3.1 A COUNTRY, A CITY, A PROJECT

3.1.1 1985: Barranquilla in Colombia

The year 1985 was one of transitions in Colombia, as two processes reached critical moments. First, violence increased significantly due to the strengthening of the leftist guerrillas, especially the Revolutionary Armed Forces of Colombia (FARC), and the rise of drug trafficking and paramilitarism. Second, the disorderly and uneven growth of cities reached new levels as a result of mounting violence. This section describes the ways in which both processes influenced and altered urban space and politics in Barranquilla.

Colombia has faced chronic political violence since at least the mid-1940s. However, it remained a formal democracy, with regular democratic elections since 1849[4] (Gutierrez Sanin et al., 2007). The two traditional Colombian political parties, Liberal and Conservative, were founded in 1849 and ruled the country throughout the 20th century. While liberals pushed forward an agenda of land, electoral and educational reform, conservative discourse revolved around the defense of the catholic church, property, and order (Arias Trujillo, 2011; Palacios, 2003). After years of violent confrontation, they agreed to co-govern through a bipartisan accord called *El Frente national* ("The National Front"). The agreement was to last sixteen years (1958–1974) and the period, or at least part of it, was a

[4] A military coup in 1953 interrupted the right-wing government of Conservative Laureano Gómez and brought General Gustavo Rojas to power. Rojas Pinilla was overthrown by the military in 1957 with the backing of both political parties, and a provisional government to reinstitute democratic elections was installed. Women's suffrage was approved in 1954, during the short dictatorship (Gutierrez Sanin, Acevedo Guerrero, & Viatela, 2007).

non-war period - with partisan confrontations ending around 1964 (Arias Trujillo, 2011; Gutierrez Sanin, 2007). At the end of this period, the Liberal Party took power, winning the 1974 elections with candidate Alfonso López Michelsen and maintaining power with only one interruption until 1998 (see Table 1).

In the late 1970s, the guerrillas became an increasingly active army. Faced with growing social protest and a spike in insurgent violence, the government of Liberal president Julio Cesar Turbay (1978-1982) responded with increasing militarization of the country (Arias Trujillo, 2011; Palacios, 2003). In the early 1980s, the FARC began using kidnapping to strengthen their finances targeting, among others, members of the growing illegal drug trafficking mafias. These mafiosi, heavily armed and resourced, responded with violence in turn. This violence gave rise to extreme right paramilitary groups, which spread throughout the country supported, not only by the drug trafficking mafias, but also by cattle ranchers, landowners, and military officers (Gutierrez Sanin et al., 2007; Memoria Histórica, 2012).

Table 1 – Presidents of Colombia elected from 1980-1998

Period	President	Political Party
1974-1978	Alfonso López Michelsen	Liberal Party
1978-1982	Julio César Turbay Ayala	Liberal Party
1982-1986	Belisario Betancur Cuartas	Conservative Party
1986-1990	Virgilio Barco Vargas	Liberal Party
1990-1994	César Gaviria Trujillo	Liberal Party
1994-1998	Ernesto Samper Pizano	Liberal Party

Source: Made by the author based on (Arias Trujillo, 2011)

Subsequently, Conservative president Belisario Betancur Cuartas (1982-1986) initiated a peace process with the guerrillas that ended in 1985 with a suspension of ceasefire. By the mid-1980s, the paramilitaries were growing even faster than the guerrillas and were responsible for the murders of journalists, judges, intellectuals, teachers, trade unionists, environmentalists, human rights activists, leftist presidential candidates, and hundreds of thousands of rural farmers (Memoria Histórica, 2012). Massacres and confrontations continued and worsened during the government of Liberal president Virgilio Barco Vargas[5]

[5] From 1986 until 1990, 129.371 Colombians were forced to flee their homes to scape paramilitary massacres or to avoid being caught in the crossfire of the paramilitaries, guerrillas or the army (Unidad de Víctimas, 2016).

(1986-1990).

The mid 1980s were also a time of deep inequality. Even if some improvement in social and economic problems was achieved during the National Front (Gutierrez Sanin, 2007), inequalities did not decline substantially (Arias Trujillo, 2011). According to a World Bank report, levels of inequality in the early 1990s were similar to those of 1938 (Charry, 2006). Inequality manifested itself along two major cleavages. First, social disparities increased between populations in rural and urban areas, the former suffering as sites of armed confrontation while the latter grew as economic epicenters (Arias Trujillo, 2011). Secondly, segregation increased within cities, where only a few benefited from social mobility, while many were excluded. Entire "pirate" neighborhoods were built around the country's mayor cities - Bogotá, Medellín, Cali, and Barranquilla. Most of the households living in these neighborhoods were left without formal employment, education, or public services, including water supply (Gutierrez Sanin, 2007; Torres, 2009).

The regulation of the water and sewerage sector was then under the responsibility of the Ministry of Public Health which, in coordination with the National Planning Department (DNP), formulated national water policies. The National Institute of Urban Development (INSFOPAL) was responsible for implementing these policies in cities, and along with the central bank (Banco de la República), INSFOPAL provided financing for investment in water infrastructure. Water tariffs were regulated by the central government through the National Tariff Board, which approved pricing proposals submitted by utilities (Acevedo Guerrero, Furlong, et al., 2015). During the mid-1980s, about 83 percent of Colombia's urban population had access to piped water through household connections, and about 65 percent were connected to a piped sewerage network (DANE, 1985).

All these national processes had a local expression in Barranquilla, where Liberal and Conservative parties had prevailed as the major political forces since the early 20th century. In the 1980s, José Name Terán, congressman from 1974 to 2002, led the liberals at the local level and Roberto Gerlein, congressman from 1968 to 2013, led the conservatives of the city (Villalon, 2003). These political elites controlled the political and bureaucratic quotas of the municipal government in Barranquilla, as they represented the department in the National Congress and had similar representation in the Departmental Assembly and on the City

Council.

It should be noted that until the mid-1980s, the president of Colombia appointed all mayors, for periods of two years. Departmental congressmen had a close relationship with the national government and participated in the selection of local authorities: with liberal presidents choosing liberal mayors and conservative presidents choosing conservative ones. Therefore, the group associated with the conservative Roberto Gerlain (the Gerlain Group) had more bureaucratic participation in the municipality during the Betancur Cuartas administration (1982-1986) than the group associated with the liberal José Name. During the subsequent liberal government of Barco Vargas (1986-1990), it was the group associated with the Liberal José Name (the Name group) that ruled the city.

The northern Caribbean coast of Colombia and its main city, Barranquilla, were deeply affected by the country's armed conflict since the late 1970s. During the early 1980s the FARC guerrilla became involved in the illegal drugs trade and strengthened their presence in the Caribbean region, vital for the export of drugs and the import of arms (Arias Trujillo, 2011). By the mid-1980s paramilitary groups also began expanding along the Caribbean region, with the help of local landowners, businessmen, politicians, and members of the army and national security agencies (Caicedo, 2009). In this context, groups of displaced persons, who had been displaced by paramilitary armies from their homes in small towns and rural areas, began resettling in and around Barranquilla (see Table 2). From 1985 to 1995, 6,709 displaced persons settled in Barranquilla[6] (Unidad de Víctimas, 2016). Most of these groups built informal settlements in the city's southwest without access to public services (T. Escobar et al., 1985; Torres, 2009).

[6] It is important to mention that, due to difficulties in the official registration processes, some underreporting in the numbers of internally displaced persons is expected. In this thesis I will take into account the state's official data published by the Unidad Nacional de Víctimas (National Victims Unit), but other figures do not match this data. For example, according to the city of Barranquilla, From 1985 to 1995, 106 400 internally displaced persons settled in Barranquilla (POFT, 1997)

Table 2 - Displaced persons arriving to Barranquilla 1985-1995

Year	Received population
1985	213
1986	177
1987	234
1988	401
1989	387
1990	701
1991	587
1992	951
1993	922
1994	951
1995	1185
1985-1995	6709

Source: Made by the author based on (Unidad de Víctimas, 2016)

3.1.2 Water and the city

As mentioned in the introduction, Barranquilla's EPMB was a public multi-utility founded in the 1920s. It was responsible for water, sanitation, solid waste collection, and parks and recreation. As part of his mandate, the mayor of Barranquilla also served as chairman of EPMB's board. The board was composed of representatives appointed by the mayor, the city council, the chamber of commerce, the banking association Asobancaria, and the departmental branch of the industrial guild ANDI. EPMB's general manager was appointed by the mayor (Word Bank, 1985b).

From the city's foundation, Barranquilla's water source has been the Magdalena River. In 1985, the city had four water treatment plants, all located near the Magdalena River (see Table 3). Since both the river and the treatment plants are situated at a lower elevation than the city itself, water delivery is accomplished through a system of storage and pumping facilities. During the mid-1980s, treated water was pumped into four storage tanks, which were located in different parts of the city (the system's highest storage tank was located 70 meters above the Magdalena River). In turn, the four existing water tanks pumped water into the neighborhoods located in the central and northern sections of the city. The distribution

of drinking water in Barranquilla was done through pipes ranging from 24 to 42 inches in diameter (INSFOPAL, 1975).

Table 3 - Water Treatment Plants of Barranquilla 1929-1985

Plant	Year of Construction	Treatment Capacity
1	1929	1000 litters-per-second
2	1960	500 litters-per-second
3	1972	2000 litters-per-second
3	1983	1000 litters-per-second

Source: Made by the author based on (World Bank, 1985c)

In 1985, the city's water system had major deficiencies. Although EPMB had managed to secure a loan from the Banque de France and was building a fifth water treatment plant, the water transmission capacity was insufficient to deliver the additional treated water to the southwestern part of the city, where most of the urban development was taking place (World Bank, 1985c). Additionally, this part of the city lacked household connections (Word Bank, 1985b, p. 11). The result was that EPMB's water supply facilities only served approximately half of the city's total population through residential, industrial and commercial connections (Word Bank, 1985b; World Bank, 1985c). The city's sanitation infrastructure was in a similar state. Only about half of the city's population living in the northern and central sections had sewerage connections, the system was overloaded and this created overflow of sewage in some sections of the city's southern areas (Word Bank, 1985b). Solid waste collection was also restricted to the northern and central neighborhoods (World Bank, 1985c).

The population living in the southwestern part of the city purchased water from private vendors:

> The poor are forced to purchase water from the hands of particular distributors in a speculative market. They receive this water in rusty metal cans. They pay in cash directly to the distributor, at the price that he sets. (T. Escobar et al., 1985, p. 15)

Apart from these private vendors, the southwestern neighborhoods had two public standpipes. The first one, in the *barrio* El Pueblo, was donated in 1982 by liberal Senator

Pedro Martin Leyes, who took a shower under the standpipe as part of an electoral campaign (T. Escobar et al., 1985). The other standpipe was located in the *barrio* Nueva Colombia. The Juntas de Acción Comunal (JACs or community action boards) managed the standpipes in both neighborhoods, and water was much cheaper than that sold by private vendors. While water from vendors had an average cost of COP$1,200 ($18.8 in constant 2016 USD) per family/per month, water from public standpipes managed by the JACs had an average cost of COP$50 ($0.78 in constant 2016 USD) per family/per month (World Bank, 1985c; T. Escobar et al., 1985). However, only two, out of thirty-five neighborhoods in the southwestern sector, were able to buy this water.

The existing water system was in a very poor state of maintenance and disrepair. Pumps for transmitting treated water failed frequently. EPMB's attempts to alleviate this disrepair crisis by better distributing the existing pumping capacity were seriously hampered because many of the system's key pressure valves were extremely deteriorated (World Bank, 1985c). Transmission, storage and distribution facilities were also prone to breakdown and increased the system's inefficiency (World Bank, 1985c). At the time, EPMB derived its revenues from tariffs for its various services including water and solid waste collection. By mandate of the city council, EPMB also received 100 percent of the property tax collected in the city. Although these funds were to extend water and sanitation services, they were not used to extend services, but to pay down debts and to cover operational expenses (Word Bank, 1985b; World Bank, 1985c).

In 1984, EPMB had serious financial problems resulting from a combination of factors. Billing and collection were very poor and only 20 percent of existing connections had functioning water meters. In the same way, preventive maintenance was infrequent because of a lack of equipment, qualified personnel, written manuals, and standardized procedures (World Bank, 1985c). General managers changed often, staying in the post an average of two years (Word Bank, 1985b). The utility had neither construction nor engineering personnel and relied heavily on external consultants, at significant expense. The staff was poorly remunerated and protested about job instability and lack of career prospects (World Bank, 1985c). At the same time, EPMB's cash deficits were being financed mainly by commercial bank overdrafts and by a large increase in debt to suppliers and creditors –

primarily the electric utility Electranta, the national social security agency ISS, and INSFOPAL (Word Bank, 1985b; World Bank, 1985c).

3.1.3 The Barranquilla World Bank Project

Conservative president Betancur Cuartas chose Guido Borrero Durán as mayor of Barranquilla for the period from 1984-1986 (see Table 5). As mayor, Borrero Durán was both the director of the board and in charge of choosing the manager of EPMB. In August 1984, mayor Borrero Durán initiated discussions with the World Bank and requested funding for a project, which would emphasize "financial rehabilitation" and "institutional development" and the execution of only the most urgently needed investment in water supply, sewerage, and solid waste facilities (World Bank, 1985c). According to a World Bank report (Word Bank, 1985b, p. 12) local authorities were "prepared to support rehabilitation efforts as they have realized that drastic measures are necessary to reverse the deterioration of public services in the city".

EPMB and World Bank consultants prepared the project in 1984. In February 1985, a Bank mission, comprised of an engineer named Walter Stottmann and a financial analyst named Thomas Zearley, visited Barranquilla and appraised the proposed project (EPMB, 1985). Negotiations between the Bank's staff and mayor Borrero Durán took place in Washington D.C., and the guarantor of the loan was the Government of Colombia (Republic of Colombia and World Bank, 1985).

Before the project was approved, both the central government and the mayor of Barranquilla agreed on six "conditions for the loan". The first condition was the financial separation of water and sanitation operations (including solid waste collection) from the other services for which EPMB was responsible. This meant transferring parks and recreation services to the municipality. Secondly, EPMB agreed to revise its water and sanitation tariffs and to implement new ones (World Bank, 1985a). Thirdly, local and national authorities promised to reduce the level of turnover in EPMB management. The associated legal agreement included a covenant guaranteeing the review of nominations for the general manager of EPMB by the central government, in order to "isolate decisions about management of EPMB

from local politics and to have them vetted by central government" (World Bank, 1985a, p. 2).

Fourth, EPMB agreed to have its accounts and financial statements audited (Republic of Colombia and World Bank, 1985). Fifth, EPMB agreed not to take on any new loans without the approval of the World Bank. Sixth, the city agreed not to allow private sector participation and not to contract out any services to private companies, as this would "negatively affect the implementation of the project" (World Bank, 1985a, p. 4). Finally, the World Bank was concerned about the urban poor's lack of access to water and wished to provide them with a short-term solution. Fifty public standpipes were to be installed during the first months of the project to complement the two existing ones. EPMB agreed to enter into talks and negotiations with the JACs of the thirty-five neighborhoods of Barranquilla's southwestern section. The JACs would have the authority to select the locations for the fifty standpipes (Word Bank, 1985b, p. 31). As a result of pressure from the World Bank, EPMB agreed to construct the public standpipe network in the southwestern part of the city in close coordination with the JACs. Assurances were obtained during negotiations that, as a condition for providing water through standpipes, EPMB would sell water at a subsidized price to the JACs (Word Bank, 1985b, p. 15).

The loan agreement was signed after agreeing on the above seven conditions. The Barranquilla World Bank loan was the 116th loan made by the World Bank to the government of Colombia. Historically, the Banks's support had been focused on industrial and agricultural projects. During the 1980s, the World Bank began supporting a wider range of projects, including: "irrigation and watershed management, water supply, telecommunications, urban development, petroleum development, exports diversification, nutrition and health" (Word Bank, 1985b, p. 5). The World Bank had already had successful experiences working on projects with other public utilities in Colombia's major cities, as was stated in a report on the feasibility of the Barranquilla loan:

> The sound performance of utilities such as EAAB in Bogotá and EPM in Medellín, attests to the fact that with persistent effort other Colombian municipal companies have the potential to develop into well-run institutions. (Word Bank, 1985b, p. 9).

The Barranquilla World Bank project had two objectives to be accomplished in four stages. The first objective was to rehabilitate and improve water and sanitation in the municipality. The second was to improve EPMB's "operational efficiency" by helping it organize its administrative, managerial, and financial capacities.

The project's first stage concerned water supply. This included the immediate expansion of water distribution in the southwestern part of the city through the construction of fifty public standpipes. The project would also fund the expansion and improvement of water transmission, storage, pumping and distribution facilities. The second stage concerned sewerage; the third part was focused on solid waste, and the fourth aspect of the project was an institutional improvement program (see Table 4).

Table 4 - Barranquilla World Bank: Implementation Stages

Project Stages	Infrastructural Interventions
Stage 1 - Water Supply	Construction of 50 public standpipes in the southwestern neighborhoods
	Construction of a storage tank called "Ciudadela 20 de Julio", with a capacity of approximately 10 000 cubic meters.
	Acquisition and installation of new pumping equipment
	Rehabilitation of the existing water treatment plants pumping stations, transmission storage, and distribution facilities
	Construction of approximately 11 kilometers of transmission mains, including the connection between the existing treatment plants and the new storage tank "Ciudadela 20 de Julio".
	Acquisition and installation of household connections in the city's southwestern neighborhoods
	Acquisition and installation of water meters in the city's northern and downtown neighborhoods.
Stage 2 - Sewerage	Construction of 3 sewerage collectors (in the northern, central, and southern parts of the city) with a total length of about 6 kilometers each
	Expansion of the capacity of 2 existing interceptors designed to eliminate sewage overloads in specific areas
Stage 3 - Solid Waste	Acquisition of solid waste collection equipment: 25 compacting trucks, 3 street sweepers, 2 front loaders, 2 bulldozers, 3 lifting trucks, and 50 containers
	Re-establish regular door-to-door solid waste collection services to approximately fifty percent of the city

	Establish proper waste management services for poor neighborhoods that were without municipal waste collection services
Stage 4 - Institutional improvement	Staff training in proper meter reading, accurate billing and fee collection
	Preparation of an inventory of spare parts and materials, identification and disposal of obsolete items, acquisition of new equipment
	Improvement of customer management: updating the customer file (census of customers), establishment of procedures to manage public relations including customer complaints

Source: Made by the author based on Word Bank (1985b); World Bank (1985c); EPMB (1985)

Project implementation was scheduled to take six years, with completion expected by mid-1992. The World Bank and EPMB began sharing a bank account in 1985, where the funds were disbursed and held. The Bank stipulated that payments out of the special account were exclusively for eligible expenditures related to the planned works (World Bank, 1985d). Contracts for most complex equipment had to be awarded to foreign manufacturers, while those for pipes, spare parts, chemicals, and civil works could be awarded to local firms (Word Bank, 1985b). The Bank also required the institutional improvement program will be carried out by a consortium of consulting firms with special expertise and experience in the execution of technical assistance programs (World Bank, 1985c).

A World Bank memorandum stated that the project's risks centered on the potential discontinuity of management staff and insufficient political support at the municipal level to fully implement the financial and institutional improvement programs. To mitigate the risks, the Bank asked EPMB to immediately increase tariffs and take steps to stabilize operating costs (Word Bank, 1985b). This memorandum also signaled that they expected the Colombian government to cover any debt that might result from the potential failure of the project. They highlighted that Colombia "has become a net petroleum exporter" (Word Bank, 1985b, p. 1) with government policies focused on containing the fiscal deficit and that "Colombia's growth prospects for the rest of the decade are good" (Word Bank, 1985b, p. 3).

Likewise, the World Bank trusted that both the city and EPMB would do their utmost to ensure the project's success because of the severe public health consequences of its failure:

> The benefits become apparent from the consequences of not doing the project, namely the continued deterioration of EPMB's water facilities leading to serious service interruptions; poor management performance of EPMB making it impossible to mount the medium- and long-term investments needed to provide acceptable water, sewerage and solid waste services to the city's population in the 1990s; increasing public health hazards as solid waste collection and disposal services progressively deteriorate; and dependence of about 400,000 people, belonging to the city's poorest, on often unsafe water purchased from vendors at the highest prices. (Word Bank, 1985b, p. 18)

Indeed, there were several reasons for the optimism of World Bank staff regarding the timely achievement of project goals. In May 1985, the National Tariff Board approved an increase of 10 percent in tariffs for EPMB. EPMB was also the main beneficiary of a 250 percent increase in municipal property taxes, decreed in April 1985 by the City Council of Barranquilla (Word Bank, 1985b). In November 1985, a World Bank report affirmed that project implementation had already started: EPMB had purchased chemicals and spare parts and had already signed contracts for construction of a storage tank, one of the installations covered by the project. (World Bank, 1985c, p. 14). World Bank staff also recognized that the central government was re-examining sector policies and institutions, with particular emphasis on adequate cost recovery, investment and credit policies, tariff policies based on financial and operating criteria and the beneficiary's capacity to pay (Word Bank, 1985b; World Bank, 1985c).

3.2 MESSINESS AND CHANGES: 1985-1992

3.2.1 Two cousins, one fraud, and many spare parts

In the above section, I summarized the project's objectives and conditions and underlined the Bank staff's optimism regarding the timely implementation of the Barranquilla water and sanitation project. In 1985, the staff enumerated all the works and policies that were already underway; that is, the awarding of contracts, the acquisition of parts and equipment, the rise in tariffs and property taxes, and the public standpipes program in the southwestern sectors of the city. This section explores project implementation chronologically. Due to subsequent failure of the project the section reflects on a number of questions: what

happened with the acquired materials and equipment? What happened to the public standpipes program? Why didn't the increases in tariffs and property taxes improve the finances of EPMB?

Major legal reforms were made in Colombia during the late eighties. Institutions were introduced to improve citizenship such as the *tutela*[7], a mechanism to ensure compliance with fundamental constitutional rights. These reforms also aimed to establish a better balance between the different levels of government, which meant, on the one hand, increasing decentralization to give greater powers and more autonomy to the regions and on the other, reducing the prerogatives of the president. Thus, many public officials who were previously appointed by the president started being publicly elected (Arias Trujillo, 2011).

The popular election of mayors had a great impact on the way Barranquilla was governed, and on the functioning of EPMB by consequence. For the first time the local mayor would be elected by popular vote instead of being appointed from Bogota. This affected the traditional two-party system in profound ways as the parties had to adapt to the new electoral competition (Villalon, 2003). The law to institute municipal elections was passed in 1986, and the first local elections were held 2 years later in 1988. These two years were marked by great instability in municipal governments across Colombia, as the parties focused on the upcoming election campaign. In Barranquilla, several appointed mayors resigned in succession after the enactment of the law to dedicate themselves to campaigning. Therefore, from January 1987 to June 1988 Barranquilla had four different mayors. As the president of Colombia at the time was Liberal Barco Vargas, all four of the mayors that resigned were Liberal (see Table 5). It is worthwhile underlying that those changes in local government had a direct influence on the operation of EPMB because the mayor also acted as the chairman of the board and chose the general manager.

[7] The Constitution of 1991 implemented a system named *Accion de Tutela* which allows claimants to demand protection of their constitutional rights. The *tutela*, must be ruled by a local or constitutional court in a maximum of 10 working days (República de Colombia, 1991).

Table 5 - Mayors of Barranquilla appointed by presidents of Colombia 1974-1988

Period	President	Appointed Mayors	Political Party
1974-1978	Alfonso López Michelsen	Fernando Restrepo Posada	Liberal Party
		Alfonso Nicolella de Caro	
1978-1982	Julio César Turbay Ayala	Francisco de Paula Ricardo	Liberal Party
		Roberto Pacini Solano	
		Ernesto Suárez Flórez	
1982-1986	Belisario Betancur Cuartas	Jacobo Acosta Bendeck	Conservative Party
		Guido Borrero Durán	
1986-1988[8]	Virgilio Barco Vargas	Ramiro Besada Lombana	Liberal Party
		Álvaro de la Espriella	
		Myriam Llinás de Ovalle	
		Daniel Moreno Villalba	

Source: Compiled by the author based on Villalon (2003)

The project was also affected by changes at the political party level as the Liberals defeated the Conservatives in the 1986 presidential election. The Barranquilla World Bank Project was negotiated with the Conservative mayor Borrero Durán, but would need to be executed by Liberal mayors as the Liberals took power nationally. This had direct consequences on the development of the project. The first consequence had to do with the public standpipes program in the southwestern area of the city. This program was never carried out because, in 1988, both EPMB and the mayor's office requested that the World Bank cancel it. Without consulting City Council or the central government, Liberal mayor Daniel Moreno Villalba, who spent less than six months in office, stated in a letter to the World Bank that "the public standpipes program was not necessary" and that "the city would rather focus on the rapid installation of modern residential connections" (World Bank, 1993, p. 7).

Works on the storage tank "Ciudadela 20 de Julio" were already underway in mid-1986. However, none of the other infrastructure works were undertaken in the projected timeframe. EPMB used most funds allocated for the project to purchase chemicals to treat water, equipment to refurbish the pumping stations, as well as pipes, valves, vents, hydrants, and water meters. Yet, instead of installing these materials and using the equipment, EPMB

[8] The first popular mayoral election was held in 1988.

stored them (World Bank, 1993). They took them out of storage in 1988, during the final phase of the mayoral race, the first in the history of the city. This election was contested between two cousins: Jaime Pumarejo Certain, supported by the Conservative Party, and Gustavo Certain Duncan, supported by the Liberal one (Villalon, 2003).

Research on water access in the southwestern part of the city by the Center for Research and Popular Education CINEP[9] collected numerous testimonies of how World Bank project funds were being used in the 1988 election campaign. Jaime Polo, a member of a local JAC questioned the biased allocation of project resources:

> The balance of the project so far has been very negative. In the *Barrio* 7 de Agosto, the JAC struggled to obtain sixteen kilometers of water pipes and now it will be easier for the neighborhood to improve its water service. But the project has ignored other neighborhoods. They put the money where they want, even if all southwestern neighborhoods were supposed to participate. Two *barrios*, 7 de Agosto and Carrizal, got water pipes in exchange for votes because politicians went there and announced boldly "I will bring the pipes, only if I collect all the votes of the block". (Bernal Forero, 1991, p. 80)

The same research described how, during election time, several houses in *Barrio* La Esmeralda received piles of pipes from members of the Liberal Party. People had to store these pipes on their patios and were told that they would get them installed only after they voted for the Liberal candidate Certain Duncan and he got elected. However, Certain Duncan lost and the pipes were not installed (Bernal Forero, 1991, p. 87). Some years later, local police reported finding water pipes abandoned in the streets of the southwestern part city (see Figure i).

[9] The Centro de Investigación y Educacion Popular CINEP (Centre for Investigation and Popular Education) is a non-profit foundation that seeks social change in Colombia. It aims to construct a society that is just, democratic, peaceful and inclusive of all the men and women that have been excluded from society – including Colombia's victims. CINEP has been active since 1972. In addition to publishing research reports, CINEP serves as an important research clearinghouse for data related to the military conflict, trade unions, civil society, human rights violations, and media coverage of the conflict. CINEP also plays a central role in training local peace advocates; working in partnership with grassroots community development organizations to encourage the work of community activists (See http://www.cinep.org.co/).

The local press registered a similar complaint concerning the allocation of World Bank funds in the southwestern *Barrio* La Paz. According to reports, two men from the Liberal Party came to the neighborhood and asked to negotiate the network expansion project with the JAC. Privately they promised twelve kilometers of water pipes in exchange for votes for the Liberal candidate Certain Duncan. Sometime afterword they arrived with six kilometers of water pipes that were stored in the house of the JAC president. Some argued that the president of the JAC distributed water pipes based on political a criterion that is only to households who pledged to vote for the Liberal Party:

> Political criteria are being used to give out water pipes in La Paz and people are digging their own trenches to install them, attaching them to whatever connections they find. They are just giving them away without any technical plan, but according to the promised votes. Chaos is such that there are sectors where people are installing some water pipes while causing the breakdown of others. (Puerta, 1988)

Figure 1 - "Local police has warned about a number of pipes abandoned in the streets of southwestern sector" Barranquilla, April 8, 1990. Source: (Dugand, 1990)

When the elections finally took place, the candidate for the Conservative Party, Jaime Pumarejo Certain, won. In 1989, the new mayor travelled to Washington D.C. to request an extension of the project from the World Bank (Lébolo Castellanos, 1990). The World Bank conducted approximately 15 supervisory missions to Barranquilla during the late 1980s.

Threats of suspending disbursements and other punitive measures were frequently considered from early on, but not applied, hoping that the new administrations would comply with the agreement (World Bank, 1993, p. 13).

At his arrival in office, mayor Pumarejo Certain named a new manager for EPMB. Stability, however, was temporary. Only months after taking office, the mayor was accused of electoral fraud. The Council of State of Colombia[10] ordered a vote recount, after which his cousin, Liberal candidate Certain Duncan, was declared the winner (Alvarado, 1989). Once in office, mayor Certain Duncan appointed another manager.

Amid uncertainty over the election, accusations of fraud and instability between the different local administrations many of the World Bank project conditions were breached. Firstly, the joint work with JACs in the program of public standpipes was hindered. Secondly, although many spare parts and materials were purchased, EPMB did not put them to use. In addition to parts, all of the planned solid-waste collection equipment was acquired and stored in warehouses, as EPMB contracted out the solid-waste collection in the wealthier zones to private contractors (World Bank, 1993, p. 3). Likewise, 50,000 water meters were imported and simply put into storage. Thus, by 1990 not even big consumers - such as those in the industrial and commercial sector - were metered (Bernal Forero, 1991, p. 41). It is important to note that not all materials and equipment were stored as part of a specific electoral plan. Many were stored and forgotten as a consequence of disorganization and managerial disorder. In 1992, for example, equipment purchased by EPMB worth USD$3M ($5.13M in constant 2016 USD), was declared abandoned by the national customs. Hundreds of pipes and pumps were intended for the water supply extension program in the southwestern area of the city. They were imported and arrived in Barranquilla on early 1988 but as EPMB never claimed them, customs declared them abandoned and they were subsequently auctioned (Mariano, 1992d) .

[10] The Council of State of Colombia (*Consejo de Estado de Colombia*) is the supreme tribunal with jurisdiction over administrative issues in Colombia.

3.2.2 The money, the chemicals, the water

As seen in the previous section, the first years of the project (1985-1989) were characterized by considerable political instability in Barranquilla. Water supply and sanitation were not the focus of local debate. The public standpipes project was cancelled silently and World Bank funds were spent in a disorderly way without generating much debate in either the local or the national press. It was when the city became incapable of treating water altogether and all the neighborhoods in the city were without water, that the issues of water supply, drainage, and sanitation, came back to the local government agenda. This occurred for two interrelated reasons. First, the Magdalena River, the city's only water source, was heavily polluted especially as it reached Barranquilla. Second, this meant an increasing need for better, more expensive chemicals that EPMB could no longer afford.

The Magdalena River is the principal river of Colombia, flowing northward about 1528 kilometers through the western half of the country (see Map 2). The river originates in the south of Colombia, where the two Andean mountain ranges Cordillera Central and Cordillera Oriental separate. The river then crosses the country in a wide valley between the two cordilleras. It finally reaches the Caribbean Sea in Barranquilla. In the early 1990s, pollution in the river reached high levels and the central government started discussing the possibility of issuing stronger regulations to protect it (López Vargas, 1996; Santiago, 1993). Due to high levels of pollution, the city sought help from the central government:

> The Magdalena's problem is one of colossal dimensions, generated by the indolence and apathy of the whole country. Barranquilla deserves the support of the central government. Recent studies from EPMB report that the Magdalena's water has high levels of iron, oils, detergents, coliforms, insecticides, mercury, phosphates, chlorides, arsenic, manganese and lead. (Editorial Diario del Caribe, 1990b)

Map 2 - The Magdalena River in Colombia

Source: Karnstedt (2004)

There were also important local sources of pollution. The first one was industrial waste due to the non-enforcement of regulations on industrial discharges. For instance, in 1990 the Cervecería Bavaria (Bavaria Brewery), a major national factory located in Barranquilla, was fined by the City for illegal discharge into the river, but after paying the fine it continued with the discharging (Lemus Navarro, 1990). In 1996, a group of local citizens filled a *tutela* against the city for tolerating the pollution of the Magdalena River carried out by the Brewery (Cantillo, 1996c). As a result, the local government instructed the Brewery to "immediately clean up all the area near the Magdalena River", if they wanted to continue operating in the city (Cantillo, 1996c). Another of the most polluting companies was the multinational Dupont's plant in Barranquilla, which was fined numerous times for illegal discharge into the river (López Vargas, 1996). In the end, the Attorney General of Colombia requested the closure of Dupont, based near the Magdalena River, for systematically violating the rules on environmental protection by illegally discharging pollutants into the

water. Dupont's discharges had manganese concentrations exceeding 130 milliliters per liter and the law allowed only concentrations of 0.2 milliliters per liter (Meléndez, 1996).

The second source of local pollution came from EPMB itself. In 1990, the Colombian national environmental agency Inderena accused EPMB of discharging sewage into the river without treatment (Piña Salcedo, 1990b). The third source of local pollution had to do with Barranquilla's inadequate drainage infrastructure. During the winter months, flash floods *arroyos* dragged garbage and runoff into the river. Some living in the southern neighborhoods, without access to waste collection services, seized the floods as an opportunity to dispose of domestic waste, throwing it into the rushing water. Throughout these months, the river received an important amount of waste. Consequently, people criticized the poor water quality and EPMB had to buy more chemicals to treat the water (Editorial el Heraldo, 1996a; Lébolo Castellanos, 1990).

To this extent, the utility needed more and better chemicals to treat water (Bernal Forero, 1991). By 1990, El Heraldo, the main newspaper in Barranquilla, sustained that "EPMB was spending most of its income on chemicals to treat water" (Lébolo Castellanos, 1990). Specifically, the utility was purchasing the following chemicals each month: "seven tons of aluminum sulphate, five tons of ferric chloride, two tons of polymers, and two tons of chlorine" (Peñaloza, 1990a). Since EPMB had accumulated debts with the local companies that supplied these chemicals, it had to start buying from resellers. These resellers tended to increase the price of the chemicals (Lébolo Castellanos, 1990).

In August 1990, the whole city woke up without water due to the lack of sufficient aluminum sulphate, one of the chemicals used by EPMB in water treatment. This led to a general water shortage and street protests, causing a hospital emergency - due to the lack of water - and the suspension of classes in all schools. EPMB's manager informed the media that the company from which they purchased chemicals had suspended all deliveries of aluminum sulphate until the payment of the arrears was made. Finally, the city's electricity utility, Electranta, lent some money to EPMB. With this money they bought "560 bags of aluminum sulphate" (Peñaloza, 1990a). On the following day, the manager of EPMB explained that water supply would be re-established within the "next two days", since the process of water treatment took approximately 24 hours (Mariano, 1990a).

At that point EPMB was purchasing chemicals for the operation of the treatment plants on a daily basis. The manager reassured the city, stating that "although there have been difficulties, we have never stopped conducting proper water treatment" (Mariano, 1990a). However, due to the lack of funds to continue purchasing these chemicals, the manager had to travel to Bogota to request an emergency loan from a private bank, the Banco de Colombia. The manager expressed his relief with the loan upon his return to Barranquilla, stating: "we very grateful as were already getting used to the daily anxiety of whether or not we would have enough chemicals to treat the water" (Mariano, 1990a)

Another major water shortage occurred when little fish began coming out of all water taps (see Figure ii). "Fish have taken over the water network", the local press reported. Millions of small fish had suddenly died and invaded all of the city's treatment plants. EPMB's operators could not control them:

> The aqueduct has turned into a giant fish tank. The employees claim that millions of dead fish were found this morning in the water treatment plants. Because of their small size the fish slipped through the cracks of the plants. The local authorities do not know the reasons for the death of so many fish and only stated that water was being treated and that employees would strive to remove the little fish from the treatment plants as soon as possible (Rincón, 1991).

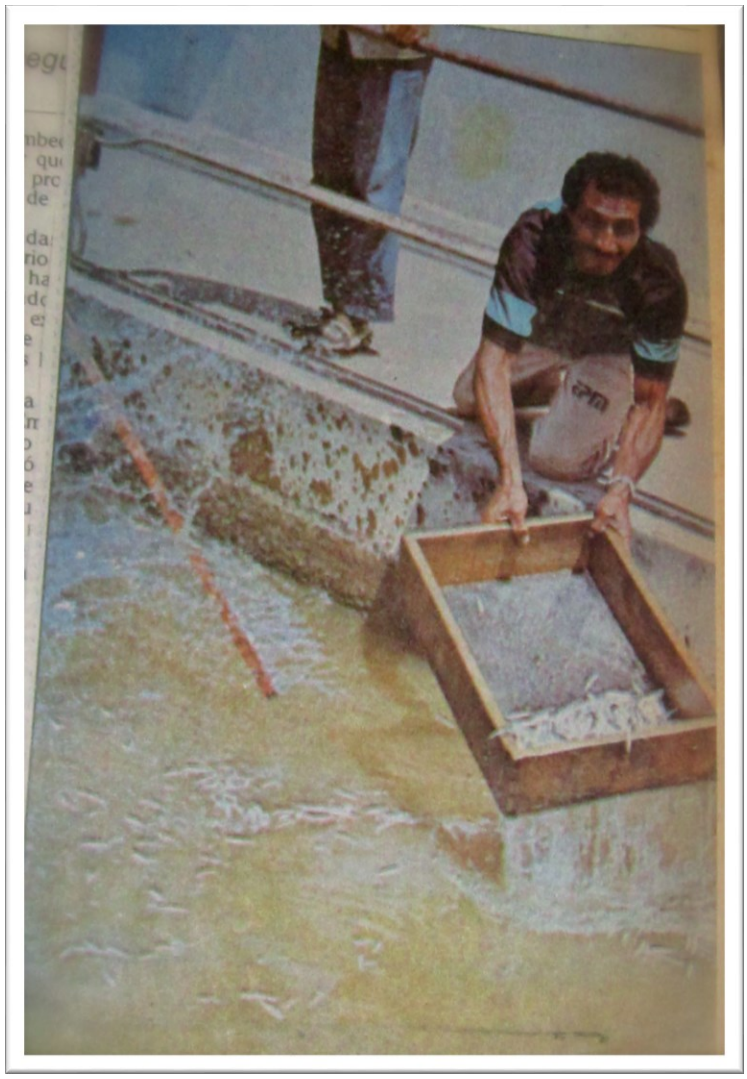


Figure 2 - "EPMB's employees keep trying to remove the little fish city's from the treatment plants". Barranquilla, February 18, 1991. Source: (Rincón, 1991)

Every time there was a crisis related to water pollution, EMPB was forced to purchase more and stronger chemicals. After the water's turbidity levels were found to be four times above normal levels, the city had to "urgently purchase eight dosing pumps, eight mixture pumps, and new American chemicals" (Rosales González, 1991). In short, after four years (1986-1990) in which improved water services were not the local government's priority, water source pollution and rising treatment expenses led to extended water cuts. After these widespread water shortages, the so-called "water crisis in Barranquilla" became a priority at national level. In 1993, the national congress created the Rio Grande Corporation with the purpose of "helping the city of Barranquilla to clean-up the Magdalena River" (Santiago,

1993). Water also became a local priority and from 1990 on, the issue constantly occupied the front pages of the local press, as the City Council, political parties and economic elites evaluated the execution of the World Bank project and debated the future of water in the city.

3.2.3 Who is afraid of the World Bank? 1990-1992

After general water cuts in 1990 and 1991, the city entered a stage of evaluation regarding the World Bank project and the situation of EPMB in general. In June 1990, the president of the City Council, Liberal Emilio Lébolo Castellanos, warned about the breaches to the World Bank loan agreement: "The EPMB's accounting is inexistent; they don't even know their bank account balances. The utility had to resort to overdrafts and local bank loans to meet payroll and to purchase chemicals. No inventories have been made and their warehouses are in complete disorder". He also drew attention to the fact that, due to its of debts with the its chemical suppliers, EPMB was purchasing contraband chemicals at two or three times the regular price (Lébolo Castellanos, 1990). Counsellor Lébolo Castellanos also drew attention to the solid waste collection reform, which he described as "absurd". In 1990 EPMB ceded solid waste collection to a private contractor, even though it had just used World Bank funds to purchase two bulldozers and eleven trash compactors. This equipment was kept in warehouses and dozens of employees were fired without prior notice (Lébolo Castellanos, 1990).

A special audit commanded by the central government of Liberal President Cesar Gaviria Trujillo stated that the problem of the EPMB was not financial, as "new funds will not help if the managerial disorder is increasing" (Osorio Carbonell, 1990). The audit also stated that the utility's disorder was of an organizational nature: "documents are filed without any organizing principle, unused materials and vehicles are stored in warehouses, and unfiled invoices are lying around in desks". Finally, the audit warned about the financial situation of the utility. It stated that even if EPMB was receiving 100 percent of the funds collected from the property tax, due to massive tax evasion, these funds were not very helpful (Osorio Carbonell, 1990). Most of the World Bank loan had been spent on chemicals, spare parts and other materials. However, there wasn't any real progress on the project's objectives and

the only work that was finished was the storage tank "Ciudadela 20 de Julio" (Dugand, 1990).

Because of the project's negative balance sheet, an accountability debate took place as different actors began assigning blame. Perhaps the first to make an accusation were the economic elites of the city, who formed the *Comité Intergremial* (Guilds' Committee), representing the region's industrial and business guilds[11]. This Committee accused City Council of having full control over EPMB's board and leading it to bankruptcy (Lemus Navarro, 1990b; López Vargas, 1990a). According to the Committee's president, Efrain Cepeda: "Politicians are responsible. The business class of the city is here to monitor and punish, but those who must bear the responsibility for EPMB's fate are the politicians, because they were elected to govern" (López Vargas, 1990a).

Faced with these accusations, City Council, with Liberal majority accepted some responsibility for the crisis. In a long debate in which solutions to the crisis were discussed, some councilors acknowledged their responsibility in the bankruptcy of the utility and issued the following statement:

> For 25 years the council has been a boxing ring where the majority coalition permanently boxed against the minority. Liberal Party against Conservative Party or vice versa. We fight among us. The five senators representing the department in the National Congress fight too. That is why we did not concern ourselves with the EPMB. Therefore today we have no roads, no water, and no sanitation. (Sarmiento Coley, 1990a)

Despite accepting some responsibility, the city councilors believed that the economic elites were not blameless and that they were trying to "present themselves as victims, throwing all the dirty water on the City Council" (Sarmiento Coley, 1990c). Councilors pointed to the fact that EPMB's eight-member board had representation from various sectors. The council chose five of these members. But, out of these five, three were chosen from lists submitted by the chamber of commerce, the Banking Association and the creditor banks, with the

[11] This Committee represented the local interests of several business and industrial guilds and associations: the Construction Association (Camacol), the Metal Industries Association (Fedemetal), the Industrialists Association (ANDI), Merchants Association (Fenalco), Banks Association (Asobancaria), the Ranchers Association (Asoganorte), and Barranquilla's chamber of commerce.

remaining two positions chosen from within the council itself. The other three members were the mayor, a representative of the President of Colombia, and a representative of the city's industrial guild. Thus, despite the statements of the *Comité Intergremial*, four of the eight board members were businessmen themselves or had been chosen by the economic elites (Editorial Diario del Caribe, 1990a).

The EPMB Union was also targeted in this debate on responsibilities. This union was accused by Conservative councilors of contributing to the utility's downfall and of having ties with the National Liberation Army ELN, a guerrilla group with significant power in the rural north of the country, near Barranquilla. The union president, Andrés Blanco, denounced the unfairness of such statements. He also stated that by making such accusations councilors were putting the lives of the union leaders at risk. Blanco sustained that the various attempts to assign responsibility were nothing more than "a smokescreen so that people would not notice the privatization of the solid waste collection, which favored only a few businessmen" (EPMB Union, 1990). The EPMB Union went on to state that there were others to blame, such as the industrial and commercial sector: "Commercial and industrial sectors have never paid their water bills or their property taxes. Senators, representatives and councilors never pay their water bills either" (Sarmiento Coley, 1990a). In August 1990, EPMB employees went on strike to demand the payment of their monthly salaries (Lemus Navarro, 1990a). The union carried banners with drawings of the members of the *Comité Intergremial* members portrayed as rats.

With respect to previous years 1986-1990, there was greater stability in the local government. After new local elections in 1990, Miguel Bolívar Acuña, representing the Liberal Party came to power. He described EPMB's situation as an "inheritance of misfortune" (Peñaloza, 1990a). The mayor appointed Alvaro Dugand as manager of EPMB. Both the mayor and the new manager thought that the utility could be restructured. City Council authorized them to start planning the restructuring (Lemus Navarro, 1990c). The plan met with significant opposition from the *Comité Intergremial*, which was against any restructuring and argued instead for the liquidation of EPMB "and all its vices" to "make way for the creation of a new, efficient and technical entity" and "avoid huge pension liabilities". The *Comité Intergremial* also proposed that EPMB's assets be sold in order to

cover its debts and create a new company with private sector participation. The *Comité Intergremial* declared that "trying to save EPMB is an utopia" (López Vargas, 1990b).

The EPMB Union in turn occupied the City Hall to protest the *Comité Intergremial* proposal. The mayor promised that he "would not allow any layoffs". Meanwhile, the union president, Andres Blanco, intervened in the debate between the *Comité Intergremial* and the City Council:

> Businessmen and politicians, I really do not see the difference. The *Comité Intergremial* and the traditional political parties have always acted as a team in the management of public utilities. (Sarmiento Coley, 1990b)

As an alternative to liquidation, the EPMB Union proposed a strategy to recover unpaid property tax to improve the finances of EPMB. Specifically, they suggested that lists of the main defaulters be published in the local press (Sarmiento Coley, 1990b). This was carried out in September 1990, with the publication of a list of the thirty-three major defaulters in the city (Rincón, 1990).

In 1990, the central government announced, through the Minister of Health (Antonio Navarro Wolf), that it would not authorize any more funds to improve Barranquilla's water supply until the city started following the World Bank recommendations (Peñaloza, 1990b). The minister sustained that: "giving more funds to EPMB would be rewarding inefficiency" (Granados & Puerta, 1990). Likewise, the government of President Gaviria Trujillo acknowledged that since the central government was the guarantor to the Barranquilla loan, it would have to make the loan payments as scheduled to avoid any future penalties from the World Bank (Research Unit, 1990). For its part, the Department of National Planning (DNP) expressed its concern about the significant breach of commitments made under the World Bank agreement. The DNP director (Armando Montenegro) stated that he did not understand why the mayor kept making new plans and evaluations when consultants hired by the World Bank had drawn up a detailed plan for reorganization some years before (Granados, 1990; Granados & Puerta, 1990).

Mayor Bolívar Acuña reacted by recalling the democratic and popular character of his mandate. He reminded the central government that: "The DNP is not the mayor. It is entitled to an opinion, to present some solutions, but it can't run EPMB" (Granados & Puerta, 1990). Amidst pressure from the DNP and the Ministry of Health, the board of EPMB - chaired by the mayor - declared that they would not implement any of the recommendations of the World Bank. They stated: "EPMB has been evaluating to determine whether the recommendations of the World Bank are convenient. We have decided they are not. The World Bank didn't do any field work and doesn't know the current situation of EPMB" (Mariano, 1990b). In consequence, the general manager, Dugand, closed the Technical Assistance Office set up by the World Bank and fired the group of consultants that had been working on institutional reform for over two years (López Vargas, 1990c). The Technical Assistance Mission, which was the fourth stage of the World Bank project, had designed accounting, information, inventory and commercial systems that were ready for implementation (World Bank, 1993).

Given these responses from EPMB, the central government requested the World Bank to stop all loan disbursements. A letter sent by World Bank staffer Ronald Mercado to his colleague Eleoterio Codato, on October 1990, states:

> I would like to advise you on a conversation I had with Mr. Ruben Darío Avendaño last October 12, 1990. He told me that Mr. Armando Montenegro, Chief of DNP, required him to inform the Bank that it should make the decision to suspend disbursements for the Barranquilla water and sewerage project, he would be grateful for an immediate action. Best regards. (Mercado, 1990)

Loan disbursements were suspended in November 1990. However, 91 percent of the loan had already been allocated (World Bank, 1993, p. 1). In its report on project closure, the World Bank concluded that the project was "a startling failure" (Latin America and the Caribbean Office, 1993). It also stated that during the preparation of the project, the Bank's staffers "did not fully understand the strength of the perverse environment within which EPMB functioned" (World Bank, 1993, p. 13). For its part, after it had started repaying the loan, the central government sent a letter to the World Bank criticizing their risk assessment procedures: "we believe that the model used by the World Bank for its appraisals is incapable

of good risk assessment". They also asked the Bank to modify its protocol for dispensing funds by establishing automatic cut-off conditionality in supervision" (DNP, 1993).

Meanwhile the local government, the *Comité Intergremial* and the EPMB Union continued to debate the future of the city's water services. However, in December 1990, things got out of control in EPMB. After a series of robberies inside the water treatment plants, one of the utility's water mains carrying water to the north of the city was destroyed by sabotage. In response, the mayor Miguel Bolívar Acuna, ordered the militarization of the treatment plants (Mariano, 1990c, 1990d). Some days later, EPMB's bank accounts were seized by one of its creditor banks (Mariano, 1990e). EPMB's General Manager Dugand urged the central government to give them some financial support: "right now, all I can say is that the company trucks don't have wheels and that we are out of chemicals to treat water. Without cooperation from the central government, the city will fall into the abyss" (Osorio Carbonell, 1991).

The manager resigned days later and mayor Bolívar Acuña stated: "EPMB does not have a penny to repay the loan from the World Bank" (Mariano, 1991a). He also urged the two major regional senators, Liberal Senator Name and Conservative Senator Gerlein, to intercede before Congress and central government to obtain funds to meet EPMB's obligations and pay salaries, pensions and other outstanding loans (Osorio Carbonell, 1991; Peñaloza, 1991). The new manager, Carlos Osorio (1991-1992) travelled to Bogota in February 1991 and met with the Minister of Finance (Rudolf Hommes), who pledged to issue the funds to cover for EPMB's labor liabilities, and with the DNP director Montenegro, who pledged to cover the payments for the World Bank loan (Montaño Acosta, 1991). In this meeting it was decided that the best solution was to liquidate EPMB and to create a new water utility with private sector participation (Mariano & Tagie, 1991a).

The *Comité Intergremial*, meanwhile, issued a statement of complacency with the liquidation of EPMB "it seems perfect that after all these months the local government has to adopt our proposal of liquidating EPMB" (Tagie, 1991a). By mid-1991, there was consensus on the liquidation proposed by the *Comité Intergremial*, with the local Liberal and Conservative parties supporting the divestiture of EPMB, that is the transfer of physical assets but not of its associated employees (Sánchez, 1991; Tagie, 1991a). The *Comité Intergremial* foresaw the "collection of millions with the sale of shares" and stated that "all

who disagree with the proposal are holding development back". City Council approved the proposal and authorized the mayor to liquidate EPMB in June 1991 (Mariano, 1991b).

Union protests began immediately. Six-hundred workers occupied the City Hall. Workers expressed deep concern about their pensions and the future of their jobs. After City Hall, EPMB workers went on to occupy the mayor's home (Tagie, 1991c). The army intervened and dispersed protestors (Mariano & Tagie, 1991b). Despite the protests, the new Water and Sanitation Company, Triple A, was formed and its new staff hired. The City of Barranquilla retained 51 percent of the shares. The other major shareholders were: the Construction Association (Camacol), the Metal Industries Association (Fedemetal), the Industrialists Association (ANDI), Merchants Association (Fenalco), Banks Association (Asobancaria), the Ranchers Association (Asoganorte), and Barranquilla's chamber of commerce (Mariano, 1991c).

Weeks before the Triple A started delivering the service, in December 1991, EPMB's employees managed to occupy the water treatment plants. Workers blocked entry to the plants for 3 months, and continued to work as if nothing had happened, until March 1992, when they ran out of chemicals to treat the water. As soon as they evacuated the treatment plants, the new company "Triple A" started delivering the service (Mariano, 1992b). Mayor Bolívar Acuña reported that workers would have to file for voluntary retirement programs and that retirees of EPMB would continue to receive their pensions from the City (Puerta, 1992).

To conclude this section, it is worthwhile to quote one of the last statements given by the head of the EPMB Union, Andres Blanco to the City Council. Addressing the role of the *Comité Intergremial* in the crisis and liquidation of EPMB, Blanco argued that the commercial and industrial sector had been the main beneficiary of the failure of the World Bank project:

> The *Comité Intergremial* does not have the moral authority to speak to the community. They have been part of EPMB's board since the fifties and have accepted and participated in all its administrative vices, all its disorganization and bureaucracy. The local banking sector has benefited from high interest loans. At the same time, the

> industrial and commercial sector has accumulated over $10 (trillion) pesos[12] in debt from unpaid water bills. Today they want to continue their enrichment at the expense of Barranquilleros. So I want to ask the *Comité Intergremial*, if they were really so concerned about the city, why did they remain silent and quietly support the squandering of funds from the World Bank project? (Piña Salcedo, 1990a)

3.3 THE AFTERMATH: 1992-1996

3.3.1 An insistent priest

We have seen how the EPMB was liquidated and, with participation of the private sector, the new Water and Sanitation company Triple A, was created. The new utility, which would be managed by EPMB's manager Carlos Osorio, assumed water supply services in early 1992, with a total of 450 employees (Mariano, 1992b). New investors continued to buy shares in Triple A, including Monomers of Colombia - the supplier of water treatment chemicals and one of the main creditors of the EPMB - and the multinational Dupont - which had been fined numerous times for the illegal discharge of waste into the Magdalena River (Mariano, 1992a). The board of the new utility was composed of four representatives: one chosen by the *Comité Intergremial*, one for the shareholders (see Table 6), one nominated by City Council, and one nominated by the mayor. The overlapping of political and economic groups becomes evident in the composition of this board, as the representative of City Council on the board was Álvaro Pupo Pupo, who simultaneously served as the president of the Bavaria Brewery, one of the main industries in Barranquilla (Fernández, 1992a).

[12] In the original source it is referred as $10 billion pesos, but since billion in Spanish refers to 10^{12}, not 10^{9} as in English it was changed to trillion. This is the equivalent to $36,600,000,000 in constant 2016 USD.

Table 6 - Triple A: Shareholders

Triple A Shareholders – 1992
City of Barranquilla
Metal Industries Association (Fedemetal)
Industrialists Association (ANDI)
Merchants Association (Fenalco)
Banks Association (Asobancaria)
Ranchers Association (Asoganorte)
Barranquilla's Chamber of Commerce
Monomers of Colombia
Dupont Colombia
Construction Association (Camacol)

Source: Compiled by the author based on (Mariano, 1991c, 1992a)

Since the creation of Triple A, consensus between the city's mayor, Bolívar Acuña, the *Comité Intergremial*, and the board of the new utility company had been the norm. This changed in during the 1992 mayoral elections. By then, the local traditional parties had become internally divided. In the Liberal Party, still led by the Name family, a dissident faction under the lead of Fuad Char, an important businessman through his ownership of several chain stores and a media conglomerate, emerged. In the Conservative Party, a new faction, led by Efrain Cepeda, a developer and businessman, challenged the traditional leadership of the Gerlain family (Villalon, 2003). In the context of these divisions, a new political movement emerged from the city's southwestern neighborhoods. Its leader was the activist and Catholic priest Bernardo Hoyos Montoya.

The birth of the movement was a response to the living conditions in southwestern neighborhoods. As explained above, the public standpipes program for the southwestern zone was never carried out. In 1988, EPMB stated they would rather focus on the rapid installation of residential connections in the area (World Bank, 1993, p. 7). Still, no residential connections were built in the southwest. The storage tank "Ciudadela 20 de Julio" was inaugurated in 1988, but it was missing all the necessary water mains and pipes. That is, it was not connected to the treatment plants or to the southwestern neighborhoods. Although politicians offered water pipes during the 1988 election, most neighborhoods were

not able to install them, as they were geographically distant from existing connections (Bernal Forero, 1991).

In 1991, CINEP reported that marginalized southwestern neighborhoods, home to approximately 500,000 people, obtained water from water vendors, and suffered from overflows of raw sewage. Their report denounced the fact that the two public standpipes, installed in the early 1980s, had fallen into disuse in recent years "due to the lack of support from EPMB and a lack of funds in the community" (Bernal Forero, 1991). The report warned against trusting the quality of the water sold by the vendors, as they stored the water in metal cans that had originally contained oily products. These cans were stored in trucks and often some amount of water leaked out of the cans - and people protested about receiving less water than they paid for (Bernal Forero, 1991).

In late 1991, people in the southwestern neighborhoods were still waiting for the fifty public standpipes promised as part of the Barranquilla World Bank Project, as they had not been informed of the change in plans (Bernal Forero, 1991). Their frustration and discontent began to be channeled by catholic priest Hoyos Montoya. Hoyos Montoya arrived in 1984 to Barranquilla with the purpose of starting an open "University for the South (Unisur)". Hoyos Montoya was inspired by Liberation Theology, a critical approach to the national status quo that questioned the attitude of the political and economic elites[13]. Living and preaching in southwestern Barranquilla, Hoyos Montoya questioned poverty, exploitation, and lack of public services, in his sermons. With vehemence he also denounced the corruption of the political class and the violation of human rights, criticizing not only the abuses of the guerrillas and paramilitaries, but also the state itself (B. Hoyos, 1991). He started leading demonstrations against the traditional Liberal and Conservative families,

[13] Liberation Theology was influenced by the Second Vatican Council (1962-1965), which promoted an open a dialogue between Catholicism and the modern world. It promoted greater tolerance and openness to the world and to other visions of society. Latin American Catholicism expressed deep concern about the poverty and dependency of the region. Latin American bishops started pointing out that the countless situations of injustice and exclusion to which poor people were subjected constituted a form of "official" or "institutionalized" violence. In Colombia, a priest called Camilo Torres proclaimed that the true Christian had to be revolutionary. Consistent with his view, he joined the National Liberation Army. A few months later he would die in a confrontation with the army. Through his career he questioned the proper role of the Catholic Church and of Christians in general, in a society with deep social differences. Inspired by his message, many Colombian priests became spokesmen for the popular sectors. Liberation Theology reinterpreted the notion of sin, concluding that poverty was a sinful situation, whose responsibility laid within the ruling classes (Arias Trujillo, 2011).

Name and Gerlein. In collaboration with socialist movements, he created the Citizen Movement. With Hoyos Montoya as candidate, the Citizen Movement unexpectedly won the 1992 mayoral election. The movement was supported by the Liberal dissident faction led by Fuad Char (Castro Haydar & De Castro Mendoza, 1998).

A few days after the election, Hoyos Montoya visited most of the southwestern neighborhoods, in order to analyze their water problems with the help of the JACs. He announced that he was going to prioritize works on drainage and sanitation, particularly to deal with streams crossing some of the neighborhoods, which could turn into flash floods during the rainy season due to a lack of drainage and accumulations of water meeting with solid waste. The elected mayor declared that flash floods in southwestern Barranquilla "were also overflowing sewage" and urged the Triple A to take actions to improve the situation as soon as possible. He gave the Triple A fifteen days to clean the streams and start collecting solid waste in the southern neighborhoods. He also declared that his administration would focus on solving water problems in the south of the City (Fernández, 1992c).

From that moment on the relationship between mayor Hoyos Montoya and Triple A's board was tense and confrontational. Hoyos Montoya did not agree with the way in which the Triple A had been created (Fernández, 1992b). He stated, for example, that the Triple A was the product of "in an irrational process, in which the municipality gave away everything it had, including all EPMB's physical assets, and received very little in return from the private sector" (Cantillo, 1994a).

Concerned with the water crisis in the southwestern neighborhoods, Hoyos Montoya, decided to intervene directly in a selection of a new manager of Triple A (Mariano, 1992c). When the *Comité Intergremial* asked the mayor to stay out of managerial decisions, Hoyos Montoya replied:

> When communities have no access to public services, they don't go to the homes of entrepreneurs, managers or owners of private companies to protest. But they protest in front of the mayor's house. For this reason I have the right to demand that my views are taken into account in what concerns the Triple A management. (Fernández, 1992d)

The new mayor called on the private sector to invest more in the Triple A. He protested because of the low investments of *Comité Intergremial* members in the new utility (Fernández, 1992e). By the end of 1992, the mayor stated that, the municipality had been subsidizing the Triple A since its creation:

> I support Triple A, but I'm not willing to sacrifice the entire budget of the municipality and harm the population knowing that the private sector has not invested enough. My concern is water. We must realize that the only concern in this process should be the city, i.e. *Barranquilleros*, not the wellbeing of economic groups. (Fernández, 1992e)

The *Comité Intergremial* warned about the direct and insistent interventions of Hoyos Montoya in the management of Triple A. The *Comité Intergremial*'s director accused the mayor of "insisting on intervening" in order to favor the southwestern population as they were "his electoral stronghold" (Ferro Bayona, 1992). Meanwhile the president of the City Council, and member of the Citizen Movement, Janeth Suarez, accused the *Comité Intergremial* of "leading Triple A's creation process and then abandoning it" (Fernández, 1992d). In December 1992, the mayor managed to put pressure on the Triple A's board to appoint one of his trusted advisers, Joaquin Fernandez Malabet, as the manager of the utility.

During his early days as a manager, Fernandez Malabet, suspended water service to 234 companies that owed the city millions in unpaid water bills (Mariano, 1992f). The new manager declared that the wealthiest had accumulated the highest debts: "The wealthiest neighborhoods and commercial and industrial sectors have the highest rates of tax evasion, arrears in their water bills, and reported fraudulent connections. We are doing between 25 and 30 water service suspensions daily". He also drew attention to the industries that made use of illegal dumpsites, reminding them that "Triple A spends billions a day collecting solid waste from unauthorized landfills" (Fernandez Malabet, 1993). Triple A also started installing water meters: the cost of the meter and the safety box, and the installation was to be paid by users in instalments (Rosales González, 1993d).

Mayor Hoyos Montoya requested loans from two private banks, the Banco Comercial and the Banco Ganadero, in order to fund water supply extension in the southwest. The City planned to use these loans in infrastructure to connect the treatment plants with the new

storage tank Ciudadela 20 de Julio, which had been built with the World Bank funds. The local government also planned to build a new pumping station, complementary mains, and residential connections (Mariano, 1993a). Triple A was hired to carry out all these extension works.

Some of this new infrastructure was put into service in April 1993 (Editorial el Heraldo, 1993). However, the mayor confirmed that only 30 percent of the southwestern population had obtained residential connections. Other neighborhoods were served through a rationing program: with pumping scheduled only three times a week. The mayor urged Triple A to perform maintenance on all pumps and pumping stations to increase the pressure in the south (Editorial el Heraldo, 1993). In June 1993, the City received new funds from the central government. The purpose, according to the mayor, was to use the funds to rapidly increase service coverage in the south (Cantillo, 1993a; Montaño Acosta, 1993).

In mid-1993, mayor Hoyos Montoya requested a loan from the government of Spain to build a second pumping station in the south (Mouthón Mejía, 1993). Since only 30 percent of southwestern homes had residential connections to drinking water, the local government called for greater allocation of central government resources. The mayor travelled to Bogotá and obtained funds for the installation of water mains in all thirty-five southwestern neighborhoods (Penso Correa, 1993). Anticipating the duration (and possible delays) of the works, the mayor developed a short-term solution: the local government started buying potable water from Triple A and distributing it freely in southwestern neighborhoods. Thus, water started being distributed to the unserved homes three times a week (Cantillo, 1993d).

It is important to note that mayor Hoyos Montoya was closely monitoring the deadlines in the construction piped water networks in the south of the City. Although funds were disbursed in early 1993, by the end of the year no progress had been registered in terms of network extension. In response, Hoyos Montoya threatened to dismiss Triple A and contract the works to other companies. Through Decree 801 he declared the urgency of these works:

> The delays of Triple A contribute to the sanitary emergency that manifests itself with more diseases and contributes to child mortality. For that reason, I feel that I must control the situation. I need to supervise the completion of the pumping station for treated water

> to the southwest and speed up the installation of waterlines from the Ciudadela 20 de Julio storage tank and of the main distribution networks.(Ruiz Alcocer, 1993)

Mayor Hoyos Montoya recalled his annoyance with the delays: "There has been no progress for 7 months. I did my part and managed to gather enough funds. I do not understand their tardiness; I cannot justify their lack of professionalism and won't forgive this" (Cantillo, 1993e). After being labelled as alarmist and wearisome by the *Comité Intergremial* and the local press, Hoyos Montoya declared:

> I ask all managers and others who are used to working in offices, to leave the north of the city and come to the mud. Because they do not know the misery in which our people are living in the Southwest. They may know a lot, they may have graduate degrees, they may be very well dressed and perfumed, but I think Barranquilla needs another type of employee in Triple A. They have to take on the challenge that the city requires them to take: we are in the middle of a health emergency and Triple A doesn't seem to grasp the severity of the situation for southwestern communities. (Cantillo, 1993e)

While water supply works were being carried out, the local government received government funding to extend sanitation infrastructure - installing collectors, stabilization ponds, and sewage pumping stations (Rosales González, 1994a). Throughout his entire mandate, the relationship between the Hoyos and Triple A was tense. In 1994, the mayor gave Triple A an ultimatum:

> More than 500,000 inhabitants of Barranquilla do not have access to water supply or sanitation. I have worked hard enough to gather the money. I had to endure a lot. I made more than 30 trips to Bogota to speak with former President Gaviria Trujillo. Everything was necessary in order to get the resources for infrastructure expansion to the southwest of the city. This is why I want you to work and finish these works before the month of December. (Padilla Rodríguez, 1994)

Local media reported that during the last days of 1994, city officials pressured contractors to work faster "even calling engineers to their houses" (Rosales González, 1994c). Finally, the manager of Triple A, González Malabet, replied to the mayor stating that the company "would step on the accelerator" to complete the water network extension work in the south

as soon as possible (Rosales González, 1994d). A few days before the end of the year, Triple A finished the sewerage network in four of the neighborhoods in the southwest (Rosales González, 1994e). Starting 1995, more neighborhoods in the southwest gained access to residential water supply (De la Cruz, 1995). Also, the utility began collecting solid waste using the equipment purchased with the World Bank loan and cleaned-up several streams. These works improved drainage services in the area (Betin Freu, 1995b).

Before closing this section, a, it is important to note that, in spite of the creation of a new utility, the EPMB Union continued to sporadically protest in front of the City Hall, requesting information about their pensions (Mariano, 1993b). In March of 1993, the local government requested funds from the central government, and also requested new loans to local private banks in order to start paying the pensions of EPMB's retired workers (Mariano, 1993b).

3.3.2 Setbacks

In the previous section we saw how, during the period between 1992 and 1994, reforms and service extension works were performed in the southwest. In this section we will see how the path for obtaining access to water services is not a straight-lined one. Access can be lost if a new local government changes the rules, if policies are changed or if infrastructure is not maintained. Likewise, many infrastructure projects that begin are never completed. They will get stuck and get suspended if there is no sustained investment or supervision from the part of local governments or regulators.

After completing his mandate, mayor Hoyos Montoya was succeeded by one of his followers, a physician named Edgar George González. However, shortly after the election, the Citizen Movement led by the former mayor split and the new mayor George González formed a dissident faction against him. Mayor George González also made alliances with both the Name family, in the Liberal Party and the Gerlein family, in the Conservative Party (Cantillo, 1995b)[14].

[14] Eventually Hoyos Montoya of the Citizen Movement managed to return to office, winning the mayoral election for the period 1998-2000. However, it is important to note that after the first period of Hoyos Montoya, the Citizen Movement lost all independency since - in order to stay in office - it held alliances with the Name

Mayor George González also made alliances with the *Comité Intergremial* and during his first year in office he tried to improve the economic situation of Triple A. Since most of the funds allocated by the central government and loaned from private banks were spent on new works for the southwest, the *Comité Intergremial* proposed to sell more Triple A shares. This Committee wanted the utility to invite more private sector participation, specifically from the international private sector. George Gonzalez agreed with the idea of looking for a new major shareholder and private operator. Both the mayor and the *Comité Intergremial* felt that Triple A was not fully prepared to deal with the city services and was in urgent need of more funds, preferably foreign capital (Betin Freu, 1995c; Cantillo, 1995a).

In 1995, the City continued to invest a significant portion of its budget on the EPMB's pension funds (Padilla Rodríguez, 1995). Councilors of both the Liberal Party and the Citizen Movement proposed that Triple A should contribute to the pension fund because all new Triple A infrastructure was built exclusively with the resources of the municipality. "t is not fair that Triple A has not contributed a penny to this infrastructure and gets all the benefits generated by their production" was stated in the councilors' proposal (Betin Freu, 1995d). However, the mayor immediately rejected the proposal arguing that such a measure would "destabilize Triple A" (Cantillo, 1995c).

In June 1996, the board of Triple A defined the requirements for the new private operator. They considered that the water utility was in need of a new shareholder "to strengthen its financial and institutional structure". The shareholder and private operator would be selected based on responses to a request for proposals including technical and financial plans. The technical proposal should include ideas to: improve the percentage of unbilled water, reimbursement of loans, collection efficiency, labor efficiency and micro metering. The city would retain 50percent of Triple A's shares (Mariano, 1996c).

family of the Liberal Party and the Gerlein family in the Conservative Party. The progressive discourse and anti-corruption measures of the first administration of Hoyos Montoya languished quickly, as the Movement established agreements and bureaucratic alliances with Name and Gerlein and started governing with the traditional political class (Castro Haydar & De Castro Mendoza, 1998). During his second period in office, mayor Hoyos Montoya himself was found guilty of corruption charges and was banned from political activity (Tiempo, 2008).

The City Council, with majorities from the Liberal Party and the Citizen Movement (the Hoyos Montoya faction) was against the inclusion of a private operator (Penso Correa, 1996a). However, mayor George González stated that the new operating shareholder would be brought in, with or without the support of the Council. Asobancaria, the city's banking association, held a cocktail party to launch the bidding process. The mayor declared: "I wish we had the support of the City Council, but legally we do not need it and unfortunately we have to move on" (De la Cruz, 1996b). Finally, the board of Triple A chose Inassa, a joint venture between the Spanish company Aguas de Barcelona and a Colombian Rancher's association called Fidugán. Inassa bought 43 percent of Triple A's shares. The participation of the municipality decreased to 50percent and other entrepreneurs held 7 percent of the shares combined[15] (Mariano, 1996l).

Meanwhile, the lack of continuity in some of the previous administration's key policies, triggered setbacks in the provision of services in the southwestern sectors. The new mayor did not have the same sense of urgency about the extension of water infrastructure to southwestern neighborhoods. Some works were interrupted as no new funds were invested (Mariano, 1996b). Besides, the program that provided free water three days a week was discontinued (Cantillo, 1996e).

The situation became critical on the sanitation and drainage front. During Mayor Hoyos Montoya's administration, the local government worked with Triple A to clean the streams and invested in the treatment of sewage discharged in the southern areas of the city near the Magdalena River. Mayor Hoyos Montoya invested in the dredging of the streams to prevent flash floods. However, Mayor George González discontinued the program. Solid waste collection stopped, and due to lack of maintenance and control of industrial water discharges, flash floods worsened (Editorial el Heraldo, 1996a; Mariano, 1996b).

Therefore, in May 1996, a class action against Mayor George González and Triple A was presented by 150,000 people from the *barrios* La Chinita, La Luz, Rebolo, and Villanueva situated near one of the streams that flowed into the Magdalena River. Plaintiffs asked for

[15] The other private operators in the competition were: "Canal Isabel II", "Lyonnaise Des eaux-Dumez", and the "Oagen - Yorskhire Water Company" (Mariano, 1996l).

the immediate protection of their constitutional rights to live in a healthy environment, to health, and to life (Cantillo, 1996c; Mariano, 1996a). They argued that the community was a victim of diseases and the problem was becoming more and more complicated as the district administration "had abandoned them and discontinued all sanitation activities in 1994, after the new mayor took office" (Mariano, 1996b).

"We have come back to times that we thought we had been overcome" sustained the plaintiffs. After two years, of mayor George Gonzalez administration, without solid waste collection, drainage initiatives or sanitation treatments, La Ahuyama, a tributary of the river was not flowing to the Magdalena and had become an oxidation pond (Cantillo, 1996b). A judge ruled in favor of the community as independent reports commanded by the Constitutional Court showed that the lack of control or treatment in the wastewater discharges had led to "an environmental crisis that extends through the stifling air, preying on the health of the people, with high levels of bacterial pollution, sedimentation and environmental degradation" (Mariano, 1996a). As a result, the mayor was forced to reinitiate cleaning and infrastructural works to restore sanitation and drainage services to the affected neighborhoods.

3.3.3 The lost decade: 1985-1995

Throughout this chapter, we have seen how Barranquilla's southwestern neighborhoods lacked access to water supply, sanitation, drainage, and waste collection up to 1985. The Barranquilla World Bank Project included a number of plans to expand water infrastructure to the neighborhoods of southwestern Barranquilla. Among these was the installation of fifty standpipes as a temporary, short-term measure to be subsidized by EPMB and managed by the JACs (Community Action Boards) of neighborhoods in the southwest part of the city.

In the midst of significant local political instability, the fifty public standpipes program was discarded. By 1991, the year in which the World Bank project was supposed to end, the situation in the southwest had worsened. While the Ciudadela 20 de Julio storage tank had been built, its operation required the construction of water main pipes, secondary networks, and domestic connections that were not delivered. Although the World Bank project aimed

to increase water supply coverage to 95 percent, because of the failure to carry out the expansion program in the growing southwestern areas, around 40 percent of the city's population remained without access in 1993 (World Bank, 1993). Eight years after the project began, many streets were still overflowing with sewage and the waste collection remained inadequate if not absent (World Bank, 1993).

In 1991, the main sources of water supply in Barranquilla's southwestern neighborhoods remained very similar to what was available in 1985. There were two public standpipes managed by JACs located at El Pueblo and Nueva Colombia. These only worked sporadically due a lack of maintenance and severe deterioration. Households in neighborhoods located near existing connections managed to build informal connections and most people needed to buy water from vendors (Bernal Forero, 1991).

According to the research by CINEP, the high cost of water sold by vendors reduced consumption in the city's southwest: "on average, communities in this sector consume twenty percent of the water consumed in areas with household connected" (Bernal Forero, 1991). Besides the excessive burden in economic terms, as locals were forced to spend a high proportion of their income in water, CINEP reported the poor state of the trucks used by the water vendors, most of them being very old models. Furthermore, the distribution of water in metal cans cast doubt on the compliance of the vended water with minimum hygienic standards (Bernal Forero, 1991).

Despite this situation, headlines in the local press during the years of acute crisis in EPMB, between 1989 and 1991, did not mention the situation in the southern neighborhoods. By contrast, discussions focused on water shortages in northern areas, covered by the network[16], garnered significant attention. There was even some discussion about building new pipes and pressure pumps to improve services in the north of the city (Tagie, 1991b). As explained above, it was not until the government of mayor Hoyos Montoya (1992-1994) that effective measures were taken to extend water services to the southwest. Still, most infrastructure works were not completed until 1995, ten years after the World Bank project began.

[16] See for example, "Fishes take on the water treatment plants" (Rincón, 1991); "Solution in 24 hours to the emergency due to lack of chemicals" (Peñaloza, 1990a).

3.4 CONCLUSIONS

The purpose of this chapter was to demonstrate the importance of local political competition, which is often overlooked in political ecology. This analysis emphasized the role of local electoral politics in shaping water distribution. These are characterized by the interaction between political parties and different factions and branches of central and local government, economic elites, unions, and community organizations. The first conclusion of the chapter has to do with the importance of these interactions in water governance. Although in much work in political ecology, local partisan politics is taken as homogeneous, this chapter demonstrates how it is the site of both alliances and confrontations. Analyses of water development projects tend to portray the World Bank, national and local governments as a single united front. This chapter, by contrast, documents disagreements and confrontations not only within the local government, but also between local and central governments, between the local government and the World Bank, and between the central government and the World Bank. It also documents confrontations between the mayor, the City Council and the representative bodies of local economic elites, confrontations within political parties, and within community movements like the Citizen Movement. All these conflicts contribute to the delineation of water/power distribution.

A second conclusion is related to the role of water in this story. The chapter documents how water's materiality had a role in the outcome of events in Barranquilla. We saw how water increasingly polluted with industrial waste, or water filled with dead fish, made the EPMB spend more and more funds on chemicals to treat it. In this sense, it was only when the water was untreatable, due to the increasing pollution that the entire city – not just the southwest - was left without piped water. This crisis affected all social classes of Barranquilla, including the wealthiest. As such, this dirty, untreatable water compelled those involved in local politics and water governance to re-examine water policy in the city. In this reflection, local government, economic elites and the EPMB Union had to confront the failure of the World Bank project, the misappropriation of its funds, and the future of EPMB.

The third conclusion is about the nonlinearity of water development. The chapter described how some neighborhoods gained access to basic sanitation and drainage but, due to discontinuities in local government policy, later lost their services. During the period of Mayor Hoyos Montoya, streets were cleaned and streams dredged in many neighborhoods in the southwestern areas of the City. The local government also implemented a short-term plan to supply water in the southwest and started distributing free water. Additionally, many public works were undertaken, under the personal supervision of the mayor. Under the mandate of the subsequent mayor, however, these neighborhoods lost free water distribution, solid waste collection, as well as maintenance of drainage infrastructure worsening the problem of flooding. Finally, promised infrastructure works were delayed.

The Barranquilla case study also complicates the private/public dichotomy, since water reforms during the early nineties included both private sector participation and massive public sector investments. The chapter describes how, while EPMB was being liquidated, its assets were being sold, and private investors were buying shares of the new company Triple A, the new mayor was gathering central government funds to extend water services and to subsidize water in the less privileged neighborhoods.

The last conclusion is related to the role of the World Bank. Work in political ecology on water development has described how, in the midst of a "state failure" discourse, the World Bank focused on projects favoring private sector entry through cherry picking (Bakker, 2013). However, the Barranquilla World Bank Project does not fit this description. With many of its components focused on southwestern Barranquilla, it was not a money-generating project. Drawing on previous experiences, the World Bank also foresaw delays in the infrastructure works and included a short-term subsidized solution for public water standpipes in southwestern neighborhoods. Although it tried to shield the project from local government corruption, it did not promote private sector participation. As mentioned in section 2.3, the World Bank had successful experiences working on projects with other public utilities in Colombia's major cities, and was confident in the fact that, with the right investment and managerial improvement, EPMB would follow the example of other municipal companies, EAAB in Bogotá and EPM in Medellín. Thus, it was not the World Bank intervention what introduced private sector to water management. It was the failure of the World Bank project what prompted private sector involvement.

4. Light is Like Water

Gabriel García Márquez's short story *La luz es como el agua* (light is like water) is about a family from the Colombian Caribbean living in Madrid. The two children of the family listen to their parents talk about their hometown surrounded by rivers and the sea and eventually ask for a small boat, so that when they return to Colombia they can go sailing. While the parents are out the children smash open a light bulb and light starts pouring out of it like water. The children explore this light as if it was water in their boat and later with scuba gear they get from their parents. In the end, however, the light fills the apartment to the point where it is pouring out of the windows and onto the streets. The children are still inside. They have drowned.

I remembered this story, featuring magical realism, during fieldwork in the southwest sector of Barranquilla, as many in the community would talk of them both, water and light, as entwined. They referred to them together, "*l*os *servicios"* (the services) and described the ways in which they failed at the same time *"se van los servicios"* (services go away).

This chapter follows water in diverse forms as it meets, shapes, and clashes with both piped water and electricity infrastructure. Treated water moves inside pipes in some neighborhoods of Barranquilla. Storm water floods asphalt roads - that lack storm drains – forming *arroyos*. *Arroyos*, in turn, disrupt and ruin poorly maintained electrical infrastructure causing electricity outages. This outage trigger water cuts due to lack of electricity in some of the city's pumping stations. I argue that sites of entwined infrastructure are critical to understand dynamics of contemporary cities not just in Barranquilla but also in many cities of the global South. I contend that in the urban south, where some areas lack public infrastructure and the existing infrastructure is often poorly maintained (and prone to breakdown), basic infrastructure (such as water and electricity) should be studied as a tangle. This is, because if one infrastructure fails it will risk triggering the breakdown of others. Thus, water, including supply, sanitation, and drainage, and electricity infrastructure are intertwined in daily life, when they work and when they fail, and should be studied together, as part of the same entwined story, instead of as separate infrastructure.

I follow a set of scholars determined to consider the biophysical properties of water and to investigate infrastructure as a terrain where political roles are inscribed. That is, through which power relations are reproduced but also contested. This set of scholars make explicit emphasis on the fact that water is dense, obstructs and enables movement, penetrates some materials and flows across others, and being a flow resource, entails not only water supply but also sanitation and drainage (Bakker, 2003, 2010; Bakker & Bridge, 2006; Braun, 2005; Swyngedouw, 2004). This debate on water's agency is enriched by scholarship on infrastructure and on the ways in which they connect and disconnect people and flows, delineate power geometries, act as symbols and political tools, or become invested with economic and political power (Larkin, 2013; Von Schnitzler, 2008). Being fragile, unsteady and leaky, infrastructure is frequently coming apart and in constant decay (Anand, 2015a, 2015b; Graham & Thrift, 2007). This group of authors also engages with the study of malfunction. They consider the uneven distribution of repair resources (Trentmann, 2009) and the fact that communities dealing with constant malfunction stop being just "users" or clients of the utilities, and become administrators and co-producers of disruption (Furlong, 2014).

Through the study of pipes, grids, meters, and drains, as well as of electric currents and different waters, I also interrogate the recent history of the city as it unfolded during the broader Colombian armed conflict. I engage with the city's past, as exclusion from access to water is often built into the city's early infrastructure networks (Kooy & Bakker, 2008). But this chapter is not only about the city's past and present. It is also about the state's projects for the city and about the ways in which the city and its various communities are imagined. As Akhil Gupta (2015, p. 1) reminds us, "infrastructure tell us a great deal about aspirations, anticipations, and imaginations of the future".

I develop these ideas in four chronological sections. The first section analyzes Barranquilla's political and social characteristics during the late 1990s and early 2000s. It describes the consequences of the national armed conflict and the arrival of populations displaced by violence that settled in the city's southwest neighborhoods. The second part focuses on infrastructure: the crisis of the electricity utility, its subsequent sale, and the ways in which this crisis entailed infrastructural decay. It traces the interconnectedness between urban

water flows and electricity infrastructure –and between electricity and water infrastructure. It also explores how water, infrastructure, and malfunction distribution reflect and reproduce inequalities. The third section tells the story of 26 *barrios* in the Southwest that were classified as "subnormal". It narrates how, through specific laws and regulations, the state created a place of systematic malfunction, where communities that were already unprivileged became more vulnerable. The final section offers some concluding remarks and reflections on infrastructure and the regulation of marginality.

4.1 A COUNTRY THAT RUNS

4.1.1 Armed conflict and the city

In Colombia high levels of violence characterized the 1990s. Both guerrillas and paramilitary groups thrived and established military control over small towns and rural regions in the country. In 1994, Liberal candidate Ernesto Samper won the presidential elections and was soon accused of receiving campaign funds from drug trafficking mafias (the Cali Cartel). His presidential period (1994-1998) was characterized by a rise in armed confrontation – while the FARC gained space in the south, extreme right paramilitary forces fought to control land and towns in the Caribbean coast (Palacios, 2003). The army, in turn, fought guerrilla groups, while at the same time leaving a free hand to paramilitary groups (Gutierrez Sanin et al., 2007). Although during his campaign he emphasized the urgency of social reforms to reduce inequality, Samper spent most of his presidential term defending himself from fraud and corruption allegations (Gutierrez Sanin et al., 2007).

His successor, Conservative leader Andrés Pastrana (1998-2002), started a new peace process with the FARC. The government made some concessions, giving the FARC a 40,000 square kilometers demilitarized zone in the rural southeastern department of Caquetá, but the guerrillas breached some of the agreements by continuing to kidnap civilians. The process then lost the support of political parties and business elites and subsequently failed[1]

[1] On February 20, 2002, as a result of the failure of the peace negotiations, the Pastrana government decreed the end of the peace process and ordered the armed forces to retake control of the demilitarized area. This led to a worsening of the armed conflict (Memoria Histórica, 2015).

(Palacios, 2003). Despite the optimism surrounding the early stages of this presidential period, it was a time of great paramilitary activity, which was described by the Historical Memory Commission[2] as the "main forced exodus in contemporary Colombian history". In 2001, paramilitary leaders and politicians from different regions of the country - including congress members, councilmen, mayors and governors – signed a political agreement ("Pact of Ralito"), which would serve as a basis for strengthening and expanding the political power of the paramilitary groups at the national level (Memoria Histórica, 2015). Regional political leaders, military officials, ranchers and landlords of the Caribbean region also supported this Pact. Under this alliance with politicians, and state officials, the paramilitary expansion into the territory continued through systematic massacres and violent displacement (López Hernández, 2010). During the Pastrana presidency (1998-2002) 1,827,331 persons were displaced by violence from their homes in small towns and rural areas (Memoria Histórica, 2015; Unidad de Víctimas, 2016).

In this context, Liberal dissident[3] Álvaro Uribe Vélez won the 2002 elections with a proposal focused on fighting the guerrillas and was re-elected in 2006 when he created *La U*, a new political party. With the help of the United States sponsored counterterrorism program "Plan Colombia", he doubled army budgets and his government accumulated military victories against the FARC, attacking its strongholds and key leaders (Arias Trujillo, 2011; Gutierrez Sanin, 2014). In 2003, Uribe Vélez signed a peace agreement with the paramilitary leaders. The purpose of the agreement was the demobilization of the paramilitary forces and the setup of a transitional justice system[4]. Specifically, the paramilitary leaders committed themselves to demobilizing all their members through a gradual process. Despite the agreement, paramilitary groups continued their territorial consolidation through violence, such as executions and massacres (López Hernández, 2010). As seen in Table 7, rural displacement continued during Uribe's presidency, with 1,630,614 persons displaced during his first term in office, and 1,364,398 persons displaced during his second (Memoria Histórica, 2015). Investigations by nongovernmental organizations and national courts began in 2007 and

[2] The National Centre for Historical Memory was created by the "Law of Victims and Land Restitution" (Law 1448 of 2011) and is responsible for writing reports on different histories and memories in the context of the Colombian armed conflict.
[3] Historically, there have numerous internal factions in Colombia's Liberal Party. Dissidents within the party have been those in opposition to official policies. For a history of liberal dissidences see (Wills-Otero, 2011).
[4] On paramilitary demobilization and the transitional justice system, see (Uprimny Yepes, Saffon Sanín, Botero Marino, & Restrepo Saldarriaga, 2006)

uncovered numerous alliances between politicians and paramilitary groups, conducting judicial processes against 107 Congress members (López Hernández, 2010). In 2010 Liberal dissident Juan Manuel Santos was elected president (2010-2014). Despite promising continuity with Uribe's legacy during his campaign and winning the elections on behalf of the *U* party, he progressively distanced himself from his predecessor and started a new peace process with the FARC guerrillas (Memoria Histórica, 2015).

It is worth mentioning that in Colombia the displacement of portions the population cannot be explained solely as a consequence of the war between armed actors, as the population has also been expelled through legal projects of land grabbing which have coexisted with and funded the armed conflict (Rodríguez & Orduz, 2012; Romero & Ávila, 2011). According to data collected by the Historical Memory Center (Memoria Histórica, 2015), nearly six and a half million persons were displaced from the 1980s to 2014 (see Table 7). Women form a little more than 50 percent of the displaced population (3,301,848). Official data estimates that about 15 percent of the total Afrocolombian population and 10 percent of the total indigenous population were displaced from their ancestral lands (Memoria Histórica, 2015).

Table 7 - Displacement in Colombia

Period	President	Political Party	Persons Displaced by Violence
1994-1998	Ernesto Samper Pizano	Liberal Party	548,686
1998-2002	Andrés Pastrana Arango	Conservative Party	1,827,331
2002-2006	Álvaro Uribe Vélez	Dissident Liberal	1,630,614
2006-2010	Álvaro Uribe Vélez	Dissident Liberal	1,364,398
2010-2014	Juan Manuel Santos	Dissident Liberal	969,576

Source: Compiled by the author based on (Unidad de Víctimas, 2016)

After Uribe Vélez' eight year mandate, social conditions in Colombia had not improved significantly. By the end of his mandate, in 2010, almost half of the country's population lived in poverty and rates of unemployment and informal employment were high (Arias

Trujillo, 2011). Law 387 of 1997 had created the System of Comprehensive Care for Population Displaced by Violence. Despite its issuance as the first policy to fully regulate the humanitarian crisis, forced displacement continued to increase and attention to the population remained generally deficient. Families did not register in the official system due to access barriers and excessive paperwork, and the programs put in place had few resources to work with. Thus, the displaced population was left unprotected, assisted mainly by the initiatives of the Catholic Church, until the issuing of more comprehensive laws, such as the Victims' Law of 2011 (Memoria Histórica, 2015).

Paramilitary expansion entailed both land concentration in the hands of a few elite landowners and the massive displacement by violence of smallholders and landless farmers to the cities. Colombian cities were thus deeply transformed during the 1990s by the effects of violent displacement in the context of the armed conflict[5]. While 14 percent of the displaced population settled in the country's largest capital cities: Bogotá (4.9 percent of all displaced persons), Medellín (4.6 percent), Cali (1.8 percent), Cartagena (1.2 percent), Barranquilla (1.0 percent) and Bucaramanga (0.7 percent), nearly half of the displaced population settled in small municipalities surrounding these cities (Memoria Histórica, 2015).

Due to these successive waves of migration, cities grew rapidly and in uneven ways. Placed in the least privileged neighborhoods, displaced families bought or rented land in the informal market *urbanizaciones piratas* ("pirate urbanizations"), and resettled either in existing informal neighborhoods or in new self-constructed settlements *invasiones* ("invasions") (Torres, 2009). A great diversity of families, regions, and customs coexisted in these neighborhoods, where communities depended mainly on informal employment[6]. As has been documented, displaced communities achieved a minimum daily sustenance working predominantly as construction workers, domestic workers, street vendors, security guards, and gardeners. In some neighborhoods they administered small grocery stores *tiendas,* where the community could pay in installments for its toiletries, groceries, and

[5] Academic production on forced displacement has had greater theoretical and analytical developments from the perspective of the regions and municipalities where the displacement events associated with violent events took place, however their impact on the city and the type of city and citizenship that displacement entailed requires further analysis (See for example Naranjo, 2004) .

[6] Informal employment is characterized by a noncompliance with the legal labor framework. As informal workers do not have social security nor written contracts (Cepeda Emiliani, 2011).

liquors (Naranjo, 2004; Torres, 2009). Rapid informal urbanization in the less privileged areas of the cities gave way to high urban density and led to the construction of houses on small lots (up to 20 square meters), where up to five members of a family lived (Naranjo, 2004, p. 293).

4.1.2 Southwestern Barranquilla

Groups of displaced persons started arriving to Barranquilla in the 1980s, but it was after 1996 that massive migration took place (see Table 8). As the conflict worsened in rural areas of the Caribbean coast, forced migrations worsened. While in 1999, 6,240 people arrived to the city, in the following years the figure increased significantly: reaching 16,612 in 2000, declining thereafter (Unidad de Víctimas, 2016). Seventy percent of the people that arrived to Barranquilla came from small towns and rural areas within the Caribbean region (Martínez, 2001).

Table 8 - Internally displaced persons arriving to Barranquilla and Gini Coefficient[7] 1995-2014

Year	Received displaced population	Gini
1996	2,352	0.478
1997	3,892	0.500
1998	6,857	0.534
1999	6,240	0.523
2000	16,612	0.525
2001	16,313	0.499
2002	14,952	0.536
2003	8,676	0.527
2004	9,433	0.539
2005	10,545	0.502
2006	6,920	0.513
2007	4,114	0.500
2008	3,561	0.512
2009	1,784	0.487
2010	1,256	0.497

[7] Gini coefficient ranges between 0 and 1 and is based on residents' net income. It helps define the gap between the rich and the poor, with 0 representing perfect equality and 1 representing perfect inequality (World Bank, 2016).

2011	1,075	0.472
2012	1,202	0.464
2013	1,542	0.458
2014	1,360	0.445

Source: Compiled by the author based on (Galvis, 2014; Unidad de Víctimas, 2016).

Families that were forced to leave the countryside, abandoned their lands and jobs, and arrived to the city without many possessions or prospects of work or housing (Memoria Histórica, 2015). As a consequence, unemployment rates and informal employment rose in Barranquilla and the poverty levels increased (Torres, 2009). By 2005, more than six percent of the population was unemployed and sixteen percent was intermittently employed in the informal sector. Barranquilla had the third highest rate of labor informality in the cities surveyed by the 2005 national Census (DANE, 2005). By 2011, approximately 65 percent of the working poor were informal, self-employed workers (Cepeda Emiliani, 2011).

This period of major challenges coincided with successive scandals related to political corruption in the municipal administration. Large public investments were made in road infrastructure in the center and north of Barranquilla and developers paid large sums as bribes to secure contracts. Mayors Hoyos Montoya (first elected in 1992 and re-elected in 1998) and Guillermo Hoenigsberg (elected in 2004) were both found guilty of the charges of corruption and misappropriation of public funds (Caracol Radio, 2006). In this environment, the Gini coefficient, which measures the income distribution among a city's residents, peaked and reached its highest levels in 2002 with 0.536 and 2004 with 0.539 (Galvis, 2014). While construction and businesses were growing in *Localidad Norte* (north sector), the poorest, *Localidad Suroccidente (*southwest sector), had a high percentage of population under the poverty line, 61,2 percent, and a high illiteracy rate, 9,5 percent (see Table 9) (Cepeda Emiliani, 2011).

Table 9 - Characteristics of the sectors of Barranquilla

Sector	Percent of population under the poverty line[8]	Illiteracy rate	Percent Afrodescendant population
Norte	12.8	4.2	5.8
Riomar	22.6	5.0	7.3
Suroccidente	61.2	9.5	13.8
Suroriente	45.1	7.2	9.9

Source: Compiled by the author based on (Cepeda Emiliani, 2011)

Displaced populations settled mainly in the southwest sector, *localidad suroccidente,* which, as mentioned in Chapter 2, had been housing displaced communities since the 1980s. During the late 1990s these new residents settled mainly in the existing *barrios* La Pradera, La Paz, and Nueva Colombia – and built a new one called Las Malvinas (Redaccion El Heraldo, 1998). But as more people arrived, the sector expanded: with 10 informal neighborhoods created in the 1990s and 15 more created during the early 2000s (see Table 10). Some of these neighborhoods were built in erosion areas with steep slopes and deep fissures, floodplain areas and landfills (Guardo Polo, 2000). *Barrios* Me Quejo and Lipaya of this sector have been classified as the poorest in the city, with more than 70 percent of their populations below the poverty line (Cepeda Emiliani, 2011; Barranquilla como vamos 2013). The sector's population works mainly in the informal sector. Most of them commute to the northern sector to provide services to neighborhoods there. With many men working in construction, private surveillance of gated communities, messaging and gardening and women mainly engaged in domestic service, childcare, and the beauty industry (Cepeda Emiliani, 2011).

[8] The most widely used non-monetary indicator in Colombia is the Unsatisfied Basic Needs Index (NBI). The Human Development Index (HDI) and the Quality of Life Index (ICV) are also used. However, at the level of disaggregation at which this work is performed, at the sector scale, the information used to calculate these indicators is not available. This is why Cepeda Emiliani (2011) uses the poverty line. The poverty line is the minimum monthly per capita cost required to purchase a basket of goods (food and non-food) that allow an adequate standard of living in a given country. In Colombia, this standard of living is calculated yearly by the National Administrative Department of Statistics DANE.

Table 10 - Neighborhood construction in the Southwest Sector 1980-2010

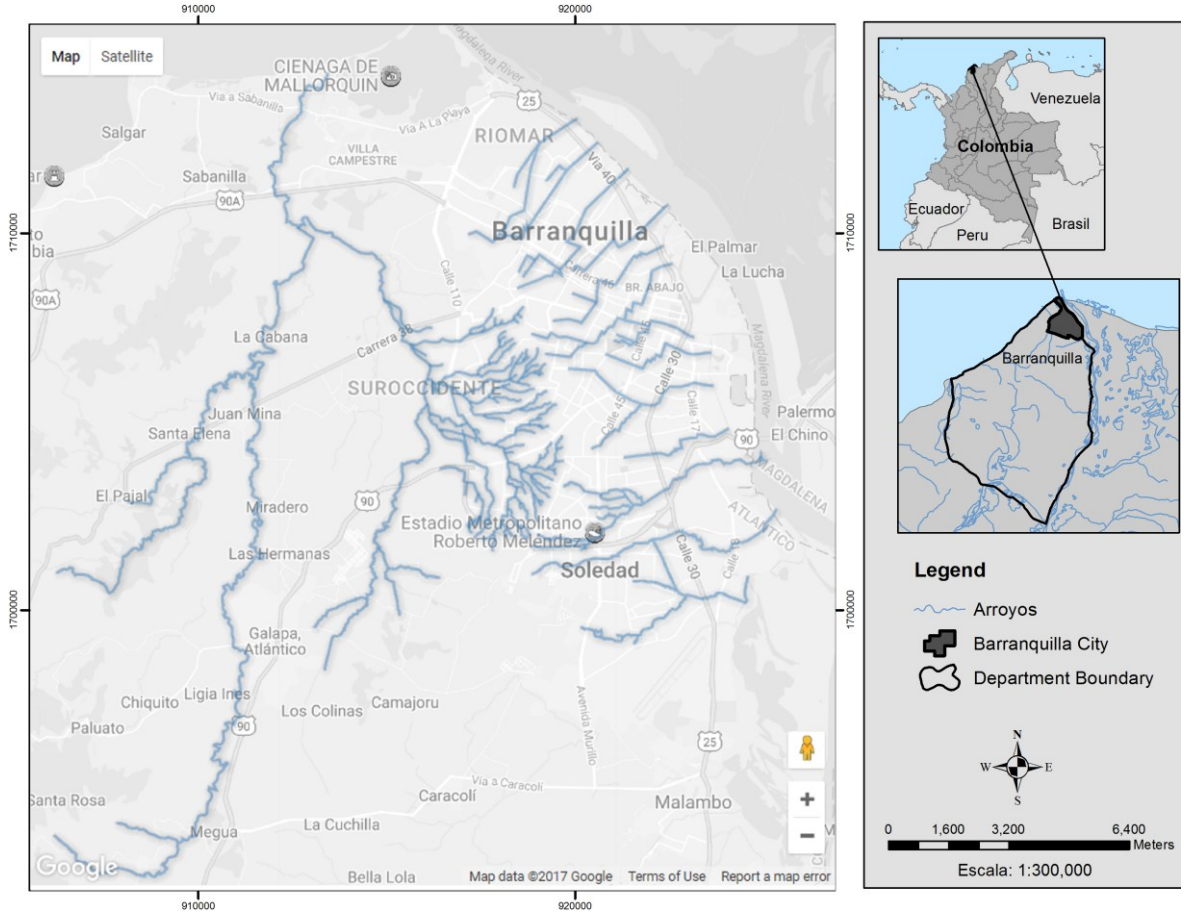
***Barrios* founded before the 1980s**	***Barrios* founded in the 1980s**	***Barrios* founded in the 1990s**	***Barrios* founded in the 2000s**
El Pueblo	La Pradera	Las Malvinas	El Rubí
El Silencio	Los Olivos	Los Rosales	Florida
La Libertad	Por Fin	Parte de El Recreo	El Edén 2000
Loma Fresca	La Paz	Villa Flor	Paloquemao
Alfonso López	Me quejo	El Romance	Las Torres
Los Andes	La Manga	California	El Carmen
San Felipe	7 de Agosto	San Pedro	San Insidro
Pumarejo	Evaristo Sourdis	La Gloria	Lucero
La Cuchilla Villate	Lipaya	Cordialidad	Los Pinos
Buena Esperanza	Santo Domingo	Los Girasoles	Las Estrellas
La Sierra	Carlos Meisel		Pastoral Social
La Ceiba	Nueva Colombia		Ville del Rosario
El Bosque	La Esmeralda		Las Terrazas
Chiquinquirá	Ciudad Modesto		Las Colinas
Cevillar	Villa Blanca		Mercedes Sur
Atlántico	Santa María		
El Valle	Paraíso		
Carrizal			

Source: Compiled by the author based on (Ospino, 2000; Torres, 2009)

The city's Afrocolombian population is also concentrated in this sector. As mentioned, Afrocolombian populations were particularly victimized during the armed conflict - 15 percent of the total Afrocolombian population was displaced by violence in the period from 1985-2014. Southwestern Barranquilla, populated mainly by displaced population, is the home of some of these communities (Memoria Histórica, 2015). In some neighborhoods such as California, El Bosque, Santo Domingo, and Lipaya, more than 30 percent of the population identify themselves as Afrocolombian[9] (DANE, 2005).

[9] As mentioned in the introduction, Colombian 2005 Census included the question "Do you identify yourself as black Colombian, Afrocolombian, or *raizal* (*raizales* are black communities from the islands of San Andres y Providencia)?" (DANE, 2005)

4.1.3 *Arroyos* al sur



Map 3 – The paths of flash-floods in Southwestern Barranquilla, 2014

Source: Made by the author based on (Arroyos de Barranquilla 2014b).

As Barranquilla grew, *arroyos*, which had already been problematic in the 1990s, increased in both their intensity and frequency (see Map 3). The high growth rates of the urban population significantly reduced permeable surface areas. That is, they reduced the vegetal layer that, in the past, absorbed some of the storm water and prevented it from immediately flooding the street[10] (Arroyos de Barranquilla 2014b). In late 1995, the newspaper El Heraldo urged mayoral candidates to build a storm sewer in order to tackle the "top priority

[10] Before the accelerated growth of the city, vegetation covered many areas within the southern sectors. This vegetation used to "wear" the *arroyo*, through a process of infiltration that reverberated in reducing its flow and turbulence (Arroyos de Barranquilla 2014a).

of the city" and to prevent the flash floods (Campbell, 1995). In an editorial the newspaper criticized local governments' lack of action:

> Apparently building a storm sewer system is more expensive than building the city elsewhere. This huge investment has been postponed for more than half a century. The successive mayors, one after another, were witnesses of the persistent drama of starring at turbulent currents traversing the cardinal points of the city, and the anguish of thousands of families who regularly face the grim consequences of flash floods (Editorial el Heraldo 1995a).

The business sector, grouped in the chamber of commerce, lobbied to pass urban regulations that made the building of storm sewers compulsory for all new housing developers (Editorial el Heraldo 1995a). The president of the chamber of commerce emphasized the negative consequences of *arroyos*. On the one hand, he assured the city was losing its commercial prospects, as investors feared the effects of the rainy season. On the other hand, he added that drainage problems ruined pavements, affected traffic, and impeded the expansion of telephone networks (Campbell, 1995).

All sectors seemed to agree on the impossibility of building a drainage system for the whole city due to its high costs. According to a city councilman from the governing party:

> Never was it envisioned that we would have rainwater problems. But of course, as we pave more surfaces the water flows faster. According to the latest study that was done by the Mayor's office, Barranquilla needs $1 (trillion)[11] pesos to solve the problem of *arroyos*. Because of course you have to dig up roads and build rain gutters. And the total budget of a municipal government (which lasts four years) is $2 (trillion) pesos. We would need to stop all local government for two years! Take the total budget and spend it exclusively on *arroyos* to be able to solve it. A (trillion) pesos, as I say it's just too much. In order to fix *arroyos* we will need the help of the national government[12].

[11] In the original source a trillion is referred as billion pesos, but since billion in Spanish refers to 10^{12}, not 10^{9} as in English, it was changed to trillion. A trillion pesos in 2013 is the equivalent to $551,000,000 in constant 2016 USD.
[12] Personal interview with councilman Alfredo Varela, dated 14 August 2013

As such, the local government, the press, and local economic interest groups agreed to prioritize the commercial zones of the city in the search for low cost solutions for the channeling of *arroyos* (Cantillo, 1995d). Throughout the last years of the 1990s, different strategies were explored. The local government commissioned a study from a Russian firm, with offices in Bogotá, which presented a proposal to study the city's aquifers in order to place suction pumps to divert the surface water into these aquifers. Although the proposal was deemed less expensive than building a drainage system, it was still considered too expensive. City council stated "expenses were well above the financial possibilities of local government" (Cantillo, 1995d).

In 1996, Mayor George González asked council for new funds to commission more studies on *arroyos*. The Council, however, did not consider it appropriate to invest more funds in research and decided to postpone investment, given that there were already too many studies on the problem, emphasizing those of a Japanese mission made during the early 1980s (Penso Correa, 1996b). Finally, in 1996 Council authorized funds for a new study and the firm "Fonade-Hidroestudios SA" was hired and presented its results "Feasibility of Storm Water Drainage Solutions Barranquilla" (Arroyos de Barranquilla, 2014b). Broadly, the new study recommended the construction of a municipal drainage system, including storm water pipelines, box culverts[13] to allow water to flow under the roads, and floodwater pumping facilities. The proposal was deemed too costly by the city council and therefore unfeasible (POFT, 1997).

In general, flash floods worsened as the city grew because of reduced permeable surfaces. However, the situation in the south of the city, and particularly in the southwest, deteriorated more rapidly. Not only because of rapid urbanization in the context of armed displacement, but also because of problems with solid waste collection, leading to an accumulation of solid waste in the streets, and non-compliance with environmental regulations in the local landfill[14] (Cantillo, 1993b).

[13] A box culvert is a structure that allows water to flow under a road from one side to the other side. Typically embedded so as to be surrounded by soil, a culvert may be made from a pipe, reinforced concrete or other material.

[14] In 1993 the utility Triple A, was sanctioned and their landfill was closed for not complying with environmental regulations (Rosales González, 1993a).

While four separate *arroyos* form in the northern sectors of the city (North and Metropolitan), ten can form in the streets and neighborhoods of the south (see Table 11).

Table 11 - *Arroyos* in Barranquilla by sector

Name	Approximate length	Sector
Arroyo street 94, 92 and 91	4,186 meters	North and Metropolitan
Arroyo street 84	5,200 meters	North and Metropolitan
Arroyo del Country	5163 meters	North and Metropolitan
Arroyo Coltabaco	3.845 meters	North and Metropolitan
Arroyo street 65	4,590 meters	Southeast and Southwest
Arroyo La Felicidad	5,759 meters	Southeast and Southwest
Arroyo La Paz (40 street)	2,903 meters	Southwest
Arroyo Rebolo (21 street)	4,826 meters	Southeast and Southwest
Arroyo street 8	3,354 meters	Southeast
Arroyo Don Juan	7,906 meters	Metropolitan and Southwest
Arroyo El Salao	9,155 meters	Southwest
Arroyo El Platanal	1,600 meters	Southeast
Arroyo Santo Domingo	2,200 meters	Southwest
Arroyo Sourdis	network of *arroyo*s	Southwest

Source: Compiled by the author based on (Arroyos de Barranquilla, 2014b; Redaccion El Heraldo, 2015b)

In chapter two, we saw that after three years of steady local and central government investment (1992-1995), subsequent governments discontinued the different development programs in southwestern neighborhoods. Solid waste collection ceased and soon flash floods worsened. In July 1996, for example, a resident of La Paz, wrote a letter to the local newspaper El Heraldo complaining about what he called "the ravages of rain" in his neighborhood:

> In my neighborhood the *arroyo* produced faults in the pavement and destabilized the structures of at least eight homes. Pieces of pavement were washed away only to worsen

> the flood. In addition, garbage had been accumulating and, as it was carried away by the water, it caused more damage (Mariano, 1996f).

Shortly after, with the arrival of the rainy season, accidents caused by *arroyos* became more frequent in the sector. In late July of 1996, *arroyo*s dragged trees and vehicles and flooded several neighborhoods. In particular during July, August, and September *arroyo* Don Juan flooded houses in the sector and opened cracks in the pavement and in the walls and foundations of houses. Due to interruptions in public transportation, residents of the southwestern neighborhoods invented techniques to cross the flash floods and get to work, using wheelbarrows and wooden bridges along the streets (Arrieta, 1996a). In September, a man drowned while trying to draw water from his flooded home in *barrio* La Cordialidad (Arrieta, 1996f); and four more residents of the southwest drowned in flash floods during the following two months (Sourdis, 1996). Due to the high intensity of rainfall during the rainy months, sediment and debris carried by the *arroyos* were often introduced into the sewer producing sewerage overflows (Planeacion Nacional, 2008). With sewerage overflowing, health authorities feared cholera and other epidemics (López & Gutiérrez, 1996). Firefighters attempted to evacuate some neighborhoods but residents refused to leave. By the end of September a resident declared to the press: "We were told to collect our personal items and leave the neighborhood until the rain is over, but where we are going to go?" (López & Gutiérrez, 1996).

After these accidents, local authorities appealed to the "civic culture" of the inhabitants of the south. Residents were asked to stop throwing their accumulated solid waste into the flash floods. They were also asked to be more careful when trying to cross *arroyos* –workshops called "how to live with my *arroyos"*, were organized during the last months of 1996 "to help low income families understand the dangers of flash floods and the fact that life cannot be exposed, without losing it" (Editorial el Heraldo, 1996a). Furthermore the local office for disaster prevention started cleaning the streets and dredging some of the river beds near the Magdalena River, with the help of the communities (Cantillo, 1996a). Clean-up campaigns took place in the *barrios* of La Esmeralda, Las Malvinas, Los Olivos and Los Girasoles to "improve the quality of life of hundreds of families suffering from the accumulation of waste that aggravates the turbulence of urban floods". The disaster office made an official statement congratulating the residents of *barrio* Los Girasoles, who cleaned

the entirety of their streets, minimizing the risk of floods that had affected their neighborhood (Editorial el Heraldo, 1996c).

Before the end of his term, in 1996, Mayor George González gave a speech in La Paz, one of the most affected *barrios*. He stated that improving living conditions for the inhabitants of southwestern Barranquilla was one of "the top priorities of his administration" and announced investments in drainage infrastructure:

> Today we are faced with a troubling antagonism between the formal city and the southwestern part, whose people have been suffering for some years from the absence of proper housing, piped water, and sewerage infrastructure. The construction of a box culvert, which will divert adequate flows of water from the many *arroyos* that affect the sector is being considered (Mariano, 1996h).

Construction works to build a three-kilometer box culvert to channel the Don Juan *arroyo,* a flash flood of approximately 7,906 meters in length that ran through the metropolitan and southwestern sectors of the city (see Table 11), started in 1997. The box culvert would go through the initial section of the *arroyo*, located around the stadium in the city center, in the metropolitan sector. The last meters of the culvert were left as an open channel and were equipped with stones to slow down water as it poured into the streets. By selecting the closed channel design, the government sought to eliminate sources of contamination and to facilitate vehicles crossing on all streets surrounding the stadium (Buitrago, 1996; Mariano, 1996m).

Despite investments and cleaning campaigns, flash-floods continued to worsen as the years progressed, causing accidents, economic losses, and flooding in low-income neighborhoods. During the period of greatest forced displacement in the region, *arroyos* increased, especially in the southwest, due to three causes. First, the construction of fifteen new neighborhoods in the sector during the 2000s further reduced the permeable surface, causing rainwater to flow more quickly throughout the sector (López, 2002). Second, some of the completed channeling works in the center and north of the city worsened the situation in the south, such as the channeling of the Don Juan *arroyo*. With the construction of two box culverts in the metropolitan sector neighboring the Metropolitan Stadium, in 1996 and 2007, the sections

without infrastructure in the southwest received the storm water more rapidly. Moving without obstacles inside the box culvert rainwater reached the southwest sector and left the box culvert into neighborhood Los Girasoles with faster, stronger flows. Don Juan's steepness, roughness and speed with registered flow rates of more than 100 cubic meters per second, made it one of the most dangerous in the city (Arroyos de Barranquilla, 2014a).

Third, garbage collection continued to be sporadic and deficient in this sector of the city. Annual campaigns were carried out to clean the most polluted neighborhoods, especially during the rainy months when the presence of solid waste threatened the health of the population (Pimienta Medrano, 2000a). Municipal brigades also focused on the dredging of sediments out of the riverbeds and the removal of waste (that chocked) box culverts. The objective of the brigades was to minimize the risk of flooding in the affected areas (López, 2002). However, no investments were made in regular waste collection and cleaning plans were limited to times of crisis.

In the year 2000, the newspaper El Heraldo declared that, of all of the problems in the city, the most serious was that of improper waste management. This problem, which induced environmental pollution and health hazards, merited "urgent attention" (Erazo, 2002). The newspaper also highlighted the poor management of garbage dumps and landfills by Triple A. The southwest sector then had two solid waste problems: not only did it not receive the service of garbage collection, but it also hosted the city's landfill[15], which was being poorly maintained by the company (Mariano, 2000b). Accusations against Triple A for mishandling the landfill were brought before the courts and sanctions were applied (Pizano, 2000).

Due to an absence of a garbage collection, many of the new inhabitants of the sector decided to build informal garbage dumps. In other neighborhoods solid wastes were disposed into the river and onto its banks (Redacción el Heraldo, 2000). In Los Girasoles, most families disposed of their solid waste directly into the *arroyo* Don Juan. In other areas of the southwest, drivers of mule carts collected all kinds of solid and organic waste for a fee, and deposited it in the river and in adjacent lots (Arroyos de Barranquilla, 2014a).

[15] It is important to clarify that the landfill was initially built in the outskirts of the city. A decade later, the rapid growth of the city and forced displacement reduced the distance between the city (southwest area) and the landfill (Pizano, 2000).

4.2 INTERTWINED DISRUPTION

4.2.1 Debts and maintenance

Hundreds of families that were displaced from the rural areas faced serious drainage and garbage collection problems in southwestern Barranquilla, although they often accessed piped water supply services. In the previous chapter we saw how, under the first administration of Mayor Hoyos Montoya (1992-1994), networks began to be extended to these neighborhoods. Afterwards – during the early 2000s - the federal government invested in network extension (Planeacion Nacional, 2008). Despite the increase in coverage, the quality of service was poor due to unexpected cuts, variations in the taste and color of the water, and a lack of pressure. The intermittency of the service led to protests or blockades in the different neighborhoods of the sector. This section will explain how the water crises were triggered by electricity problems. Water cuts were caused by blackouts affecting water pumps and treatment plants.

The blackouts resulted from coordination failures between water and electricity utilities, which were largely related to debts that EPMB had accumulated with the electricity distribution company, Electranta throughout the 1980s (for a recount on the electricity sector in Colombia see table 12). In addition to water treatment chemicals and staff costs, EPMB spent a good part of its resources on electricity to pump water. Pumping stations were necessary due to the topographical conditions of the city, with hills and important differences in altitude between the locations of treatment plants situated near the water intake of the Magdalena River, and some of neighborhoods of the city. Between 1984 and 1988, for example, EPMB's electricity bills represented 16 percent of its total expenditures (Bernal Forero, 1991, p. 34). By the time EPMB's shares were sold to the new company Triple A, it had accumulated a number of unpaid electricity bills. By the end of 1993 the manager of Triple A and the Ministry of Mines and Energy evaluated ways to pay off its debt to the public electricity utility Electranta (Cantillo, 1993c)

Triple A offered to pay in monthly installments allowing it to settle the debt within approximately five years. However, the board of Electranta, composed of representatives of City Council, the mayor and the Chamber of Commerce, rejected the formula and demanded

payment of 100 percent of the debt. They explained that Triple A (and formerly EPMB) had accumulated over COP $3,000M in debt ($6.3M in constant 2016 USD). Electranta, due to its budgetary crisis, was in urgent need of these funds and was not able to make a long-term payment plan for such a large sum. The board also protested about unfulfilled promises to follow similar payment plans, made during the 1980s and early 1990s (Suarez Badillo, 1993).

Triple A, in turn, asked for better tariffs. They argued that, as one of its mayor clients, Electranta should give them special tariffs (a 30 percent discount). Also, they stated that, with the inauguration of new pumping stations, energy consumption would continue to increase. They also promised to pay bills on time, and be "better clients" (Ruiz Alcocer, 1994). In September 1995, Electranta included Triple A in a public list of defaulters and threatened to stop distributing electricity to its buildings. The manager of Triple A Fernandez Malabet, declared that he did not understand Electranta's attitude, because "there shouldn't be any selfishness among public service companies and to the contrary, utilities should all work together to move forward" (Cantillo, 1995b). As he was constantly pressured to pay the debt, manager Fernandez Malabet replied that Triple A did not have to pay on time for a poor quality service:

> I think Electranta's board has poor commercial vision, not realizing that Triple A is one of their best customers (…) we feel mistreated by Electranta, its poor service has affected us, as we see the need to constantly suspend water supply in various sectors of the city due to unexpected energy rationing (Pimienta Medrano, 1995b).

It was during these years that Electranta explained, in different press releases, its inability to continue investing in network maintenance or in network expansion due to their budgetary crisis [16] (Mariano, 1994; Suarez Badillo, 1993; Villarreal Herrera, 1994a). The board expressed the urgent need to invest in maintaining networks to improve service quality. Especially, they needed to replace aging equipment such as underground cables in some sectors of the city and many light poles. They also needed to do maintenance on distribution

[16] In 1995 Electranta published a "list of recommendations for citizens to help with service quality" in the local press. The list advised consumers to "turn off the lights when leaving a room and iron clothes in batches with as many garments as possible per batch. Avoid opening the refrigerator very often, avoid having old appliances, avoid drying clothes in the back of the refrigerator" (Santos Lemus, 1995). By 1996 Electranta also recommended reducing energy consumption by "avoiding the use of air conditioners" (Mariano, 1996e).

circuits and distribution transformers. Tree trimming was also a pressing necessity, as trees were growing near electricity lines posing safety risks and were a cause of electricity outages (Mariano, 1996d, 1996k; Santos Lemus, 1995; Villarreal Herrera, 1994a).

By that time representatives of the community in the southwest of the city protested about the lack of maintenance of electricity infrastructure. In September 1995, for example, Alberto Paz the *personero* (ombudsman) of Barranquilla demanded that Electranta replace a light pole in the *barrio* El Paraíso. This request had been made repeatedly by the community for more than six months, but was left unattended. According to the ombudsman Paz, the pole in question was about to fall since its wood shaft (see Figure iii) was rotten and had been "crumbling and endangering passers-by, a light already came off and fell on a community member, causing her minor injuries" (Sierra, 1995). Similarly, citizens from the *barrio* Ciudad Modesto quarreled about a fallen light pole "the pole, on the ground, is surrounded by several electrical cables that pose a danger to pedestrians" (Redacción el Heraldo, 1996c). Another emergency was registered in the same neighborhood, when a distribution transformer fell to the ground with its respective web of electrical cables. Several blocks were left without electricity and one of the residents was severely burned by the transformer's oil[17] (Arrieta, 1996b).

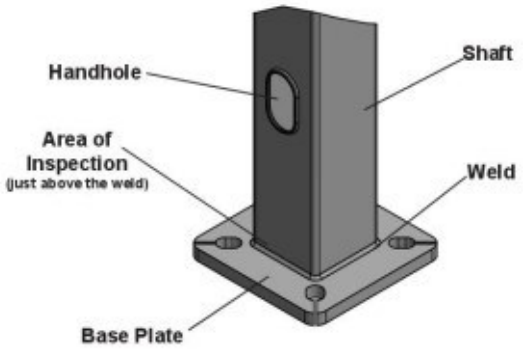


Figure 3 – Standard base of a light pole or distribution transformer

Source: (Thompson, 2006)

[17] Transformer oil is the generic name given to the oil used to insulate and cool electricity distribution transformers. As part of a complete preventive maintenance program, periodic oil analysis will monitor the condition of electricity transformers and detect problems before they become serious (Thompson, 2006).

Figure 4 - Light pole and distribution transformer.

Barranquilla, November 15, 2014.

Figure 5 – Light pole in the city center.

Barranquilla, November 15, 2014.

Figure 6 – Distribution transformer in the city center.

Barranquilla, November 18, 2014.

In 1996, El Heraldo inaugurated a section dedicated to complaints about the poor quality of electricity infrastructure. Regular demands to trim trees near cables, and to replace fallen light poles and distribution transformers were published (Redacción el Heraldo, 1996a; Redacción el Heraldo, 1996d; Redacción el Heraldo, 1996e). In *barrios* La Paz and Carrizal, residents reported 40 deteriorated light poles, as well as missing electricity transformers, and abrupt changes in voltage (Cantillo, 1996f). That same year, El Heraldo published an editorial calling for investment in preventive maintenance: "We must overcome the fragility of our poor electrical grid. The city must take responsibility for the built infrastructure and promote a true culture of preventive maintenance" (Editorial el Heraldo, 1996b).

By late-1994, Electranta had begun its own process of restructuring and there were recurring calls by the central government on its liquidation and to create a new company (Villarreal Herrera, 1994b) In October 1995, the economic crisis of the utility led the municipality to propose the sale of its shares to private investors (Editorial el Heraldo, 1995). The situation

was aggravated in the summer of 1997 by a drought resulting from El Niño[18]. The drought affected dams and, since hydraulic generation has been responsible for most of the electricity consumed in Colombia since the early 1990s, it affected energy prices (see table 12). Electranta, which already had financial problems, failed to fulfill its obligations and in March 1998, the national regulator, Superintendence of Household Public Services SSPD[19], ordered the takeover of their businesses, property and assets (Redacción Caribe, 1998c).

Table 12 - Electricity sector in Colombia

Generation
This activity consists of the transformation of resources such as oil, coal, gas or water into electricity. In the case of Colombia, the two most commonly used resources are gas and water. Thermal generation is achieved through the burning of gas, coal or oil. Such plants declined in Colombia during the 1980s. Currently, this type of production provides only 19 percent of the electricity consumed in the country. The production of electricity from river damming is the most important form of generation in Colombia. Hydraulic generation is responsible for 81 percent of the electricity consumed in the country. The country's largest hydroelectric dams are Guavio (in the department of Cundinamarca), San Carlos and Guatape (both in the department of Antioquia).
Transmission
Once generated, electrical energy must be transported over large distances to consumer centers, concentrated in cities. For this purpose, electric transmission lines (also called high voltage lines) are built.
Distribution
Electricity, transmitted at high voltage, goes to transformation substations that reduce its voltage and distribute it through the distribution network that supplies cities and industrial centers. As it exits the substation, electricity enters the distribution network. Upon arrival at the service location, the electricity is reduced again to lower the voltage. This is done through a distribution transformer: a transformer that provides the final voltage transformation in the electricity distribution system, reducing voltage used in the distribution lines to the level used by the customers. Finally, in residential areas there are earthing systems to ensure the safety of consumers. The earthing system, in combination with protective devices such as fuses and residual current devices, must ultimately ensure that a person will not come into contact with a dangerous electric current.

[18] The El Nino phenomenon, which occurs every three to five years, is caused by warmer water in the eastern Pacific Ocean. As trade winds lessen or reverse their direction, winds from the west push warm surface water to the east in the direction of the continent of South America. In South America, it increases the risk of flooding on the western coast, while increasing the risk of droughts on parts of the eastern coast (See N. Hoyos, Escobar, Restrepo, Arango, & Ortiz, 2013).

[19] Law 142 of 1994 consolidated centralized regulatory authority, while encouraging decentralized management, through the creation of new regulatory agencies. One of them was the Superintendence of Household Public Services (SSPD) created to ensure utility compliance with all relevant regulations. In cases of non-compliance, the SSPD has the authority to intervene and assume the management of the utility, as well as to liquidate it and sell its shares (C. d. Colombia, 1994b).

Commercialization
This is the last stage and consists of the purchase of electricity in the wholesale market and its sale to the final consumers. In Colombia, the Regulatory Commission of Energy and Gas (CREG) regulates tariffs.

Source: Compiled by the author based on interviews with experts in the Colombian electricity sector.[20]

In order to end the serious budgetary crisis of Electranta, in 1998 the SSPD decided to invite private sector investors and created a new company called Electricaribe. Sixty-five percent of the utility's shares were bought by a consortium formed between Houston Industries and Electricidad de Caracas and the remaining 35 percent were kept by the municipality (Redacción Caribe, 1998b). The debt accumulated by Triple A was forgiven (Redacción Caribe 1998a). Electricaribe, however, reported major economic losses in 1999. The company argued that the bad performance had to do with high labor costs inherited from former collective labor agreements, the high impact of pension liabilities, and decreasing energy demand as a result of a national economic recession (Mariano, 2000a). Given the poor performance, the consortium sold its shares to the Spanish company Gas Natural Fenosa in 2000[21] for half the purchase price. Gas Natural Fenosa also bought some of the municipality's shares and became the private operator of the utility and its major shareholder – with 84 percent of the shares (Mariano, 2000a).

During its first year as the operator of Electricaribe, Gas Natural Fenosa reduced the company's personnel and launched a number of innovations which included: "a new system of energy distribution management with GPS and GIS technology that will allow us to quickly calculate consumption" (Figueroa, 2000). Innovations also included a new call center to report damages and problems with the service and educational campaigns "to train community leaders on the rational use of energy, on meter reading, and on the basic aspects

[20] Personal interviews with Hilberto Diaz, mechanical engineer, former manager of Electranta, dated 17 September 2013; Gustavo Cotes, electrical engineer, former manager of Electranta & former director of the regional office of SSPD, dated 5 November 2013; Eduardo Melo, electrical engineer, former manager of Electranta & former manager of the National Public Housing Office, dated 17 September 2013; Oscar Acero, industrial engineer, former commercial manager of Electranta, dated 5 November 2013; and Rodolfo Acosta, electrical engineer, former planning manager of Electranta, dated 17 September 2013.

[21] Currently, Gas Natural Fenosa is the third largest electricity company in Spain. At the international level, it has business in eleven countries in the world, seven in Latin America: Panama, Guatemala, the Dominican Republic, Costa Rica, Nicaragua, Mexico and Colombia (Fenosa, 2016).

of billed concepts, and on rights and responsibilities of the clients" (Figueroa, 2000). Subsequently, the company also invested in centralizing and improving its billing systems and in high technology to prevent theft and fraud in the use of energy services. Through more than 100 networked screens, the utility aimed to map each one of the 6,500 distribution transformers in the city and to monitor exact consumptions: "this way frauds will be detected by the system automatically as the system will alert us about inconsistencies between energy sent or distributed and energy billed during the month" (De la Cruz, 2002).

According to its manager in Barranquilla, Betty Yadira García, as an operator and major shareholder, Electricaribe privileged investments in the company's commercial management. Its main investments during the 2002-2013 period were in office buildings, billing systems, administrative staff, advertising campaigns, and the installation of new and better meters[22].

Despite the sale of the utility the law determined that all funding for the development (and extension) of new electricity networks was still the responsibility of the government at the local, departmental and national scales (Congreso de Colombia, 1994a). However, there were few state investments in the sector during this period. In the 1970s and 1980s there was an intense process of construction of large hydroelectric electricity plants and the result of this policy was the steady growth of the external debt (Observatorio de Multinacionales en América Latina, 2008). Although electricity generation improved during the 1980s –the extension of electricity reached 80 percent of the population in the 1989 -, the enormous debt of the electricity sector dragged on throughout the 1990s. This prevented the state from investing in improving transmission and distribution networks, especially in the Caribbean cities (Observatorio de Multinacionales en América Latina, 2008).

In the period between 2000 and 2010, the central government made successive promises to extend networks to the southwest sector of the city (Distrito de Barranquilla, 2000; Observatorio de Multinacionales en América Latina, 2008; Defensoría del Pueblo, 2004). However, the investments that were made only covered the extension of electricity infrastructure to 57 percent of the sector. That is, of the 60 neighborhoods that made up the

[22]Personal interview, dated 18 October 2013.

sector in 2013, 26 did not have formal electrical interconnection networks (*Congressional debate: Public services in the Caribbean*, 2013).

But if the extension of new networks was the responsibility of the state, the maintenance and replacement of existing infrastructure was the responsibility of Electricaribe. While Manager García sustained that the company was doing regular preventive maintenance and replacing aging infrastructure, citizen movements continued to demand better infrastructure all throughout the 2000s (Observatorio de Multinacionales en América Latina, 2008) and the local government protested systematically about Electricaribe's lack of investment in maintenance. Alejandro Char Chaljub, mayor from 2008 to 2011 and head of Cambio Radical, the party that held power in the city from 2011-2015, accused the company of causing distress to the city due to the "repeated breakdowns in the very old distribution transformers they still have in service" (Benjumea Brito, 2014).

According to an investigation made by Senator Jorge Robledo, from the leftist party Polo Democrático, and presented in a Congressional debate over public services in the department of Atlántico, maintenance and renewal of electricity infrastructure have been deficient in recent years. In the period from 2009-2013, Electricaribe invested in the maintenance of 536 circuits, out of the existing 786. That is, they did not invest in 32 percent of the city's energy network (*Congressional debate: Public services in the Caribbean*, 2013).

4.2.2 *Arroyo*s meet electricity

As discussed in the previous sections, toward the end of the 1990s the city of Barranquilla experienced rapid and uneven growth as a result of the armed conflict. In the southwest of the city, drainage problems worsened. With respect to electricity. The company's financial problems meant that infrastructure was not maintained. As a result, drainage problems led to electricity outages during the rainy season.

Flash floods affected poorly maintained electricity infrastructure in different ways. First, the constant flooding of some streets affected the light poles and distribution transformers. By rusting, corroding, rotting, and denting wood and metal shafts, the *arroyos* compromised

their structural integrity. During the late 1990s mayors George González and Hoyos Montoya warned the rusting of metal poles and rotting of wooden ones as a result of persisting flooding (Arrieta, 1996d; Cuesta, 2000). During the same period the president of the city's chamber of commerce, Berrio Mendoza, sustained that any big investments in electricity infrastructure would be in vain if the flooding was not addressed: "Working on a storm sewer is necessary before we can think about improving the electrical infrastructure or the telephone system" (Campbell, 1995).

In addition to flooding, flash floods cause destruction due to the speed at which the water flows. *Arroyos* emerged violently —washing away already shaky light poles and distribution transformers. Throughout the rainy season of 1996 much of the electricity outages in the city's southwest were due to *arroyos* clashing and overthrowing light poles and distribution transformers (Mariano, 1996h). One of the main crises in southwestern Barranquilla occurred in 2002 in *barrios* Las Malvinas, Los Rosales, and El Bosque, where violent *arroyos* following a heavy downpour knocked over ten light poles. This caused circuits to malfunction, causing electrical overflow. As a result, the neighborhoods affected were left without electricity for two days (Erazo, 2002).

Similar episodes were registered throughout the city's southwestern neighborhoods during the raining seasons from 2003 to 2010[23]. Specifically, emergency episodes unleashed by flash flooding and prolonged blackouts were registered in 2003 in the southwestern *barrios* Las Malvinas and El Bosque (Fontalvo, 2003); during 2006 in the entire southwestern sector when *arroyo* La Felicidad knocked over distribution transformers (Montalvo, 2006), and during 2010 when flashfloods affected *barrios* Loma Fresca, El Cármen, and El Lucero (Caracol Radio, 2010).

According to a longtime manager of Electricaribe, Betty Yadira García, the utility follows a standard procedure every time flashfloods cause blackouts. Firstly they make a press release stating that Electricaribe does not bear any responsibility for the malfunction, then they assess the damages and proceed to repair.

[23] See (Arroyos de Barranquilla, 2014a; Arroyos de Barranquilla, 2014b; Redacción Caribe, 2014; Cuesta, 2000; López, 2002; Redacción Caribe, 2014).

> Every time we have electricity emergencies due to flooding, Electricaribe emits a press release explaining that the blackouts happened due to the *arroyo*s and promises to restore service as soon as possible. We always double our operation, managing to restore service in the different areas of the south[24].

Trees also play a role in these episodes. As mentioned, both citizens and Electranta emphasized the importance of trimming branches near electricity infrastructure. Due to the delays in maintenance, trees continued to graze the infrastructure in many places. During the rainy season, the speed of the *arroyos* knocked over some trees and branches. These, in turn, knocked over lines and light poles. As explained by the manager of Electricaribe:

> The *arroyos* can knock down trees that fall onto electricity lines. High voltage cables then make contact with each other or with the branches of the trees. In some cases, this causes light poles and distribution transformers to collapse as well. Sometimes the cables also break and we have short-circuits[25].

It is important to note that not all of the city's electricity infrastructure is above ground. Some of its oldest transformers and substation equipment are underground. This was also affected by the *arroyos*, which can go underground soaking parts of the city's underground electricity grid including cables, transformers, and switches. This underground flooding can cause blackouts: during the rainy season of 2000, the underground flooding of the substation "20 de Julio", situated near an *arroyo* area in the southwest of the city, left both the southwest and southeast sectors of the city without electricity. According to a statement by Electricaribe after the emergency: "It is normal that circuits will be out of service following the first rains of the season, given the intensity with which the rain fell" (Cuesta, 2000). The same thing happened in 2014, when flooding at the same substation left 40 neighborhoods of Barranquilla's south without electricity for 70 hours, causing public order disturbances such as road blockages and protests in the streets (Redacción El Heraldo 2015a). During some flooding events, Electricaribe decided to preventively shutdown higher voltage levels in the Cordialidad substation located in the heart of the southwest sector [26]. This policy leaves

[24] Personal interview, dated 18 October 2013.
[25] Personal interview with Betty Yadira García, Manager of Electricaribe Barranquilla, dated 18 October 2013.
[26] Normally, substations' voltage is shutdown only during maintenance (Thompson, 2006).

the surrounding southwestern neighborhoods without electricity during heavy storms (Redacción Caribe 2014).

But what happened after each one of these flashflood-induced blackouts? According to the manager of Electricaribe, part of the problem with these blackouts results from obstacles faced in attempting to repair infrastructure. Specifically, repair crews cannot approach electricity infrastructure while it is raining and are blocked from reaching certain parts of the city by flash floods and traffic chaos:

> First, during the rains we cannot touch the electric infrastructure. For security reasons, for safety, no one can manipulate the network while it is raining. Even during drizzle. Networks become more vulnerable, everything is a conductor of electricity and puts the safety of workers at risk. We cannot conduct repairs when it is raining. Second, traffic can stop our repair crews. After a heavy rain, which is frequent in this region, mobility throughout the city is interrupted until the *arroyos* cease. The *arroyos* make us wait. We are not able to carry out repairs until the *arroyos* are fully drained even if the rain has already ceased[27].

When they are finally able to work, Electricaribe's crews begin to shutdown voltage in flooded substations and, with the support of motor pumps, they remove accumulated water (Redacción Caribe 2014). Some of the fallen poles are repaired and replaced. Distribution transformers can be replaced if they are beyond repair, or dried out and put back in place (Redacción Caribe 2014). However, complaints about extreme delays and oversights in the repair of damaged electricity infrastructure are constant. Since 2010, groups such as *Fuera Electricaribe!* (Get out Electricaribe!) and *No más Electricaribe!* (no more Electricaribe!), have taken to the streets to protest during outages (SSPD, 2015). Some have also taken to social media to voice their complaints and register protest[28]:

[27] Personal interview with Betty Yadira García, Manager of Electricaribe Barranquilla, dated 19 November 2013.

[28] See Facebook group "Electricaribe the worst company of Colombia" (https://www.facebook.com/ElectricaribeLaPeorEmpresaDeColombia/); Twitter accounts "Fuera Electricaribe" https://twitter.com/f_electricaribe; and "No más Electricaribe" https://twitter.com/NoElectricarib

> Without TV, air conditioning, telephones or a place to charge them, no fridge for more than 24 hours, thanks @ElectricaribeSA for returning us to the Stone Age (Fuera Electricaribe, twitter feed, May 14, 2014).

> The electricity service failed again yesterday after it rained in Barranquilla. Yesterday's rain caused blackouts in three *barrios* in Barranquilla. Thus, the ghost of a crisis that has been affecting more than 2.4 million people in the southwestern sector of the city came back to haunt us (Electricaribe la Peor Empresa de Colombia, Facebook group post, April 17, 2016).

In 2014, the System Average Interruption Duration Index (SAIDI), a reliability indicator used by electricity utilities to measure the average outage duration for each customer served, was 83.5 hours for Electricaribe in Barranquilla (SSPD, 2015). This was the highest in Colombia, with the national SAIDI being only 17.27 hours, according to a study commissioned by the CREG (Tertulia El Heraldo, 2014). The SAIDI index in Barranquilla was 74.6 hours in 2013, 76.9 hours in 2012, and 84.4 hours in 2011 (Electricaribe, 2013, 2015).

4.2.3 Pumps without electricity

These prolonged blackouts trigger water cuts for different reasons. First, they cause water cuts because of the lack of electricity in the pumping and re-pumping stations. As the city's topography is characterized by the presence of multiple hills, one of the most recurrent crises is caused by shorts in the circuits bringing electricity to the pumping stations in the south of the city, responsible for water distribution from the "20 de Julio" storage tank to the neighbors of the southwest sector (Betin Freu, 1995a; Mariano, 1992e, 1996j). Despite the connection between blackouts and water cuts, water cuts usually last longer being resolved only hours after the electricity returns. This is due to the time required to restart pumping processes. Also, according to the staff technicians of Triple A, "sometimes energy does not arrive with the necessary voltage (and stability), and this entails extra delays for the water utility"[29].

[29] Personal interview with Julia Serrano, Manager in charge Triple A, dated 25 October 2013.

Second, if the damage to the electricity grid is serious and prolonged, it can affect treatment plant No. 5, which treats water for distribution to the south of the city. If the treatment station is paralyzed due to a blackout, it requires time to begin operating again:

> Approximately three hours are required to start the treatment equipment after an electricity failure in the plant. First, we must review electric stability to evaluate any possible drops in voltage. Afterwards, we start water pressure pumps. At the same time, we turn on the dosage pumps to start treating raw water. If plant No. 5 is affected, neighborhoods in the south will run out of water (Mariano, 1996n).

After a blackout in 2014, for example, Triple A's communication office explained that it takes longer to reestablish the functioning of water infrastructure after a blackout. They reasoned that repairs must be done gradually in a treatment plant, as pressure must go back to normal before water can be pumped to the various sectors of the city:

> Before the impatience of many users who demand promptness in the service, we must inform them that it is not as simple as with the energy service. Once this service is restored, it is necessary to wait for the water to flow through the pipes so that tanks, such as that of 20 de Julio, are filled (Redacción El Heraldo, 2014a).

During late 1999, while Electranta was being seized by the SSPD, constant electricity outages in plant No. 5 caused a 72-hour water cut in the southwest sector of Barranquilla. Although Triple A tried to re-establish service, more electricity failures occurred: during a single night four blackouts were reported in the water treatment plant. When the electricity was restored, voltage was still low preventing the resumption of water pumping (Mariano, 1999). At the time, Triple A Manager, Fernández Malabet, declared that Electranta was solely responsible for the water supply crisis (Pimienta Medrano, 1999).

After the sale of the Electranta to Gas Natural Fenosa, the relations between the water and electricity utilities improved considerably. In 2006 Aguas de Barcelona bought out other investors and managed to secure 81 percent of Triple A shares. After that both Electricaribe

and Triple A were mostly owned by Spanish corporations[30] (Mouthón, 2017). In the context of electricity failures that entail water cuts, they sometimes made collective statements promising timely solutions. According to Electricaribe's general manager[31], both companies try to coordinate their communication strategies with the respect to blackouts and water cuts in the southwest sector. Sometimes, Triple A and Electricaribe jointly remind the community that flooding triggers blackouts, that the drainage infrastructure is not the responsibility of the water company, since it depends entirely on the office of urban planning, headed by the local government[32].

Some electricity outages have triggered associated disruptions in other services. In addition to electricity and water supply, sewerage evacuation has also been compromised during these outages. Sewage vacuum pumps, used to move sewer to the discharge point in the Magdalena River, can be left without electricity for prolonged periods of time. In 1998, for example, successive electrical failures left all Triple A's equipment in the southern part of the city without electricity. As a result, both water supply and sewer services were suspended in some neighborhoods (Redacción Caribe, 1998c). After a similar incident, waste waters started flowing through El Recreo sewer line (located in *barrio* El Recreo). Overflowing sewerage also cracked the pavement of the nearby streets (Posteraro, 1999). Sewerage problems were frequent during the rainy season throughout the study period. In 2005, a prolonged electricity outage in sewage plant No. 5 and its surrounding sewage vacuum pumps caused a six-day water supply and sanitation crisis in most neighborhoods of the southwestern sector. The emergency resulted in health epidemics that mainly affected the infant population (Observatorio de Multinacionales en América Latina 2008).

Malfunctions entailing flooding, electricity outages, and water cuts likewise unleashed problems in other services such as solid waste collection and networked gas supply:

> Yesterday, we witnessed the strongest downpour so far this year. Electricity and telephone cables were damaged in the storm, causing total chaos. In addition to *arroyos*

[30] By 2014, Aguas de Barcelona, a Spanish company dedicated to services, distribution or treatment of water, owned 81 percent of Triple A's shares and Gas Natural Fenosa, a Spanish natural gas company, owned 83 percent of Electricaribe's shares (Mouthón, 2017).
[31] Personal interview, dated 18 October 2013.
[32] Personal interview with Julia Serrano, Manager in charge Triple A, dated 25 October 2013.

> in the southwest sector, a sewer overflowed. Most houses in *barrio*s of El Bosque and La Cordialidad were deprived of water supply, gas and electricity. In La Cordialidad, the pavement slabs were lifted out of place by the *arroyos*. Gathered at the Don Bosco Community Center, residents called on authorities to pay greater attention to problems that arise in their neighborhoods before more disasters occur (Arrieta & Villarreal 1996).

During these episodes the telephone lines were also damaged by flash floods, and public transportation collapsed:

> Due to continuous blackouts and inefficient energy services, worsened by the rains, southwestern Barranquilla is in widespread chaos. The water was cut because there is no electricity. Phones and computers don't work. There were flash floods and now there is water everywhere. The outdated electricity networks have been drowned in endless downpours. And as if that were not enough, some neighborhoods appear to have been bombed. Rains have scattered solid waste along the streets. Some people throw trash into the *arroyos*, taking advantage of the flash floods to dispose of large items, such as mattresses, old furniture and tree branches (Mariano, 2005).

4.3 SUBNORMAL BARRANQUILLA

4.3.1 Do it yourself

The first references to the category of *barrios subnormales* (subnormal neighborhoods) can be traced back to the early 1990s[33]. By 1992 the local government, under the administration of Mayor Hoyos Montoya, began extending water and sanitation networks to the southwestern sector of the city. However, not all the neighborhoods belonging to the sector benefited from the investments. The newest and lowest income neighborhoods were not

[33] Since the first waves of urbanization in the 1920s, Colombian state institutions have classified informal neighborhoods, without official ownership papers, with different names: *barrios piratas (*pirate neighborhoods), *tugurios* (slums), *barriadas* (big slum), informal neighborhoods, illegal neighborhoods, *invasions (*invasions), and risk zones. For a story of informal settlements in Colombia see (Torres, 2009).

included in the network extension plans and were categorized by the municipal government as "subnormal neighborhoods"[34].

Residents of these neighborhoods were invited by the municipality and Triple A to install their own water and sanitation infrastructure. Manager Fernández Malabet explained that, with the "Community Development Project", the utility had the objective of improving life in the southwest by generating employment and improving public services:

> We will give users in subnormal southwestern neighborhoods the possibility of participating in the construction, development and installation of their own water and sewer lines. This infrastructure will improve their living conditions. In order to participate in the project they must organize within their community action boards, JACs, and contact Triple A for guidance and materials. What we want is to decentralize the process of network extension. The utility will work alongside the community, by contracting leaders, guiding them, and helping them solve their problems. The community provides the labor to build the networks and the company provides the materials (Rosales González, 1993b).

As Triple A was not providing the garbage collection service in the sector they made a call to community members who were owners of animal-drawn vehicles (wagons pulled by donkeys known as *zorras)* to collect solid waste and carry it to stationary storage units. In return, they received a payment according to the weight of waste collected (Rosales González, 1993c). JACs were also called to organize women's cleaning crews known as *escobitas* (little brooms). These were charged with sweeping the streets and collecting street trash. These crews would also be trained to act as health brigades, helping to prevent water and vector borne diseases (Rosales González, 1993c). Once the services started being provided, JACs were asked to work in the issuing of water bills and the collection of payment (Montaño, 1996; Rosales González, 1993b).

While water networks were being built, under the supervision of Triple A, the southwest continued to grow as a result of forced displacement. As mentioned above, twenty-six

[34] Although the municipality and Triple A begin to use the category of subnormal in the 1990s, there was not an official list of these neighborhoods. Rather, as new neighborhoods were founded, they were classified as subnormal (Rosales González, 1993b, 1993c).

neighborhoods in the sector were left outside of the electricity grid. These neighborhoods built their own improvised connections to the electricity network. In 2000, the city received 16,612 displaced people, the largest number in its history. This wave of forced migration coincided with the purchase of the energy company Electricaribe by the Spanish multinational Gas Natural Fenosa. This yielded a new resolution to regulate informal energy consumption in Barranquilla's southwest sector following negotiations between the new owners and the national government (Observatorio de Multinacionales en América Latina 2008).

Following, Resolution No. 120 of the Regulatory Commission for Energy and Gas (CREG), subnormal neighborhoods were no longer those without water connections. Instead, the CREG resolution No. 120 defined *barrios subnormales* as "human settlements located in the outskirts of municipalities, outside of the interconnected system, which obtain electricity by connecting, without any authorization, to the grid" (Ministerio de Energía, 2001). The resolution also established that the mayor would be responsible for classifying neighborhoods as subnormal. It also authorized utilities to calculate the approximate consumption of households in these neighborhoods and to charge them for electricity. Theoretically, CREG Resolution 120 was going to be temporary, while the local government worked on the "normalization" of the 26 neighborhoods – i.e. their inclusion in the electricity network (Ministerio de Energía, 2001).

After the issuing of CREG Resolution 120, the 26 southwestern neighborhoods were re-classified by the municipal government as subnormal. Electricaribe then installed a distribution transformer equipped with a consumption meter for each of the neighborhoods (see Table 13). The local JACs were expected to make arrangements for the installation of the distribution network to enable individual connections. Every month the company issued a single bill, charging the entire neighborhood for the total amount of energy drawn from the distribution transformer during the period. This cost was then divided per household through a so-called "cargo census", that is an estimate of household consumption based on the number of appliances owned (refrigerator, stereos, televisions, fans, light bulbs, etc.). Electricaribe was not in charge of the cargo census, the distribution of bills, nor rate collection. Instead, a delegate, appointed by the JAC, took on these activities. As

compensation, the delegate received 14 percent of the total amount that he/she managed to collect via the cargo census (Defensoría del Pueblo, 2004).

Table 13 - Subnormal Neighborhoods in Southwest sector Barranquilla

Subnormal Neighborhoods in Southwest sector Barranquilla 2000 - 2014[35]
El Pueblo
La Cuchilla Villate
La Sierra
La Ceiba
El Bosque
El Valle
Carrizal
La Pradera
Los Olivos
Por Fin
La Paz
Me quejo
La Manga
7 de Agosto
Evaristo Sourdis
Lipaya
Santo Domingo
Carlos Meisel
Nueva Colombia
La Esmeralda
Ciudad Modesto
Santa María
California
San Pedro
Cordialidad
El Edén 2000

Source: Compiled by the author based on (Distrito de Barranquilla, 2000; Defensoría del Pueblo, 2004)

[35] Information to calculate the number of residents or indicators (NIB, poverty line) is not available at the *barrio* scale of disaggregation in Barranquilla. For the challenges of working with Colombian official statistic data in the *barrio* scale, see Cepeda Emiliani (2011).

Although Resolution 120 was meant to be temporary it became permanent as the municipal government failed to install an adequate distribution network. In 2003, the National Congress approved Law 812, proposed by President Álvaro Uribe Vélez. It created a special subsidy called the Social Energy Fund (FOES). The FOES was intended to cover part of the cost of the energy consumed in subnormal neighborhoods. Specifically, it proposed the financing of 18 percent of each neighborhood's electricity bill. Law 812 also approved the continuity of the community distribution transformers and the single bill (and cargo census) methodology (Congreso de Colombia, 2003). Months after the law was issued, Gas Natural Fenosa created the company *Energía Social, ES* (Social energy), to sell electricity in the subnormal neighborhoods of the Caribbean region. As a result, Electricaribe's clients are now households from middle and upper classes, while the population with the least resources and subnormal connections are clients of Energía Social (Observatorio de Multinacionales en América Latina, 2008).

Law 812 simply legitimized the way Electricaribe was already managing electricity in "subnormal" neighborhoods. That is to say, Energía Social continued installing distribution transformers. They then divided this community consumption by the number of households in the neighborhood, taking into account the cargo census. The only novelty introduced by the law was that new subsidies would be transferred directly to Energía Social (Congreso de Colombia, 2003). Although there was a tacit agreement between the utility and the JACs, none of the community members working on electricity distribution and billing had labor contracts or formal agreements with Energía Social[36]. The utility had very few staff members and relied heavily on subcontractors (Defensoría del Pueblo, 2004).

In 2005, the situation of the subnormal neighborhoods, which were accumulating debts to Energía Social despite low quality service, resulted in protests (Urrutia, 2005). The National Ombudsman issued a report alerting that "the situation in subnormal neighborhoods due to the effects of the armed conflict is calling for concrete actions to extend networks"

[36] In general, Gas Natural Fenosa reduced the number of staff in both Electricaribe and Energía Social. According to the Observatory of Multinational Companies in Latin America (2008), Electricaribe's staff has decreased considerably in recent years - in 2006 a retirement plan was approved for 673 workers - but the vacant posts were never filled. Instead, the company subcontracted private contractors, cooperatives, small and medium-sized enterprises. During my visits to Energía Social, I corroborated that all of the tasks that involve direct contact with the population - such as bill distribution and collection, meter reading, disconnection and reconnection works, and reviewing and maintenance of equipment and networks - are subcontracted.

(Defensoría del Pueblo, 2004). The government of President Uribe Velez responded by creating the Program for the Standardization of Electrical Networks (PRONE). The program was set up with the objective of building adequate electricity grids in subnormal neighborhoods, and the budget for its execution would come entirely from the central government (Congreso de Colombia, 2006). Although it was intended to be a national program, the Caribbean region has received more than 90 percent of the funds from PRONE since 2006. Yet, the installation of new networks has been very limited: as of 2008, networks had been installed in only 9 percent of subnormal neighborhoods (Observatorio de Multinacionales en América Latina, 2008).

The situation of subnormal neighborhoods did not improve in the following years. According to reports presented to the National Congress in November 2013, 92 percent of the subnormal neighborhoods registered in the country were concentrated in the cities of Caribbean coast. The reports also stated that the region had "the worst energy services in the country" due to the frequency and duration of electricity outages. This situation is particularly difficult in the dry, high-temperature tropical climate of Caribbean cities, with an average temperature of 27.4 ° C. This makes the problems of refrigeration, food preservation and ventilation acute (*Congressional debate: Public services in the Caribbean*, 2013).

These "subnormal" connections built by the communities are inadequate and tend to breakdown during the rainy season. The city's electricity grid consequently differs across the city's neighborhoods. While a "normal" neighborhood has transmission grids linked in a trunk and branch structure, where electricity from a large supply radiates out into progressively lower voltage lines until it reaches homes and businesses (see Figure vii), a subnormal one has disorganized lines, described by the press and the communities as *telarañas* (spider webs) or *marañas* (entanglements) (see Figures viii and ix). In order to obtain electricity, subnormal communities have used all the materials available to them to connect to Energía Social's transformers. Alfredo Correa De Andreis, an academic and activist who had worked with displaced communities, described the process:

> In terms of providing electricity services, these populations were defined by the multinational (Gas Natural Fenosa) as subnormal. Informal electricity connections are a

reflection of the difficult social situation of neighborhoods formed by communities of displaced persons. The displaced communities come from rural areas and have had to leave their places of origin due, fundamentally, to the armed conflict. The main destination of the victims of forced displacement in the Colombian Caribbean has usually been Barranquilla, the departmental capital, since in the periphery of this city they are more likely to find a means of subsistence and can most easily remain invisible to avoid new persecutions from the armed actors who caused their displacement in the first place (Correa De Andreis, 2005).

Figure 7 –Electricity distribution grid in northern Barranquilla.

November 4, 2014.

Figure 8 – Electricity distribution grid in subnormal Barranquilla. Detail.

***Barrio* Evaristo Sourdis, November 6, 2014.**

Figure 9 – Electricity distribution grid in subnormal Barranquilla. Detail.

***Barrio* Evaristo Sourdis, November 6, 2014.**

When asked about the management of the subnormal neighborhoods, Electricaribe's manager explained the company's position. She emphasized the fact that the company could guarantee only a minimum of service quality, due to the absence of adequate distribution infrastructure:

> Electrical subnormality occurs due to the complete absence of networks. In these sectors, the energy is commercialized through a subsidiary company to Electricaribe, called Energía Social. This company is in charge of billing, measuring consumption, and guarantying certain minimum standards of quality. But we cannot forget that subnormality means total absence of appropriate networks[37].

For his part, Everth Santos Romero, regional Superintendent of public services, explained some of the ways in which the inhabitants of subnormal neighborhoods have historically managed to connect to the distribution transformers of Social Energy:

> Sometimes people organize themselves to weave nets, but they usually hire someone. There are men who know how to do this, the *marañeros* (entanglers), and they receive payments collected among the block. During election time, politicians who want votes, or neighborhood leaders who want to venture into politics, finance the construction of networks by paying for both the materials and the work of the *marañeros*[38].

Another description of these networks and the way that electrical subnormality works was given by councilor Alfredo Varela, of the Party Cambio Radical, the center right party which has held the majorities in the Council as well as the mayoral office since 2008:

> I understand that in practice subnormality works like this: what people do is connect to other networks or distribution transformers close to their homes. They look for some way to connect to the grid, in a very handmade, very rustic way. I understand that Electricaribe, through Social Energy, which is a mini-company that they have to cater to subnormal neighborhoods, does the billing by dividing the total consumption read in the transformer's meter by the total households who live around it[39].

But not all the official versions of the subnormality are uncritical of the category and how which Energía Social uses it in service provision. One of the former directors of the regional SSPD underscored the difference between providing a public service and conducting a profitable business, as well as the lack of investment in subnormal neighborhoods, as the

[37] Personal interview with Betty Yadira García, Manager of Electricaribe Barranquilla, dated 18 October 2013.
[38] Personal interview, dated 5 November 2013.
[39] Personal interview, dated 18 September 2014.

company has no obligation to invest in new networks and the central government invests mainly in subsidies for consumption. He stated:

> Are they doing business or providing a public service? What about people's health? For Energía Social this is purely business. I cannot deny that the service has improved a lot, but it has only improved for those who pay. The service has improved a lot but only here, you see, in the north of the city, in these upper class neighborhoods. Energía Social is fully supported by the government. Electricaribe does not invest much in repair or maintenance activities, nor in replacing very old transformers. It is just a business for them[40].

Similarly, a former manager of the public utility Electranta explained the economic advantages that led Electricaribe to create a separate company to serve unprivileged neighborhoods, separating the profitable clients from the ones that could not afford their tariffs.

> I see it this way: when one goes to buy a chicken there are two possibilities. One can buy the whole chicken, with bones, or a boneless chicken. The latter one is more expensive. Then, with Electranta, the government sold the whole chicken. Then Electricaribe took out the bones and called it Energía Social. Since this utility is poor and needy, it does not work well. Thus, the state has to subsidize it entirely[41].

Such descriptions of the Energía Social's services highlight the poor state of the distribution networks. Arcadio, a JAC leader in subnormal *barrio* Los Olivos, explains that the main problem in these neighborhoods is that the constant damages and cuts in the service fall on the community because, under the figure of subnormality, the company has no responsibility for the provision of the service:

> Energía Social is never held accountable. Every time there's a problem they just answer that their responsibility ends at the distribution transformer. From then on it is the responsibility of the people of the neighborhood. They do not care if people get connected. They do not care about how they get connected. It does not matter that they

[40] Personal interview with Gustavo Cotes, former manager of Electranta & former director of the regional office of SSP, dated 17 September 2013.
[41] Personal interview with Hilberto Diaz, former manager of Electranta, dated 17 September 2013.

> are connected with wires, clothing hangers, phone cables, and all kinds of craft cables to bring energy to their homes. None of this matters to the company[42].

The utility's lack of accountability is evident in the aftermath of major blackouts. While Electricaribe agrees to repair the network in some neighborhoods, it excludes all neighborhoods that are classified as subnormal. After successive protests in *barrio* La Pradera, Electricaribe stated in a press release that:

> Since La Pradera, where the protest took place, is classified by the current municipal electricity regulation as an electrically subnormal neighborhood, the responsibility for the maintenance and / or replacement of equipment rests with the community and the state, in accordance with what is established by the law. It is not Electricaribe's responsibility to fix it (Redacción el Heraldo 2014c).

4.3.2 Electricity is dangerous

As mentioned, during the 1990s the water utility, Triple A, provided materials and instructions to the community so that they could build their own water, drainage, and sanitation networks. During the 2000s, the electricity utility, Electricaribe, came up with a similar idea: they installed distribution transformers in the neighborhoods and asked communities to build their own distribution networks. This second process, launched by Electricaribe, was however more problematic. This was due to two key differences with the Triple A program. First, in terms of process, while Triple A provided guidance on how to build networks and was accountable for the repair and maintenance of the local networks, Electricaribe provided no guidance as many networks were already being made in the neighborhoods and was only responsible for installing (and measuring the consumption from) the distribution transformers. It was not accountable for the repair and maintenance of the distribution grids.

[42] Personal interview dated 12 October 2014. The name has been changed.

The second difference has to do with the material characteristics of each infrastructural connection. In the southwest sector, like the water networks, the electricity networks are described as ineffective, porous, fragile, and aesthetically unappealing. In addition, to all of these adjectives, electricity networks are also described as *peligrosas* (dangerous). The dangers associated with electrical connections result from the particular properties of electricity. Unlike water, electricity cannot be seen, nor smelled, nor tasted. Yet, electricity can be touched, felt, and, depending on the level of exposure, it can have harmful effects on human bodies. According to Silvia Macías, an Emergency Room doctor in Barranquilla who has taken care of patients after accidents with electric currant:

> When a body comes into contact with significant current, electricity is driven by the amount of minerals we have in our different tissues. The most affected being the muscles (such as the heart) and also the brain. Muscles suffer something called *rhabdomyolysis,* which, in simple words, is like the disintegration of the muscles. Then, all the toxins that are generated arrive at the kidneys, producing renal failure.
>
> The electrical current enters at a single point of the body. Most times I have seen it enter through the hands, and it always seeks is way out. So, at first glance, you only see two wounds or external burns on the patient, but internally is where the serious damage occurs. Also, if the electric current passes through the heart, it disrupts the entire conductive system of the heart, producing fatal arrhythmias[43].

By 2008, Energía Social estimated that approximately 296,000 families lived in the city's 26 subnormal neighborhoods (Observatorio de Multinacionales en América Latina, 2008). These neighborhoods built electrical networks with sticks, wires and cables using knots as splices. The large number of households connected to a single distribution transformer and the precariousness of these connections regularly induced changes in voltages, which in turn caused the deterioration or breakdown of household appliances. Newspapers registered systematic protests about damaged appliances: speakers, fans, refrigerators, television sets all burned because the electricity went out and returned with very high voltage, on a weekly basis (Observatorio de Multinacionales en América Latina, 2008). An Ombudsman's report to the National Congress sustained that most subnormal neighborhoods experienced these

[43] Personal interview, dated 10 November 2014. The name has been changed.

relatively frequent blackouts on a daily basis, between 7 am and 8 pm (*Congressional debate: Public services in the Caribbean*, 2013).

Most importantly, these electrical connections pose significant danger to the life and health of those living in the neighborhoods. Subnormal connections, for example, seldom include grounding systems (De la Hoz, 2014). In most distribution networks, the main reason for building of grounding systems is consumer safety, specifically their protection from electric shocks. A grounding system, in combination with protective devices such as fuses and residual current devices, ultimately ensures that a person will not come into contact with a harmful level of electric current[44]. Although there are no official statistics on the number of fatalities resulting from household electric shocks, some communities keep their own records. The JAC of *barrio* Siete de Abril registered 25 deaths between 2000 and 2007 due to accidents with electric appliances or by fires unleashed by the explosion of transformers affecting pedestrians[45] (Observatorio de Multinacionales en América Latina, 2008).

Still, most of the accidents registered within the population were with those who build the informal connections (Observatorio de Multinacionales en América Latina, 2008). Men working as network builders, which are known in the city as *marañeros* (entanglers), are not formally trained as electricians. They have learned the craft from relatives and neighbors. They build connections or repair them for a fee of between $20,000 and $30,000 pesos ($7.37 to $11.1 in constant 2016 USD) (Escorcia Lugo, 2015). They are not protected by any labor regulation and receive no benefits. Moreover, they work with inadequate materials (Pimienta Medrano, 2000b). These workers are subject to the most accidents, mostly while conducting repairs because these are typically performed during or after rain given the damage that *arroyos* cause to the electricity poles (Pimienta Medrano, 2000b). Emergency Room doctor Silvia Macías narrates her experience treating injured *marañeros* during the rainy season:

[44] Personal interview with Hilberto Diaz, former manager of Electranta, dated 17 September 2013

[45] Distribution transformers transfer energy between circuits, switching energy from one voltage to another. But when flooded with too much electricity, the sudden surge can cause a transformer explosion. Most of Barranquilla's transformers were imported in the 1950s and '60s, and in the 2000s older transformers had met or were near the end of their operational lives of between thirty to forty years (Personal interview with Hilberto Diaz, former manager of Electranta, 17 September 2013).

> Water is a conductor of electricity and the more minerals the water has, the greater its conductivity[46]. So what I see is that badly managed or unshielded wires, you know, wires without the insulation they usually have, come in contact with rainwater, or with the sweat of the men who are manipulating the network. Water, at the end of the day, is what causes the electric shocks. Contact between electric currents and water is what causes most accidents[47].

The population of *marañeros* that work to install and repair networks consists mainly of young, black men from subnormal neighborhoods (see Figure x). It is worthwhile to note how state regulated self-construction work is gendered. In the case of street cleaners, the gendering of the program is evident from its very name *escobitas* (little female brooms). According to the agreement between Mayor George González and Triple A: "150 women were called to serve as little brooms. These women would receive payments, according to the cleaning needs of their respective "*barrios*" (Cantillo, 1994b). Although not as explicit, there is some agreement on the masculine character of the *marañero* profession. The main national newspaper El Tiempo, for example, described them as: "those intrepid young guys who climb poles using only ropes, in order to fearlessly manipulate the electrical networks" (Escorcia Lugo, 2015).

Figure 10 – *Marañero* (entangler). Detail. *Barrio* Evaristo Sourdis.

[46] Distilled water, the liquid obtained when water is boiled and steam is allowed to condense, void of minerals and impurities is an insulator of electricity. However, plain water, like for example tap water, rain water, and grey water contain different types of dissolved minerals, including calcium, magnesium, iron and sodium. Plain water, therefore, acts as an excellent conductor of electricity (Thompson, 2006).
[47] Personal interview, dated 10 November 2014. The name has been changed.

A former member of Electranta's board explains how subnormality endangers the life of young, black men:

> There is a serious problem with subnormality. There is a fundamental right that is violated and is the right to life because all those building the network can get electrocuted since these networks are simply pieces of wires and cables. These men have no proper tools of any kind and they have no proper training. Then every 15 days, a *negrito* (black boy) in *barrios* like Por Fin or Los Olivos dies. So, what happened? There was a storm, then a blackout, and while the cables were still wet he tried to fix the connection. For me that is a type of violence[48].

In late 2013, Senator Jorge Robledo launched an investigation into electrocutions in subnormal neighborhoods. He later reported that, according to data from Electricaribe, between 2011 and 2013, 91 inhabitants of subnormal neighborhoods died as the result of severe electric shocks. During a Congress session, he and his party Polo Democrático expressed their alarm and indignation and requested the intervention of the central government:

> "We find this information very offensive. How is it possible that the country does not take action to prevent these accidents from happening? I ask myself why the media has ignored these events? Why has not there been a scandal about this? How come these 91 victims do not have mourners at the state level? This people did not die because they were being irresponsible or because they did not know about the dangers of working with electricity. They died because they were poor. What killed them were poverty and the subnormality system that legalizes injustice. This will never happen to a child from a well-off family in Colombia. Because these things do not happen in the upper tiers of the socio-economic stratification of the country" (*Congressional debate: Public services in the Caribbean*, 2013).

Senator Robledo held a meeting with the families of victims of electrocution. He denounced before the Congress how the survivors of these tragedies were re-victimized as, in addition

[48] Personal interview with Gustavo Cotes, former manager of Electranta & former director of the regional office of SSP, dated 19 November 2014.

to losing a loved-one, they were blamed for the accidents. Because they made the decision of tampering with the electricity grid, they were held responsible for their own death (*Congressional debate: Public services in the Caribbean*, 2013). After a *marañero* lost his life in Barrio Nueva Colombia, Energía Social denied any responsibility for the accident:

> They sent a company official who came with a social worker to the neighborhood. They told us that they were very sorry but that we had to understand that this is how life is (Observatorio de Multinacionales en América Latina, 2008).

The neighborhood leaders, organized through the JAC, were frustrated after the Congressional session. They believed that, despite the complaints, Social Energy continued to work as if nothing had happened[49]:

> Arcadio: I cannot believe that nothing has changed. These neighborhoods have suffered various deaths because of that company. And now, carefree, they say that nothing happens in the Caribbean coast. You can see posts that are collapsing, wooden posts that do not reach a thickness of 30 or 40 centimeters, you know, and wooden posts. All poorly maintained poles that have been in service for 25 and 30 years. Pitiful electricity networks, patched, networks of high voltage that handle 13,000 volts. And so they have the nerve to say that the service is optimal. I do not see plans for improvement or for standardization.
>
> Aureliano: Yes, there are a number of wooden posts that we have used for more than 20 years. They say the accidents happen because of our carelessness and because we use excessive energy. No, accidents have happened because of the bad shape of the networks. My family has already lost someone because of an accident. How many men do we have to lose to get a quality service?

Neither the company Energía Social nor the main company Electricaribe assumed any responsibility during the first decade of the 2000s. When asked about the losses in human lives due to the poor state of the network in the southwest, Energía Social's manager explained that when purchasing Electranta in 2000, Gas Natural Fenosa only acquired the normalized networks, that is to say, those that had the optimal technical conditions to

[49] Personal interview, dated 5 December 2014. The names have been changed.

continue in operation. They also argue that they will not invest in expanding infrastructure in the southwest because legally it is not their responsibility and they would not manage to recover the expenditures[50]. Thus, the responsibility for the continued occurrence of accidents such as those cited seems to fall on the inhabitants of the subnormal communities, since according to the CREG regulation No 120 they are the ones in charge of installing, maintaining and repairing distribution infrastructure.

The general manager of Electricaribe also sustains that the public focus should be on the "culture of non-payment" and on the fact that every year 192,000 cases of meter manipulation or of illicit connection to the network are detected. In addition economic damages resultant from energy theft, the service offered to paying customers in normal neighborhoods is adversely affected. When asked about the accidents, the manager sustains that "communities in the region have lost respect for electricity". Although she argues that she does not want to refer to the matter (as electric shock accidents are under judicial investigation), she explains her view on the subject:

> Well there are many sources of information on these accidents. I am going to be specific with an answer: precisely today we are affected because in the southern sector a person trying to manipulate the network suffered an accident after falling of a transformer. Nothing serious happened to him, he just fell from the transformer, but he caused a malfunction in the transformer and left two industries in Barranquilla without energy service. These two industries at the time of this interview are affected.
>
> I believe, after working in Electricaribe for almost 14 years, that here in Barranquilla people have lost respect for energy, they do not fear the electricity grid. In other places in the country, people are very afraid of electricity because they know the consequences that its manipulation can have. But here it is different. Here in Barranquilla they have no respect or fear, and they think they can do anything, manipulating even high voltage. This is why we have so many problems. Like what you just mentioned, these so-called accidents due to electric shocks, but I do not want to discuss it because it is a very delicate subject that has other legal connotations and is being investigated[51].

[50] Personal interview with Julia Serrano, Manager in charge Triple A, dated 25 October 2013.

[51] Personal interview with Betty Yadira García, Manager of Electricaribe Barranquilla, dated 18 November 2013.

With regard to local authorities and regulators, they underscore the fact that no law or regulation is being violated even if the situation in the southwest is of concern. Councilman Alfredo Varela, from the city's ruling party Cambio Radical, in conscious of the fact that "there are many ups and downs in the voltage and that the system generates risks". He explains how his party Cambio Radical has been trying to pressure the company to improve their services:

> There are problems, especially in homes where the connections are handcrafted, that is to say they are not installed by Energía Social but they have been knitted by *marañeros*. These entanglers face big risks and we have had some sad news about accidents and deaths. It is true that we, as the city government, have been slow in building the new infrastructure but, in one way or another the situation also implicates Energía Social, the company that is providing the service. Because you do not provide a service for just to provide it, you should provide a service and try to ensure minimum standards of quality[52].

In turn, the superintendent of the Caribbean office of the SSPD argued that, due to the exceptional character of subnormal connections, their malfunction falls beyond their responsibility:

> In subnormal neighborhoods, without proper connections, the problem of electrocutions is very common. The competence of the Superintendence in these matters is limited to verifying that the company is providing an adequate distribution transformer. But, if we are talking about a subnormal area where an electricity utility is providing a service under special parameters, set not by us but by the national government, where people draw their own energy from a particular point, then indisputably these issues are not within the orbit of the SSPD[53].

[52] Personal interview with Councilman Alfredo Varela, dated November 15 2013.
[53] Personal interview with Everth Santos Romero, superintendent in charge of the Caribbean office of the SSPD, dated November 5 2013.

4.4 DIFFERENT DRAINAGE CHANNELS

Subnormal barrio Evaristo Sourdis was formed in the 1980s. During the late 1990s, while the neighborhood grew in size, the municipality and Triple A hired private contractors to build a storm drain to reduce the *arroyos*. When I visited the neighborhood in November 2014, I observed the drain, which consisted of a concrete channel that passed through the main street. It had been a week without rain and there was little water in the channel (see Figure xi). Inside it, I could see some plastic bags, weeds, and a broken umbrella. Beside the drain, is a *tienda* (local grocery store) followed by a block of houses. When asked about life in proximity of the channel the storeowner, whose family residence was located behind the counter explained:

> Tatiana (me): Have you had any problems with this drainage channel?
>
> Luz: Yes, of course, many times. Every time a hard rain falls, it overflows. Some of the trash from other neighborhoods ends up in the channel. Oh and while it rains nobody comes here to help us with the flooding. If there is significant damage, like if the *arroyo* knocks down a pole or something we will call the utility and wait and wait … But what else are we going to do? We just need to be prepared to try to keep water from getting inside the store[54].

During the same week, I visited the site of another storm drain, this time in the residential neighborhood El Country in the northern sector (see Figure xii). The box culvert, built by a private firm contracted by the municipality and Triple A, consisted of an underground concrete structure that allows water to flow under the neighborhood's main road. The underground channel is equipped with three cells, designed to slow the speed of the rain as it drains down to other neighborhoods. According to the project's head engineer, design variations between drainage infrastructure are the product of the value of a given public procurement contract. Contractors will design infrastructure depending on the value of the contract[55].

[54] Personal interview with Luz, store owner, Evaristo Sourdis, dated 14 November 2014. The name has been changed.
[55] Personal interview with Mauricio Acosta, civil engineer, Barrio El Country, dated 21 November 2014. The name has been changed.

The variations between both storm drains are evidence of unequal state engagement. Even though the local state invested in drainage infrastructure in both *barrio*s – Evaristo Sourdis and Country – these investments were not equivalent and thus entailed two different designs, one more complex and effective than the other. Different infrastructure contributed to the active social construction of marginality in the southwest of the city. Through the creation of "subnormal" as an official category, these differences were normalized and legitimized. José, a member of the Outraged Committee against Energía Social refuses to use the term "subnormal":

> I do not use that word subnormal because it stigmatizes us. Since we are subnormal it is normal that we have no sophisticated infrastructure. Electricaribe is not responsible anymore and Energía Social evades us. In the constant meetings we have had with Energía Social, they have explained to us that there are no plans for improvement. If you had the opportunity to get closer you would see that our light poles are not even wooden, they are pieces of poles added to each other and the community is paying all the cables.
>
> There is an anguish that overwhelms us because we feel forgotten by the municipality, by the department and also by the national administration. Because we feel like we cannot demand our rights because we are not normal. We are subnormal[56].

[56] Personal interview, dated 28 November 2014. The name has been changed.

Figure 11 – Storm drain. Detail.

Barrio Evaristo Sourdis, November 19, 2014.

Figure 12 – Storm drain. Detail.

Barrio El Country, November 21, 2014.

Storm drains and electricity grids are bound up with the social construction of marginality in the city. In the case of electricity, the CREG subnormality regulation No 120 also established tariffs and penalties. As a result, the population living in the 26 subnormal neighborhoods, already struggling to survive in the city, began to accumulate utility debts. *Barrio* La Pradera was built between 1991 and 2000 and has approximately 400 inhabitants. The neighborhood is formed of plots of an average size of 120 m^2 (width 8m, length 15m), which were sold for approximately COP $300,000 each ($835 in constant 2016 USD) (Torres, 2009). Families with an average of five members have made efforts to build their houses using zinc and concrete and to improve the neighborhood's infrastructure with few municipal subsidies. Some households have two generations living in them, or have been divided for rent. The majority of the barrio's male population works in *rebusque that* is receiving daily payments as street vendors, messengers, cobblers, gardeners, and construction workers. Women from the neighborhood work mainly as domestic workers and street vendors (DANE, 2005; Torres, 2009). By 2014, La Pradera's residents owed Energía Social COP $109 million ($55,200 in constant 2016 USD) (Sanchez Cristo, 2014).

Eduardo Melo, a retired member of Electranta's board, who later worked for the National Housing Agency, explained about what he called "the dynamics of *rebusque*".

> I was the manager of the National Housing Agency here in Barranquilla. I knew first-hand about everyday life in the subnormal neighborhoods and also about their dynamics of *rebusque*. For example, people go to the store, they do not buy a bottle of cooking oil: they buy a little bit of cooking oil in a small plastic bag. Another example, there is this store where they sell beauty products. Where they sell perfumes, perfumed soaps and face powder make-up, you know. So, instead of selling an entire bar of soap, they split the bar into four pieces, and then they pack these pieces in cellophane paper. The face powder make-up, they divide it and sell small quantities in plastic bags: $2,000 pesos, $3,000 pesos of face powder make-up. It's because people make the money they need for the day[57].

[57] Personal interview, dated 17 September 2013.

The literal translation of the Spanish word *rebusque* is "rummage". As used in Colombia, it refers to the practice of going to the city and finding short-term jobs that will provide the necessary payment for food and shelter for that day. As communities in subnormal neighborhoods work under unstable conditions and depend on what they find during the day, they do not have a steady monthly income. In barrio Evaristo Sourdis, Faride explained the *rebusque* activities that she performs. She sells ice buckets, as most families in her block do not own a refrigerator and, at the end of each year, she sells the Christmas crafts that she and her daughters make out of recycled Coca-Cola bottles[58].

As a consequence of this, Social Energy had to devise a special strategy to collect payment for electricity bills. This is called the Valera system. A *valera* is a sort of check-book, families can deposit weekly payments to pay their debts. According to Úrsula, one of the company's employees:

> With the *valera* families can pay monthly consumption little by little, in three or four installments. It's the only way these people can pay because most of them do not have a monthly salary. They are people who live by *rebusque*. These people receive a daily payment. Some days there are jobs available, but some days there are not[59].

Although there is an Outraged Committee against Energía Social, representing the community of subnormal neighborhoods, it has few opportunities to file complaints against the utility or the municipality. First, because many of the inhabitants of these neighborhoods do not want to have problems with the government, as communities forcibly displaced from their rural homes want to retain their anonymity in the city. As documented by Correa De Andreis (2005), forced displacement entails losses: communities lose their social networks, the meaning of their historical experience, and the right to have rights. Displaced communities arriving to Barranquilla are stigmatized and viewed with distrust by the rest of the population, who perceive them as strange populations who represent the urbanization of the conflict (Memoria Histórica, 2015; Naranjo, 2004; Unidad de Víctimas, 2016).

[58] Personal interview, dated 14 November 2014. The name has been changed.
[59] Personal interview, dated 20 November 2013. The name has been changed.

Second, even when the community decides to oppose collective billing, they encounter many obstacles. In *barrio* La Cuchilla de Villate, for example, the neighborhood's JAC refused to sign the agreement to install a community electricity meter and mobilized to resist making any bill payments until the utility, the municipality or the city council improved the networks. Months later, Energía Social arrived to install the community electricity meter under the protection of the Police Riot Squad ESMAD (Observatorio de Multinacionales en América Latina, 2008).

4.5 CONCLUSIONS

This chapter studies the nexus between water and electricity infrastructure. To function, water infrastructure depends on a working electrical system. Pumping stations, that assure the flow of drinking water and the removal of sewerage in the steep terrain of Barranquilla, as well as water treatment plants, depend on continuous electric current and consistent voltage. The correct functioning of the electricity infrastructure is, in turn, affected by the malfunction of drainage infrastructure. Specifically, wires, distribution lines and poles, transformers, and electrical plants, are affected by constant flooding and by the speed of *arroyos* or flash-floods. In interrogating the interconnection between water and electricity and between the malfunctioning of different infrastructure networks, this chapter is an enquiry into the asymmetric relations of power in the city. Thus, the chapter analyzes the political and economic life of the city considering the importance of material and immaterial devices and artifacts (Barry, 2010), including the uneven distribution of infrastructure, waters, and repair resources.

As the country's armed conflict spread throughout rural areas and paramilitary groups land-grabbed through massacres in the Caribbean coast, life changed in the cities as well. The war reached the city through the crisis of displacement. Between 1996 and 2014, 117 326 internally displaced people settled in southwestern Barranquilla. Despite its lack of infrastructure, the sector expanded as displaced families, former small land holders or landless peasants, many of which identified as Afrocolombians, built new neighborhoods and sought to make a living in the city.

While forced displacement was taking place and families were settling in the southwest, the electricity utility was going through a crisis. This chapter described the crisis of Electranta and its subsequent sale to Gas Natural Fenosa. In the midst of the crisis there was little investment in extending the electricity network to the new southwestern barrios, and maintenance activities ceased. Poorly maintained electricity infrastructure collapsed in the southwest, where *arroyos* had become more frequent due to the rapid urbanization. Electricity outages in turn, unleashed malfunction episodes leading to localized water and sanitation crises.

In 2000, there were 26 neighborhoods without electricity infrastructure in the southwest. In response, young men from the community, called *marañeros,* built the distribution networks. These neighbors were later officially classified as "subnormal", and although they came up with their own connections, they were asked to pay a bill for the energy they extracted from the transformers. During periods of malfunction, when rain and *arroyos* damaged the electricity networks, *marañeros* were constantly at risk of accidental electrocution. Despite the protests of the community, neither the central government, the municipality, nor the utilities have been held accountable – either for the accidents or for the constant malfunction. This is because both, accidents and periods of malfunction occur within the regulatory framework of the state.

This chapter thus shows how water and electricity infrastructure – and its absence – is intertwined at multiple scales. Their entwined story includes the work of informal repair, unruly water flows, electricity currents, and the vulnerability of particular communities. Delving into how these intersections are produced, the chapter leads to two conclusions. The first one, is related to the ways in which infrastructure contributes to the configuration of the identities of some neighborhoods and communities (Anand, 2012, 2017b; Kooy & Bakker, 2008; Von Schnitzler, 2017). In the southwest sector of Barranquilla deficiencies in garbage collection, electricity connections, and storm drainage delineated racialized and gendered identities based on unequal power relations.

Technologies of scarcity such as self-built electric grid, communal metering, and the *escobitas* solid waste collection program, have been implemented in a context of *rebusque*, responding to the challenges faced in the absence of formal employment (Von Schnitzler,

2017). The street cleaning program *escobitas,* which specifically targeted women from the southwest sector built on imaginaries of lower income women as domestic workers, working in wealthier neighborhoods of the city. In turn, the *marañero* job came to be performed mainly by young Afrocolombian men. In both cases unequal social relations and stereotypes were produced and reinforced through infrastructure.

The second conclusion has to do with the state and active construction of marginality within the city. Electric "subnormality" is a form of state engagement in southwest *barrios,* as the presence of precarious infrastructure is also a direct action. Instead of narratives featuring the absence of state or state failure, the stories of southwest Barranquilla portray the state construction of marginality. As Anna Tsing argues, marginality is a powerful technique precisely because margins are real places where roads do not penetrate, goods are rarely accessible, and schools barely exist (Tsing, 1993). Marginality, she adds is also a discursive and ideological position from which people learn how to talk about things like state, justice, and about themselves (Tsing, 1993).

In 1997, the departmental governor of Atlantico, Rodolfo Espinoza, and the mayor of Barranquilla, George Gonzalez, proposed the building of a separate municipality in which to relocate the displaced populations of the Caribbean, so that they would not "deteriorate" Barranquilla (see Figure xiii). Instead of receiving displaced communities in the city, they proposed to resettle them in vacant public land in the rural areas in the south of the department, where armed confrontation was less frequent[60] (Cantillo, 1997). The new municipality was never built, but the intention to build a separate place where all war victims would arrive, without disrupting the city's everyday life, endured within some of the local political elites. Displaced communities were located in the southwest sector and through a series of regulations of national and local nature 26 neighborhoods within the sector were classified as "subnormal". These were thus places of marginality with respect to the rest of the city.

[60]Rather than a new "municipality" the authorities were proposing a kind of refugee camp, since there were plans to build housing blocks, but not for employment, health and education for the proposed residents (Cantillo, 1997).

Despite being marginal, this sector was not "another" city. Here I follow calls by Anand (2011, 2017b), to avoid dualistic approaches and "move past the trope of two cities" and instead aim to document the diverse and changing processes through which displaced communities settle and live in the city. Working in construction, security, domestic work, and child care, these communities not only live in Barranquilla, they have made it.

Proponen Municipio para los desplazados

Por Marta Cantillo

La constitución de un nuevo Municipio en el Departamento del Atlántico, como una forma de solucionar el problema de cerca de 3.500 desplazados, es una propuesta que impulsará el Gobernador del Atlántico (e), Rodolfo Espinosa Meola.

Los planteamientos hechos por el mandatario seccional en una comunicación dirigida al Ministerio de Desarrollo pretenden recursos que según su opinión deben ser utilizados para beneficio del mismo Departamento del Atlántico como son los provenientes del Fondo Erradicación de Tugurios.

Estos recursos -recordó- hacen parte de la Estampilla Pro Ciudadela Universitaria, que a su juicio debe manejarlos directamente la Administración Departamental con el propósito de resolver el problema de déficit habitacional existente.

"Nosotros estamos trabajando la parte de Estampilla Pro Ciudadela Universitaria. Tenemos en los años 92, 93, 94 y 95 aproximadamente 2.500 millones de pesos que no han sido invertidos y lo que va corriendo de este año".

Consideró interesante que al Departamento del Atlántico se le dé la posibilidad, a través de un convenio, de manejar esos dineros por es-

Rodolfo Espinosa, Gobernador (e) del Atlántico.

cias habitacionales que tenemos en el Departamento del Atlántico, cómo no se ha invertido este dinero".

Por ello anunció que "presionarán" para que no solamente lo anterior sino hacia el futuro se les conceda también la administración y la inversión de ese dinero.

Para Espinosa Meola la propuesta se concretará este año, pues en una primera carta le plantearon al

Petición a Mindesarrollo

La siguiente es la carta que el Gobernador (e) Rodolfo Espinosa Meola le envió al Ministro de Desarrollo, Rodrigo Marín Bernal:

"En el afán de continuar apoyando el desarrollo de la región y de acuerdo a lo establecido en el Plan de Desarrollo del Gobernador Polo, en el cual se plasma la necesidad de mejorar "la calidad de vida de los atlanticenses", respetuosamente le solicitamos que los recursos que hoy se transfieren por parte de esta Administración al Inurbe Regional Barranquilla, por concepto del recaudo de la Estampilla Pro-Ciudadela Universitaria (20% del recaudo), los cuales tienen como destinación específica la "Erradicación de Tugurios", sean manejados y ejecutados por la Gobernación del Atlántico directamente, con la supervisión y control de ese Instituto.

Estos recursos que ascienden a más de $400 millones de pesos anuales, generalmente el Inurbe los mantiene invertidos por largo tiempo en entidades financieras, como en la actualidad ocurre con las transferencias correspondientes a 1994, 1995 y lo que va de 1996, lo cual no permite la realización de inversiones de manera coherente y coordinada dentro las distintas esferas, además del no cumplimiento de la destinación que el mandato constitucional y legal les ha asignado. Dentro de nuestro Banco de Proyectos hemos desarrollado, en conjunto con los Alcaldes Municipales y con las comunidades del Departamento, numerosos proyectos, los cuales, de ser aprobada nuestra solicitud, iniciarían su ejecución de inmediato.

De antemano le agradecemos en nombre del Departamento del Atlántico, la atención que le merezca esta solicitud y esperamos su pronta respuesta".

Figure 13 – Proposal to build a municipality for populations displaced by violence in the Caribbean.

Source (Cantillo, 1997). June 5, 1997.

5. Bureaucrats without state

In the rainy season of 2014, President Juan Manuel Santos (2010-2018) announced an imminent increase in electricity rates[1] for the Caribbean region motivating the communities in Barranquilla to mobilize. In 2014, the region had the highest water and electricity tariffs in the country (Olivares, 2015). For residents of the southwest sector, expensive bills overlapped with frequent flash flooding events and poor water and electricity services. Leaders of different neighborhoods in the sector staged a sit-in near the SSPD's regional office to publicly denounce, not only the increase in rates, but also the recurrent and unexpected water cuts and blackouts registered in the southwest sector.

"Blackouts and water cuts are a historical problem in our sector" said Remedios, one of the participants in the protest, who represented the JAC from *barrio* Carrizal. She explained that, with the protest they were exerting pressure so that the mayor and the national SSPD would intervene "to improve the service and charge fair rates". Remedios highlighted the fact that the protests were peaceful and that no roads were blocked. "We are doing a peaceful protest seeking a real solution, three times a week we suffer from blackouts, the children do not sleep because of the heat, how are they going to perform at school like this?" she asked. Alicia, another protestor, from *barrio* La Pradera explained that, for residents of the sector it was unfair to pay and accumulate debts for a low quality service: "We are tired, in the past two months there have been multiple water cuts and blackouts. Blackouts usually start at 10 pm and the water service comes and goes. We are here because we want the government to give us a solution".

Agustín and Sabas[2], two residents of the southwest sector, who besides protesting were offering their services to the crowd, invited me to the sit-in that morning. Since 2003, they have had their own *oficina de quejas y reclamos* "complaints office", where they work as intermediaries in the filing of formal complaints against Triple A and Electricaribe. Lacking a college degree, they call themselves "law technicians" and their job consists of building

[1] The price per kilowatt hour went from COP $319 ($0.16 in constant 2016 USD) in September 2014 to COP $909 ($0.46 in constant 2016 USD) on October 2014 (Dioku, 2014).

[2] All the names of residents of the Southwest sector and all other community members have been changed.

bridges between state bureaucracies, specifically the SSPD and the courts, and local residents, in the contestation of water and electricity bills. In this chapter, I tell the story of their daily activities, as they meet up with residents, analyze their claims and bills, decide on a strategy to proceed, and then embark on a process that involves utility employees and functionaries of the SSPD. I thus follow residents of the southwest sector as they navigate state bureaucracy to contest water and electricity distribution in the city.

I draw on two sets of literature. Firstly, I build on the anthropology of the state, which avoids thinking about the state as an entity or "thing", and instead studies it as a heterogeneous group of institutions, practices and people (Gupta, 1995; Sharma & Gupta, 2006). These institutions and practices have been shaped buy historical legacies, host different layers of authority, and are prone to contradictions (Mitchell, 1999, 2002; Sharma & Gupta, 2006). This literature contends that the state should be studied through its localized practices, which are carried out by local institutions (Gupta, 1995; Sharma & Gupta, 2006). Secondly, my analysis is also informed by political ecologies of the state. It draws on analyses that document the ways in which state making entails environmental and infrastructural transformations (Agrawal, 2005; Anand, 2017b; Gupta, 2015; Harris, 2012; Meehan, 2014; Meehan & Molden, 2015) and the ways in which infrastructure is productive of power relations and in turn constructs places of stateness (Loftus, 2006; Von Schnitzler, 2017). This thread of the literature highlights the need to unearth the practices that constitute the state and how they relate to the production of socionatures and power relations.

Bringing these ideas into conversation, the chapter offers an ethnographic account of the *oficina de quejas y reclamos*, documenting (1) the relationship between Agustín and Sabas and the communities that request their services; (2) the practices of Agustín and Sabas and their personal stories, and (3) the conversations and debates regarding water and electricity infrastructure, metering devices, and episodes of malfunction. The analysis focuses on bureaucratic practices such as the filing of formal complaints. Likewise, through the study of contestations over water and electricity distribution, it also highlights state practices in relation to the environment or the non-human dimensions of state practice (Meehan & Molden, 2015).

This chapter also seeks to make an argument through the selection of the *oficina de quejas y reclamos* as an ethnographic site. The fact that there is a need for these intermediaries is telling of the relation that communities have with the state. The study of the complaints office, a non-official intermediary office between communities and SSPD, leads to conclusions about the relationship between state bureaucracies and the communities they are supposed to serve (Sharma & Gupta, 2006).

I develop the analysis in four sections. The first section sets the regulatory ground on which contestation stands[3]. It also introduces Agustín and Sabas and describes how they became interested in public services. It explores their initial collaboration with Cayetano, an SSPD functionary, who taught them about the law and about how to legally challenge the utilities. The second part focuses on everyday routines at the complaints office. It traces the three main causes for discontent: metering inconsistencies; irregularities in fraud detection processes; and unexplained variations in the level of subsidies, that is, the fact that bills do not reflect the subsidies that communities are legally entitled to receive from the government. The third section focuses on the limits that this form of contestation encounters. It narrates how, through formal complaints, communities cannot contest pressing issues in southwest Barranquilla such as systematic malfunction, fragile infrastructure, and electricity accidents. Moreover, it tells the story of the frustrations experienced by Agustín and Sabas as they tried to keep the office open, resisting bribe offers, legal pressures and threats of violence. The final section offers some concluding remarks on the appropriation of the law by marginalized communities and what the everyday state comes to mean for them.

5.1 DEBT AND PUNISHMENT

5.1.1 Metering debt

"It is cultural," says the general manager of Electricaribe, Betty Yadira García[4] "people from the southwest sector have a culture of non-payment (*cultura del no pago*)." As I sit in her

[3] Following calls by Ranganathan and Balazs (2015, p. 414) the chapter aims to understand the "regulatory" and "everyday" state not as a binary, but rather in ways that acknowledges that "each is constitutive of the other". Therefore it will describe Colombian regulatory framework as constitutive of the ethnographic account.
[4] Personal interview, dated 28 October 2014

office, in the northern sector of the city, manager García explains how the unwillingness of southwestern *barrios* to pay the monthly bills is a consequence of their cultural baggage. It has been a week of intense protest over high water and electricity's tariffs in the city, and she wants me to understand the utility's position. According to her analysis there is not only one, but there are two cultural problems in the sector. "We have another problem, the culture of energy theft", she adds, "It is important that you know that at the city level, a lot of money is lost each year. Customers manipulate meters because they do not want to pay".

Manager García also describes how, in order to tackle these "cultural problems", utilities, such as Triple A and Electricaribe, have put three strategies in place[5]. The first one is related to education. Both utilities, through their corporate social responsibility plans, employ social workers who, in turn, give workshops in the southwest sector about the importance of timely payment of the bills, and responsible consumption of services:

> We provide support for socialization, awareness raising and training of community workers who go to the sector to give information to the community. Because you have to keep in mind that these are people who have never had water meters, never had electricity meters and they are going to start having them. They now have the responsibility to pay bills, they now have to have an efficient and rational use of both water and energy. That is why, with the help of the government, we support and train the communities, so that they don't have disadvantages when it comes to using services or paying the bills.

The second strategy consists on helping communities pay through repayment plans. As approximately 30 percent of the city's households are late in the payment of their bills, the utilities give them opportunities to enter into flexible debt repayment plans. There are also incentives, such as discounts, for those who enter repayment plans as soon as they become indebted.

[5] As was mentioned in Chapter 3, the relations between the Electricaribe and Triple A (both owned by Spanish corporations: Gas Natural Fenosa and Aguas de Barcelona) were very good during the study period. In the context of electricity failures that entail water cuts, they sometimes made collective statements promising timely solutions. According to Electricaribe's general manager, both companies try to coordinate their communication strategies, their corporate social responsibility strategies, and some of their interventions and initiatives on the southwest.

The last strategy targets the so-called "theft culture". According to manager García, "the only way to stay ahead of fraud is to closely monitor meters". A general method of monitoring is the routine replacement of water and electricity meters, especially if the utilities identify imbalances between the amounts of electricity/water that are being sent to the sector and what is being billed. When utilities find these imbalances, they check meter by meter and if they find any indication of its manipulation they initiate a process to replace it. They have to "communicate to the users about the imminent replacement of their meters and how they will be paying for the new ones in installments". The finding of evidence of fraud is often followed by a fraud process. In cases where evidence is found proving that a household is guilty of fraud, the utility imposed a fine for retroactive consumption, a fine charging an estimated fee for the amount of months during which the household has been defrauding the system. In cases of major fraud, the utilities are entitled to initiate a criminal process[6], which could lead to imprisonment (1-6 years) or to a fine of up to 100 monthly minimum wages, which for 2016 was equivalent to COP 69 million ($22,579 in constant 2016 USD).

Although manager García did not mention it, there is a fourth strategy put in place by the water and electricity utilities to ensure cost recovery. Both companies had lobbied the national government for a relaxing of certain regulations and programs in order to improve their commercial conditions. According to a report by the National Ombudsman, during a financial setback in 2002, Gas Natural Fenosa and Aguas de Barcelona, Spanish corporations which are the majority shareholders of the water and electricity utilities in the Caribbean region, threatened to sell their shares and sue the Colombian state (Pueblo, 2004). The companies argued that they could not exercise the principle of free competition, as they could not "choose the sites and conditions that would make their business more profitable and productive". As a result, the Colombian Government agreed to a set of investments on infrastructure to make the companies' "business" more profitable.

The report by the National Ombudsman sustains that the partial lifting of the restrictions placed on cross-subsidization between high and low income neighborhoods was also a result of the companies' pressure on the national government (Pueblo, 2004). During the late

[6] The national *Código Penal* ("penal code") regulates the criminal process and penalties concerning utility fraud, see (Congreso de Colombia, 2004).

1920s, a system of cross-subsidization was implemented in Colombian cities through which those with higher incomes as well as the institutional, commercial and industrial sectors paid rates above the full cost of services, subsidizing households with lower incomes. Since the 1960s municipalities were divided into tiers, based on socio-economic characteristics (tiers 1 being the one with the lowest income) for the purposes of cross-subsidy[7]. In 1994 Law 142 of 1994, aimed at neoliberalizing the utility sector, set limits on the level of cross-subsidy between socio-economic tiers. However, in 2003, Law 812 softened the restrictions placed on cross-subsidy under Law 142 to allow greater support for low-income users. While Law 142 stipulated that subsidies for users with the lowest income could not exceed 50% of basic subsistence consumption, Law 812 raised the maximum subsidy to 70% for the lowest income tier (see Acevedo Guerrero, Furlong, et al., 2015). Gas Natural Fenosa and Aguas de Barcelona lobbied for Law 182 (Defensoría del Pueblo, 2004).

Finally, as was described in Chapter 3, in 2003 the National Congress created a special subsidy called the Social Energy Fund (FOES) to cover part of the cost of the energy consumed in "subnormal" neighborhoods (Congreso de Colombia, 2003) and soon afterwards Electricaribe created the company *Energía Social, ES* (Social energy) to sell electricity in the subnormal neighborhoods of the Caribbean region (Observatorio de Multinacionales en América Latina, 2008). As a result, Electricaribe secured extra income by charging neighborhoods that were outside of the interconnected system and obtained electricity by connecting, without any authorization, to the grid.

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In the same week of my interview with manager García, I was invited to a community gathering in *barrio* El Carrizal. As it had been a week of flash flooding and protest, some local and national radio journalists were also invited to the meeting.

[7] Decree 3069 of 1968 required that municipalities be divided into tiers based on property value assessments for the purposes of cross-subsidy. Later, Decree 970 of 1991 established a six-tier system in which the tiers are defined using a combination of socio-economic characteristics for each neighbourhood, including data on housing quality, the availability of public services including transportation, the condition of nearby infrastructure, recreational facilities and parks, access to nature, and proximity to businesses and commerce. The National Department of Statistics (DANE) established the weight of each of the factors used to define the tiers in each municipality. The processes are public, and residents have the right to challenge their assigned tiers (Acevedo Guerrero, Furlong, et al., 2015).

The first one to speak is Fanny, one of the JAC members:

> There is no such thing as a culture of non-payment; we simply refuse to pay increasing bills for a service that is provided in poor conditions. As a neighborhood we refuse to pay. We already have many debts with Electricaribe and Triple A, mine, for example is more than COP $6,000,000 ($1,965 in constant 2016 USD).

Rosa, another resident, takes the microphone next. She explains that, being an *ama de casa* ("housewife"), she has complete control of the water and electricity consumptions in the household and she tries to keep consumption low. However, she says, she continues to receive expensive bills every month. "With bills like mine you would think I run a factory, since 2012 tariffs are just impossible to pay, the only alternative is to make a payment plan and accumulate debts", she states. According to her testimony, her water and electricity bills were around COP $200,000 to $300,000 ($65 to $98.25 in constant 2016 USD) each per month[8]. Due to the expensive bills, Rosa recognizes that she has not paid a complete bill in almost 3 years, and the amount she owes to the utilities is above COP $8,000,000 ($2,620 in constant 2016 USD). She continues:

> We used to get monthly bills of COP $35,000 ($20.30 in constant 2016 USD) for electricity, sometimes water would be COP $40,000 ($23.2 in constant 2016 USD) and we managed to pay them, but now it's too costly. I do not understand. My house is in tier 2, it has four rooms, one shower. We are in total six persons, three adults and three children, but we only have a few appliances. I have my fridge, washing machine, clothes iron, two televisions, four fans, and a sound system. We only turn on the washing machine and the sound system on Sundays. There is nothing else. We don't have any air conditioners.

Yamile, who is 38 years old and has lived in the sector her whole life, takes the microphone. She does not understand why, being in a subnormal neighborhood, they are still receiving such high bills "I owe millions for a service that is not worth it. The cables that transport the energy heat up and burst every few days. We are constantly suffering blackouts, and Energía

[8] By 2014, families in southwestern Barranquilla, were making approximately one minimum wage per household monthly, that year the minimum wage was COP $616,000 ($312 in constant 2016 USD) (Redacción Economía, 2013).

Social's technicians only come to read the community meter or to suspend services for non-payment", she says.

According to Carmela, who then takes the microphone, her worries are worse, as she has received a letter from Triple A, informing her about a fraud process against her and about a pending COP $1,000,000 ($327.5 in constant 2016 USD) penalty. "Do they want to seize our houses out of debt? In other services, like telephone, internet or gas we get bills between COP$35,000 ($11.46 in constant 2016 USD) and COP $80,000 ($26.2 in constant 2016 USD) and we pay them on time" she points out. Leidy, a domestic worker and beauty products seller, mentions that she too has accumulated debt due to a fraud process with Triple A. Pedro, who has recently entered a repayment plan, wonders "where do all the subsidies go?" The microphone is then passed to Eliécer, who owns the local *tienda* (grocery store). "My store has a single cooler with capacity for 500 bottles, another small freezer for ice cream and a shelf to display other products. It is the only source of income for my family. I now owe around COP $14,000,000 ($4,585 in constant 2016 USD) in accumulated bills", he states while showing the bill. He also explains how he started receiving very expensive bills when the utilities decided that the store was to be considered as part of the commercial sector, which is subject to higher tariffs. He has signed 2-year repayment plans to pay the debts in monthly installments, but he confesses that he feels as if he will owe money to the utilities "forever".

After the meeting ends, Omar, one if the residents who did not get the chance to speak, invites me and a radio journalist to visit his home. He is keen on showing us the few appliances he owns and the amount of water that comes out of the faucets. We walk for two blocks and then we are invited to enter the living room where his wife Diana and two daughters are watching afternoon television. Omar works as *mototaxi*[9] driver, Diana works as domestic worker a few days a week. The rooms are small, the walls are made of cement, and the roof has zinc tiles. Omar asks his wife to open the kitchen faucet and a stream of water comes out without much pressure. He then starts moving around the house, as if making an inventory of all their appliances: his fridge is about five feet long, there is one television set, a radio, and three fans. While the radio journalist records some of Omar's

[9] In many cities of Colombia motorcycles are used as taxis. Since the business is not yet regulated, it is currently illegal, see (Montezuma, 2015).

answers, Diana shows me the bills with the repayment plans. They owe Triple A almost COP $2,000,000 ($655 in constant 2016 USD) and Electricaribe approximately COP $3,000,000 ($982.5 in constant 2016 USD).

In sum, throughout the period between 2002 and 2014, Electricaribe and Triple A put in place various strategies to improve their commercial performance. They did community trainings on the importance of paying bills on time, designed payment plans for residents to pay in monthly/weekly installments, and put in place meter monitoring plans. They also received some benefits from the state: they continued to receive direct disbursements for cross-subsidization and the FOES subsidy. In parallel, residents of some neighborhoods, such as Carrizal, were falling behind in their payments and started entering debt repayment plans.

5.1.2 Agustín and Sabas

Agustín welcomes me into the *oficina de quejas y reclamos* during a Saturday morning. The place, which also serves as *fotocopiadora* (photocopy shop) is almost empty. Outside, street vendors are starting their working day. Newspapers, green mangos, *tinto* (black coffee), and lottery tickets are being offered loudly. On this particular Saturday, we have planned to discuss, not about water and electricity bills, like we usually do, but about his life more broadly. Born in the rural area of San Antero, a municipality[10] in the department of Córdoba, Agustín is an Afrocolombian man in his fifties. Being approximately 1.85 meters, he is taller than average Colombians. His parents had 14 other children, but two died at a young age. His grandfather owned a small plot of land surrounding the family home where they had cassava plants, a banana tree, and two cows. "We were not poor, cause we had food", says Agustín. He also remembers how his grandfather shared the harvest and milk with the neighbors: "my grandfather taught us how to share, how to stand up for those who are in trouble".

While Agustín was still in primary school, his father left home to find another place to settle in order to seek a better future. In San Antero, working opportunities were few and being a

[10] San Antero currently has 31,365 inhabitants (DANE, 2005).

day laborer in local haciendas, he could not secure enough income to support the family. He first ventured into the municipality of El Carmen, in Bolívar, where he found a plot of fertile land with a nearby river. In order to make enough money to buy the plot, he left for the "big city", Barranquilla, were through *rebusque,* he could gather enough funds within a short time frame. He had a brother in Barranquilla, who at the time lived in *barrio* El Pueblo, one of the oldest in the southwest sector. The brother worked as an auto mechanic, and after some months managed to convince Agustin's father to stay in the city in order to provide a better future to his children:

> After my father left for Barranquilla, his dream of cultivating a plot of land in El Carmen vanished. My uncle said to him "How is it possible that you are thinking about moving the children *pal' monte* (to the countryside)? How are you going to take your family backwards?" He then convinced my father, arguing that the future was in the city, where we could build a house in the southwest and work with him in the automobile repair shop. Next thing we knew, we were all moving to Barranquilla. I think it was good, it was fate, imagine what would have happened if we had moved to El Carmen, which path I would have taken? Violence was terrible in that region[11].

Agustín was 12 when the family moved to Barranquilla. Like his brothers, he attended school until the sixth grade and then went to work in the automobile repair shop to help make an income for the family. At 18, he enlisted in mandatory military service[12] for two years. While in the army, he was known for helping those in trouble. "Being one of the tallest," he says, "I could stand up to defend those who were being mistreated". When he returned home, he immediately joined the *JAC* in southwestern *barrio* Santa María, where the family was living at the time. Agustín describes his entry into neighborhood activism as a young Afrocolombian man:

> Because of the values that my grandfather taught me, I wanted to help the neighbors. In the army, they used to call me the *el abogado de los pobres* ("the lawyer of the poor"), because I would stand up against injustice. I was only 20 when I started on *barrio* Santa

[11] El Carmen de Bolivar was deeply affected by armed confrontation. Its inhabitants were victims of active paramilitary dispossession and land grabbing processes which ended with a massive displacement in the 1990s. See (Memoria Histórica, 2016; Uribe Mosquera, 2012).

[12] Military service is mandatory for Colombian males between the ages of 18 and 24. Colombian military service has ranged from 12 to 24 months. After the service all men will receive a military card, which can be required by the university, in case of professional education, the employer or the armed forces (Rueda, 2017).

> María as the JAC's secretary, writing minutes and preparing the coffee, and some years later I became the JAC's president. People listen to me because I have a strong tone of voice and I am confident in my ideas. I think black people in this country have gone through a lot and, in the process, they have been persuaded that they are less. But I do not feel that way.

While participating in the JAC, Agustín finished a "machine operation and maintenance" training at the *Servicio Nacional de Aprendizaje SENA*[13] ("national vocational training agency"). After receiving his SENA certificate, he started working at the port in Barranquilla. He used to have a formal contract, to do machine maintenance and repair, but after a port restructuring in 1994, he lost his job. After that he could only find short-term jobs doing maintenance activities at the port.

He became interested in water and electricity services around the year 2000, when residents of the sector started getting bills that registered very high levels of consumption. By then he had formed his own family and was living in *barrio* Evaristo Sourdis. As he and his neighbors registered monthly increases in their bills, reflecting not only higher consumptions but also charges for the installation of new meters, they started accumulating debts. Antonio, his friend who lived in southwestern *barrio* San Felipe with his wife and three children received a monthly water bill for 80 cubic meters (m3). With a minimum wage income, Antonio became deeply indebted with Triple A. Agustín questioned the legitimacy of the charges. For his neighbors it was difficult to understand increasingly complex bills. Many among them were not familiar with metered consumption. They had never heard about cubic meters (m3) or kilowatt-hours (kWh) and found both water and electricity bills complicated to read, filled with numbers and percentages (see Figure xiv). But for him it was different, he did know how much water his family consumed because he understood measurements. He knew that, on average, a family of 5 consumed 20 m3 of water and 270kWh of energy monthly[14]. He also understood how water and electricity infrastructure worked. Agustín has

[13] SENA is a Colombian public institution aimed to develop vocational training programs for the Colombian force labor. It is a government initiative to develop free technical education and foment employment. Its educational programs focus on areas such as administration, agriculture, construction, design, electricity, electronics, mechanics and cooking (see http://www.sena.edu.co).

[14] In his calculations Agustín is close to the official estimated. According to SSPD, a Colombian family (4-5 people) consumes on average 266 kWh and 18 m3 of water per month. This is a rough estimate and depends on other factors such as income and cultural and climatic factors (Bohórquez Aya, 2016; Redacción el Tiempo, 2001). According to the regulatory commissions CRA and CREG, a family should try to keep the

a technical background. He explains how, it was due to his training as machine operator that he was able to start working in the water and electricity sector.

> I am a machine operator, I know about infrastructure, about how water and electricity meters work, I know about measurements. This is why the utilities have trouble with me, because I know the technical foundations that underlie the bill. I know the way water moves through a pipe, how electricity moves through the grid. I know the technical detail. I cannot be deceived as easy as the others when talking about cubic meters and kilowatts per hour. You know, when reading the bills people are naive because they don't understand.

With these concerns in mind, Agustín joined the Union for Public Services USP, a city committee that documented and publicly reported problems and irregularities in the delivery of public services. USP had been formed by union members of the former public utilities Electranta and EAAB, and was mainly made up of union members, from both the former and the new utilities, members of JACs and other neighborhood leaders. They, for example, documented cases where the consumption rose significantly without apparent reason and organized blockages and pacific protests to put pressure on the SSPD, the local authorities, and the utilities.

consumption of electricity below 173 kWh-month and that of water, between 15 and 16 m3 monthly (CRA, 2014; CREG, 2007).

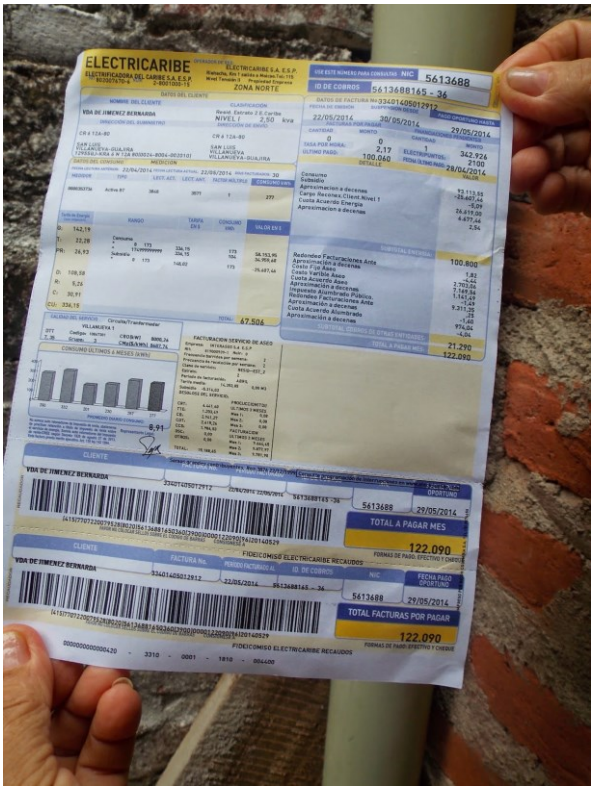

Figure 14 - Utility bill.

Oficina de quejas y reclamos, November 21, 2014.

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Being in his early forties, Sabas is younger than Agustín and has lighter skin. He tells me that he comes from a family where they were all "*morenos"* (brown). He was born in the municipality of Codazzi[15], department of Cesar and grew up in the Hacienda Las Flores, an agricultural estate which produced rice, sorghum, cotton and oil palm. In Hacienda Las Flores, his father worked as a machine operator and technician and his mother worked as domestic worker. He and his 4 brothers finished high school in Codazzi's public school and then were employed at the hacienda. Sabas narrates how, the owners of the hacienda would frequently employ the children of the employees as soon as they were old enough to work:

> As soon as I turned 15, I was given the opportunity to start helping my father after school and during vacations. I am grateful because that way I was able to learn a trade and be responsible for myself. After I was trained and working full time in the hacienda I was

[15] Codazzi is a municipality of 35,000 inhabitants, epicentre in the seventies and eighties of the cotton development in the country (DANE, 2005).

given a monthly salary. My brothers did the same, this is why now they are all working as machine mechanics.

In 1997 things changed for the family as paramilitary forces took Codazzi[16]. Fearing the violence, they were forced to abandon their life in the hacienda and resettle in Barranquilla. They figured that, being the main city in the Caribbean region, Barranquilla would provide opportunities to start over. Sabas found a job doing maintenance and repair of big diesel engines in the port. However, he remembers, his life became more difficult. He recalls continuously falling sick due to the impregnating smell of diesel and the heavy weight of the engines he had to take apart. He started having breathing problems and spending time in the hospital.

With time the family managed to find a house in *barrio* La Cordialidad where many from Codazzi had settled. Sabas, started his own family and built a house near that of his parents'. One day in 2002, he came home from work to find his water service suspended. As he was careful to pay the water bills on time, he requested information from the technicians of Triple A. They in turn informed him that he had an ongoing fraud process. He felt humiliated because the whole neighborhood found out and he did not want to be perceived dishonest. He checked for possible leakages, he checked his meter, and reviewed the bill. He was so angry that he decided to go and dispute the fraud process. As he knew little of administrative procedures, he spent time in waiting lines in Triple A and the local Ombudsman Office, *Defensoría del Pueblo*. Despite being informed that it was "almost impossible" to dispute and reverse a fine for fraud, Sabas did not give up and ended up in the regional SSPD. This is when he first became interested in water and electricity services.

5.1.3 A little help from a functionary

After waiting four hours in the SSPD, which was packed with people voicing similar concerns, Sabas was sent to talk to Cayetano, an SSPD functionary who was seated behind a glass barrier. Cayenato listened. After examining the information, he recommended filing a *queja formal* "formal complaint" and explained the procedure to Sabas. He gave him a

[16] According to official data, during the period between 1995 and 2006 paramilitary forces perpetrated 31 massacres in Codazzi (Lemus, 2012).

format and recommended that he buy copies of Law 142 of 1994 and of the *Código Contencioso Administrativo*[17], a litigation code where he would find information on how to proceed in case he had to appeal. He told Sabas to write the formal complaint and then bring it back. Sabas did as he was instructed. He was happy when, some weeks later, Triple A was forced to withdraw the fine and the charge of fraud. But he was intrigued when Cayetano suggest that he learn more about his rights and those of his neighbors.

> He asked me if I was interested in studying the public services regulation because he was going to teach a course in the afternoons and evenings. I told him that I did not have the money to pay for any courses and he answered that it was for free. I was also scared because I did not do the mandatory military service, so I do not have a *libreta militar*[18] ("military card"). To my surprise Cayetano said that it was not a problem. So I said yes and started learning, he became my teacher.

A group of 17 in the southwest sector were recruited by Cayetano, the SSPD functionary who taught the course in his spare time at different locations in the southwest. It was during this course that Sabas and Agustín met.

Agustín continued working at the port and participating in his local JAC and in the Union for Public Services (USP). In one visit to SSPD, he had talked to Cayetano, who invited him to participate in the course. At first Agustín was not sure about joining the course. He felt that, lacking a high school diploma, he would not be able to complete it.

> I kept working on the measures, looking for inconsistencies in bills to help the neighbors, but the truth is that I lacked the legal basis. I thought all regulations were very difficult to understand. Then there was a functionary, Cayetano, who offered me a training, I told

[17] In Colombia most important legislation are frequently printed and sold in the street by street vendors. Although this infringes copyrights, and is penalized, it has been a widespread practice in the city centres, principally in streets surrounding the judicial courts. Since the 2010s most regulation is online, however many continue to rely on these printed reproductions of the law. See (Arboleda Palacio, 2005; DIJIN 2009)

[18] As has been documented, in Colombia mandatory military service mainly targeted the lowest income families, as military cards were informally sold at high prices by members of the army. Therefore, those with the means could buy their way out of the service. It has also been documented how many low income families, especially in conflict areas, would hide their sons from the recruitment officers. As a result this young men were usually unable to engage in activities that require the military card, such as working with the state, attending a university or applying for technical training at SENA. They can also be forcefully recruited by armed forces in raids or, if asked to provide the military card, at any encounter with police or army officers. See (Defensoría del Pueblo 2014; Rodríguez Hernández, 2008)

> him I had no idea of the legal part, I had no idea of the legal part. I also told him that I only finished primary school and did not go to high school, but he answered that all I needed to know was how to read. Cayetano explained that after the course I would be ready to place formal complaints against the utilities myself. I remembered that my grandfather used to settle the disputes between neighbors back when I was a child, so I thought that if my grandfather who was completely illiterate was able become a leader, I could become one too.

Both Agustín and Sabas took the course. They learned mainly about one group of regulations: Law 142 of 1994 that regulates public services in Colombia, and the subsequent laws that have modified it[19]. They also studied the publications of the Water and Electricity Regulatory Commissions, CRA and CREG, and some of the technical regulations related to the water and electricity sectors. The course also covered the details of the role of SSPD, which regulates water, electricity, and gas utilities and was created under Law 142. Agustín and Sabas also became aware of the existence of citizen oversight committees, which were created through user initiatives in each sector of the city. Each committee chose a representative that was invited to yearly meetings with the utilities and the SSPD in which they could directly report on the quality of their services. All representatives at the city level could, in turn, choose a city representative who would be invited to national meetings with the SSPD.

Cayetano took them through the steps to file a *queja formal* ("formal complaint") (see Figure xv). If a household wanted to dispute a bill, due to inconsistencies in metering or irregularities in an ongoing fraud processes, the first step was to lodge a document in which the plaintiff would state that he/she was filing a *queja formal* ("formal complaint") and include the utility's name and a description of the problem in numbered paragraphs. This could be done, directly at the utility's offices, or through the local SSPD. The utility had a term of 15 business days, to respond to the request. If the utility did not respond within that time frame, the plaintiff could request an investigation due to *silencio administrativo*

[19] Law 632 of 2000; Law 689 of 2001; Decree 302 of 2000; Decree 229 of 2000; and Decree 1713 of 2002, are among the most important regulations that have reformed Law 142 of 1994, in what concerns water services. For a review on Colombia's water regulation, see (Acevedo Guerrero, Arias, & Furlong, 2015). In the electricity sector, the important regulations have been Decree 111 of 2012, which regulates the Social Energy Fund - FOES, CREG Resolution 108 of 1997, which issues general criteria for the protection of users' rights, and CREG Resolution 036 of 2015, which regulates fraud processes.

("administrative silence"). This second process, needed to be filed at the local SSPD. It would be a similar document to the previous one, but would need to clearly state that the plaintiff had not received a response.

In the case where the plaintiff received a response but did not agree with it, he or she could lodge an appeal. This would entail the filing of a third document at the local SSPD. In this appeal, the plaintiff needed to explain the differences he/she had with the decision. This procedure had to be carried out within a maximum of 5 days from the notification of the decision in which the utility denied the formal complaint. If SSPD denied or rejected the appeal, the plaintiff could file a second appeal, also called "final revision", within a maximum of 5 days from the notification of the decision. Thus, the SSPD would decide on the second appeal: the utility had to make all relevant files available, and SSPD would deliver a verdict in no more than 15 business days.

Before finishing the course, they also took a few lessons on relevant constitutional precedents. They reviewed Sentence C-150 of 2003 of the Constitutional Court[20], which ruled a *tutela* in favor of the plaintiffs, stating that public service providers (for services like water and electricity) could not suspend services to vulnerable communities due to lack of payment without due diligence. Suspension of water or electricity services, according to the sentence, went against the constitutional articles related to social rights, including health, sanitation and potable water.

[20] For a review on constitutional court rulings about water services, see (Roa-García, Urteaga-Crovetto, et al., 2015)

Figure 15 – Process for how to file a claim.

Source: compiled by the author.

After the 2-month course, Sabas helped all of his friends and family members to file formal complaints. Meanwhile, by the end of 2002, Agustín did not have time to work as a machine mechanic anymore, because he spent all his time helping neighbors recover their suspended services or fighting debts. One day he ran into Sabas, they exchanged experiences as they were both feeling unsatisfied in their port jobs. While Agustín was tired with the monotony, Sabas, who at the time had a broken arm, was tired because of the intensity of his job. They felt that they complemented each other; while Agustín was more outspoken, Sabas was shy. Agustín needed someone to help him write the documents on the computer, and Sabas was

familiar with technology. They then decided to join efforts and launch the *oficina de quejas y reclamos*, where they could help their neighborhoods and find a new way of earning a living.

5.2 Photocopies and the everyday state

5.2.1 Disputing metering

Agustín and Sabas rent a shop in the city center, next to the courts and nearby the city council. Inside Leonor, one of Agustin's nieces, is in charge of the photocopy machine. There are some plastic chairs at the entrance where people who are waiting can sit. There are also two spare computers used in times of abundant work, when assistants are hired to collaborate in the writing of formal complaints. Agustín's desk is located in this common area. He does all his work in a notebook and then dictates it to Marcela, an assistant who comes by in the afternoons after high school to transcribe Agustin's notes on the computer. Sabas has a small office in the back. He works in a big desk and does not have an assistant. On each one of the desks sit copies of Law 142, piles of photocopies, brown folders for filing documents and blue binders, of the same type that are used in the courts and judicial bodies. After completing a process, all the information and documents are filed in a folder with a stamp that indicates the dates in which the process was filed and the law technician who handled it. The filing cabinets, blue with different drawers, are also similar to those used in state offices.

They both have their own clients. Agustín is known to many members of the sector's JACs, and they recommended his work to new clients. Sabas, in turn, has a clientele among migrants from Cesar, his department of origin, which are frequently referred to his office by friends and family members. They seldom work together on a single process, unless it is an important process, where the charge or penalties is high. When they first set-up the office they decided that they would charge a COP $10,000 ($5.51 in constant 2016 USD) fee for drawing up the formal complaint and printing it. They charge separately for the photocopies and transportation in case the client cannot file the documents him/herself (bus ticket to utilities or SSPD and back). In cases where the plaintiff is successful and has the charge or

penalties rescinded or reduced, Agustín and Sabas charge 20 percent of the original charge or penalty fee.

The most frequent reason for visiting the office has to do with metering: with inconsistent water and electricity metering, causing a financial burden for communities. These inconsistent readings can result from three factors. Firstly, they can be due to water or electricity meters which gave inaccurate readings. According to Agustín, water meters can fail because of a lack of calibration[21], and in general, water and electricity meters can fail if they have manufacturing defects of because of faulty installation. "These cases are complicated because on occasion, the utility will accept to replace the meter, but then charge the new one to the plaintiff," explains Agustín.

I finally understand his point when Clara, a *cafetería* waitress from *barrio* San Isidro, comes by the office. She suspects that her water meter is malfunctioning. The meter has started registering consumptions of over 60 m3 per month, which is quite high for the 16 m3 per month consumptions she used to receive. In the formal complaint, Agustín points to the fact that Clara had been paying these high bills for two months because of the faulty meter and therefore a portion of the bill had to be reimbursed. He also requests that the new meter should be entirely funded by the utility. Although SSPD orders Triple A to pay for the meter, it does not agree to the reimbursement.

One of the first cases handled by Agustín, was also due to an inaccurate water meter. He was asked to help a public school principal from *barrio* La Manga, who had seen the school water bill rise in an unusual way. Although the principal had been writing his own formal complaints and appeals, SSPD was not ruling in his favor. Agustín recalled how the arguments made by the principal, pointing out the wellbeing of his students and the terrible consequences a water suspension would entail for the community, had nothing to do with the metering itself and this was not benefiting the appeal:

[21] To be sure of accurate measurements, the accuracy of the meter needs to be ascertained. This is done, by making sure that the meter is properly calibrated. For more on water meter calibration see http://flowmetrics.com/water-meter-calibration-important-flow/

> We met at the high school on a Sunday and told the principal "I did not go to college but I can write a better complaint than you". Then I did a simple experiment, I first made sure that no water was being used in the building. Next, I emptied a 1 gallon container into a 5 gallon bucket 5 times and marked the top of the water level with piece of tape to mark the exact level for 5 gallons of water in the bucket. I then emptied the bucket. I asked the principal to make sure that the water meter was in 0 and I ran water with a hose into the bucket. I filled the bucket to the 5-gallon level and shut the water off. The meter reading was way above the 5 gallons of water that had passed through it. The meter was not working properly. I wrote the complaint, documenting the experiment step by step and we won it. I know the SSPD, they prefer the technical arguments, because it is more scientific.

After problems with the meters, leakage is the second reason for inconsistent readings. Gladys, who came by the office suspecting a leak, had a home in *barrio* San Felipe. In September 2013, she received a bill for a consumption of 325 m3 that month. In the formal complaint, Agustín argued that her neighbor, who owned a car wash, had a 180 m3 monthly consumption. "How could this be?" he stated. Ten days later, Triple A sent a crew of technicians that discovered a leak: there was a tube, tucked into the gutter which had been leaking water. Although they repaired it, the debt remained intact. Agustín then went back to the laws and regulations. He called Cayetano, his teacher, who helped him find precedent. In the appeal to SSPD, they argued that Triple A was under an obligation to help Gladys with the leak. According to the law, they should have sent a crew of technicians to check for leakages from the minute they realized there was such a spike in consumption. As a result, 50 percent of the debt was pardoned.

According to Agustín, electricity leaks are also common, however, these were are difficult to prove through a formal complaint due to the existence of subnormal neighbors. In subnormal neighborhoods of the southwest sector many were connected with fragile infrastructure, which in itself provokes leaks. Likewise, he says, he is certain of the fact that Energía Social invoices for a voltage higher than the one which is actually consumed by users of the community meters, but the conditions of infrastructure in the subnormal neighborhoods make this difficult to prove.

Finally, faulty readings can be a result of technician error either by inflating meter readings or not performing individual meter readings but using rough estimates based on the average consumption of the sector. In some cases, like in Celina's, these faulty readings were easy to prove. After receiving two very high bills Celina, from *barrio* Paraíso, wrote down the consumption she had been reading in her water meter which differed from what was billed. After she spoke with Agustín, he advised her to gather her last three bills and to take a picture of the meter with her cellphone, making sure that the meter's serial number was visible. She also needed to make sure that there was a witness who could corroborate the dates when the pictures were taken by signing a sworn and notarized statement. He also advised her to file the formal complaint as soon as possible. This, because the moment a formal complaint is filed, the utility cannot suspend the service until a decision is made regarding it. After Celina came back, Agustín's niece Leonor printed the pictures and provided a template of a sworn statement for the witness to fill in. She also pointed Celina to a nearby notary to have it signed and notarized. Agustín charged the usual COP $10,000 ($5.51 in constant 2016 USD) and then dictated the document to his assistant, made photocopies of the bills and of Celina's identity card and filed all the documents at Triple A on the next day. He and Celina made an appointment for 16 days later, when they visited Triple A together, to find out that the process was ruled in favor of Celina. Since the original bill was for COP $125,000 ($68.9 in constant 2016 USD), Agustín received $25,000 ($13.8 in constant 2016 USD) in cash.

Other cases are more complicated. Problems related to over-billing for electricity are especially common in subnormal neighborhoods with community meters, where household consumption is estimated but not measured, and where the population does not receive a detailed explanation about how their consumption is estimated. Manuel, in *barrio* Edén 2000, disputed his electricity bills for months, with the help of Agustín. His house, in a subnormal neighborhood, has a patio in an adjacent lot where he raises five chickens. In February of 2011, Manuel began receiving two electricity bills, one for his house and another for the uninhabited lot. Agustín wrote a formal complaint, pointing out "the absurdity of charging electricity to an inhabited lot". Electricaribe, however, rejected it, and Agustín had to file an appeal with the SSPD. "The important thing, in the end, is not so much the process as the argument," explained Agustín. In a process, a plaintiff should present comprehensive documentation, witness statements and photographs. Creativity also plays a role in the way in which the case is presented. "What we did", said Agustín, pointing at his assistant Marta

who had transcribed the appeal, "was to highlight the absurdity of billing a plot without any construction". SSPD ruled against the appeal and Manuel continued to receive a bill for the lot, which registered a consumption of almost 200 kWh per month. Because having a debt tied to the property would have prevented its future sale, he was forced to commit to a repayment plan. When I visited the office in September 2013, Agustín was filing a second appeal to the SSPD. Here, he was highlighting the everyday life of Manuel with his family and the chickens. With a series of sworn testimonies and pictures, the appeal highlighted that the lot should be taken out of the community billing system, as it did not use any electricity. When I came back to the office in November 2014, Agustín told me the appeal was finally decided in favor of Manuel and the debt, which by then was around COP $8,000,000 ($4,050 in constant 2016 USD), had been rescinded. I phoned Manuel and asked him about his thoughts concerning the appeal and he explained how, despite winning the appeal, he felt disappointed:

> I no longer want to know anything about the SSPD or Energía Social or Electricaribe, all the time I wasted, all the worries it caused me, being so indebted. At the end I had to pay almost COP $1,700,000 ($861 in constant 2016 USD) to Agustín. Although if it were not for him, I would still be receiving the bill for the lot, accumulating more debt with the utility. Winning the appeal does not compensate me either economically or morally.

Another common case is that of plaintiffs who find out that the meters are not being read. As was mentioned in Chapter 3, after the sale of the utilities to private companies, both Triple A and Electricaribe, made significant staff cuts. As a result, most activities that involve meter reading, or the maintenance or repair of infrastructure were outsourced to contractors. As the contractors have no direct relation to the utilities, their activities are hard to monitor. Moreover, on some occasions, meters simply cannot be read. As part of the meter monitoring campaign, utilities had installed protective boxes that sometimes became rusty and made reading difficult. Another common mistake had been to install the electricity meter quite high in order to prevent it from being manipulated. This also made it impossible to read the meter, as contractors need a ladder to see the readings (see figures xvi and xvii). In these cases, formal complaints can be filed to have the boxes or meters replaced or moved.

“People will prefer a meter they can see, because if contractors start estimating the consumption it will be higher”, explained Sabas.

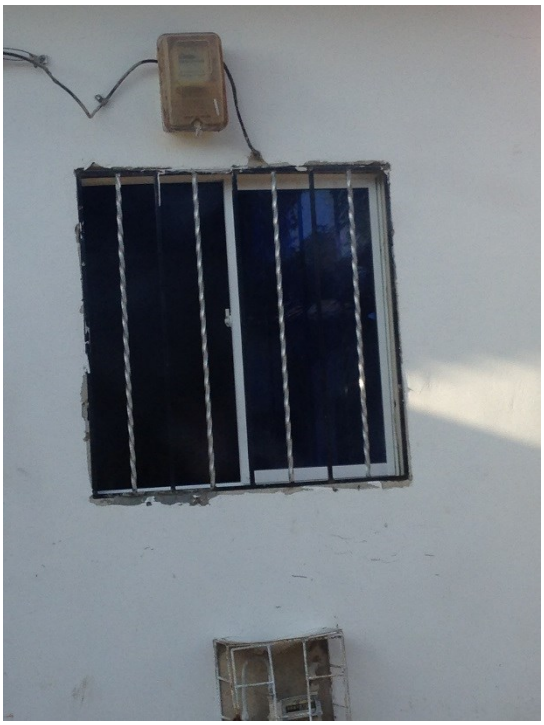

Figure 16 – Electricity meter. Detail.

Barrio Evaristo Sourdis, November 26, 2014

Figure 17 – Electricity meter. Detail.

Barrio Evaristo Sourdis, November 26, 2014

5.2.2 Disputing fraud

On a Thursday morning, during the rainy season of 2013, Sabas tells me the story of his first big win. It was 2002 and he had just finished the training with Cayetano, when he was approached by Gabriel, the owner of the biggest store in the southwest *barrio* Chiquinquirá. Gabriel offered to pay him for his help with a fraud process initiated by Electricaribe. Due to the alleged fraud, Gabriel was being charged a large sum as a fine for un-billed consumption. Sabas who had never filed formal complaints for payment, refused to take the job. Since Gabriel insisted, he agreed to listen to the story and to take a look at the case. The store was doing well, it was not only a place where neighbors could purchase groceries, but, having 3 tables, a big television set, and two speakers, it was also a place to watch *fútbol* ("soccer matches"). During the weekend, the store filled with neighbors and Gabriel sold beer and *empanadas*. Despite its success, there was no evidence of the store consuming much electricity: there was only one fridge and one fan behind the counter. Gabriel would turn on the radio during the weekends, but there were no additional speakers. During the weekend he would keep extra cold beer in buckets filled with ice. Neighbors sat at tables outside, where they had street lighting. The store closed at midnight during the week and at 2 a.m. during weekends. The bills did not make sense. Gabriel was being accused of fraud, that is, of tampering with his electricity meter. However, he had been paying more or less on-time and his consumption had not varied significantly. Sabas took the files home and reviewed them carefully. He found a major inconsistency:

> All meters are identified with a serial number. Every time technicians initiate a process for fraud they must create a file with the meter's information, including its serial number. In Gabriel's case, the meter number that Electricaribe had put in the fraud records did not coincide with the number on the store's actual meter. Then, based on that fact, I appealed to the SSPD which ruled in our favor. It was a simple detail.

After that experience, Sabas became aware of the fact that sanctions were becoming a form of "business" for Triple A and Electricaribe. He, for example, recalls that most of the people he knew back then were indebted because of fraud processes. "In the period between 2002 and 2004, the two utilities were imposing this type of fines based on the minimum suspicion

of fraud", he explains. The process started when a crew of technicians made a surprise visit to a neighborhood to review all of the metering devices. If the technicians suspected a possible irregularity in a particular meter they issued a review report. From there, the crew informed the resident. After that, residents had 5 days to contest the fraud allegations. The problem was that, many times, residents were not home at the time of the crew's visit. Therefore, while the utilities assumed that the residents knew about the initiated fraud process, they did not and they only found out about the process and subsequent fine, when the bill arrived. After receiving the notice of the fraud process, many felt resigned to pay. According to Sabas, in fraud processes, the utilities stand "as judge and plaintiff". They gather the evidence of fraud and make a decision without consulting anyone. The only way to get a third party involved is by making an appeal to SSPD.

> Most people did not know that they could dispute the process with the utility. Even if the utility rules against the resident, and decides to proceed with the sanction, the user has the right to file an appeal to the SSPD. Obviously, most people do not know about such measures, many did not know about the existence of the SSPD. I did not know about its existence until 2002! In short, the final result is usually to be burdened with the sanction and the fee.

Agustín has another view of fraud processes. What he finds particularly unfair is the way in which Electricaribe and Triple A put pressure on the communities of the southwest. According to his analysis, both utilities frighten residents. Since meter manipulation entails the theft of energy or water, and is thus considered a crime, the utilities often threaten residents with a criminal process. The offers of debt repayment plans that include discounts are thus hard to refuse. In fear getting a criminal record, residents usually agree to pay the fine.

> Imagine if you receive an accusation of fraud, you can wait and get into more trouble with the law, or you can start paying right away, in which case you will also get a discount. That is why some people start paying right way, they sign a repayment agreement without even understanding what the fraud process was about.

Agustín and Sabas agree with the fact that these fraud processes seem to be cyclical. "Some years the utility crews will conduct more surprise visits to the sector, some other years the utility crews will be *más calmados* ("more calmed")" explains Sabas.

In early 2013, however, they received information that changed the way in which they wrote fraud-related formal complaints. Cayetano, the SSPD functionary and their teacher, sent them a 2012 sentence by Colombia's State Council[22], in which the Council ruled against both the electricity utility of Bogotá and the SSPD on the subject of fraud investigations and due process. According to the sentence, utilities could no longer start a fraud investigation without properly notifying the resident and explaining to him/her the reasons behind it, even if this meant returning after the surprise visit just to deliver the notification. With this new precedent in hand, Agustín and Sabas work to enforce due process in fraud investigations. To start or proceed with any fraud investigation, utilities are required to have proof of proper notification, such as the resident's signature.

During my time at the office, I documented three types of fraud-related claims. The first was related to due process. In the case of Alfonso, for example, who took his fraud process to Sabas, Triple A had put him under investigation for manipulating his water meter in *barrio* Carlos Meisel. In his case, the contractors decided to remove the meter in order to check if it was functioning properly. Although Alfonso was home and agreed to sign the notification, he was not informed about the reasons that lead to the accusation of fraud. The technicians just "took the meter away and told me not to worry, because the removal was provisional and it would have no costs". The moment he received the bill with the notification of the fraud process, he decided to file a claim. Sabas wrote the formal complaint arguing that the right to due process had been violated. Even if Alfonso was present during the visit and signed the notification, technicians were required to give him an explanation and they did not. Alfonso took the formal complaint in order to file it. When he left, Sabas confessed that he saw no future in it. Alfonso had signed the notification and there were no witnesses who could verify the veracity of his claims. When, two weeks later, Triple A rejected the formal complaint. Sabas advised Alfonso not to appeal.

[22] For the complete sentence, Sentencia 25000-23-24-000-2002-00272-01 see (Consejo de Estado, 2012)

“This is the problem with due process”, Sabas explains, “even if there are regulations in favor of residents, such as the fraud investigation notification, many of them feel intimidated by the crew of technicians and sign the notice without fully understanding what is going on”. One of the least effective new regulations, for example, stipulates that residents have the right to call a trusted technician to supervise the crew as they check the meter. However, the regulation gives residents 15 minutes to contact and bring in a trusted technician. Due to the narrow time margin, most meter revisions were made without the presence of an independent technician.

Some cases like Melba's were winnable but long. Melba, a woman in her thirties, is a single mother and employed fulltime as domestic worker in the north sector. She had met Agustín in the JAC offices of *barrio* Evaristo Sourdis. She called him immediately, when she received a surprise visit on a rainy morning from the technicians of Electricaribe, informing her that they had opened a fraud investigation and were removing her meter. With his advice, she asked the utility technicians to explain the evidence of fraud and requested 15 minutes for Agustín, her technician, to come and supervise the meter removal. The technicians, according to her testimony laughed at her, removing the meter and asking her to sign and stop stalling. Melba then did what Agustín advised, she called other neighbors to come and witness the conversation and record it with their cellphones, and refused to sign, even when pressured by the crew.

Agustín wrote a first formal complaint, which was rejected by Electricaribe. He then advised Melba to appeal to the SSPD. While they were waiting for the decision on the appeal, Melba received the fine notification from Electricaribe. She also received a proposal to accept the fine and enter a debt repayment plan in exchange for a 25 percent discount. Melba came back to the office. She was scared, the fine of COP $635,000 ($322 in constant 2016 USD) was high and she believed that the 25 percent discount would benefit her more than filing more appeals. They had threatened to suspend her service and if that happened she would not only end up paying the fine, but also the reconnection fee. She was also getting in trouble at work, as she needed to leave early to come see Agustín. Agustín convinced her not to accept the plan and rapidly wrote another formal complaint and went to file it personally at Electricaribe. “They cannot legally do this”, he explained before leaving, “They cannot suspend the service while there is an ongoing appeal with the SSPD”. When the appeal was

dismissed by the SSPD, Agustín had an idea. Although he had never used videos in the past, as they were used to working with sworn testimonies, he decided it would be a good idea to try. He called Melba and asked her to come as soon as possible; they needed to file the second appeal quickly in order to avoid the suspension of her service. Agustín asked Sabas to help him write the appeal, they emphasized on the importance of the videos as bearers of the truth: the technicians did not explain the situation and denied Melba her right to due process. Sabas made a DVD with the videos. 15 days later, the appeal was ruled in Melba's favor and the fine was rescinded.

The second type of fraud-related claim is related to the removal of the meter. Every time there is a fraud investigation, utility technicians are entitled to preventively remove the meter to check that it is functioning properly. According to Law 142 of 1994, utilities have 30 days to check the meter and to reinstall it, or to install a new one. However, some residents declared that the technicians never returned the meters. Ruby, for example, sought Agustin's help in inquiring about her water meter. As I asked her about her motives for lodging a formal complaint, she responded "if there is no meter, technicians will estimate, and these estimations are worse. I have lost control over my consumption because if I try to lower it they will not know. I want the meter back, I am still paying for it". According to Agustín, this concern is becoming more common, as residents believed that without their meters they are in hands of the technicians who will estimate based on the neighborhood's consumption, which may often be higher.

A third type of fraud-related issue that is common in subnormal neighborhoods is related to the cargo census. In these neighborhoods, community consumption is divided on the basis of a cargo census that establishes the number of appliances per household. Fraud processes are initiated following surprise visits to check for the number of appliances per household. If a household has more appliances than declared on the census, they are sanctioned. At some point in 2012, these processes started being filmed by Energía Social making them difficult to dispute. Many would arrive to the office explaining that the house that appears in the video of the fraud investigation is not theirs, or that had just bought a new appliance when the crew came, and so had not had time to declare the new appliance to the utility so that it could be included in the census. Neither Agustín nor Sabas take these processes. They affirm that "with the existence of a video, the cargo census is difficult to dispute". They also

explain, that in the case of electricity, subnormal neighborhoods have very few chances of winning a dispute with the utilities. They do not have an appropriate grid; "they are prone to leaks and malfunction and therefore have almost no rights when it comes to electricity services"[23].

In Sabas opinion, "fraud is how the utilities make their money. Fraud-related fines are not subsidized, so it doesn't matter if you're in tiers 1 or 2, you still need to pay the full amount". Plus, he added, residents are frightened at the prospect of a legal processes and thus sign long debt repayment plans. In addition, opening a fraud process almost always includes the changing of the meter, and every time the utility changes a meter; residents need to pay the full cost of the new one in monthly installments. Communities in the Southwest sector, for example, spent up to 3 years paying for a new water or electricity meter, which in 2014 cost about COP $250,000 ($127 in constant 2016 USD). In the case of electricity, residents also need to pay for the protective box. For Agustín, "fraud is also how technicians make money". Since these crews of technicians are hired through temporary and precarious contracts, some take advantage of the fraud processes, to make some extra income by accepting bribes in exchange for "overlooking" cases of fraud. A report by the National Ombudsman added another layer to Agustin's argument. It revealed that, due to an internal policy by Electricaribe which gave bonuses to technicians that uncovered fraud processes, some were opening fraud investigations based on false reports and fabricated evidence (Redacción Nacional, 2015).

5.2.3 Subsidies and other issues

Dulfai comes to the office on a Tuesday afternoon in December 2013. She works as a hairdresser and, Tuesday is her slowest day. She lives in the subnormal *barrio* Los Olivos, and besides her own concerns, she has gathered the concerns and questions of many of her neighbors. As mentioned on Chapter 3, recognizing its inability to extend electricity infrastructure to these neighborhoods, the state subsidized a large part of the electricity

[23] Sometimes surprise visits to review the cargo census resulted in protests and confrontations between the residents and the utility technicians. In response to the opposition of these neighborhoods Energía Social's crews are sometimes accompanied by the local police (Observatorio de Multinacionales en América Latina, 2008).

consumption in subnormal neighborhoods with the Social Energy Fund (FOES). This is why, Dulfai found it strange that many on her block were having trouble paying their bills. "At the beginning bills were very low, because of the subsidy, but lately costs are increasing and the service is so bad. Why should we pay?" she explains. Sabas reviews the bills that she has gathered. According to his analysis, Electricaribe through its subsidiary Energía Social, is keeping small portions of the subsidies. Dulfai, for example, was awarded a FOES subsidy discount of only COP $19.35 ($0.01 in constant 2016 USD), when she was entitled to receive COP $1,935 ($1.07 in constant 2016 USD). He alerts Dulfai to what is, in his view, an open secret.

> Look at the subsidy, look at the bill, and notice that if you look carefully, you know, by paying attention to the detail and knowing the rules, you will realize they keep a part of the subsidy. Not much, no more than COP $1,900 or $1,500 ($1.05 or $0.82 in constant 2016 USD), but still. They have been doing it for a while, for a year or two, they do it and the government knows and lets them do it.

Despite discovering the inconsistency, Sabas warns Dulfai about the difficulty of winning this type of formal complaint. The inconsistency was never above COP $2,000 ($1.10 in constant 2016 USD). "It is not worth it *mi amor* ("my love"), the two buses that you will have to take to file the document at the SSPD would be more expensive than what the utility is stealing from you".

It is important to mention two other regular situations at the office. The first is about the *puntos de pago* ("payment points"), very small shops around the city where you can pay bills form Electricaribe and Triple A. These payment points are given in concession by the utilities to private actors, who will collect the bills and transfer them to the utilities. Alirio, a resident of *barrio* Carrizal who visited the office, confessed that he preferred *puntos de pago* to banks, as they were faster and very accessible in the south and center of the city[24]. However, he was confused and disappointed because even though he had paid, his water service had been suspended. Since he kept the bill with the stamps from *punto de pago*, which indicated that he had already paid, the process was quickly successful. His service

[24] Although online payments were also possible during the period of the ethnography 2013 and 2014, none of the interviewees were paying services online, due to mistrust with internet security and the need for a bank account and an online bank profile to do them.

was reconnected free of charge. Many residents come for help in resolving similar issues. Although their formal complaints are always successful, they manifest feeling disappointment with the corruption of the *puntos de pago*, as the only the alternative was to pay at a bank which implied queuing, sometimes for an hour.

The second common situation is about a household appliance credit launched by Electricaribe in 2010. The credit is advertised on the back of each bill: "Now you can acquire or renew your appliances with the best financing plans and pay them in comfortable monthly installments through your monthly electricity bill" (see Figure xviii). The only requirement to obtain the credit is to have the approval of the owner of the property and to agree on the interest rates. Ismael, who owned a two-bedroom house in *barrio* Lucero, applied for one of these credits in 2013. After it was approved, he and his wife bought a washing machine to be paid in 24 installments. In December of that year, they had extra expenses due to the Christmas holidays. Thus, although they paid for the portion of the bill that corresponded to the electricity service, they fell behind on their credit payments for the washing machine and their service was suspended. Ismael visited the office to learn about the repercussions of his debt. Sabas explained that, even if he fell behind on credit payments, the utility could not suspend his services. According to Law 142 of 1994, charges to third parties (such as the appliance credit) have to be billed separately and residents can choose whether to pay it or not. Consequently, service cannot be suspended if a resident cannot pay the installments for the credit. After filing the formal complaint with the SSPD, Ismael got his service reconnected at no charge. Agustín and Sabas file similar formal complaints every week and usually they win them.

Figure 18 – Household appliances credit.

"Why are you waiting to get a new washer? Purchase or upgrade in the offices of Electricaribe or at Rayco shops outlets for washing machines, refrigerators and air conditioners and pay in comfortable installments through your Electricaribe bill". Advertisement on the back of an electricity bill, 2014

5.3 NEXT DOOR BUT NOT THE SAME

5.3.1 "There are many things that we cannot change"

For Agustín, the field of public services, is one in which he is constantly pushed to learn. "If you come by my house on a Sunday, you will find me studying, going over the laws and the constitution," he tells me. When I met him in September 2013, Agustín wanted to show me how he had learned Law 142 of 1994 by heart. But the more he knew about the law, he told me, the more dissatisfied he was with the service and with the government in general. On different occasions, Agustín explained that, according to law 142, the service fees should be determined according to the specific characteristics of each region. He found it unfair that a resident of the Caribbean region, where temperatures rose to 42 degrees Celsius, paid the

same or more than a resident of Bogotá, where the average temperature is 14 degrees Celsius. Residents of the Caribbean region had to use more electricity, as they needed fans and refrigerators with an urgency that was not experienced in cooler areas of the country. Every time he brought up this injustice, Agustín resorted to examples from Bogotá.

> Tariffs should be established by taking into account the characteristics of each region. That is what the law says and it makes sense because if we are in the burning sun, we will take more showers and wash more clothes. In the mountains it is different. I have heard that in Bogotá people do not need big refrigerators they can even leave the juice and milk out. Imagine what would happen here, the milk would turn sour within hours.

Agustín is concerned about the injustice of Caribbean residents paying higher rates for water and electricity than those in the cooler areas of the country, however, he tells me that he knows that he cannot change this reality through a formal complaint. As a "law technician" he is aware of the limits of his job. "I know how to spot inconsistencies in bills and how to write a formal complaint, but I am not a lawyer", he says. He explains that there were many things at the national level that are beyond the reach of his *oficina de quejas y reclamos*.

"*A fin de cuentas nosotros no somos sino mecánicos*" ("At the end of the day we are just mechanics"), says Sabas when I ask him about the reach of their formal complaints. He explains that they can only dispute bills, but they cannot dispute the wider issues, such as the lack of appropriate electricity infrastructure in subnormal neighborhoods, insufficient drainage infrastructure, and inadequate garbage collection. Moreover, they cannot dispute the obligation to pay for water and electricity services that are unreliable, "not only because of the cuts but also because the variations, in pressure in the case of water and voltage in the case of electricity". From time to time, the office receives visits from southwest residents who want to file formal complaints in the hope of putting pressure on the SSPD. They have documented multiple system malfunctions steaming from *arroyos,* followed by blackouts and water cuts, the overall poor quality of the services, and the unexpected cuts for alleged maintenance and repair of infrastructure.

According to what they had learned in their course with Cayetano, residents have the right to an efficient and continuous service. While Sabas blames the malfunction events on the

lack of maintenance and the overall underperformance of Electricaribe and Triple A in the city's southwest sector, Agustín argues that malfunction events are the responsibility of the state. The conversation made him *rabioso* ("angry"), as he contended that what would be fair in the case of the southwest sector would be not to pay for services as they were unreliable.

> Each municipality of the country has the duty to ensure the efficient and continuous provision of public utilities for water, sanitation, and electricity for all inhabitants. The main obligation of a utility is the continuous provision of a good quality service, that is, without interruption. If the law was respected in this country, the SSPD would recognize that there is a failure to provide the service in the southwest of Barranquilla and that the residents are thus entitled to compensations for damages for each day of service failure. But no, here it is the opposite, instead of receiving a discount on utility services, the whole sector is indebted to them. The local governments have known about this situation since *Cura Hoyos* was mayor ("the priest", Mayor Hoyos Montoya). The presidents in Bogotá have known about our situation too. Electricaribe and Triple A benefit from the state subsidies and the cross-subsidies, they do all sorts of irregularities with the bills because the state is negligent in the verification of the billing of public services. Law 142 of 1994 says that it is an obligation of the SSPD to monitor, control and sanction the utilities and they do not, they do not do anything.

Reports by the National Ombudsman (Elquis Díaz, 2015; Redacción Nacional, 2015; Defensoría del Pueblo, Pueblo, 2004) on the performance of SSPD, help to contextualize Agustin's position. They point to the fact that, although the regional office of the SSPD has conducted investigations on the quality of services in the Caribbean region and ruled against the utilities, these rulings have not been taken seriously. According to a 2004 report, between 2003 and 2004, Electricaribe and Triple A complied with less than 30 percent of the decisions taken by the regional SSPD office, regarding issues from economic penalties to directives to perform urgent infrastructure maintenance. Even though the SSPD is entitled to conduct investigations and impose penalties, it has no institutional capacity to enforce them when it comes to private providers such as Gas Natural Fenosa and Aguas de Barcelona (Defensoría del Pueblo, 2004).

Another key issue before which Agustín and Sabas feel that formal complaints are powerless is that of the quality of the electricity infrastructure and the related accidents occurring in the subnormal neighborhoods. As mentioned in Chapter 3, these accidents affect principally the *marañero* population as they install and repair self-made electricity connections. Agustín remembers how, when family members of electrocution victims call him for advice, he has to say that it is best to get a lawyer through the free Legal Advice Centre in Universidad del Atlántico, Barranquilla's public university. However, according to what he had researched with the help of Cayetano, it is difficult for someone who was voluntarily manipulating the network to be legally recognized as a victim. For there were only antecedents of compensation after unexpected accidents such as poles falling down or changes in household voltage, "where victims did not do anything to cause the accident".

In conclusion, despite the success of many of their formal complaints and appeals, Agustin and Sabas described their limited scope. Among the things that cannot be changed via *quejas y reclamos* to the SSPD are the violations of the law in terms of utility rates, poor service quality, a lack of infrastructure, and the accidents of young men who are injured while trying to build electrical connections in southwestern neighborhoods. Another of the daily issues that causes some discomfort for Agustín and Sabas, are visits from residents that are unable to pay for their services or the costs of a process, such as photocopies. At different times when residents try to negotiate the price or state that they simply cannot pay, Agustín and Sabas explain the impossibility of helping them for free. Sometimes they send Marta, Agustin's assistant to explain their position. They both express feeling embarrassed to turn down residents in need. *Tenemos que vivir de algo* ("we have to live off something"), they would say.

The visit of *Seño* Trina (*Seño* is an abbreviation of *Señora*, Mrs.) to the office, however, triggered a different situation. Trina is a lady of about 70 years in age, living with her daughter, a domestic worker, and her three grandchildren in *barrio* Los Olivos. In November 2013, she received a bill from Triple A for COP $1,300,000 ($717 in constant 2016 USD) due to a water leak that had not been discovered in time. Someone in the neighborhood referred her to the office, and after looking at the bill and having a general conversation with her, Agustín felt unease. She told him about their low income, about her daughter being a single mother, and about the other debts that she was paying to Electricaribe. She asked

about the possibility of receiving a state subsidy called *familias en acción* ("families in action"), which provides cash transfers to low-income families with children[25]. At some point, it became clear that *Seño* Trina believed the complaints office was in fact a state office. While she waited in one of the office chairs and was offered coffee by Marta, Agustin went to Sabas' office. He explained that even if he won the process, *Seño* Trina would still have to pay their 20 percent fee "It is almost half the salary of her daughter, they all depend on that salary in the house," Agustín explained. Sabas nodded, "the lady looks very poor." Both agreed to file the formal complaint before the SSPD at no cost. "When a customer comes who we see that has money, we will charge him 25 percent, instead of 20 percent, and so we will compensate," concluded Sabas.

5.3.2 "It is hard not to accept a job at the utilities"

For Agustin and Sabas it has not been easy to keep the office open. Soon after they opened it, they lost the help of Cayetano, who was working for the SSPD. Cayetano's course was supposed to last a year and a half, but was cut after only 7 months when he received a warning from his superiors. He was instructed to end the course if he did not want his work to be affected. By that time, the security guards working at the door of the SSPD building were recommending Agustín to the residents who waited in line, as he was faster and more efficient than the SSPD at providing guidance on how to file a formal process against the utilities. "One of these security guards had been my client and he recommended my services. People would rather pay COP $10,000 ($5.07 in constant 2016 USD) than waste a working day in a line, waiting for advice on how to proceed", explained Agustín.

Over time, the relationship with the SSPD got worse. Agustín, who had been chosen by his *barrio* Evaristo Sourdis as the representative of the citizen oversight committee, was no longer invited to meetings and events. In 2005, the position that Cayetano held was eliminated and he was fired. Cayetano had to move to another department, where he got a job as a schoolteacher. Agustín and Sabas maintain a good relationship with him, and he continues to advise them by telephone in difficult cases. For Cayetano, with whom I spoke

[25] Families in Action is a program managed by the Social Prosperity Ministry that offers to all those families with children and adolescents under 18 economic support through the form of cash transfers, to ensure the children will have access to a healthy diet, and will stay in the school system See (Roth, 2009) .

by phone, his dismissal was indirectly the result of pressure from the utilities on the SSPD. By 2004, Agustín and Sabas became frequent visitors in the offices of Triple A, Electricaribe and the SSPD as they filed processes almost every week, and in one way or another he was blamed for having incited them.

In addition to losing his teacher and his opportunity to have good relations with the SSPD, Agustín lost many of his *compañeros,* ("friends"), who had been active with him in the Union of Public Services UPS. After the privatization of the utilities, mobilization for access to public services reached a high point, but in subsequent years many of the former leaders were threatened[26] and left the city or were co-opted by the utilities. Most of the classmates in Cayetano's course ended up abandoning the movement. Some entered negotiations with the utilities, obtaining concessions for the management of *puntos de pago*. As a result, a number of *puntos de pago* in the city are managed by former union members and JAC leaders. Others became part of the corporate social responsibility initiatives of the utilities and received scholarships and other benefits in exchange for working with them to design campaigns encouraging the timely payment of the bills. "It was a difficult time in the city", argues Sabas.

> The years 2002, 2003, 2004, were hard. There were no jobs and many former members of EAAB's and Electranta's unions, had been unemployed for years. They were in the movement but eventually had to look for jobs and unfortunately they were co-opted by the utilities that they used to criticize.

Agustín does not agree with Sabas. By 2002 he was in a precarious position too. After losing his steady employment in 1994 he had been doing all kinds of jobs. However, he was not tempted by the bribes of the utilities.

> Unfortunately there were many leaders who gave in because of the money. They offered them a *punto de pago.* They offered me one too. It was their way of buying out the leaders. In a meeting with social workers from Triple A, they even offered to give me a scholarship so that I could start a career. "Sorry, I answered, what are you guys thinking? I will not accept that". I don't want to be in business with them, I don't want them to pay

[26] See next section

> for my studies. I didn't even finish high school. They were shocked every time I said no. They were shocked because I am black and they thought I was going to accept anything. I told them "sorry, I do not need to work with you". The blacks have let themselves be convinced that they are less. So that's why they were shocked. I'll never be intimidated.

"We have always known that that the job in the office is variable and difficult" says Sabas. There are days when they both process around 10 claims. Other days they do not receive any visitors. With the revenues of the photocopy shop, they manage to pay the rent. Both continue to live in the same neighborhoods where they lived when they first met. They are aware that it is not a job in which they are going to rise socially, but they make a daily living. In many ways, Agustín explains, working in the office every day is another type of *rebusque.*

5.3.3 "There is no point in running away from death"

In addition to the economic problems, the rupture of the relationship with the SSPD, and attempts at co-optation on behalf of the utilities, another of the obstacles that Agustín and Sabas have to overcome to keep the office opened is intimidation. Pressure for the office to close was stronger in the years preceding the paramilitary peace process. Around that time, Barranquilla experienced a wave of violence as a result of the expansion of the Northern Block of the AUC, a paramilitary group present in the Caribbean region. It settled in the city between 2000 and 2003, and consolidated its rule between 2003 and 2006 (Trejos Rosero & Posada Ramírez, 2014). The paramilitary strategy in Barranquilla consisted of controlling illegal economic activities (Verdad Abierta, 2011). The expansion and consolidation of paramilitary forces in the city of Barranquilla resulted in an increase in crime: between 2004 and 2006, this paramilitary structure committed 1664 homicides (Trejos Rosero & Posada Ramírez, 2014). As in other cities, paramilitaries had a far right "counterinsurgency plan" which entailed the persecution of civic leaders. This involved threatening, displacing and assassinating human rights defenders, academics, students, left-wing politicians, unionists, and community leaders (Memoria Histórica, 2012). In 2003, the paramilitary persecution of union members reached a high point as they threatened 63 union activists affiliated to the Central Union of Workers CUT (Trejos Rosero & Posada Ramírez, 2014; Verdad Abierta, 2011).

It was in this climate of uncertainty that the *oficina de quejas y reclamos* was created. Many of the leaders and unionists of the Union for Public Services had received threats. In 2005, Adam Pacheco Rodríguez, a 46 years old resident of the southwestern *barrio* Las Estrellas, was assassinated. Pacheco Rodríguez worked at Electricaribe and was the president of its union (Redacción Justicia, 2011; Verdad Abierta, 2009). Subsequently, it was revealed that officials from the police and the Administrative Security Department (DAS) had taken part in the murder of Pacheco Rodríguez as well as in other murders of community leaders in Barranquilla and in the Caribbean region (Redacción Justicia, 2011).

The year that Pacheco Rodríguez was murdered, Agustín and Sabas received a letter with drops of blood in it. In the letter they were asked to close the office. Agustín remembered how, after receiving the letter they thought about telling the police, but did not think that they would pay them much attention. Also they had heard rumors about the existence of pacts between the police and the paramilitaries. Agustín thought about the things his grandfather taught him.

> One day as I walked to the office a friend warned me, "They're going to kill you". By then, paramilitaries were threatening leaders everywhere in the southwest. We received a letter with drops of blood near the end of 2005. I then remembered my grandfather who used to tell to us "well, my children, do not run away from death. There is no point in running from death, because running from death is like running from the rain, you get wet, sweaty, fall on the pavement and scrap your knees". There is no point in running. So I told Sabas "we are small fish, I don't think anything will happen to us, but it is best to face it, and if we have to die, we die". I decided to stay.

Shortly after receiving the threat, the paramilitary armies at the national level demobilized as part of a peace process and in Barranquilla the homicide rates declined significantly (Trejos Rosero & Posada Ramírez, 2014). Since then, the intimidation is much more subtle. From time to time, for example, they have been denied entrance to the offices of Triple A and Electricaribe. And, in 2013, Sabas was brought to court by Electricaribe.

As usual, Sabas had gone to Electricaribe to file a formal complaint in a fraud-related process. The plaintiff was Sandra, a woman from *barrio* San Felipe who worked in sales and, due to her tight schedule she delegated the task of filing the formal complaint to Sabas.

A few weeks later, the utility denounced him for fraud: they accused him of manipulating the meter in collusion with Sandra. Electricaribe's lawyers sustained they had eyewitnesses and sworn testimonies of the alleged fraud. It was an effective way to intimidate Sabas. He had to hire a lawyer and was prosecuted. A thing that worried him was the fact that he did not have the mandatory *military card.* At his age, he would no longer be sent to the military service but he would have to pay a large sum for the military card if its absence became noticeable during the trial.

During the trial, he explained that despite having filed the documents, the fraud process did not pertain to him and that he had no relationship with Sandra. He also tried to describe the work that him and Agustín did in the office. Sabas remembered how, during the trial both he and Agustín were very worried. They knew that Electricaribe had a good legal team, believed that the local judiciary system would benefit those with the economic power, and, since fraud in Colombia could be punished with a jail sentence, feared that Sabas could be sentenced to jail time. Without any savings, Sabas had everything to lose. After several sessions in court, however, Electricaribe withdrew the charges against him. The absence of his military card was never noticed. Despite the good outcome, Sabas interpreted the whole situation as a clear attempt at coercion. He explains how, during the days of the trial he understood two things. The first was how far the utility would be ready to go in order to challenge the complaints office. The second one was how vulnerable he and Agustín were to Electricaribe and Triple A, even if for a decade they had been reading the law, winning processes against the utilities, and gathering support from the population in the southwest.

> I realized that we are vulnerable before the law. Even though we spend all day reading the photocopies of the law and trying to enforce it. When I walked to the courts for the trial, I realized that our office is next door to them, but that we are not the same. We are not real lawyers, we are mechanics.

5.4 CONCLUSIONS

This chapter studied the state by focusing on its local practices, institutions, and effects (Gupta, 1995; Mitchell, 1999; Sharma & Gupta, 2006). Through an ethnographic account of the *Oficina de quejas y reclamos* in the center of Barranquilla, it documented everyday

contestation strategies in the form of formal complaints against the utilities. These documents were written and filed in collaboration between residents of the southwest sector and two "law technicians" Agustín and Sabas, who acted as mediators between the SSPD and the communities.

At the same time, the chapter explored the regulation and the strategies put in place by the utilities, Triple A and Electricaribe, to ensure full-cost recovery in the southwestern sector in the period between 2002 and 2014. These included educational programs to promote the payment of bills, debt repayment plans, and meter monitoring systems to detect possible fraud. Likewise, Electricaribe created its subsidiary Energía Social, to collect bills through a community meter system in neighborhoods without proper infrastructure. These measures led to pervasive economic indebtedness from water and electricity bills in the context *rebusque* and the unstable work patterns in the city's southwest.

It was in this context that Agustin and Sabas set up the *oficina de quejas y reclamos*. Both men were born in rural areas of the Caribbean region. Agustín arrived to Barranquilla with his family in his childhood, in search of better economic opportunities, and Sabas arrived after reaching the age of majority, with his family, due to the paramilitary take-over of his hometown. Both worked as mechanics in the port of Barranquilla when they became recipients of the assistance of an SSPD functionary who gave them a course on the laws related to public services. Together they provided a service to the residents of the city's southwest, filing formal complaints about billing inconsistencies, irregularities in fraud processes, and mismanagement of subsidies.

Through the study of their routines, their life histories and their interaction, both with the southwest community and with the utilities and the SSPD, this chapter showed different ways of imagining the state. It was possible to document the frustration and fear of residents faced with progressive indebtedness and charges of fraud. This fear is permeated by distrust in the regulators and institutions of the state (or of law). It is due to this distrust that many residents sought the help of Agustín and Sabas, because they knew that it was possible that, in the hands of utilities and related institutions, they would not receive fair treatment.

Likewise, the ethnography evidenced the way in which the legacies of state violence contributed to distrust in certain institutions (Sharma & Gupta, 2006). When Sabas and Agustín received threats, they did not seek the help of the police believing that the institution condoned paramilitary strategies. Likewise, when Sabas was prosecuted for a fraud he did not commit, he feared being convicted because of the corruption in the judicial system.

Though his relationship with Cayetano, the SSPD official, Agustín described how, even if Cayetano was a "good functionary" the existence of different levels of authority above him, sabotaged his ideas and actions. By contrasting the actions of the regional SSPD, which tended to be permissive of utility strategies, with the sentences of Constitutional Court and the Council of the State, that limited these strategies, Sabas and Agustín also detected and denounced the contradictions between the different state scales (Gupta, 1995; Mitchell, 1999; Sharma & Gupta, 2006).

It was also possible to see how, the work of the office contributed to the construction of the state imaginary among the southwestern population of the city. Not only because of residents like *Seño* Trina, who believed Agustín and Sabas were functionaries of the state, but also for residents like the security guard at the SSPD building, who told people waiting in line that Agustín was better than the SSPD in advancing formal complaints. In general, a visit to the office would help structure the perception that people had of the state: they would feel satisfied with the SSPD when the formal complaint written by Agustín or Sabas was successful, or frustrated when it was unsuccessful or when it entailed a long wait.

Despite the many barriers they encountered daily, such as the limited scope of formal complaints, attempts at bribery or cooptation, and legal and physical intimidation, Agustin, Sabas, and the residents seeking their services were able to effectively challenge the distribution of water and electricity in the city. Not only by winning in processes against the utilities, but because as long as there was a formal complaint or an appeal in progress, the utilities could not suspend services: water continued to run through the tabs and lights remained on in the southwest sector.

Finally, the title of this chapter "bureaucrats without state" refers to the paradox which becomes manifest in the daily lives of Agustin and Sabas. On the one hand, both men imitate

state procedurialism (Mitchell, 1999). They rented an office next to the city courts and use the same folders, stamps, and stationery as nearby state offices. Like what state officials are meant to do, they serve the local population, listen to the communities, and present them with solutions to access water and electricity services. On the other hand, and in spite of imitating local bureaucracies in their everyday actions and participating in the social construction of the state, Agustín and Sabas are vulnerable to the state. Born in low-income families, they were both affected by the armed conflict: Agustín as soldier under mandatory military service and Sabas as a victim of forced displacement. Once in the city, they had to make a living through *rebusque*, in the absence of social security benefits. The lack of a military card excluded Sabas from any educational opportunity subsidized by the state. Finally, by the time they were threatened in 2005, they did not trust the police and had no one to turn to for help.

6. Conclusions

The general questions guiding this research were: what may a study of water reveal about the state? And what may a study of the state reveal about water? To answer them, I started by following water flows in Barranquilla, specifically, by studying the 1985 World Bank project which aimed to extend water, drainage and sanitation infrastructure to southwestern neighborhoods. The analysis of this project motivated me to focus on political parties and the elections. Through archival work I was able to document the important role that electoral politics played in the development of the project and the implementation of successive water reforms. While studying electoral and party dynamics around the water reforms, I also examined the changes in regulation and infrastructure and the ways in which they translated into uneven water and rain distribution. These changes in the urban distribution of water have been contributing to the creation of the "state effect". Neighborhoods classified as "subnormal" with little access to water services, mobilized and protested arguing that they had being "left out" by the state. While studying popular contestations concerning water and electricity services, I met Agustín and Sabas, who in turn led me to the *Oficina de Reclamos*. In the claims office, members of southwestern communities seek intermediaries to interact with the local state bureaucracies in order to contest and challenge unequal water and electricity allocation and sometimes achieve redistribution. In what follows I draw four general conclusions.

6.1 PARTY POLITICS AND WATER REFORM

The implementation of the Barranquilla World Bank project in 1985 unleashed a series of disagreements and alliances between the national and local governments, the city council, the Liberal and Conservative political parties, and the economic elites of Barranquilla. These alliances and differences were based on different positions and ideas on the distribution of water in the city. Instead of a straightforward implementation of the Bank's recommendations, this thesis describes how this implementation consisted of a highly contentious process. A process that provoked the internal division of the parties which had traditionally held power in the city. Likewise, there were disagreements between the economic elites and the local government.

During the first five years of the project (1985-1990) infrastructure was not extended to the city's southwest as the funds were used in the framework of corrupt electoral campaigns. However, by 1990 a new electoral force, *Movimiento Ciudadano*, had emerged to challenge this unequal distribution of water. After winning the local elections in 1991, this new political party (in alliance with other factions of traditional political parties) secured the necessary investments to extend water supply in the southwest.

Although the relation between water distribution and electoral politics has been a subject of scholarship in disciplines such as comparative politics, and more generally political science (Herrera, 2017a, 2017b), this relation has not been explored within political ecology as an approach focusing on power-laden processes of environmental change. While many studies in urban political ecology document everyday life of communities as they deal with essentially corrupt local politicians (Anand, 2017b; Gandy, 2008), or center on a narrative that assumes cohesion among elites (Budds, 2013; Swyngedouw, 2004), this thesis examined local party politics to better explain water distribution in the city.

In the context of water reform, local politics, which involved coalitions and disagreements between government, parties and economic elites, was one characterized by heterogeneity, where ideas on the ways in which different flows of water should be distributed in the city both clashed and converged.

6.2 INTERCONNECTED INFRASTRUCTURE

The intersection between water and electricity infrastructures was documented throughout the thesis. This intersection became an analytical site from which to observe the city. It allowed me to portray the routines of malfunction and the ways in which, both the malfunction episodes and the resources to repair the damaged infrastructure, are distributed unevenly in the city. In the southwest, where the largest number of displaced populations are concentrated, the drainage, water and electricity infrastructure are particularly fragile and there are more episodes of malfunction. Likewise, it is a place in which the processes of repair are prone to delays or depend on the actions of the community itself.

Looking at this intersection between water and electricity infrastructures from a perspective that takes recent history into account, I was able to put together a narrative about the ways in which displaced communities, who arrived in the city without many possessions, built not only housing, but also water and electricity infrastructure in the southwest. These infrastructure construction processes were to some extent regulated by the state in partnership with utilities Triple A and Electricaribe. These self-construction processes were organized along gender lines. The women in the sector were assigned tasks of street sweeping and garbage collection, and men were delegated the construction and repair of electricity networks. Some testimonies, describing the work of the *marañeros*, suggest that these processes were also organized along race lines, since they are mostly described as young Afrocolombian men.

Finally, it was possible to analyze the production of marginality in the southwestern sector of Barranquilla. In particular, in the neighborhoods classified by the local government as subnormal due to the absence of formal electricity connections. This marginality is expressed in the levels of indebtedness experienced by the residents, in the constant cuts of light and water, but also in the "danger" of infrastructure. Residents of the southwest argue that the infrastructure in their neighborhoods is "dangerous" because it causes accidents, particularly in episodes where rainfall triggers the appearance of flashfloods and these, in turn, damage the electrical infrastructure. The population of Afro-Colombian *marañeros* in charge with repairing electrical networks is the most vulnerable to this type of danger. Thus, social relations and stereotypes were produced and reinforced through infrastructure.

This marginality is not only a consequence of the accelerated growth and the historical lack of drainage infrastructure. It is also produced actively through local government decisions, which have not extended appropriate electricity grids, through national government decisions, that legitimized the atypical situation of these neighborhoods through the creation of the category of subnormal neighborhoods, and through the actions of utilities, that deny repair services to these neighborhoods even though they charge them a bill for the electricity consumed.

6.3 POLITICIZING THE UTILITY BILL

Different authors have documented the ways in which political agendas are put forward through technical means, and how both citizenship and democracy are stabilized through technical means such as infrastructure, cables and meters (Meehan & Molden, 2015; Mitchell, 2002; Von Schnitzler, 2017). Since the work of regulatory agencies and commissions, utility engineers and accountants, can seem a technical "boring" or "dull" work, characterized by identical everyday routines, their practices can seem apolitical (Anand, 2017a; Star, 1999). These perceptions can lead us to underestimate the fact that it is through technical and infrastructural terrains that power relations are reinforced and injustices are distributed.

> The dullness of infrastructure has political effects. It enables their various managerial authorities—officials in public utility commissions and departments of environmental services—to remain faceless. It allows their practices to remain illegible in opaque institutions (…) Their "boringness" obscures how the work they are made to do is fundamentally political (Anand, 2017a, p. 3).

In Barranquilla the precarious economic situation of the southwestern neighborhoods is reinforced, through the utilities' bills. These bills arrive monthly and are difficult to read and understand. They include, in addition to the "total amount to be paid", a grouping of figures, graphs, units of measurement, tariff formulas, and penalties. It was through these bills that the populations of the southwest became indebted. By imitating state bureaucracies, Agustin and Sabas have been able to shed light on what appeared to be opaque. They have questioned all the contents in the bill: the small numbers, measurements, and fraud processes. Combining the technical knowledge of the infrastructure with the knowledge of public services' regulation, they have appropriated administrative and regulatory tools to politicize the gray zone of tariffs and meters.

Therefore, in the complaints office, the community challenges the distribution of water, electricity, and debts in the city. This is not a gendered exercise. Both male and female residents contest debts and fraud processes. Women living in the southwest sector and working as domestic workers in the wealthy northern sector, are among the most assiduous visitors of the complaints office. It is also not an exercise that vindicates consciousness and

projects of blackness. Authors such as Fernandes (2012) have showed how in urban communities in Caracas, Venezuela, avoid the term Afrodescendant since it reduces the possibility of building broader solidarities among the racially diverse urban poor. Roshani (2016), in turn, has described how in Colombia Afrodescendant communities experiencing severe circumstances such as violent displacement, generally unite under one identity (for example, as displaced communities *"desplazados"*) regardless of racial background. In a similar way, both Agustín and Sabas who are Afrodescendant, as well as many visitors of the complaints office, do not identify as Afro-Colombian and prefer to cluster around common experiences of poverty with other mestizo neighbors of the southwest.

6.4 STUDYING THE STATE THROUGH LOCAL FLOWS OF WATER

In an article titled "notes on the difficulty of studying the state", Philip Abrams (1988) sustains that political analysis usually takes the state for granted. He highlights the fact that scholarship reproduces the "myth" of the state by assuming the existence of an object or thing called the state, which is consistent, independent, and all encompassing. Abrams argues that what we call "the state" is an exercise of legitimation. What is legitimized is the exercise of power and domination achieved by particular state agencies through historical specific processes.

> Of course what is legitimated is, insofar as it is legitimated, real power. Armies and prisons, the Special Patrol and the deportation orders as well as the whole process of fiscal extraction (Abrams, 1988, p. 77).

By studying the Colombian state through water, this thesis attempted to demystify the state. To do this, it brought two groups of literature into conversation. Firstly, ethnographic accounts on the state, which document and analyze the everyday workings of local bureaucracies and how they help to construct the "state effect" (Gupta, 1995; Mitchell, 1999; Sharma & Gupta, 2006). That is, they contribute to the construction of a shared "truth" that there is an entity called the state apart from society (Mitchell, 1999, 2002). Secondly, literature on the state from critical geography and political ecology, which analyze of the co-production of the state, biophysical nature, and infrastructure. That is, studies on the ways in which the "state effect" is achieved through the transformation of biophysical nature and

through infrastructural interventions (Agrawal, 2005; Alatout, 2008; Anand, 2017b; Harris, 2012; Meehan & Molden, 2015).

By bringing these two groups of literature together the thesis sought a balance between *1)* state studies from below, concentrating on its bureaucratic basis, through analyses of the daily life of its institutions and bureaucratic practices and *2)* studies that focus on the co-production of state and nature, which document the ability of the state to transform the biophysical nature and infrastructure on a large scale. With this I also follow calls to enrich political ecological accounts of the state by a continued engagement with state theory (Bridge, 2014).

Following distinct water flows in Barranquilla, from the River Magdalena to the reservoirs, from rain and flash floods and as it intersected with electricity, this thesis was able to tease out the incoherent and diversified set of practices and representations that make up the state. Instead of state cohesion, the chapters document different spaces of statehood in the city, ones in which investment in infrastructure and maintenance are palpable and others such as the subnormal neighborhoods of the southwest in which state agencies contribute to the daily production of marginality. It is important to mention that these spaces of statehood are built through every day electoral and partisan dynamics, in which investments in infrastructure and regulations are negotiated and defined.

The thesis also documents different experiences of the state. On the one hand, it documents the experiences of local politicians in the face of decentralization policies such as the popular election of mayors. These experiences included, for example, the emergence of a new political party, *Movimiento Ciudadano* that during its first years of existence was able to win local government elections. On the other hand, it describes the different expectations and processes triggered by Law 142 of 1994. While promoting the participation of the private sector in public service provision, which in Barranquilla meant the sale of the public utilities to Spanish corporations, the law also created the Superintendence of Public Services SSPD, which would become a source of state resources to challenge the power of these companies.

Through the ethnographic study of the *Oficina de Reclamos* in which intermediaries build bridges between the southwest community, the utilities and the SSPD, the thesis showed

different ways of imagining the state. It was possible to document feelings of frustration and fear, of residents faced with progressive indebtedness and charges of fraud, and feelings of distrust in the regulators and institutions of the state (or of law).

Finally, it was through these water histories that experiences of state violence became visible. Displaced communities were located in the southwest sector and through a series of regulations of national and local nature 26 neighborhoods within the sector were classified as "subnormal". These were thus places of marginality with respect to the rest of the city. Journeys of *rebusque* and pervasive economic indebtedness make everyday life difficult. Many of them also face the fear of being processed by water or electricity fraud, and getting a criminal record. For the community of *marañeros*, who work in dangerous conditions, and for trade unionists and social leaders who, like Agustín and Sabas, had to face threats of violence or imprisonment, violence is experienced as a continuity that inhabits daily life.

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López Vargas, A. (1996, July 21). Contaminación, la muerte lenta del río (Pollution, the slow death of the river). *El Heraldo,* p. 4A.
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Mariano, J. (1990b, November 30). EPMB no aplica las recomendaciones del Banco Mundial (EPMB won't implement recommendations from the World Bank). *El Heraldo,* p. 4.
Mariano, J. (1990c, September 16). Robo en el acueducto demuestra que siguen los inmorales en las EPMB (Robbery at the acqueduct evidences inmoral behaviour at EPMB). *El Heraldo,* pp. 1, 5.
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Mariano, J. (1990e, December 22). EPMB carece de controles (EPMB lacks control). *El Heraldo,* p. 1.
Mariano, J. (1991a, March 20). EPMB sin un peso para pagar al Banco Mundial. *El Heraldo,* p. 1.
Mariano, J. (1991b, June 7). Alcalde firmó acuerdo para nueva empresa (Mayor signed Agreement to create new utility). *El Heraldo,* p. 1.

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Mariano, J. (1992b, April 30). EPMB entregan el acueducto (EPMB's workers leave the acqueduct). *El Heraldo,* pp. 1, 7A.
Mariano, J. (1992c, September 8). Gerente Apolítico piden los gremios (Guilds want an a-political manager). *El Heraldo,* p. 6.
Mariano, J. (1992d, November 24). El escándalo de la EPMB: los equipos abandonados eran para dar más agua al sur (EPMB's scandal: abandoned equipment was to give more water to the south). *El Heraldo,* p. 1.
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Mariano, J. (1992f, December 29). El municipio y la Triple A firman contrato de acciones (The municipality and the Triple A sign a contract). *El Heraldo,* pp. 1, 7A.
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Mariano, J. (1993b, March 12). Municipio asume toda la deuda (Municipality assumes the entire debt). *El Heraldo,* p. 8.
Mariano, J. (1994, September, 27). Tecnología ambiental en las térmicas (Environmental technology in the thermal power plants). *El Heraldo,* p. 11A.
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Mariano, J. (1996b, May 17). Alarma sanitaria en el caño de la Ahuyama (health alarm in the stream of the Ahuyama). *El Heraldo,* p. 4A.
Mariano, J. (1996c, June 18). Definen reglas para socio de la Triple A (rules are defined for partner Triple A). *El Heraldo,* p. 6A.
Mariano, J. (1996d, June 18). Se cambiará el cable subterráneo (underground cable will be replaced). *El Heraldo,* p. 6A.
Mariano, J. (1996e, July 10). Electranta pide reducir el consumo de luz (The Electranta recommends reducing energy consumption). *El Heraldo,* p. 4A.
Mariano, J. (1996f, July 12). Los estragos del invierno (Ravages of winter). *El Heraldo,* p. 12A.
Mariano, J. (1996h, July 15). Anuncia el alcalde obras para el sur (Mayor announces works for the south). *El Heraldo,* p. 4A.
Mariano, J. (1996j, July 18). Por falla en la interconexión la costa sin luz (Due to failure in the interconnection coast without light). *El Heraldo,* p. 4A.
Mariano, J. (1996k, July 23). Comienza reposición del alumbrado público (Reposition of street lighting starts). *El Heraldo,* p. 4A.
Mariano, J. (1996l, September 20). Inassa nuevo socio de la Triple A (Inassa new shareholder of the Triple A). *El Heraldo,* pp. 1A, 5A.
Mariano, J. (1996m, September 24). Obras para acabar con el arroyo Don Juan (Works to end the stream Don Juan). *El Heraldo,* p. 4A.
Mariano, J. (1996n, September 24). Nueva emergencia eléctrica (New electrical emergency). *El Heraldo*.

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Mariano, J. (2000a, April 1). Pérdidas económicas reportó la empresa Electricaribe (Economic losses reported by Electricaribe). *El Heraldo,* p. 4A.
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Mariano, J., & Tagie, P. (1991b, May 29). Sindicato paralizó alcaldía y casa del alcalde (Union paralized the town hall and mayor's house). *El Heraldo,* p. 5.
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Montaño Acosta, J. (1993, June 22). A fin de mes aprueban crédito para la Triple A (New loan for Triple A will be approved at the end of the month). *El Heraldo,* p. 7.
Montaño, J. (1996, July 15). Sube el consumo de electricidad (Electricity consumption rises). *El Heraldo,* p. 11A.
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Padilla Rodríguez, R. (1995, December 26). En 1995 el municipio invirtió más de 8 mil millones en el fondo de pensiones de EPMB (In 1995 the municipality invested over 8 billion in EPMB's pension funds). *El Heraldo,* p. 7A.
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Peñaloza, J. L. (1991, January 22). Gaviria ayudará a EPMB. *Diario del Caribe,* p. 2.
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Penso Correa, H. (1996b, July 3). Mil millones de pesos para estudiar los arroyos (One Billion pesos to study the streams). *El Heraldo,* p. 10A.
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Pimienta Medrano, M. (1999, August 18). La Triple A tuvo que esperar dos días para restablecer el servicio (The Triple A had to wait two days to restore service). *La Libertad,* p. 6A.
Pimienta Medrano, M. (2000a, April 27). El distrito invierte en limpieza de arroyos (The district invests in clean streams). *El Heraldo,* p. 5A.
Pimienta Medrano, M. (2000b, May 13). La gobernación invierte en erradicación de tugurios (The government invests in slum eradication). *El Heraldo,* p. 5A.
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