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ABSTRACT

This doctoral dissertation analyzes a set of contemporary environmental conflicts around spatial planning and urban nature in Bogotá, Colombia (1990–present day). In this research I ask what the relations are between the spatial planning processes of recent history and contemporary urban environmental conflicts. To answer this, I focus on three questions. What have the specific roles of the government authorities, civil society, and different social actors been in the processes of urban planning and environmental concerns in Bogotá in recent decades? What have the environmental and social impacts of planning policies in Bogotá's ecosystems been during the same timeframe? How have socio-ecological inequalities in the city been linked with Bogota's spatial planning? This dissertation therefore analyzes the dialectic between conflict and spatial planning, exploring how urban nature and spatial planning processes are a source of environmental conflict related to socio-ecological inequalities in Bogotá. In this study I scrutinize environmental conflict as a key notion for identifying more productive ways of approaching such a dialectic in the production of urban territory. Although Bogotá's region has faced several environmental challenges and inequalities, the possibility of reimagining a more just urban nature along with the conflicts and through situated knowledge has been alive in the last three decades

among different social groups in planning practices. This research is situated in the Political Ecology of Urbanization (PEU) and adopts some elements of urban environmental history, establishing a dialogue between the analysis of qualitative research material with existing information from fields such as ecology and physical geography. Therefore, this doctoral dissertation introduces a historical reconstruction about the conflicting visions around urban nature in Bogotá in the last decades. The documentation of the visions over urban nature offers an empirical basis for the design of an alternative roadmap for the understanding and management of environmental conflicts related to (spatial) planning and urban nature in the Bogotá region and beyond.

Keywords: political ecology of urbanization, spatial planning, urban nature, environmental conflict, Colombia.

TIIVISTELMÄ

Tässä väitöskirjassa tutkin alueidenkäytön suunnittelun ja kaupunkiluonnon välisten jännitteiden aiheuttamia ympäristökonflikteja Kolumbian pääkaupungissa Bogotássa 1990-luvulta nykypäivään. Tutkimuksessani kysyn, millaisia ovat lähihistoriassa tapahtuneiden aluesuunnittelun prosessien ja nykyisten ympäristökonfliktien väliset suhteet. Etsin vastauksia kolmelta taholta. Ensinnä tunnistan ja kuvaan, millaisia ovat olleet valtionhallinnon, kansalaisyhteiskunnan ja erilaisten yhteiskunnallisten toimijoiden erityiset roolit kaupunkisuunnittelussa ja ympäristökysymysten muotoilussa viime vuosikymmenien aikana. Sitten selvitän, millaisia ympäristö- ja yhteiskunnallisia vaikutuksia toteutetuilla suunnittelupolitiikoilla on ollut Bogotán suurkaupunkialueen sosioekologisiin järjestelmiin. Lopulta kohdistan katseen sosioekologisten eriarvoisuuksien ja alueidenkäytön suunnittelun välisiin yhteyksiin Bogotássa. Analysoin konfliktien ja aluesuunnittelun välistä dialektista suhdetta, jossa kaupunkiluonto ja aluesuunnittelun prosessit muodostavat sosioekologiseen epätasa-arvoon liittyvien ympäristökonfliktien lähteen. Ympäristökonflikti muodostuu tutkimuksessani keskeiseksi käsitteeksi, jonka avulla voidaan tunnistaa yleisempiä vastakkainasetteluita kaupunkisuunnittelussa ja kaupunkitilan muokkaamisessa. Vaikka Bogotá on ympäristöön liittyvien haasteiden ja epätasa-arvon näyttämö, ovat erilaiset yhteiskunnalliset

toimijat siellä myös kyenneet viimeisten kolmen vuosikymmenen aikana hyödyntämään tilannesidonnaista tietoa ja siten kuvittelemaan uudenlaista oikeudenmukaisempaa kaupunkiympäristöä. Tutkimukseni sijoittuu kaupungistumisen poliittisen ekologian ja kaupunkien ympäristöhistorian aloille, luoden vuoropuhelua laadullisen tutkimustiedon ja ekologian ja luonnonmaantieteen kaltaisten tutkimusalojen välille. Tutkimuksessani luon historiallisen rekonstruktion Bogotán kaupunkiluotoa koskevista ristiriitaisista tulevaisuudenkuvista viime vuosikymmeninä. Kaupunkiluotoa koskevien visioiden dokumentaatio tarjoaa empiirisen lähtökohdan vaihtoehtoiselle tiekartalle kohti aluesuunnitteluun ja kaupunkiluontoon liittyvien ympäristökonfliktien parempaa ymmärtämistä ja hallintaa sekä Bogotássa että yleisemmin.

Avainsanat: kaupungistumisen poliittinen ekologia, aluesuunnittelu, kaupunkiluonto, ympäristökonflikti, Kolumbia.

To the memory of Elsa Alvarado and Mario Calderón,
and to all like them who have lost their lives in Colombia
in defense of life in all its forms.

*

'(...) Amanecer bailando, amanecer pasa'o
La vida vale poco si no suena un tumbao
Amanecer gritado, amanecer sangra'o
La vida vale poco si no te la has juga'o (...)'

'La ruta del venado' by 1280 Almas

'(...) Ay mi barrio tan bonito y esto soy y este es mi grito,
ay yo le pido al Distrito que ponga más corazón. (...)'

'Barrio' by Javier Moreno

'Yo no concibo mi vida sin El Mochuelo'

Woman living in the Mochuelo Alto vereda,
beside the Doña Juana landfill

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PREFACE: Embarking on situated research

I began my relationship with environmental issues at a very young age. Yet no family member nor relative belonged to any environmental group. As a middle-class kid in Bogotá, I discovered environmental issues in the early 1990s. It was a turbulent time—one of many—for Colombians. The combination of an eruption of drug-trafficking terror against society with the consolidation of paramilitarism as part of the counterinsurgent war, and political violence aligned with state terror, were afflicting the country in dreadful ways that have ever since had harmful consequences and implications for Colombia. Despite all this, and against all odds—this is a Colombian affair after all—the current National Constitution was issued in 1991 after a citizen plebiscite that demanded the establishment of a pluri-diverse National Assembly to draft a new Constitution with an ecological 'spirit,' as the previous Constitution dated from 1886. By 1991 there was noticeable public interest in the environmental question because of the expectations raised by the 1992 Rio Summit. This interest received an impulse from a group of intellectuals and leaders from civil society who had already been doing environmentalism from the margins since the early 1970s. Nevertheless, the issuing of the new Constitution with the reinforcement of a neoliberal and 'economic opening' (Apertura Económica) in the country were aligned processes.

Amidst all of this, and mostly unaware of what was happening, I remember watching some TV shows at home that began to introduce me to environmental issues, most about the global problematic and some addressing local issues. This happened not only during my childhood but during my pre-teenager and teenage years. I also remember seeing myself as an explorer working in remote 'wilderness' areas in the Amazon or the Colombian Pacific rainforest. I was convinced I should become a young environmentalist by watching stuff on TV and reading books or magazines—a good basis to prepare for an exploration of nature. From those very early days, however, I began to hear a common phrase that you can unfortunately still hear: 'Think twice about it. Don't go there—it's risky and dangerous.' 'Don't go there' should be read as advice to avoid to 'peripheral' places or most of the Colombian countryside. I

had not the remotest idea of what was happening in Colombian and Bogotá's environmental politics at that time. After all these years and even with a degree of work experience, I still remain ignorant of many issues.

At this point, the reader may be asking why I am including these autobiographical references in a doctoral dissertation. (Urban) Environmental politics are also personal. Before I started my doctoral studies I had already experienced that it is 'real-life' work. When I drafted the original idea of this research in Bogotá, my life experiences were fundamental. I have almost a decade of professional experience in urban environmental issues in Colombia, with a focus on the place where I was born and raised. Bogotá is now my 'case study,' and it also presented itself to me as a first choice not only by fate but because I was cautioned about or chanced on restrictions to working in places in the Colombian countryside. I again heard, 'it's risky, don't go there.' Although I managed to get to know some places during my college years when I was studying for my bachelor's degree in ecology, doing fieldwork for my first professional commissions, or simply engaging in outdoor activities in national parks, I could not take work outside the city. I thus found that I had worked in Bogotá as a young practitioner with environmental state agencies (at local and national level); as a scholar offering consultancy, doing occasional lecturing in some universities; working in local activism, supporting local environmental NGOs, or acting simply as a concerned *bogotano*. My master's thesis in human geography was about an urban protected area in south Bogotá called Entrenubes[1] (Quimbayo Ruiz, 2012), where I used to work as an environmental educator. I consider the history of this protected area a seed of this doctoral research project.

To be fair to history, there have also been places in Bogotá about which people warn, 'don't go there.' In hindsight, it now seems my destiny was waiting to offer me a close encounter with (and at a certain point participate in) this politics several years after having worked on the issue, and later by undertaking a doctoral research project. During this journey I began to profile Bogotá's urban nature issues as my doctoral research project. The

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[1] This can be literally translated as 'in between the clouds.' This protected area probably named by its neighbors, because it is close to one of the wettest and. most cloudy parts of Bogotá's eastern hills.

development of this research project and my itinerant way of life between Finland and Colombia in recent years (as well as the 'in-betweens') saw me beginning to learn more not only about Bogotá but Colombia itself. Moreover, my intellectual journey has moved from the natural to the social sciences, and an acknowledgment of the huge challenge of embracing both approaches in my research practice. This learning process began to disclose some aspects of the socio-ecological inequalities that my previous experience had overlooked or taken for granted. My doctoral studies were undertaken at a moment when environmental politics and urban nature in Bogotá—as in many places globally—have been more present than ever. Yet the present brings to mind some things from the recent past that we might have believed had been overcome but may again be emerging under different protagonists or narratives. So I continue to learn.

This doctoral research project has been more than a scholarly exercise. It has also been a journey of self-reflection about things with which I have lived for a large part of my life, as well as an experience of enormous personal and intellectual growth. It has at times been challenging and intimidating, but always motivating and relevant, especially in these times of planetary collapse, with a climate emergency, biodiversity devastation, authoritarianism, and pandemics. Despite many tribulations along the way, I have confirmed for myself the importance of achieving an honest engagement in our research practice that we owe to our society and the planet—to assist in the pursuit of a just place of socio-ecological coexistence. The results of my research seek to make a humble contribution to such a pursuit. It needs the hands of everyone, everywhere.

1 Introduction

This research analyzes a set of contemporary environmental conflicts around spatial planning and urban nature in Bogotá, Colombia (1990–present). Bogotá and its surrounding region, known as Sabana de Bogotá, is a metropolitan territory of important ecological value and a regional protected area system (Ándrade et al., 2013; Calvachi, 2012; Gallini and Castro, 2015; Quimbayo-Ruiz, 2016; van der Hammen, 1998), yet it is embedded in a quite fragmented and unequal metropolitan space (Thibert and Osorio, 2014). In recent decades, especially between the mid-1990s and mid-2000s (Montezuma, 2005), Bogotá has been the setting of urban transformations of public space, transportation, climate change, and citizen initiatives in urban policies. These have even been recognized internationally (Berney, 2010; Duque Franco, 2008; Lampis, 2013; 2016). Nevertheless, most of the policy developments reveal more about the circulation of ideas among urban expert networks than the actual success of urban policies and innovations (Galvis, 2014; Montero, 2017; 2020). In Latin America and the Caribbean (henceforth, LAC) and Colombia, urban nature and biodiversity have recently gained great interest in environmental research (cf. Dobbs et al., 2019; Mejía, 2017). However, it still lacks a stronger engagement with critical approaches such as political ecology that can dialogue with international research in this field.

Bogotá's case deserves to be studied to understand how spatial planning and urban environmental conflicts relate to socio-ecological inequalities. The active role of several local actors in the last three decades in spatial planning processes (Beuf, 2016), and the relationship of emerging controversies and debates on urban nature and environmental conflicts (Julio and Hernández, 2014; Quimbayo Ruiz, 2014; 2018; Osorio Ardila, 2019), are points of entry for further inquiry. Local environmental awareness has its most important roots among the working class and the grassroots, backstopped by intellectuals and practitioners from the most diverse or even disparate backgrounds.

Bogotá's territory still faces several environmental conflicts and challenges in which social inequalities and segregation are entangled with each other. Climate change vulnerabilities and risks may exacerbate such conflicts. The

city of Bogotá and its surrounding region encompass one of the highest levels of climate change risk in Colombia. Climate change projections predict a near 1 °C increase in the average temperature in the next 40 to 45 years, with increasingly variable rainfall patterns (IDEAM and others, 2014; IDEAM, 2015). This scenario would bring increasing vulnerability to already existing climate change risks such as floods, landslides, and heatwaves, compromising critical dimensions of urban metabolism such as food security, water supply, biodiversity, human health and settlements, and infrastructure (IDEAM, 2017). Although this research is not exactly a climate change vulnerability assessment, it may shed light on recent assessments in understanding certain socio-spatial dimensions from urban transformations that would lead to the exacerbation of these vulnerabilities and risks.

This dissertation's case-study is therefore relevant to an understanding of contemporary environmental challenges beyond Bogotá and Latin America, considering the particularities of the Colombian setting, with important biodiversity values, and historically marked by armed and political conflict. This socio-ecological context can offer insights into contemporary democratic practices in critical environmental transitions.

My main research question in my Bogotá research is: What are the relations between the spatial planning processes of recent history and contemporary urban environmental conflicts? To answer this question, I focus on three further questions:

1. What have the specific roles of the government authorities, civil society, and different social actors been in urban planning processes and environmental concerns in Bogotá in recent decades?
2. What have the environmental and social impacts of planning policies in Bogotá's ecosystems been during the same timeframe?
3. How have socio-ecological inequalities in the city been linked with Bogota's spatial planning?

Through these questions, I seek to understand the political interlocution among social movements and local authorities on spatial and urban planning. In so doing, I identify relevant trends regarding planning and nature (since

the 1990s) by analyzing specific environmental conflict cases such as profit-driven urbanization over protected areas, quarrying activities (mining), or the impact of landfills in urban-rural areas. Based on these cases, I also seek to explain the relationship between these environmental changes with socio-ecological inequalities. My intention in this dissertation is to demonstrate how urban and spatial planning processes are a source of environmental conflict, and if spatial planning and urban nature are related to several socio-ecological inequalities in Bogotá. The Bogotá case can therefore also shed light on concerns around urban nature and spatial planning elsewhere. Before continuing, it is important to briefly set out some of these concepts and their scope for this research.

In this research, the notion of **environmental conflict**, despite its negative connotation, creates an opportunity to reconstruct, rethink, and reimagine natures and ecologies across situated knowledge (Haraway, 1988; 1991) in planning practices (cf. Lewis and Ernstson, 2019) among different social groups in the urban territory. Environmental conflicts are often defined as an incompatibility in the interaction of different actors (including nature) with ecological systems. However, this is a very narrow definition, and without denying the conditions of environmental injustice in megacities like Bogotá and many others (regardless of the region or continent), it is possible to find more productive ways of approaching environmental conflicts. In this research I understand environmental conflicts as processes of the socio-ecological production of dispute and co-creation of environmental realities (Palacio 2002; Merlinsky, 2013; Cárcamo and Mena, 2017). Conflicts are thus not mere outcomes of proximate issues, but encompass different trajectories and milestones. To gain a better understanding of such processes of the socio-ecological production of realities, it is relevant to focus on inequalities. At this level the situated actions, practices, and knowledge of human actors interplay with the non-human, creating opportunities for socio-ecological transformation in urbanized territories. Such opportunities include dissent in democratic practices of environmental governance or conflicts of knowledge in environmental disputes (Brown and Tregidga, 2017).

In addition, in this research I understand a **territory** as a socio-spatial product that reflects multiple symbolic and material appropriations of a

specific space (or place) on an everyday basis through people's strategies and practices of territorialization. For this conceptualization I draw on contemporary ideas about territory from Western European and North American traditions of human geography (cf. Elden, 2010) in dialogue with theorizations and notions from Latin America (cf. Quimbayo Ruiz, 2020a). The urban territory can be understood as a space to advocate, appropriate, live, and care for it; or it can be a contested space. I thus understand **territorialization** as the socio-spatial process by which a territory, through situated knowledge and practices of a certain individual or social groups in nature, is produced. In my research urban (the city) and rural space are part and parcel of multiple territorializations in the urbanization of the Bogotá region. In turn, deterritorialization means the dissolution of the existing territorial formations, while reterritorialization is the formation of new territories in place of pre-existing ones (Haesbaert, 2013).

Besides environmental conflict and territorialization, I understand **socio-ecological inequalities** as the conditions of exclusion, limitation, or restriction of use, appropriation, and management decisions of environmental commons such as water, biodiversity, public space, or the unequal assignment of activities with a high impact on the health of both ecosystems and people (Schlosberg, 2007). These inequalities are constitutive processes of capital accumulation and dispossession along lines of exclusion of gender, race, or ethnicity (Ulloa, 2015; Dietz, 2018).

The concept of **social actors** is favored in this dissertation to stakeholders. The former implies direct action, the latter a more indirect influence on a specific socio-ecological process. Finally, and especially for Colombian and to a certain extent Spanish-speaking readers, the use of the English concept of **spatial planning** in this research must be understood as the Spanish *Ordenamiento Territorial*. Spatial planning can refer to land use and watershed management, and is not only restricted to urban planning. I decided to avoid using 'territorial planning,' a direct translation from Spanish of *Ordenamiento Territorial*. This decision is based on the different and disparate meanings that the concept of territory encompasses, depending on language and context (Quimbayo Ruiz, 2020a).

This research is situated in the field of human geography and within the frameworks of the political ecology of urbanization and urban environmental history. The research takes a qualitative methodological approach, which, although not entirely ethnographic, employs ethnographic tools. Likewise, it establishes a dialogue between qualitative information with existing information from fields such as ecology and physical geography. Alongside this investigation's historical reconstruction and among the myriad stories about environmental conflict in Bogotá, it attempts to offer a different perspective that can shed some light on the multiple challenges urbanization poses for different societies.

It is not my intention in this research to achieve the academic self-indulgence of offering tailored solutions to environmental problems. Instead, I assume my role is to assist in conceptualizing what the relationship between environmental conflicts and planning has been in the case of Bogotá. By documenting this case, we can also attain a common basis for sharing conceptual clues that allow us to question new ways of achieving urban environmental coexistence that are perhaps more pluralistic and inclusive than those proposed by mainstream environmentalism. This doctoral thesis is based on the development of four research manuscripts: three published; the other offered for publication. The reader will thus find in this document a summary of the main article's results, and a complementary analysis of the dialectic between conflicts and spatial planning in Bogotá. They will also find a discussion of the research gaps and considerations for future research. The rest of this document will be structured in the following chapters: the conceptual and theoretical standpoint; methodology (including case study, positionality, and research ethics); a presentation of the set of articles; research outcomes and discussion; and conclusions.

2 Conceptual and theoretical standpoints

Over the years environmentalists (from the grassroots to scholars) have stated that we are living in a planetary environmental breakdown. Contemporary environmental challenges and socio-ecological inequalities are not recent outcomes. Instead, we are experiencing only the lapse of an unfinished socio-ecological process that is still far from being fully understood (cf. Biermann and Kim, 2020). There is a traceable and considerable amount of documented history concerning how the global capitalist system and its extractive approach have destroyed and dispossessed almost all the possible alternative means of life (especially racialized and gendered ones), regardless of the 'North-South' divide (Patel and Moore, 2018). Likewise, it is historically traceable that sustainability and development (two sides of the same coin) have shaped (urban) societies relationship with their physical environments and nature. Of course, the current climate crisis, intertwined with the effects of the Covid-19 pandemic, means it is crucial to establish critical environmental transitions in relation to climate change (Buck, 2019; Dawson, 2017) and nature conservation (Büscher and Fletcher, 2020).

However, if we are to understand the current environmental breakdown, we need to construct an analytical dimension of the historical recent past. This will assist us to examine the margins of the global capitalist system narrative and within the politics of interstices (Pignarre and Stengers, 2011) to apprehend the everyday dynamics of the urbanization of nature. The global scale is due to its construction on the local, and *vice versa* (Massey, 1992). A sense of place therefore exists in every environmental struggle that interplays between the global and local scales. Such a 'sense of place' '(…) is not merely a matter of individual taste but rather an evolving social process involving the collective cultures and practices through which the environment is represented, perceived and shaped (…)' (Armiero and Sedrez, 2014:2). How can we understand environmental conflicts through land-use and spatial planning issues? How can we understand the role of people and nature in (urban) environmental conflicts? These are the emerging questions that can guide our scrutiny of urban environmental conflicts in Bogotá and beyond.

In what follows I will introduce the theoretical foundations and concepts that are the lenses through which I see Bogotá as a case study.

2.1   Critical lens: political ecology and environmental history of a Latin American urbanization

Urban political ecology proposes that to serve the interests of the elite at the expense of marginalized populations, the material conditions that comprise urban environments are captured, controlled, and manipulated (Heynen et al., 2006: 6). Nevertheless, morphological expressions of contemporary capitalist urbanization are also visible far beyond cities through massive undertakings that transform landscapes and extract resources through uneven development (Arboleda, 2016; 2020). Urbanization is not only how 'urban life' is politically produced (cf. Lefebvre, 1991 [1976]); it is also a socio-ecological process that breaks away from the primacy of the city as a historical entity (Angelo and Wachsmuth, 2015), where rural and peri-urban spaces are therefore part and parcel of capitalist urbanization (Tzaninis et al., 2020). Instead of urban political ecology, this research embraces the definition of a Political Ecology of Urbanization (henceforth, PEU). As a critical analytical framework, the PEU analyzes socio-ecological systems regarding urbanization and its relationship with social and environmental injustices, including who has access and how to the material and energy flows that enable urban life, and who is most impacted by the negative outcomes of urban metabolism, such as waste or air pollution (Loftus, 2019; Keil, 2020).

The research of socio-ecological inequalities and the configuration of urbanization processes is still an emerging field of inquiry in the LAC region. Recent contributions addressing territorial issues have been the global-local ramifications of urbanization and extractive geographies (Arboleda, 2020; Pintos, 2017), the use of urban space (Álvarez, 2012), the allocation of toxic materials in marginalized areas (Auyero and Swistun, 2009), water supply (Acevedo Guerrero et al., 2016; Duarte-Abadía and Boelens, 2016; Holmes et al., 2019; López, 2018; Parra and Gitahy, 2017), and democratic participation and ecological controversies in city planning (Osorio Ardila, 2019). Yet the

estimation of urban footprints is still an incipient area of applied research in the urban and regional sustainability of food, water, and energy (Díaz, 2011; Delgado, 2015).

Although urbanization in the LAC region shares common patterns and features (Caldeira 2017; Sedrez, 2013), there is no single regional urban experience. It is therefore important to acknowledge geo-historical particularities (in this case in Bogotá) in existing urban morphologies to understand urbanization processes as context-specific and situated socio-spatial processes (Schwarz and Streule, 2016), and how unequal socio-ecological transformations can be related to specific knowledge production throughout the various political mobilizations. Such an understanding would enable the promotion of proper democratic participation in social relations between people and between people and the environment (Quimbayo Ruiz and Vásquez Rodríguez, 2016). Besides, although urban politics have long been studied in relation to social justice in the LAC region, it is equally important to document how environmental imperatives such as climate change adaptation and risk management, biodiversity conservation, food, or water supply also participate in processes of social formation and statecraft in fragile democratic contexts (cf. Zeiderman, 2016a; 2016b; Osorio Ardila, 2020).

This study also adopts some elements of environmental history. This is an emerging and interdisciplinary field of research in which socio-ecological events from the recent past can explain contemporary environmental challenges (Palacio, 2002). It thus implies the management of current and past data and recognitions of spaces and social and ecological processes, transformed by different societies and space-time contexts. Its interdisciplinary nature means this field finds coincidences and articulations with the PEU, emphasizing the temporality of environmental conflicts. However, if a good exercise in environmental history is to be undertaken, theoretical care and rigor must be applied to avoid generalizations and anachronisms. A comprehensive understanding of a context's recent history requires a solid epistemological and operational basis that explains socio-ecological processes (Urquijo et al., 2017). For example, the 'rematerialization' of historical research in the last three decades found in the social metabolism—a key notion in understanding

urbanization—shows promising potential to analyze socio-ecological issues (Gallini, 2012).

In research on urban environmental history from the LAC region, issues of urban water supply processes, green spaces and parks, disasters, and environmental degradation are dominant (Acevedo Guerrero et al., 2016; Leal, 2020; Sedrez, 2013). Although there is an important research tradition of environmental movements related to rural affairs linked to land reform, mining, or deforestation in the LAC, the role of social movements in environmental conflicts around urbanization, the governance of urban nature, and planning practice is less explored, despite the field's great potential to contribute to the assessment of socio-ecological inequalities and issues of environmental justice (cf. Molano Camargo, 2016; Sánchez-Calderón, 2018).

2.2   Environmental conflict and socio-ecological inequalities

Environmental conflicts are at the core of inquiries in political ecology, environmental history, and environmental justice research and action (Robbins, 2012; Palacio, 2002; Merlinsky, 2013; Temper et al., 2015; Le Billon, 2015; Cárcamo and Mena, 2017; Le Billon and Duffy, 2018). The concept of conflict often bears a negative connotation and a contested incompatibility in the interaction of parties concerning ecological systems. However, this is a very problematic and simplistic definition. In his essays on social conflict and war the Colombian philosopher Estanislao Zuleta addresses how a contested notion like **conflict** might be understood:

> The eradication of conflicts and their dissolution into a warm coexistence is neither an attainable nor desirable goal, either in personal life—in love and friendship—or in collective life. On the contrary, it is necessary to build a social and legal space in which conflicts can manifest themselves and develop without opposition to the other leading to the suppression

of the other, killing him [her], reducing him [her] to impotence, or silencing him [her].[2]

Estanislao Zuleta (2017 [1985]: 85–86).

Zuleta was not an environmental thinker, but his insights are useful for framing environmental issues in a volatile social and political setting like the one in Colombia. If conflicts are managed as such intelligently, Zuleta acknowledges their productive character to foster more just and peaceful societies. Another thinker who shares Estanislao Zuleta's ideas on conflict and dissensus in democratic practices is the philosopher Jacques Rancière. Recently, Rancière's ideas have received attention in the attempt to understand contemporary environmental controversies (Brown and Tregidga, 2017; Lewis and Ernstson, 2019; Fuentealba and Verrest, 2020). Democracy, according to Rancière (2010), is not a political regime, and democratic practices are thus the abilities of those who are not counted or suffer from exclusion to rupture a certain normalized order and force a new arrangement of who counts as equal. His ideas directly challenge consensus-oriented accounts of politics that confine democracy within strict limits. This means that (neo)liberal democracy is mainly about controlling the difference (excess in Rancière's terms) that threatens established orders (Rancière; 2006). Such a difference is what keeps democracy alive.

Through Rancière's lenses we can call into question prevailing spatial planning paradigms and assumptions in addressing socio-ecological processes, because emerging dissensus in environmental conflicts is (re) produced through historical processes, rather than starting from a position of seeking rational interests (Lewis and Ernstson, 2019). Controversies can be generative in undermining regimes of sensemaking to redistribute expertise and in opening new and just forms of knowledge production in planning practices (cf. Whatmore, 2009), stepping aside from seeing conflicts as negative and understanding them as a fundamental political expression. Urban political ecologists (Swyngedouw and Ernstson, 2019) and environmental

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[2] Free translation from the Spanish by the author.

justice scholars (Di Chiro, 2016) have already pointed out that human-environment transactions have become actively 'depoliticized,' shaped by neoliberal managerial governance regimes hand in hand with universalistic or even neo-Malthusian (cf. Ojeda et al., 2020) environmental views and narratives (i.e. sustainability and climate change, or the Anthropocene), that avoid critical debates by characterizing alternative viewpoints as 'radicalism.' Swyngedouw (2007; 2011), following thinkers like Rancière, proposes that conflicts are intrinsically constitutive of politics, and without politics and with the imposition of an idealized environmental consensus, struggles become depoliticized and 'post-political.'

However, these 'post-political' remarks should be taken with caution. Although it is a correct critique, characterizing all environmental concerns and mobilizations as part of the 'post-political' can be problematic (McCarthy, 2013). There are multiple kinds of environmentalism and mobilization, and each environmental struggle is unique and situated in specific geo-historical contexts. To accept the 'post-political' vision without healthy criticism occludes political parallels in past struggles from which we could learn or see new political possibilities in contemporary movements or ideas (Meyer, 2020) that exist within different kinds of social coalition along the lines of class or identity.

The notion of conflict therefore opens a possibility of understanding and making visible socio-ecological inequalities and the political processes immersed in environmental issues. Conflict has a social function, rendering diverse and even contradictory aspects of the mutual and indissoluble relationship between humans and the environment (Palacio, 2002). The idea of consensus is dismantled by the emergence of conflict when the positions of social agents, the latent structures of political contest, and the conflict's symbolic condition are unveiled (Seguel, 2010). Environmental meaning and its political evaluation can therefore structure relations between agents in conflict changes. Merlinsky (2013) and her collaborators have identified seven dimensions for the study and documenting of environmental conflicts, which are part and parcel of a multidisciplinary approach to the documenting of any environmental conflict, in which complexity is also a key element to

consider. I will now briefly summarize the dimensions and describe why they are important for my Bogotá research.

The first dimension, 1) **scale**, is important because it refers to the conflict's spatiotemporal scope, its connections and relationships with local and global processes, and the context implications for different situations of conflict and their development. The second dimension, 2) **territorial inscription**, is key because it is linked with how the territory is produced and helps to explain how social and power relations set the conditions of processes of (de)territorialization for each conflict. The third dimension, 3) **socio-technical controversies**, involves disputes over control of assets and resources, but also over the power to generate and impose certain definitions of reality, or how expert knowledge is legitimized or disputed in each situation. The fourth dimension, 4) **social actors' profile in the controversy**, is important to identify the positionality, power, and willingness to mobilize (i.e. resources, capabilities, and so on) of each actor in the conflict, and their relationship with the conflict's trajectory. The fifth dimension, 5) **collective action patterns**, is a key dimension for our research, because it allows us to identify and understand the repertoire of action, practices, and strategies in the political system where the conflict takes place. The sixth dimension, 6) **juridification**, is key in Bogotá's case, because it defines how political reforms in the legal system, and through the influence of certain social actors, can re-signify environmental conflicts and disputes. The final dimension, 7) the **institutional claim's inscription**, consists of how certain conflicts and disputes open the possibility of reshaping new conditions in a given organizational and social order to change social and ecological realities.

A consideration of these points and dimensions in studying environmental conflicts allows us to avoid falling into the trap of portraying conflicts as an **outcome** of incompatibility among protagonists (humans and non-humans). Instead, conflicts are **processes** in which incompatibility emerges because of multiple exclusions (Seguel, 2010) or even forms of violence (Le Billon and Duffy, 2018). Understanding environmental conflict as a process needs to address the different stages (ex-ante/ex-post) and manifestations of political tensions and emerging inequalities. Moreover, conflict is not only manifested in access to and appropriation of commons such as biodiversity, water, or

soil, but in values, knowledge, or ways to feel and experience the world with regard to gender and ethnicity positionalities (Escobar, 2006; Ulloa, 2015).

Although there is some agreement concerning how environmental conflicts should be understood, their conceptualization varies, depending on the school of thought or research-action where conflicts are analyzed. For example, there have been discussions about how both political ecology (academia) and environmental justice (activism and research activism) investigate socio-ecological inequalities (Temper et al., 2015; Le Billon and Duffy, 2018). Environmental justice scholar-activists often understand environmental conflicts through the analysis of Ecological Distribution Conflicts (EDC). Such distribution conflicts arise when one group benefits from using material resources, while other groups are affected by damage to their livelihoods. The beneficiaries often seek to evade liability for such behavior. From this perspective environmental conflicts and EDC can be interchangeable, yet conceptualizations arise from different social movement theories of ecological economics framings (Pérez et al., 2018).

My Bogotá research seeks to highlight the kind of roles and practices that have been performed by different social actors in environmental conflicts. Such conflicts are spatialized and therefore become territorial (Merlinsky, 2013). This set of roles and practices belongs to a situated knowledge (Haraway, 1991) that is embodied in the physicality of specific human bodies and their artifacts. 'Knowledge does not come from above, from nowhere, from simplicity, but from ground level, from somewhere and from complexity' (Haraway, op. cit., p. 195). Human bodies are crossed by different experiences (somewhere) along the lines of class, gender, and race positionalities. The notion of objectivity must therefore be recast, conceived as an unfinished and incomplete process. Situated knowledge replaces the traditional concept of scientific neutrality and objectivity with an alternative formulation that stresses embodied physicality, social construction, and cultural politics.

Yet the reproduction of socio-ecological inequalities always takes place at multiple spatial-temporal scales (cf. Massey, 1992; Massey et al., 2009). Social inequalities emerge in socio-ecological processes through the use and appropriation of and access to natural resources, as well as their (re) distribution, and the capacity of the involved stakeholders to overcome or

cope with changing environmental conditions through participation and recognition (Schlosberg, 2007). Socio-ecological inequalities and exclusionary relations in lines of class, gender, or race (Ulloa, 2015) intersect through new forms of nature production. Simultaneously, such forms of nature production and exclusionary relations are already inscribed (i.e. biodiversity, soil, water, and so on) (Dietz, 2018).

Paying attention to socio-ecological inequalities in the assessment of environmental conflicts is thus fundamental. It enables a better understanding of environmental conflicts beyond limited and simplistic notions, challenging us to rethink how environmental issues and democratic practices go hand in hand in achieving more just environments. In LAC and Colombia, the recent research developments in Action Network Theory (ANT) and Science and Technology Studies (STS) regarding how knowledge and practices are (co)produced in certain environmental conflicts, and how socio-ecological inequalities are reproduced through such conflicts (Arrieta, 2019; Dupuits et al., 2020; Parra and Gitahy, 2017, Osorio Ardila, 2019; Parra-Romero, 2020), are noteworthy. This study seeks a dialogue with these contributions.

In terms of urbanization and ecology, particularly in post-colonial settings, there is a need for a radical rethinking and reworking of current planning practices and concepts (cf. Metzger, 2018). In the Bogotá region, for example, Osorio Ardila (2020) has argued that the conception of planning as technical and neutral knowledge poses obstacles to effective citizen participation in decision making. Such a conception rejects controversies around the kinds of knowledge of those who disagree with state decisions, and how certain actors formulate the problems of the city and its proposals for resolving them. Osorio's argument resonates with that proposed by Sundaresan's (2019) study in Bangalore, India, where situated planning practices challenge dualistic conceptualizations such as state and society, focusing instead on networks, ideologies, and processes. Planning practices are not the exclusive concern of 'planners' but of a multiple of stakeholders, social collectives, and individuals. They are also unavoidably political, and embedded in conflicting rationalities (Watson, 2003) or conflicting nature values (Osorio Ardila, 2019). In the Colombian context state formation is a key process for understanding how social actors relate to democratic practices and territorial governance in

an elusive and restricted democracy (cf. Bolívar, 2006; Camargo and Ojeda, 2017). The theorization of these matters therefore needs decentering from traditional assumptions about democracy and governance, and to address different kinds of socio-ecological network, ontology, and throughout power relations among geo-historical trajectories (cf. Rivera Cusicanqui, 2010, Stengers, 2015, Tsing, 2015).

Again, the conflict enables new democratic practices in situated urban ecologies to be identified and mapped, instead of starting with an idealized notion of achieving consent in planning to pursue more just urban spaces. I conclude this conceptual and theoretical section with the concepts of territory/territorialization and situated knowledge to ground these concepts of **conflicting rationalities as conflicts of knowledge** about nature in spatial planning practices. The Bogotá case study affords us an opportunity to rethink spatial planning practices in urban territory through ecologically situated knowledge.

2.3 Territory/territorialization[3] and situated (ecological) knowledge

In this research the following regional social science traditions go hand in hand with different grassroots movements in the LAC region (Fals Borda, 1996; Montañez and Delgado, 1998; Echevarría Ramírez and Rincón, 2000; Santos, 2000; Reboratti, 2001; Serje, 2005; Herrera, 2007; Zibechi, 2008; Porto-Gonçalves, 2009; Escobar, 2010; Haesbaert, 2013; Ulloa, 2015). A territory reflects multiple symbolic and material appropriations of a specific place every day by people (individually and collectively) through de/reterritorialization strategies and practices, and it is thus an unfolding of knowledge and experience of territoriality (Quimbayo Ruiz, 2020a). This notion of territory embraces ongoing social uprisings elsewhere in the region

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[3] This section contains and summarizes conceptual elements on territory/ territorialization elaborated in Article II of this doctoral dissertation (Quimbayo Ruiz, 2020a).

that are set against the accumulation and dispossession of commons such as biodiversity, water, urban space, and housing.

Discussions on territory in LAC are part and parcel of social movements' struggles and expert discussions on spatial and regional planning. The meaning of territory and its process of socio-ecological production (territorialization) differ from how it is usually understood in European and North American epistemic currents (Beuf, 2017). It is common to find academia and grassroots movements engaging with territorial concerns due to spatial and land-use planning becoming a focus in the development of new territorial policies in most of the region, and the increasing presence of territory in public debates on land rights. Western scholarly notions of territory are 'hybridized' with local knowledge (Massiris-Cabeza, 2002; Montero and Chapple, 2018), while some of the epistemological contributions from European and North American currents have been articulated in local contexts. For example, the promotion of strategies and actions for sustainability and territorial management has been fostered through the notion of territory (De Castro et al., 2015). Moreover, the connection between territory and notions like the right to the city (Lefebvre, 1968 cited in Harvey, 2012) has gained interest not only in regional debate but beyond (Halvorsen, 2019; Streule and Schwarz, 2019).

However, territorial notions have also been circulating in partisan politics, official circles, or NGOs, regardless of political ideology, and through disparate and ambivalent meanings through various legal struggles for land and nature rights (cf. Correia, 2019; Offen, 2003; Rawson and Mansfield, 2018; Walsh, 2015). Claims to the right to territory, difference, and otherness (Escobar, 2010) vary regarding identities and subjectivities such as gender or class as part of geo-historical power relations. Although social movements have conceptualized and politically mobilized territory in claiming territorial resistance (Streule and Schwarz, 2019), claims to territory are usually accompanied by struggles for its care (Ulloa, 2015).

Territorial struggles are also reflected in territorial dispossession (deterritorialization), which produces differentiated territorialities for the most vulnerable individuals or communities in rural or urban contexts in the access of commons such as water and land (Ojeda, 2016; Camargo and Ojeda, 2017), or the use of urban space and social mobilities (Alves, 2016;

Ritterbusch, 2016; Esguerra Muelle et al. 2018). Thus, for our research interest urbanized spaces become territorial assemblages in which stakeholders with different land-use interests and values engage in de/reterritorialization processes around either the dispossession of land and means of life, or the political struggles to contest it (Haesbaert, 2013).

Territorial struggles are mobilized through situated knowledge and practices. A situated ecological knowledge also entails the territorial knowledge people have of their surrounding ecological systems, which is the result of their experiences in a specific location (cf. Epstein et al. 2014) and subject to territorialization. Beyond understandings of ecological functions such as connectivity, pollination, the regulation of water runoff, and the microclimate, important interpretations are articulated in situated urban ecologies through certain environmental discourses, ideas, and practices (Ernstson 2013; Haase et al., 2017). Situated urban ecologies assign significance to the ecological structures and functions of specific locations, for example. This is especially observed in how people and communities establish a relationship with their physical environment or relate with non-human beings and processes (i.e. types of nature like animals or plants, water, and energy sources) (Loftus, 2012; Lawhon et al., 2014; Shillington, 2011). Thus, the key socio-spatial scale of analysis regarding urban theory and ecology lies in the subjectivity of situated ecological knowledge and situated urban ecologies (Haraway, 1988). Situated knowledge is sometimes also referred to as 'local ecological knowledge,' which is not something fixed or to be taken for granted. Instead, such knowledge is part of wider networks, both influenced by and influencing broader political, economic, and social forces such as the globalization of markets, technologies, and so on (Horowitz 2015).

This study of Bogotá is committed to contributing to the further theorization of these matters, which are beginning to be glimpsed in this case study area (Arrieta, 2019; Ome, 2017; Osorio Ardila; 2019, 2020). The specific political ecologies of urbanization in the LAC region present potential challenges to conceptualizing how knowledge of nature is generated in peoples' daily lives through political mobilization (Quimbayo Ruiz and Vásquez Rodríguez 2016). There is also a need to understand how situated knowledge is intertwined with normative and technical-scientific concepts at the everyday level of

environmental conflicts. In this vein, urban nature is both an active actor and a vehicle involved in igniting urban politics. Urban nature, as an embodiment of biodiversity reflected in plant and animal species, landscapes, and regional ecosystems, is also part of the city and the urban. Urbanization is just another transformation of nature. This is by no means a justification for perpetuating a capitalist approach to urbanization. Rather, it understands urbanized landscapes as socio-natural products (cf. Swyngedouw, 1996) amid the pursuit of the right to the urban commons (Harvey, 2012). In sum, the reterritorialization of the urban territory can be leveraged through a set of situated ecological knowledge and practices delivered by a group or individuals in certain environmental conflicts.

3 Methodology

3.1   Case study

'Urban and rural landscapes (. . .) are not two places but one. They created each other, they transformed each other's environments and economies, and they now depend on each other for survival (. . .) We all live in the city. We all live in the country. Both are second nature to us.'
William Cronon (1991: 384–5).

'All Colombian cities are in the countryside.'
Colombian practitioner's phrase, heard in Bogotá in early 2018.

Why does Bogotá warrant research? Bogotá is Colombia's main political and economic center. It is a Capital District with a special governance and tax-regime, and is composed of 20 local political-administrative units called localities (*localidades*)[4] distributed over 1,635 square kilometers, of which 250 square kilometers are urban, 29 square kilometers are planned for urban expansion, and 1,227 square kilometers are rural (Alcaldía Mayor de Bogotá, 2004; SDP, 2017). By 2018 Bogotá's population was estimated to be more than seven million, and the total population between the District and metropolitan area was almost 9 million (https://www.dane.gov.co). The metropolitan area of Bogotá is yet not constituted;[5] its relationship with other municipalities (N=23) is a sort of *de facto* metropolitan area (SDP 2014).

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[4] Usaquén, Chapinero, Santa Fe, San Cristóbal, Usme, Tunjuelito, Bosa, Kennedy, Fontibón, Engativá, Suba, Barrios Unidos, Teusaquillo, Los Mártires, Antonio Nariño, Puente Aranda, La Candelaria, Rafael Uribe Uribe, Ciudad Bolívar, and Sumapaz. Most of these political-administrative units are completely urban, except Ciudad Bolívar, Usme, Santa Fe, San Cristóbal, and Suba, which have both urban and rural areas. Sumapaz is completely rural.

[5] Through constitutional reform, on June 16, 2020, the politico-administrative body of the Bogotá-Cundinamarca metropolitan region was issued. The body has an associative character for Bogotá and the municipalities of the Department (Cundinamarca) and intends to coordinate matters of regional and metropolitan scale. Nevertheless, at the time of writing there is no clarity on how this region will be formed, or how it would work.

In urban sustainability circles what became known as the 'Bogotá Model' (Berney, 2010; Duque Franco, 2008) has been much praised and commented on. From the late 1980s until the present, and especially between the mid-1990s and mid-2000s (Montezuma, 2005), Bogotá underwent multiple urban transformations that received international recognition and awards from urban planner and expert circles. The narrative about the 'Bogotá Model' is of a city that overcame its status as a 'Third World dystopia' through innovative urban transformations worthy of imitation by cities in the south, and even in the north. Among such urban transformations are the development and implementation of the iconic *Transmilenio* bus rapid transit (BRT) network (now unpopular among most *bogotanos*), and the promotion of the use of bicycle paths by the *Ciclovía* Sundays and holidays carless streets event; certain improvement in public infrastructure, the development of citizen consciousness, and more recently, local initiatives to cope with climate change (Lampis, 2013; 2016).

However, those achievements can also be posited as more illustrative of the circulation of ideas among urban planners (Montero, 2017; 2020), who are often driven by powerful stakeholders engaged in urban infrastructure development, rather than by effective urban solutions to current challenges such as public transportation and the use of public space (Galvis, 2014). Bogotá is the largest Latin American city without an urban rail network. Moreover, Bogotá's highly praised urban sustainability success stories have concealed an important aspect of the local urban agenda that is materialized in the hills, wetlands, rivers, streams, and green areas embodied in the biodiversity and ecological processes that form part of the city. Austin Zeiderman's work (2016a; 2016b) is perhaps one of the first contributions to establish an alternative assessment of the 'Bogotá Model,' involving issues of risk management and climate change adaptation, and their relationship to urban security and citizenship crafting.

There are multiple assessments of the urban nature of Bogotá (Andrade et al. 2013; Quimbayo-Ruiz, 2016; Mejía, 2017), and an increasing interest in mainstreaming urban biodiversity (mainly propelled by local movements and citizen-science initiatives, e.g. Humedales Bogotá Foundation and Grupo Ecomunitario). Nevertheless, despite worthy exceptions (Osorio Ardila, 2019), there is still a research lag in understanding how environmental imperatives

such as biodiversity conservation or climate change mitigation and adaptation are mutually intertwined with planning practices and environmental conflicts in the urban territory. Conflicts emerge due to controversies around territory, triggering multiple socio-spatial transformations, or as I call them in this study, de/reterritorializations embedded in a fragmented political setting (Gilbert, 2015; Peña, 2016; Suárez, 2017; Eaton, 2020).

Like many other Latin American capital cities and metropolitan regions, Bogotá has many historical layers. The pre-Hispanic territory, the Colonial city, and the post-Colonial Republic with different stages of modernization within the national process of state formation are layers reflected in local city and countryside landscapes (Herrera, 2007; Lucena Giraldo, 2016; Zambrano and Bernard, 1993). The present Metropolitan Area of Bogotá, which belongs to the Altiplano Cundiboyacense region, has had a human population for approximately 12,000 years (Correal Urrego, 1990). The indigenous Muisca-Chibcha formed the Muisca Confederation before the Spanish conquest but was rapidly subjugated to the Spanish crown during colonial rule. After independence the new state dissolved many of the indigenous reservations where Muisca survivors lived, and throughout the nineteenth and twentieth centuries they were extremely dispossessed and marginalized. Since the late 1980s the local indigenous councils and the Muisca culture have undergone reconstruction. The Muisca in Bogotá-Cundinamarca live in discrete places (*parcialidades*), and when people hold collective land titles, they live in *resguardos*. The Muisca have adopted the legal jargon brought about by multicultural and economic policies, and structure discourses reveal that the defense of beliefs is also active, despite the constant use of modern elements and cultural practices (Chaves Agudelo, 2016).

However, one peculiarity of Bogotá compared with other Latin American metropolises is that it is the capital of one of the most biodiverse and geographically complex countries on the planet (Carrizosa, 2014; Instituto Alexander von Humboldt, 2014), but simultaneously of one of the most unequal, restricted, and violent democracies, with the longest (and still unresolved) armed political conflict in the western hemisphere. Despite recent peace and reconciliation attempts, such as the peace accord between the Colombian state and the former Revolutionary Armed Forces of Colombia

(FARC), the country is still struggling to overcome the accumulated effects of decades of systemic corruption at several levels of the state, the eruption of paramilitarism, drug trafficking and crime, and political violence, resulting in countless human rights violations (torture, massacres, abductions, sexual violence, mass displacements) that are rooted in land-use (re)distribution conflicts and overt social inequality. Most of the armed conflict victims and internal refugees are peasants, indigenous people, or Afro-Colombians, and especially children, youth, women, and the LGBTQ population. When these people reach the city from the countryside, most often continue to experience urban violence, marginalization, or a double forced displacement inside the city (cf. Howe, 2010; Morris, 2017; Ritterbusch, 2016). Unfortunately, recent escalations of state repression intertwined with crime structures are reinforcing this historical path. Such a sociopolitical setting has generated a differential access to formal housing, public health, education, and transportation in urban settings, which also exacerbates social distress, insecurity, and environmental pollution. Now, the impact of the Covid-19 pandemic has led to a deterioration in many of the situations resulting from these socio-environmental issues. In spite of a common assumption, Bogotá's status as the capital does not mean it has no experience of all these sociopolitical phenomena.

Although most of the Colombian population is urban, there is still a strong relationship with the rural world through territorial and cultural extension. This rural/urban nexus in the Colombian capital city's region, the Sabana de Bogotá, is very visible. The Sabana is a high Andean plateau—between 2,600 and 3,800 meters above sea level—and is on the mountainous boundary between the Magdalena Valley and the Colombian Eastern Savannahs (*Llanos Orientales*) (Figure 1). The Sabana is an ecosystem in the central axis of the Colombian Eastern Cordillera (part of the Northern Andes) of a fluvial-lacustrine origin, which was formed during the successive uplift phases of the mountain ridge hundreds of millions of years ago (since the Late Miocene/ Early Pliocene), forming narrow anticlines associated with inverse longitudinal faults, slip faults, and strike faults (NE–SW direction), along a homoclinal ridge with varying degrees of folding and erosion, setting a geo-form which constitutes the characteristic surrounding hills and mountains of the city region (van der Hammen et al., 1973; Carvajal and Navas, 2016: 116).
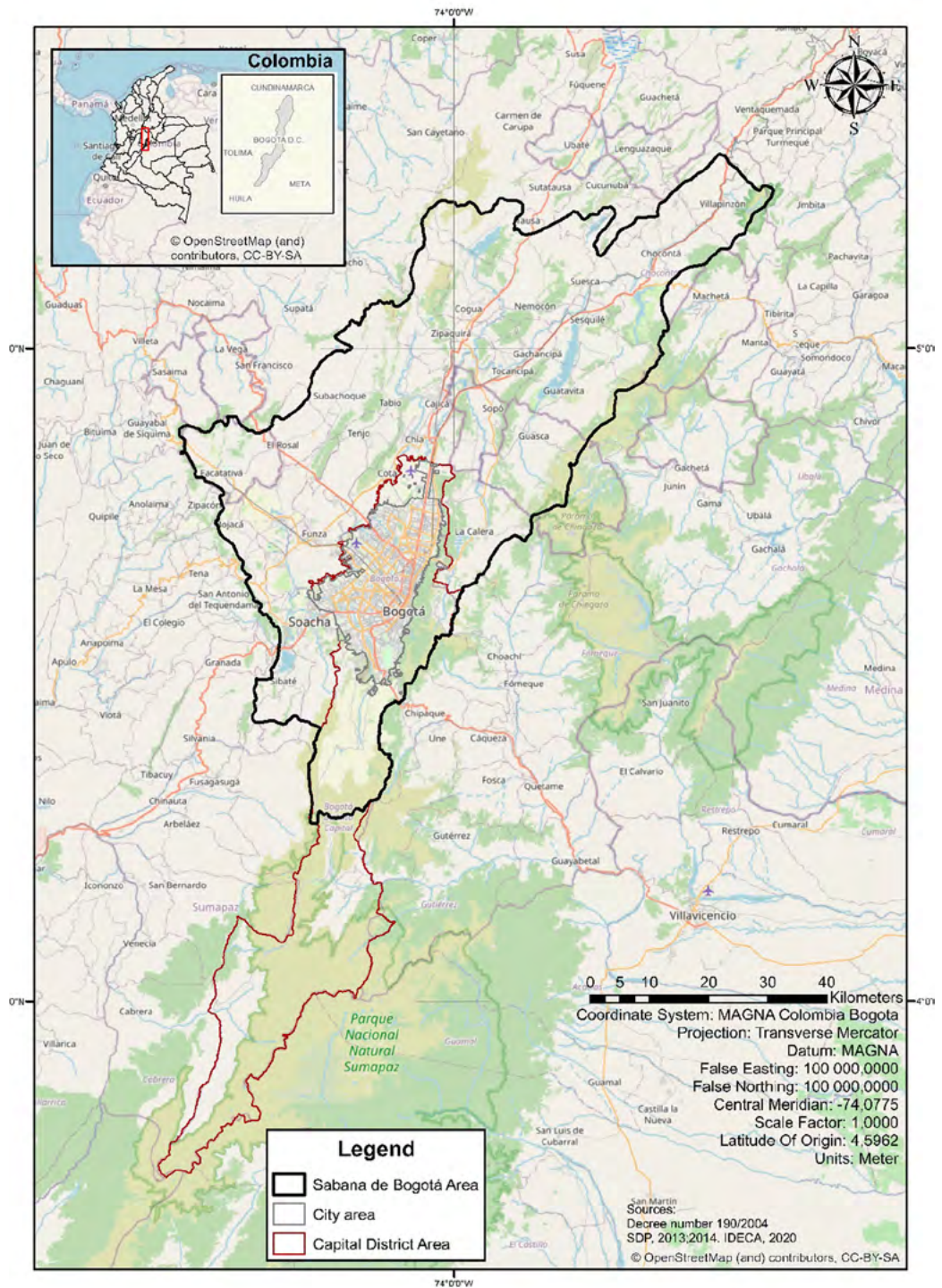
Figure 1. Map of the Sabana de Bogotá area, including Bogotá's city and its District (source: author's elaboration of map).

The region's climate is cold and dry on the plain, with average temperatures in the range of 12–17 °C. Precipitation averages are around 800 mm per year, decreasing to 500–600 mm per year toward the southwestern part of the Sabana. A colder humid climate predominates in the higher areas, with temperatures lower than 10 °C and annual rainfall above 1,000 mm, while cold humid conditions prevail in the foothills, with average temperatures between 10 and 12 °C and annual rainfall between 800 and 1,000 mm (Carvajal and Navas, op. cit.). Moreover, temperature and precipitation regimes in the Bogotá region are affected by the El Niño Southern Oscillation (ENSO). The warm phase of ENSO (El Niño) produces drier conditions than normal and more prolonged dry seasons in the Colombian Andes, while La Niña is the cold phase, presenting the opposite phenomena (IDEAM-FOPAE, 2005). The Sabana has been declared a strategic ecosystem for Colombia (Article 61 Law 99/1993) and represents the equatorial high mountains ecoregion, characterized by high levels of biodiversity, mainly consisting of sub-ecosystems such as high-Andean forests and hills, wetlands, rivers, and *páramos.*[6] In the hydrological system the upper basin of the Bogotá River demarcates the Sabana, with a total area of 4,321 square kilometers and the following sub-basins: the Sisga, Tominé, Muña, and Tibitó reservoirs; and the Teusacá, Tibitó, Negro, Frío, Chicú, Balsillas, Tunjuelo, Fucha, and Soacha rivers.

The Bogotá river leaves the Sabana at the point known as Salto de Tequendama (the Tequendama waterfalls). Bogotá's elevation above sea level and strategic location near the surrounding *páramos* of Sumapaz and Chingaza have played a favorable role in shaping the city's hydrographic network, including the processes of water reception and distribution. This has led to discharges of surface and groundwater from the basin of the Bogotá river, whose source is 3,400 meters above sea level, in the municipality of Villapinzón northeast of the Cundinamarca Department, and which then,

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[6] This is an Andean moorland ecosystem above the tree line, only present at high altitudes in Colombia, Ecuador, Peru, and Venezuela. Some argue that these ecosystems can also be found in mountainous areas in Costa Rica and Panama. The majority of the *páramo* ecosystems occur in the Colombian Andes (Sarmiento, 2016). The Sumapaz Páramo, about 20 kilometers south Bogotá, is the largest such ecosystem in the world. The WWF has recognized the *páramos* as an ecoregion: https://www.worldwildlife.org/ecoregions/nt1006.

after 370 km, flows to 280 meters above sea level to the Magdalena river in the city of Girardot.

In the District the Bogotá river constitutes a natural limit to the city's west. All the most important currents from the eastern hills and the south that cross the city converge in this river; these currents become the Torca, Juan Amarillo or Salitre, Fucha or San Cristóbal, and Tunjuelo rivers. Some floodplains and urban wetlands are associated with these currents and wetlands (SDA, 2007). These urban wetlands form a set of relevant ecosystems regulating local ecosystem functions such as hydrological cycles, or offering benefits to the social fabric, such as mitigating flood risks, improving air quality, and offering leisure and environmental education values. The local authorities currently recognize 15 of these ecosystems and their legal status as protected areas, most thanks to the pressure of civic and social organizations. One of these organizations, the Humedales Bogotá Foundation, has identified a larger number (twenty more at least) of unrecognized wetlands.[7] In 2018 eleven of these wetlands were included as part of Bogotá's wetland complex in the Ramsar list, the first in urban Latin America.[8]

All local sub-ecosystems and protected areas have been framed according to the scientific-political concept of the Main Ecological Structure—*Estructura Ecológica Principal*—(henceforth, MES). The Dutch-Colombian ecologist Thomas van der Hammen (1998) originally proposed this concept for the Environmental Action Plan for the Bogotá river's watershed, and several Colombian environmental scientists have since used it. Likewise, the MES has been included in spatial planning policies like the Master Plan for Land-use in Bogotá (*Plan de Ordenamiento Territorial*—henceforth, POT). A definition of the MES can be found in Articles I and IV of this doctoral dissertation, and a map in Article I (Quimbayo Ruiz, 2018a).

Although the MES concept might portray the Bogotá region ecosystem as a nature/city dichotomy, it instead describes it as a hybrid socio-natural entity (cf. Swyngedouw 1996). This urban-regional ecosystem has undergone

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[7] Mapa de los Humedales de Bogotá (Bogotá's wetlands map): http://humedalesbogota. com/mapa-humedales-bogota/ (Last retrieved: July 13, 2020).

[8] 'Complejo de Humedales Urbanos del Distrito Capital de Bogotá.' RAMSAR: https:// rsis.ramsar.org/ris/2404 (Last retrieved: July 13, 2020).

constant land-use changes, and its original ecology of streams, wetlands, and swamps has been continuously and severely modified since before Spanish colonization (cf. van der Hammen, 1992; Delgado Rozo, 2010). The pre-existing ecological conditions were mixed with grasslands, cereal crops, livestock, eucalyptus trees, and other introduced tree species[9] after the arrival of the Spaniards or brought by the *campesino* population arriving from other regions of the country. Together, such conditions produced a locally well-known cultural landscape (*paisaje sabanero*), emulating European fields intertwined with the socio-ecological features of the Andean high plateau (cf. Delgado Rozo, op. cit.) such as North Andean shrubs and wetland vegetation. This landscape is now threatened by urban expansion. Although the urban-region ecosystem structure and ecological values had already been modified before Colombia's inception as a republic, they have since been markedly simplified and depleted, especially since the human population of the city of Bogotá skyrocketed during the twentieth century because of population migration related to civil and political conflict, and rapid industrialization (Gouëset, 1998). Later, such population growth and urban development influenced the rest of the metropolitan region, where urbanization rates in recent decades have been higher than those in the capital itself. The concentration of urban services, as well as political and financial power, has resulted in a metropolis that has not promoted a cohesive regional socio-spatial integration (Thibert and Osorio, 2014) (Photo 1).

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[9] The Australian *Eucalyptus globulus* was introduced in the mid-nineteenth century. Other introduced species are acacias (*Acacia dealbata* or *A. melanoxylon*), ash trees (*Fraxinus sp*.), North American pine and cypress species (*Pinus patula, P. radiata* and *Cupressus lusitánica)*, and grasses like the kikuyo (*Cenchrus clandestinus*).

Photo 1. Landscape of contemporary Sabana de Bogotá (Source: the author, 2018).

In the city the socio-spatial pattern tends to be heterogeneous within a huge extension of settlements (*barrios*) with different socioeconomic settings, informal areas, and low-income settlements concentrated on the outskirts, especially toward the south. Although there is a concentration of high-income settlements in north Bogotá, people from all income statuses, including those in illegal settlements, share space in each of the District's localities (Photo 2).

Photo 2. Aerial view from northwest Bogotá. To the lower left is the Santa María del Lago wetland, an urban protected area (Source: the author, 2018).

During the 1970s and late 1980s informal settlements sprang up because of the burgeoning demand for housing throughout almost all the peripheral southwestern and northwestern areas of the city, such as Bosa or Suba; to the south and southeast in Usme and San Cristóbal; or to the northeast in Chapinero or Usaquén (for more see Jaramillo, 1992; Hataya, 1996). Faced with growing demand for housing and urban services, housing supply failed to sustain a quantitative and qualitative offering. Housing site acquisition occurred mainly through illegal occupation or informal contracts with 'pirate developers' (*urbanizadores piratas*) (see Figure 2). Likewise, the quality of housing suffered from inadequate construction and the lack of basic urban infrastructure services like water, sewerage, and electricity. The state was overwhelmed by the increasing urbanization and informal settlements, but the most critical points were the influence exercised by powerful real estate over local authorities and private interests, leading to urban land-use speculation. Urban policy and regulations increasingly favored such interests.

Figure 2. An article from the local newspaper *El Espectador* (March 2, 1991) about the establishment of a state of emergency in the city to halt the action of the *urbanizadores piratas* (source: Luis Ángel Arango Library Press Archive).

Most of the city's urban development and housing (around 70%) started through informal developments (Camargo Sierra and Hurtado Tarazona, 2013) which, after pressure from community-based organizations, were recognized and formalized as urban developments by the state (Hataya, 2010; Zambrano, 2004). Although there is almost universal coverage by some urban services, especially water and sanitation, several communities remain 'disconnected' from them, with precarious housing conditions and extreme poverty. This spatial configuration corresponds to socio-spatial segregation patterns that reflect a socioeconomically stratified society and a notably fragmented urban space.

Meanwhile, rural Bogotá (Photo 3) embraces different territorialities and populations like farmers, small agricultural entrepreneurs, industrial flower farmers, and indigenous Muisca communities. The fact that most *bogotanos* know little (whether through ignorance or indifference) about the extent to which the city and its growth are related to the rural reveals much about how the implications of the urban narrative as 'progress' have diminished alternatives for more sustainable paths. Rural Bogotá is a space characterized by the presence of economic and productive activities such as agriculture, livestock husbandry, rural tourism, and cultural handicrafts, surrounded by the most important protected areas and urban-regional ecosystems (around 734 square kilometers). There are 4,221 housing units (*viviendas*) in rural areas, with a total of 4,353 households (*hogares*) and 16,787 people (3.9 persons per household); that is, about 0.22% of the total population of Bogotá. About 49% of the rural properties (*finca* or *predio rural*) are owned by the residents themselves, with the remainder divided between usufruct, leasing, sharecropping, and in some cases *de facto* possession (Secretaría de Desarrollo Económico, 2015). About 70% of the rural land is constituted by *páramo* ecosystems, 9% by high Andean forest and scrub, <2% by forest plantations, 16% by pasture, and 3% by crops (Secretaría Distrital de Ambiente, n.d.).

Photo 3. Landscape in the rural area of Pasquilla, Ciudad Bolívar, south Bogotá (Source: the author, 2015).

Urbanization has caused the loss of unique wetland areas and soils with high productive potential, while high-impact activities such as landfills or quarrying have been allocated to marginalized and rural areas. Despite such ecological transformations, endemic types of ecosystem, fauna and flora, habitats, and landscapes with different land covers and soil types remain present, which sustain life in the city-region. The current land cover consists of Andean high mountain forests, tree plantations, and their mixtures; *páramos*, scrub, and grasslands; as well as cultivated and urbanized areas (Isaacs and Jaimes, 2014), showing different types of intervention and transformation for each land cover. According to official data, in these habitats and landscapes around 600 plants and more than 200 animal species are recorded (SDA-CI, 2010), but according to local biologists and experts, their numbers could be far greater (Hernández Schmidt, 2019).[10] For example, about 235 bird species, including some

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[10] Official data are not completely reliable. According to the open-source platform Naturalista (http://naturalista.biodiversidad.co/) (a local node of the international i-Naturalist network), which collects observations and records from biologists, nature enthusiasts (*aficionados*), and citizen scientists, all supported by national and academic institutions in biodiversity, around 600 animal species (birds, mammals, amphibians, reptiles, fish, invertebrates), and more than 780 flora species have been recorded in the city-region.

endemisms, have been recorded in the entire region (city and surroundings) (Roselli et al., 2017; Stiles et al., 2017). This biodiversity includes endemic bird species inhabiting Bogotá's wetlands, such as Apolinar's wren, or *cucarachero de pantano* (*Cistothorus apolinari*), and the spot-flanked gallinule, or *tingua moteada* (*Gallinula melanops bogotensis*), which are respectively threatened and endangered (Calvachi, 2002; Humedales Bogotá, 2014). Although the pace of human population growth has decreased, it continues to grow steadily (cf. Rojas Morales and Pachón Muñoz, 2017), and all these ecological values are at risk because of the ongoing pressure of urban development.

Yet although Bogotá has a significant number of green and protected areas, the population suffers from a lack of effective access to green spaces. The absence of greenness is especially present in marginalized and peripheral areas (Quimbayo-Ruiz, 2016; Scopelliti et al., 2016; Loret de Mola et al., 2017). Finally, there has been a historical and unjust allocation and development in low-income and marginalized areas of high-impact activities related to the urban metabolism (Díaz, 2011; Delgado, 2015), such as landfills, dumps, quarrying activities, and dams.

Climate change projections for the city-region predict a near 1 °C increase in the average temperature in the next 40 to 45 years, with increasingly variable rainfall patterns. This scenario means that the city's most densely populated and socially vulnerable areas (Alcaldía de Bogotá, 2015) will increasingly be exposed to climate change risks such as floods, landslides, and heatwaves (IDEAM and others, 2014; IDEAM, 2015; 2017). Peripheral areas have usually been the location of low-income housing urban development. Such developments often overlap stream banks, wetlands, and hilly areas that harbor important ecosystem benefits, increasing the probability of disasters such as floods or landslides if these areas are transformed and urbanized. Urban populations of precarious workers such as vendors, sex workers, and the homeless (cf. Ritterbusch, 2016; 2017) are among the most vulnerable to climate change impacts. Although Bogotá is the country's most important political and economic center, and despite the improvement in its socioeconomic development since the early 1990s (cf. Gilbert, 2015), elements of spatial injustice remain present, entrenching the long path of different sorts of violence related to internal war and political conflict.

3.2 Methodological approach, materials, and analytical methods

Four research manuscripts (see the 'Set of articles' section) constitute this dissertation. It is important to clarify from the outset that this doctoral research was not based on participatory action research or ethnography, although it did rely on participatory and ethnographic research tools. The methodological approach was fundamentally qualitative and of an interdisciplinary character, establishing a dialogue between different data from social and ecological knowledge traditions, and it covers a timeframe spanning the late 1980s to the present.

This dissertation considers Bogotá as a case study of multiple environmental motivations, conflicts, and stakeholders driving spatial planning and urban nature advocacy at the metropolitan scale. There are also limitations in terms of research design and conduct. Initially, at an early stage of the project an analysis of land-use cover change and its relationship with public planning policies in specific locations in Bogotá was proposed, but was not ultimately conducted. Instead, the documentation work collected for the case study (which will be detailed in this section) revealed that this dissertation could complement already existing ecological scientific knowledge and place it in a dialogue with qualitative information.

Based on previous documentation regarding the case study (see Quimbayo-Ruiz, 2016), the following research themes were defined as analytical tools to answer the research questions, and to guide the development of the articles:

- 'Non-developed' space in the spatial planning process in Bogotá

The ways in which urban and spatial planning in Bogotá have dealt with rural, non-developed, and urban-rural fringes are explored here. The role given by planning practices to urban nature (ecology) is also analyzed. Finally, how the planning process has considered the public commons in urban development is investigated.

- Urbanization impacts, environment, and socio-spatial strategies and practices

Through specific cases in urban and rural areas in Bogotá, the research focuses on how certain populations and community groups, and their

livelihoods, have been transformed by urban dynamics due to the expansion of the city. It also analyzes the kind of strategies these populations resort to in dealing with the physical and socio-ecological impacts of urbanization.

The role of social movements, state agencies, and private actors in planning practices related to urban nature was fundamental to the two analytical issues. Moreover, following Merlinsky (2013), Seguel (2010), Schlosberg (2007), and Dietz (2018), environmental conflicts related to spatial planning in Bogotá were characterized and analyzed through the development of the four research articles according to these dimensions: 1) social movements' strategies and practices in urban nature advocacy; 2) de/reterritorialization processes and situated ecological knowledge; and 3) socio-ecological inequalities. Given the sociopolitical circumstances of local order, two periods over three decades were set for analytical purposes: 1990–2000 and 2000–present. The first period corresponds to the establishment of reforms of the institutional order and governance (norms, institutions, policies) regarding environmental issues and spatial planning. The second corresponds to a period when multiple transformations and disputes around this political order occurred.

The development of this research had different fieldwork stages. In the first stage, conducted in April 2017, the aim was to refine methodological tools, conduct some preliminary interviews, identify and gather documentation, and meet potential interviewees. The second stage was undertaken between November 2017 and April 2018, and became the main fieldwork stage. During this second stage most of the interviews, participant observation activities, visits to the field, and collection of documentation were undertaken. The last stages were between December 2018 to early January 2019 and February 2020, and consisted of the verification of collected information in prior stages and updating it with new observations in the field.

During each of these stages I managed to gather information from diverse sources. Thematic, unstructured, and group interviews were conducted. Besides the interviews, participant observation and field visits were undertaken, supported by visuals and pictures. I managed to gather documents relevant to spatial planning and ecological issues in Bogotá over the last four decades by accessing public and private archives (virtual and physical repositories). Normative, technical, and scientific information around

urban-regional biodiversity was then gathered. All the collected material was narrowed down for the scope and analysis of each research article. In what follows I detail how each of these materials was handled and analyzed.

3.2.1 Interviews

The interviews were conducted during the first and second fieldwork stages (see Annex 1). The strategy was to locate key interviewees who could guide me toward the topics on which I was focusing. In the first stage, interviews with two social leaders and three practitioners, and one group interview with five members of a local NGO, were conducted. Some methodological aspects of the research were also refined during this stage. In the second stage I interviewed 32 planners, practitioners, and social leaders who had participated in urban planning processes in Bogotá in the last 30 years. Among the people interviewed, some worked as head planning officers at the District's state agencies, while others were current officers, professional planners, and urban ecology experts; among the social leaders were those who used to work as staff in state agencies in a joint effort with community-based projects. Of the 32 interviews, 12 were thematic, exploring questions about the role of ecological concerns in planning practices and the main challenges of planning practice regarding ecological concerns in recent years. The remaining interviews were a combination of unstructured individual and group interviews on related topics. In terms of positionality, the interviewees were from various social and cultural backgrounds, mostly white/mestizo and mestizo,[11] and although the numbers were almost even, there were a few more males (see Annex 1). To transcribe excerpts from the interviews, recorded audios from interview sessions (when interviewees allowed) were retrieved; the audios remain in a safe private repository for my exclusive use.

For reasons beyond my control and related to the time constraints of some interviewees, two of the structured interviews and one of the group interviews were unfinished (i.e. not all the questions were covered), and

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[11] The Colombian population is ethnically very diverse. Mestizo, white, black, Amerindian (Indigenous), and Romani are the officially recognized population groups. However, the majority of Colombians do not identify with ethnic groups, and are thus considered either white or mestizo.

there was no further opportunity to resume them. However, other sources of information, such as the record in a field diary of some of the participant observation activities and the use of some documents related to the case study, allowed the gaps left by these unfinished interviews to be filled. The unfinished interviews were not discarded from the total set of interviews and their respective analysis. I came to this decision because such interviews provided valuable elements from the local context that were not addressed in the other interviews. Likewise, during the design and fieldwork phase of the research an attempt was made to consolidate a set of interviewees who could perfectly reflect different points of view about the topics of interest, considering people or organizations who could represent antagonistic or even confrontational views regarding others. However, this proved difficult, and it was impossible to arrange some interviews despite having clarified my discretion as a researcher with no agenda other than my doctoral dissertation. Finally, to protect people and guarantee community privacy in line with research ethics, the interviewees were anonymized. Furthermore, when a person is cited, their name is changed.

3.2.2 Documents

This research is based on a review and content analysis of government and policy documents (including law and regulations), reports, scholarly literature, and documents produced by social and civic organizations. Some of the initial material was collected during my previous professional experience in Bogotá. Most of this initial set of documents was used for the first article. During the second fieldwork stage it was gathered into a large body of technical and policy documents spanning the 1970s to the present and related to the city-region's urban planning. In collecting the documents, a selection of keywords was used: the Spanish term *Ordenamiento Territorial* (spatial planning); and the word Bogotá. The main body of these documents was compiled from public and private archives, mainly in the city of Bogotá. Public documents were originally collected based on what was revealed in the interviews through private archives to which access was granted by the interviewees. Others were found online and from digital sources in two ways. First, they had been made available online by state agencies and retrieved from their

websites. Second, documents were collected from the public archives of the state institutions in Bogotá.

The earliest data from public sources are from the 1970s. This largest set of documents, collected during the second fieldwork stage, were sorted by coding the related topics using the ATLAS.ti software to more easily manage the number of documents. I finished with a total of 118 documents related to the topics of urban planning; urban-region and metropolitan planning; environmental land-use planning; and urban biodiversity and urban ecology.[12] The documents were analyzed and their subjects narrowed down according to each research article. These documents were later complemented with a literature review on empirical research related to Bogotá (references were used and cited throughout the articles) to provide a potentially different perspective in comparison with and contrast to the findings in the analyzed documents. Furthermore, the triangulation of the information found in the documents and research literature relied on interviews, participant observation activities, and visits to the field.

3.2.3 Participant observation activities and visits to the field

The participant observation activities (N=11) and visits to the field were mainly conducted between November 2017 and April 2018, and a few others were conducted between December 2018–January 2019 and February 2020 (see Annex 2). The visits to the field were intended to observe the physical transformations of the area's landscape. A second purpose of the visits was to conduct participant observation activities. The visited locations were the spaces where the interviewees performed their activities or met other local social actors to discuss their practices and strategies for dealing with environmental conflicts. These discussions were in a freer form than the interviews, with no detailed questions prepared in advance. Participant observations and visits to the field were also used to complement the information found in the documents and given in the interviews. For example, when visiting areas in the Ciudad Bolívar locality, a local practitioner

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[12] At the time of writing progress is being made on establishing a digital repository for the open consultation of anyone interested in these documents.

led a guided tour of the urban-rural fringe. During the tour the impacts of urbanization were discussed, and time was provided for discussion with rural inhabitants. Participant observation during meetings and public events dealing with land-use and spatial planning organized by social organizations and state agencies was also conducted. As in the interviews, the participant observation focused on the role of ecological concerns and urban nature in planning practices. All the observations were recorded in a field diary. Finally, inputs from my previous professional experiences were used to contextualize the findings.

3.2.4 Additional and supplementary data

Through contact with the Center for Research and Popular Education in Colombia (CINEP) in Bogotá, and financial support from the CEIBA Foundation, in this research (and especially in Article 1) I used the Social Struggle DataBase produced by CINEP to trace environmental mobilization in Bogotá for the period 1990–2014 (available at the time of acquirement in 2017). The database is based on press and media archives, interviews, and reports from social organizations. According to CINEP, one of the database's limitations is that the local press and media systematically make actors like women invisible or assign the epithet 'subversive' to social protest.

On the other hand, to complement and support the collected data, a local press review (of daily newspapers) was conducted to examine the press's documentation and rendering of environmental conflicts and urban planning in Bogotá in the recent history of the city-region. At the beginning of the research project it was planned to conduct a press archive review of the newspaper *El Espectador* and its 'Bogotá' section, relying on the press archive at the Central Bank of Colombia's Luis Ángel Arango Public Library in Bogotá. However, given the work such a review would require without any additional research assistance, the review was only able to cover archives from the January 1990 to March 1991 timeframe. To address this limitation, the digital archive of the major Bogotá newspaper *El Tiempo* was used as a better and more pragmatic alternative. The press releases were retrieved from the *El Tiempo* web archive. The chosen newspaper pieces were assigned with keywords (in Spanish) to organize topics of interest for the research (see

Annex 3) useful for contrasting and complementing most of the information gathered from interviews, documents, and participant observation.

3.3   Positionality and research ethics

This research adopts a critical approach to socio-ecological systems to contribute to the addressing of contemporary environmental challenges through reflective research practice. My research practice attempts to be ethically coherent regarding current local and global challenges, and sensibilities beyond academia. Such a commitment requires a pluralistic and self-reflective practice, especially for scholars concerned with socio-ecological struggles, and the pursuit of alternatives to development and capitalism (cf. Asher and Wainwright, 2019). In environmental research, and especially research in environmental social sciences (i.e. political ecology and environmental history), such a practice enables more affirmative action and genuine engagement with environmental challenges (Batterbury, 2018).

I consider my research practice to be situated self-reflective expertise. Based on Burawoy's ideas on the extended case study research method (1998), my research practice seeks to achieve a reflective science to empirically contribute theoretical elaborations. In the extended case study method reflexive science '(…) applies (…) in order to extract the general from the unique, to move from the "'micro" to the "macro", and to connect the present to the past in participation of the future, all by building on preexisting theory' (1998: 5). Working with this approach brings reflective understanding that raises the level of explicit consciousness to acknowledge that our research exercise has real-life repercussions (ibid: 6).

Following Burawoy's ideas, such an acknowledgment requires a rejection of methodological prescriptions, enabling the exploration of broadly geo-historical patterns without relinquishing either science or quotidian knowledge. While grounded theory is concerned with the discovery of new theory from the ground up, in the extended case method approach the aim is to seek to reconstruct or reshape existing theory. Although the foundations of the extended case study are rooted in ethnographic research, I found the

principle of achieving **reflective science** proposed by Burawoy pertinent for my research and experience of Bogotá, which I frame as a complete case study embracing different issues of environmental conflict, planning practice, and urban nature.

In undertaking a self-reflective exercise of my own experience and research practice, it is therefore my responsibility to document the research's results transparently and inclusively, avoiding the reproduction of any exclusionary or discriminatory action along gender, class, or race lines. Here, we recall Donna Haraway's (1991) understanding of knowledge production as situated knowledge. Besides my own embodied experiences, the people who participated in the interviews were not only interviewees: Most became knowledge peers. Among them were practitioners and people who faced environmental issues every day, regardless of whether they were activists or at the frontline of policy implementation. Knowledge production is not detached from social and political networks, which are in constant flux in time and space, and across different scales and epistemic perspectives (Stengers, 2005).

My expertise and familiarity regarding the case study may well have given me advantages in design, access to data, and research development. Nevertheless, this has also brought additional research challenges and limitations, nuanced by the constant perception of being perceived as an 'inside' or 'outside' subject (researcher), depending on the research stage (i.e. design, fieldwork, writing) or place where it was performed (i.e. in this case between Finland and Colombia). Regarding this 'outsider/insider' tension, the issue of my positionality as a researcher in the multiscalar process of knowledge production therefore emerged (Lopes de Souza, 2019). Researchers tend to be perceived as the only valid person holding 'expert' knowledge on specific topics. However, undertaking reflective science is not about the intention of establishing a model of 'best' and 'self-aware' scholarly practice, but of understanding this circumstance as a methodological proposal of the coexistence of various forms of knowledge in dialogue (Burawoy, 1998: 14). Dialogue here is defined in principle as the degree of intersubjectivity between the researcher, participants, and premises concerning the research subject.

Collaborative work with the actors related to the research topic would have been desirable, as I would have had the privilege of accessing information and being in touch with key social actors in the territory. Yet one of the limitations of this research was the lack of availability to spend more time with local social actors and community members to collaboratively explore with them additional land-use strategies that might complement the existing proposals from communities. The longer my doctoral studies and research plans progressed, the more I sensed my physical detachment from Bogotá. Although I wanted to continue a genuine engagement with practitioners, activists, or former colleagues, it was very challenging to develop mutual collaboration because of restrictions of time and distance, and the everyday circumstances of most of the actors. Although the increasing use of social media and virtual platforms facilitates communication, it can never replace the quality of physical contact, interaction, and presence in the field.

Moreover, and especially during the development of Article III, the massive invasion of institutions, researchers, and other external actors using the time and knowledge of local communities has created genuine emotional stress for most of the territory's inhabitants, who feel exploited by them without gaining any additional benefit or change in their living conditions. I took the political decision not to contribute to such stress in my research practice. In sum, multiple physical and temporal restrictions from both potential participants and myself explained this situation. All these elements and challenges were key to establishing this research as non-participatory action or ethnographically oriented. Moreover, restrictions and limitations arose from events in the local (and even global) sociopolitical environment, which will be detailed later in this subsection.

From the conception of my research project to my current research pathway, I have had to rethink how my scholarly knowledge dialogues with contemporary struggles and environmental challenges, not only in Bogotá but in the Colombian context in general. There were several successive events during my doctoral journey. The signing of the peace accords between the Colombian state and the Revolutionary Armed Forces of Colombia (FARC) in 2016 (about the time I started my doctoral studies), the peace referendum, and the precarious implementation of these accords became central to the current

political conjecture. Precisely, and despite the agreement, state repression, violence, corruption, and environmental destruction have not ceased. On the contrary, they are unfortunately increasing in the country, which has become one of the most dangerous places on Earth to be a human rights or environmental activist (Global Witness, 2020; Front Line Defenders, 2020).

While all this was happening, polls and election cycles confronted minds and hearts politically. In 2018 the congressional and presidential elections took place, followed in late 2019 by local and regional elections. More recently, in November 2019, the country's largest national strike (*Paro Nacional*) in the last 40 years brought mass demonstrations and protests as a sign of the uprising of various sectors of Colombian society against an authoritarian government and its political unwillingness to prevent and correct multiple manifestations of structural violence. Unfortunately, this social uprising was undermined by political fragmentation, state repression through police brutality, the reactivation of political violence, and soon afterwards the state of emergency imposed by the Covid-19 pandemic.

Political violence, state repression, and overt corruption are considerably less brutal in Bogotá than in other parts of the country. However, they still affect the Capital District, and show recent signs of deteriorating, especially in the area of state violence.[13] The plundering of urban nature due to profit-driven urban growth (and fueled by local and national powers), especially throughout the term of Enrique Peñalosa's administration (2016–2019) has exacerbated the already existing spatial injustices (Photo 4). In 2020 Mayor Claudia López took office after running a campaign that embraced the premises of social and ecological justice. However, many challenges (and projects) originating in the previous District administration, as well as accumulated socio-ecological inequalities, remain and have been exacerbated by the situation created by

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[13] The tragic events that became known as '*La Masacre de Bogotá*' should be mentioned in this context. They occurred in Bogotá's metropolitan area on September 9, 2020, and were caused by disproportionate state repression to halt social discontent regarding state violence and police brutality. The repression left at least 14 people dead and more than 130 injured. There were multiple human rights violations, including illegal detentions and rape of women by members of the police force. Unfortunately, these murders and human rights violations were neither the first nor only that occurred with impunity in 2020 across Colombia.

the Covid-19 emergency. Although my analysis spans the period since the 1990s, all these events affected the research performance and analysis of the results. Their development has facilitated a rethinking of how urban and regional politics can enable new possibilities in urban nature coexistence.

Photo 4. A banner at a demonstration in the Plaza de Bolívar against Enrique Peñalosa's administration's change of land-use policy in wetland areas (Source: the author, 2018).

Meanwhile, distance and the itinerant nature of being a doctoral student in Finland created emotional tension, heightened during the extreme isolation and confinement of the Covid-19 pandemic. Nevertheless, these circumstances also opened the doors to self-reflection, a constant checking of my research practice, a reassessment of my research methods, data interpretation, and the dissemination of results. In other words, they made me open to research flexibility, without any loss of academic rigor.

Another research practice challenge was to maintain trust and transparency with the people on the ground who were challenging socio-ecological inequalities every day, and thus to remain accountable. Throughout my itinerant existence between Colombia and Finland I have attempted to balance my roles. For example, in doing my Ph.D. I had the opportunity to contribute to three opinion pieces in local media outlets in Bogotá, two of which were

collaborations (Quimbayo Ruiz and Osorio Ardila, 2017; Quimbayo Ruiz 2018b; Osorio Ardila and Quimbayo Ruiz, 2019), and one in Finland during the Covid-19 pandemic (Quimbayo Ruiz, 2020b). This latter text was part of a blog special issue in the Environment, Society and Development in Latin America Research Group (ESDLA) based at the University of Eastern Finland, concluding with a virtual event in November 2020.[14] I also wrote a text about one of my specific cases in south Bogotá for a book chapter (Quimbayo Ruiz, 2019a), and I made an intervention about the environmental injustice case of the 'Doña Juana' landfill on a local radio station in May 2020.[15] A document written in Spanish with Matti Salo with the summary results of the third research article from this dissertation (Quimbayo Ruiz et al., 2020) was shared online for dissemination in October 2020.[16] Around that time I was also invited to participate in a webinar about the Bogotá wetlands' Ramsar certification.[17]

Meanwhile, in Finland I had the opportunity to share reflections and views on Colombian environmental issues. For example, I collaborated in writing an expert opinion about the Colombian peace process and environmental conflicts for *Turun Sanomat* (Quimbayo Ruiz and Salo, 2017), and I was invited as a guest speaker in events in Joensuu and Helsinki focusing on

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[14] 'Post-pandemic LAC: Pathways towards ecological and just futures in Latin America and the Caribbean.' Link to the event's info and recording: https://blogs.uef.fi/envirolatam/2020/11/18/post-pandemic-lac-pathways-towards-ecological-and-just-futures-in-latin-america-and-the-caribbean/

[15] '*Somos Planeta*' radio program from the Universidad Nacional de Colombia's Radio. Link to the radio episode: http://unradio.unal.edu.co/nc/detalle/cat/somos-planeta/article/que-hacemos-con-dona-juana-tragedias-en-el-sur-en-medio-de-la-pandemia.html

[16] The document's Spanish name is '*Documento de síntesis de resultados: Territorio y ambiente en la vida bogotana: Estrategias y prácticas de las comunidades campesinas en Usme y Ciudad Bolívar.*' It can be downloaded at this link: https://www.academia.edu/44282252/Documento_s%C3%ADntesis_de_resultados_Territorio_y_Ambiente_en_la_vida_bogotana_Estrategias_y_pr%C3%A1cticas_de_las_comunidades_campesinas_en_Usme_y_Ciudad_Bol%C3%ADvar

[17] The event's name was: *¿Qué significa para Bogotá tener un complejo de humedales con certificación Ramsar?* Link to the event's recording: https://www.facebook.com/AmbienteBogota/videos/377116220240741/

various environmental and social phenomena.[18] Outside Finland, I played a role in disseminating Bogotá's environmental concerns. I presented my doctoral research progress in seminars, conferences, and academic visits, writing opinion pieces—including a contribution for the former ENTITLE Blog platform, now the Undisciplined Environments Platform[19] (Quimbayo Ruiz, 2019b)—and participated in a joint collaboration article analyzing urbanization, the Covid-19 pandemic, and socio-ecological inequalities in South America (Osorio Ardila et al., 2020).

Finally, my positionality as a non-white Colombian doctoral student and researcher in the Nordic context raised other issues. This was clear in my research's pursuit of engagement in international discussions of urban and environmental sustainability. Despite the advances in environmental and urban studies in 'decentering' knowledge production from European and North American currents (Ernstson and Sörlin, 2019; Zeiderman, 2018), the assumption and prejudice that view local cases in the so-called 'Global South' as insufficiently 'worthy' to contribute to contemporary environmental discussions unfortunately remain common. I therefore trust that this research can contribute to the commitment to decentering knowledge production and circulation. In sum, both my positionality and research subject have constantly evolved during the development of the doctoral project. I believe that this reflective insight may contribute to a larger debate about our positionality as researchers in our research tasks in urgent times (cf. Batterbury, 2018; Sultana, 2020).

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[18] Guest speaker at the event *Kehittyykö Kehitys? Kehityksen määrittelyä meillä ja muualla*, Joensuu, April 25th, 2018. Event organized by *Kohtuus Vaarassa*, Social Democratic Youth of Joensuu, Nature League Savo-Karjala, and Left Youth of Joensuu. Guest speaker at the event What is happening in South America and why? The event was organized by the discipline of Development Studies and the Academy of Finland Research Project: Citizen Utopias in the Global South, University of Helsinki. The event was organized at ThinkCorner at the University of Helsinki. January 13th, 2020.

[19] The platform's website: https://undisciplinedenvironments.org/

4 Set of articles

This section summarizes the set of articles with their research questions and aims, as well as the author's contributions, in Tables 1 and 2. The full texts of the four articles are attached after this doctoral summary's conclusion.

Table 1. Set of articles

Article	Research question/Aim	Journal/Outlet
I: People and urban nature: 'The environmentalization of social movements in Bogotá' (Quimbayo Ruiz)	How has urban nature been used as a vehicle by social movements to contest urban commons? I identify the specific role **social movements** play in **urban nature** advocacy in Bogotá. I also argue that ideas of urban nature embodied in hills, wetlands, rivers, and streams in Bogotá have been used as a vehicle by social movements to reclaim the **urban commons**.	Journal of Political Ecology-JPE. 2018 (25): 525–547
II: Territory, sustainability and beyond: Latin American urbanization through a political ecology (Quimbayo Ruiz)	How useful is the concept of territory for an exploration of the political ecologies of urbanization? I identify how the concept of **territory** is useful for examining the **political ecologies of urbanization** in the LAC region. I explore cases of urban nature advocacy in Bogotá to understand how the different lines of class and social privilege are related to urban nature. The article also discusses certain implications for **urban justice** with respect to territory and sustainability.	Environment and Planning E: Nature and Space-EPE. 2020 3(3): 786–809 Online first. November 2019

Article	Research question/Aim	Journal/Outlet
III: Reterritorialization practices and strategies of *campesinos* in the urban frontier of Bogotá, Colombia 1st author: Quimbayo Ruiz 2nd authors: Kotilainen and Salo	What happens when peasants do not migrate to the city, but the city expands to their areas of residence? We explore how **rural populations** and their livelihoods have been transformed as a response to these urban dynamics and the city's expansion. We focus on the strategies that *campesino* populations employ to deal with the physical and socio-ecological impacts of this change.	Land Use Policy Volume 99, December 2020, 105058 Online first. 23 September 2020
IV: Ecologizing **urban planning** in Bogotá, Colombia: The idea of nature in a city 1st author: Quimbayo Ruiz 2nd authors: Salo, Hiendapää, and Kotilainen	How have planners incorporated ecological considerations in their planning practices? What insights does this offer for broader planning theory and land-use practice? We explore the emergence of **ecological concerns** in **land use and urban planning** in Bogotá.	Manuscript proposed for publication

Table 2. Authors' contribution to the research articles

ARTICLE	I	II	III	IV
Conceptualization	GAQR	GAQR	GAQR; JK; MS	GAQR; JK; MS; JH
Study design and methodology	GAQR	GAQR	GAQR; JK; MS	GAQR; JK; MS
Investigation and fieldwork	GAQR	GAQR	GAQR	GAQR
Analysis of materials	GAQR	GAQR	GAQR; JK; MS	GAQR; JK; MS; JH
Writing—Original Draft	GAQR	GAQR	GAQR; JK; MS	GAQR; MS; JH; JK
Writing—Review & Editing	GAQR	GAQR	JK; MS	MS; GAQR; JH; JK
Overall responsibility	GAQR	GAQR	GAQR	GAQR

GAQR: Germán A. Quimbayo Ruiz
JK: Juha Kotilainen
MS: Matti Salo
JH: Juha Hiendapää

5 Research outcomes and discussion

In this chapter I present and discuss the main results of the four manuscripts. Following the proposals of Merlinsky (2013), Seguel (2010), Schlosberg (2007), and Dietz (2018), environmental conflicts related to spatial planning in Bogotá are assessed through these dimensions: 1) social movements' strategies and practices in urban nature advocacy; 2) de/reterritorialization processes and ecologically situated knowledge; and 3) socio-ecological inequalities. Article I and part of Article II present and discuss a historical reconstruction of the path taken by environmental social movements in urban nature advocacy in Bogotá between the 1990s and the present. Articles II and III focus on an analysis of urban planning and environmental policy development, and their relationship with situated practices among social actors and organizations. Meanwhile, Article IV pays special attention to the inclusion and articulation of ecological concepts and the role of nature in planning processes.

Based on the development of these three dimensions and the four articles, a complementary result of the research is that it characterizes the environmental conflicts related to urban and spatial planning and on this basis crafts a type of spatial planning timeline for the case study area. Such a characterization not only contributes to further documentation of the Bogotá case but offers a detailed background for interpreting and discussing the articles' main research outcomes.

The following introduces a synthesis and characterization of environmental conflicts. It discusses how the planning practice has been received in Bogotá in recent decades, and explains the emergence and persistence of such conflicts. A discussion of the research outcomes is presented in the following subsections: 1) Timeline of environmental conflicts and spatial planning in the Bogotá region; and 2) Unveiling environmental conflicts and spatial planning in the Bogotá region. After these subsections an additional discussion of the research outcomes of the research articles is presented in the following subsections: 3) Social movements' strategies and practices in urban nature advocacy; 4) De/reterritorialization processes and situated ecological knowledge; and 5) Environmental conflicts and socio-ecological inequalities in planning practices.

5.1 Timeline of environmental conflicts and spatial planning in the Bogotá region

Through document content analysis and other sources such as press archives, this study formulates a timeline for spatial planning to reconstruct and identify the policy intentions of linking ecology and planning practices that have been present in Bogotá over the past five decades (Figures 3 and 4).

Bogotá's spatial planning story shows that ideas of modernization and urban progress (for example, to control the growing human population and regulate nature in the city), embodied in individual or collective practices led mainly by the local political-economic elite and certain sectors of society, such as professionals in urban planning, architecture, or related fields, have shaped planning formulations. However, as the set of articles shows, a broader range of social actors, especially with regard to grassroots and social movements, has also been involved in planning practices.

As the city modernized, the question of population growth in profiling planning approaches such as densification or urban expansion played a key role. However, ecological dynamics (nature), through various interventions such as channeling rivers to foster urbanity and modernity (cf. Felacio, 2018; Gallini et al., 2014; Gallini and Castro 2015, Osorio 2007, 2008; Sánchez 2012, 2016), or its transformation through several political decisions regarding the city's water supply (Osorio 2007), were suppressed and simplified. In the first decades of the twentieth century the city administration began a quest for alternative sources to secure its water provision. In 1928 the municipal council agreed to solve the water supply problem through contracting projects, and in 1929 the high basins of the Sisga and Neusa rivers, north of the Sabana de Bogotá, and the Teusacá river, in the municipality of La Calera, were purchased (through public expropriation). Finally, the acquisition of the Tunjuelo river basin in the La Regadera sector to the south of the city, near the town of Usme and in the area north of the Sumapaz *páramo*, was a major strategic project to solve the water supply problem in Bogotá. This led to the construction of the first dam for city water provision in the 1930s (see Osorio, 2007).

Figure 3. Bogotá-region' spatial planning: 1970-2000

Earth Summit Johannesburg, 2002

World Urban Forums I, II, III, IV (2002–2008)

Decree 3600/2007 Rural land planning

MADS Resolutions 475 and 621 (2000):
• Decisions regarding urban expansion in nothern Bogotá

• Court Admon/Cundinamarca River Bogotá Judgment (2004)
• Redelimitation of the Bogotá Eastern Forest Reserve (Resolution 463/2005) Suspended by a regional court until 2013

Mesa de Planificación Bogotá–Cundinamarca (Multi-stakeholder space for Regional Planning) (2003)

Land Use Master Plan (*POT*) 2000:
• MES concept was included: District Protected Areas System (Hills, wetlands, rivers, etc.)

District Decrees and Public policies on:
• Rurality (327/2007)
• Wetlands (624/2007)
• Protected land-use (462/2008)

POT 1st revision (2003–04)

PGA 2008–2038

Earth Summit "Rio+20" Rio de Janeiro, 2012

World Urban Forums V, VI, VII, VIII, IX, X (2010–2018)

Paris Agreedment on Climate Change (2015)

Sustainable Development Goals (SDG) (2015)

Habitat III Quito, 2016

Law 1454/2011 Regional Development

Law 1625/2013 New law regarding Metropolitan Areas

MADS Resolution 1434/2017: *Páramo ecosystems'* delimitation

Decree 2372/2010:
• Law on National Protected Areas System

POMCAs Decree 1640/2012

• National court (CE) ratified Res. 463/2005, adding new dispositions (2013)
• Redelimitation of the Bogotá's River Upstream Watershed Reserve (2013)
• CE rules a sentence on Bogotá river's managment (2014)

Constitutional reform to declare the Bogotá–Cundinamarca Metropolitan Region 2020

Accord 11 CAR–(2011)
• Declaration of the Regional Forest Reserve of Nothern Bogotá *Thomas van der Hammen* (TvDH)

• *Páramo Conservation Corridor Project Sumapaz, Chingaza, Guerrero, Guacheneque and Cerros Orientales*
• *Región Especial de Planeación–Región Central-RAPE* (Multi-stakeholder space for Regional Planning) 2014
• The environmental management plan of the TvDH Reserve was issued 2014
• Comprehensive Regional Plan for Climate Change-PRICC 2014

District Water Plan (District Decree 485/2011)

Public Policy on Biodiversity (District Decree 607/2011)

Biodiversity Nodes Project (2012–2016)

POT proposal including climate change criteria Suspended by a court (2014)

District Decrees and Public policies on:
• Ecourbanism (Decree 566/2014)
• Climate Change and Risks (Decree 579/2015)

POT New proposal (2021?)

2000

2010

Present

Decisions and policies with effect on two or three levels.

International/global level

National level

Bogotá-region level/Sabana de Bogotá/Cundinamarca

Bogotá D.C. level

Figure 4. Bogotá region spatial planning: 2000–present

At the beginning of the twentieth century Bogotá inherited the colonial city model (Cuellar Sánchez and Mejía Pavony, 2007; Mejía Pavony, 2000). While no major urban growth was evident, impacts on the environment were noticeable, including the loss of vegetation on surrounding hills due to the extraction of firewood and its ecological impact on rivers and streams (Osorio, 2008). The early 1900s saw important limestone and sand extraction in municipalities like La Calera, in northeast Bogotá, and in the late 1930s the La Regadera dam, upstream of the Tunjuelo river in Usme, was established to meet the growing capital's water supply. Bogotá's population was by then around 144,000 (Zambrano and Bernard, 1993), and some authors (Rey, 2010) have indicated an increase in population density between 1890 and 1910. However, the city's southern limits only extended two blocks from the church of Las Cruces in the historical center of Bogotá. Toward the south beyond the Fucha river and incipient marginal settlements, there were only non-urbanized lands which belonged to farms (*haciendas*)[20] such as El Hato, La Milagrosa, La Fiscala, Tunjuelito, Las Manas, and many others. These farms produced cereals like wheat and barley but also offered places for recreation during vacations for the more affluent residents of the nearby city. Most of the owners belonged to the local elites.

Urban sprawl started between 1910 and 1920 and grew steadily. The city's growth expanded toward the northeast and west from the historical center. It was not until 1940–1950 that the process of urbanization toward south Bogotá began to gain strength, and the city reached a population of almost 650,000 at the beginning of 1950 (Suarez Mayorga, 2006). Urban growth and development were facilitated in these areas by the subdivision of plots of land from the old *haciendas* by their owners (usually through successive inheritances), which was then sold to urban developers, who sold it on either as legal or illegal property titles (Zambrano, 2004; 2007). Moreover, the most important areas for the

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[20] The *hacienda* was a form of property derived from the colonial *estancias* and the purchase of indigenous (Muisca) reserves' lands by the white and Criollo elites in the mid-nineteenth century. Osorio Ardila (2019) constructed an interesting chronology and review of how the Sabana de Bogotá region's lands became urbanized from indigenous water channels (*camellones*), transforming the colonial *estancias* and indigenous reserves (*resguardos*), first into the *haciendas sabaneras* and later to the town and city.

extraction of clay, gravel, and sand for building materials overlapped with such areas (Secretaría Distrital de Ambiente-Universidad Nacional de Colombia, 2007). Newcomers and inhabitants therefore also became workers in such exploitation areas, such as Rafael Uribe Uribe and Tunjuelito in the south, or Chapinero and Usaquén in the north, where brick factories or *chircales* were established. The former *haciendas* then became Bogotá's working-class neighborhoods (*barrios obreros*).

Low-income urban housing was possible on the southern periphery because of the sub-plotting of the last remaining *haciendas* on the plain and in the flood areas of the Tunjuelo river. Until the mid-1940s, aggregate materials used for concrete production in Bogotá were located near La Calera. As a result of a study of the building and construction sectors commissioned by one of the main companies (Cementos Samper), important gravel deposits were identified on the eastern hills (Cerros Orientales) in San Cristóbal and on one of the banks of the Tunjuelo river (Sanz de Santamaría, 1982: 91 cited in Sánchez, 2012). With increasing demand for materials, its proximity to the city, and above all the good quality of the material, the Tunjuelo's banks became the city's main gravel supplier. Most of the material was used not only in the construction of tall buildings but in almost every civil work such as aqueduct and sewerage networks, roads, and more recently the trunk avenues for the Transmilenio BRT system (Sánchez, op. cit.).

Meanwhile, through the first four decades of the twentieth century, most of the indigenous and *campesino* population migrating to the city established small rural settlements on the Sabana's eastern hills in the municipalities of La Calera, Choachí, and Usme (the last was not then part of Bogotá), and on the southern hills in Soacha. At the same time, settling processes in rural areas (known locally as '*colonización*') were consolidated in various locations around the city of Bogotá, especially in the upstream basin of the Tunjuelo river (Fajardo et al., 1975) and the Sumapaz region, the latter an area with a long tradition of agrarian struggle (cf. Marulanda-Álvarez, 1991; Londoño-Botero, 2011). Most of Sumapaz is in the high mountains, and it covers part of the largest continuous *páramo* ecosystem in the world, which today constitutes a national natural park; in 1986 the area became a locality of the Capital District under District Agreement 9.

From the end of the nineteenth century until the 1940s, the Sumapaz region was the setting of numerous and prolonged conflicts between tenants, settlers, and landowners. This was because of how the land-use lease system worked or the influence of the *haciendas*' expansion over vacant land occupied by the settlers. Yet a strong peasant organization formed around the agrarian conflicts. By the end of the 1940s a significant number of settlers from Sumapaz had achieved recognition of their land ownership through the allocation of vacant land and the division of several *haciendas*. Unfortunately, this important process of democratization of land property was interrupted by the long and intense period of violence that unfolded after the events in Bogotá on April 9, 1948 known as '*El Bogotazo.*' During this period the peasants suffered from serious abuses and political violence, which motivated the transformation of the agrarian organization into a peasant guerrilla group, led by Juan de la Cruz Varela, who had by then decided to join the Communist Party. However, transitions between armed conflicts and amnesties later paved the way for the strong influence in the region of the FARC guerrillas. This halted the previous settlement process in the region, reduced the traditional forms of the *hacienda* economy, and stagnated economic development. The presence of armed groups persisted until the end of the 1990s, when the Colombian National Army regained control of the area. The area then became an important sector for the armed forces' surveillance and the metropolitan police, because it was one of the main points of access to the capital.

Nevertheless, the tipping point for Bogotá's urban growth was the decision in 1955 to annex municipalities such as Usme, Bosa, Fontibón, Engativá, Suba, and Usaquén to the Bogota District, which made thousands of hectares available for urbanization, but with no proper plan to regulate urban growth. The municipality discarded the implementation of a Regulatory Plan (*Plan Regulador*), which was proposed by the internationally renowned urbanists Charles-Édouard Jeanneret (better known as Le Corbusier), José Luis Sert, and Paul Lester Wiener. Between the late 1940s and late 1960s the city's local administration privileged the city's organization in its urban planning, without considering the existing settlements and population in Bogotá's surrounding rural areas.

In addition, urbanization in the peripheral areas of the city's south was minimally regulated by the state. This, combined with a vertiginous population

increase in southeast Bogotá through the arrival of people after a period of partisan political violence called '*La Violencia*' (1948–1958), caused new spontaneous settlements to emerge in response to the need for housing for immigrants and displaced people from other regions of the country such as Cundinamarca, Boyacá, Tolima, and Santander (Alcaldía Mayor de Bogotá, 2005). Urban population growth rates rose to almost 7% between 1950 and 1960 (Zambrano and Bernard, 1993), and urban developments were undertaken by legal and illegal developers with insufficient state regulation. Urban developments and housing therefore failed to offer quality of life to their inhabitants, who later had to struggle for a worthy public space regulated by the same local communities. In the 1970s and 1980s such settlements were subject to regularization by the state because of these communities' pressure (Zambrano, 2004).

In the 1970s, the National Institute of Renewable Natural Resources and Environment, also known as INDERENA (which was an administrative agency of the Ministry of Agriculture), led the creation of protected areas such as Bogotá's Eastern Forest Reserve and the High Bogotá River Basin Reserve (Resolution 076/1976), and in 1977 two National Parks in the Bogotá region in the high mountains and *páramos* of Chingaza and Sumapaz. These political decisions regarding the environmental protection of the Bogotá river basin and surrounding *páramos* were taken to guarantee the city's water supply.

In 1972 the municipal administration released an assessment and plan known as Bogotá Fase 2, with technical support from the World Bank. The plan's urban planning approach was referred to as '*ciudades dentro de la ciudad* [cities within a city]' (Photo 5), and Bogotá was considered a city region to address urban-rural relations. For example, the plan designated agricultural lands in the District area[21] for food production and natural resources management. Besides the definition of agricultural lands, other principles of Bogotá Fase 2, such as urban centrality and zoning, were later included in key land-use regulations such as District Agreements 7/1979 and 6/1990 (Figure 5).

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[21] Rural affairs were by no means considered a central topic. On the contrary, during the 1960s and 1970s the Colombian state undertook an entire national modernization project that was backed by multilateral organizations such as the International Bank for Reconstruction and Development (IBRD) (part of the World Bank). Bogotá Fase 2 was part of a larger national development plan known as 'The Four Strategies' (*Las Cuatro Estrategias*) in which urbanization (instead of national rural development) was promoted as one of the most important national economic strategies.
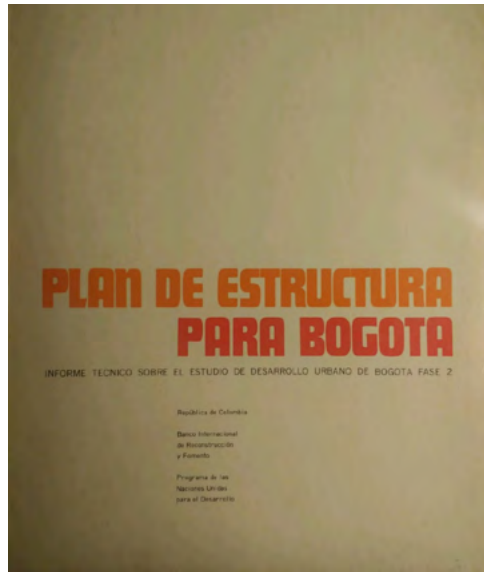
Photo 5. The cover of the *'Plan de Estructura para Bogotá'* technical report, which was the basis of the Bogotá Fase 2 assessment and plan (Photo source: the author, 2018).

Figure 5. An article from the local newspaper *El Espectador* (March 2nd, 1990) *'Bogotá no crece por decreto'* (Bogotá does not grow by decree) about the concern about the urban development of agricultural land (source: L.Á. Arango Library, Press Archive).

In the 1980s and 1990s Bogotá suffered from a deteriorating environment, reflected in air and water pollution, a lack of green areas, and landfills in the middle of the suburbs. The population increase during the last half of the century in Colombian cities was a response to the desire for state modernization and a result of waves of immigrants expelled from the countryside, mostly internal refugees displaced by war. The National Constitution was reformed at the beginning of the 1990s, when Colombia was suffering serious sociopolitical unrest and an economic crisis. In this reform environmental concerns, the ground for the promotion of specific policies and regulations that opened the possibility of addressing socio-ecological conflicts, were fundamental. Indeed, the enacting of the new National Constitution in 1991 was an important precedent for the formal institutionalization of the environmental agenda in the country. The environmental impetus that anticipated the Rio de Janeiro Earth Summit in 1992 was reinforced and then reflected in the participation of Colombia and its representatives in the summit. In the new constitution the Sabana de Bogotá region was declared a strategic ecosystem for Colombia (Article 61-Law 99/1993), considering concerns (still relevant today) about environmental depletion due to increasing urbanization (Photo 6).

Soon after, in 1993, National Law 99 was promulgated by the Colombian Congress, creating the National Environmental System (SINA). This was followed by the ratification of important international commitments: the Convention on Biological Diversity (Law 165/1994) and the Ramsar Convention on Wetlands (Law 357 of 1997). These new institutional arrangements, aligned with a spirit of neoliberal state-decentralization that had already been experienced in other Latin American countries since the 1980s, allowed the Ministry of the Environment to lead the establishment of urban environmental authorities in the main cities and metropolitan areas. This also enabled an institutional agreement for the allocation of sufficient regulatory powers and financial resources to ensure that environmental issues became firmly rooted in urban policies. These institutions were not only required to cooperate with the public sector but to work with the private sector, NGOs, and community organizations.

Photo 6. Front covers of two key assessments on the Sabana de Bogotá region's environment, society, and development. On the left: *¿Hacia dónde va la Sabana de Bogotá? Modernización, Conflicto, Ambiente y Sociedad* (Where is the Sabana de Bogotá going? Modernization, Conflict, Environment, and Society) from Montañez Gómez et al. (1992). On the right: *Bogotá y Cundinamarca: Expansión Urbana y Sostenibilidad* (Bogotá and Cundinamarca: Urban Expansion and Sustainability) from Pérez Preciado (2000) and commissioned by the CAR[22] (source: the author, 2018).

As the country's capital, Bogotá was the protagonist of this type of legal reform in urban policies and the environment that embraced a set of multiple actors, as Articles I and IV describe. After the enactment of the new National Constitution, the enactment of Law 1421 in 1993 established the Organic Statute (*Estatuto Orgánico*) to reorganize Bogotá's political-administrative structure and tax regime. Simultaneously with this institutionalization of environmental concerns, the city underwent a qualitative urban transformation between the mid-1990s and mid-2000s. Reforms in public space, mobility and transportation, and citizen culture by the administrations of Mayors Antanas Mockus (1995–1997/2000–2003), Enrique Peñalosa (1998–2000), and Luis E. Garzón (2004–2008), were undertaken and largely materialized. Such transformations had repercussions

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[22] According to local sources this document had a restricted and limited circulation due to strong political pressure regarding its technical content, which opposed influential interests in the state. Some practitioners even claim that several copies of the document were burned at the order of high-level state officers. However, I have no other evidence to confirm this.

at international discussions of urban planning, becoming known as the 'Bogotá Model' (Duque Franco, 2008). It seemed that the city was rectifying planning practices, overcoming the terrible and chaotic consequences of the urban growth of the recent decades, and becoming a modern city.

These transformations introduced a great variety of urban planning tools and initiatives that eventually became a collection of unfinished projects that lacked political continuity and major success. One of the seminal urban planning initiatives for the upcoming reforms was the Bogotá 2000 Strategic Plan (Figure 6). It was developed during the administration of Mayor Jaime Castro (1992–1994) but was never fully implemented. In the same period a commission of experts, called *Misión Bogotá Siglo XXI*, was assembled. It sought to provide information and concepts, including environmental imperatives, for the city's planning. Despite both initiatives' lack of continuity, they were nevertheless influential in adopting a more strategic approach to the practice (but not necessarily implementation) of urban planning, emphasizing medium- and long-term city-level planning. This plan also emphasized the need to align the city's growth and development with the parameters of neoliberal urbanization.
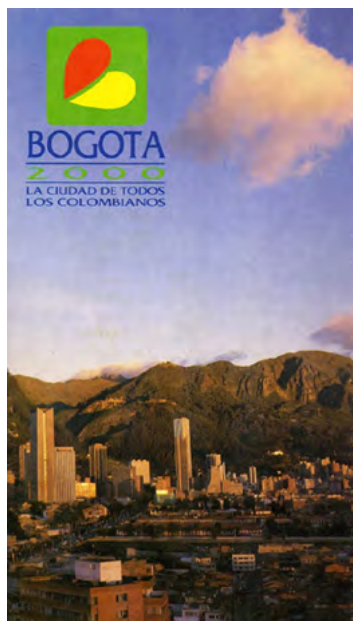
Figure 6. A still from the Bogotá 2000 Plan (source: Internet, unknown).

Other initiatives were more long-lived. For example, Bogotá's environmental management office (Administrative Department of the Environment–DAMA) was established in 1990. From 1995 DAMA became the formal environmental authority of the District's urban area and through further legal and institutional reforms (District Agreements 248 and 257 of 2006) it became the District Office of the Environment–SDA in 2007. In addition to the SDA, other local government institutions began at least occasionally to adopt sustainable development approaches. Among them was the Bogotá Water Company (*Empresa de Acueducto de Bogotá-EAB*). Although the EAB has been part of the District Administration, it is a key regional actor in interventions beyond the politico-administrative boundaries in water management and in its participation in conservation efforts with the National Natural Parks Office, which has a presence in the Chingaza and Sumapaz *páramo* areas. As a whole, this institutional setting led to the materialization of SINA's principles in urban environmental management in the District, as well as several innovative measures to deal with the effects of climate change variability and risks (Lampis, 2013; 2016).

Various tools, mechanisms, and spaces for civic and democratic participation for environmental concerns were established and provided within these institutional arrangements, as Articles I, II, and III explain in detail. For example, between 1993 and 1994 an exercise was carried out between the state and civil society to develop the Local Environmental Agendas (*Agendas Locales Ambientales*) for each locality in Bogotá, promoting participatory environmental programs and actions. All this belonged to a large environmental education and participation program called '*Viva Bogotá Viva,*' commissioned by the Mayor of Bogotá (see Photo 7). This type of program was developed years later under other names, though with limited continuity and mixed success.

Photo 7. A set of publications from 1993–1994 about the *Agendas Locales Ambientales* for each of Bogotá's localities, physically available in Bogotá's Public Archive (photo source: the author, 2018).

It is important to stress that planning initiatives were developed in parallel or alignment with national-level legal frameworks for municipal planning, such as Law 152 of 1994 and Law 388 of 1997. The former concerned the Municipal Development Plans (henceforth, PDD) issued by each district or local government for its four-year term of office; the latter concerned the Municipal Land-use Plans, where ecological considerations were more explicit (Photo 8). In Bogotá this was seen in the formulation of the Master Plan for Land Use (*Plan de Ordenamiento Territorial*, henceforth, POT).

Photo 8. Various documents containing planning policies for environmental issues in Bogotá through the 1990s and the early 2000s (source: the author, 2018).

Article IV of this doctoral dissertation describes the PDD and the POT and their mutual relationship as tools in land-use measures and actions. Moreover, the relationship between ecological considerations and the concept of MES and its inclusion since the early 2000s in Bogotá's POT, as well as other spatial planning mechanisms with regional implications like the Watershed Plans, or POMCA (its Spanish acronym), are also detailed in the article. As mentioned in the case study description, all local sub-ecosystems and protected areas were framed under the scientific-political concept of the Main Ecological Structure (MES). The Dutch-Colombian ecologist Thomas van der Hammen (1998) originally proposed this concept for the Environmental Action Plan for the Bogotá river's watershed (see Figure 7), and several Colombian environmental scientists have used it since. The MES gained special consideration in the efforts to integrate the city and its surrounding region, which had begun by the early 2000s. Later, environmental imperatives in planning agendas were enthusiastically included not only in the Capital District but at the regional and national levels.

Figure 7. The front cover of the Environmental Action Plan for the Bogotá river's watershed document, prepared by Thomas van der Hammen in 1998 (source: the author, 2018).

There has been a wide-ranging discussion among Colombian scholars and practitioners of the political, normative, administrative, and institutional

implications of these principles in land-use governance (Arias Sánchez, 2018; Rossbach and Montandon, 2017; Rubiano Galvis and Esteban García, 2016). Article 10 of Law 388, for example, defines the 'higher hierarchy environmental determinants' (*determinantes ambientales de superior jerarquía*) that are key principles for addressing ecological approaches to the city-municipal and regional levels. Article IV presents Bogotá and its surrounding metropolitan region as a crucial place for experimentation with and validation of these policies in Colombia.

Articles I, II, and III describe and discuss participatory processes in environmental planning and management from that period to recent times. Between 2004 and 2011 public policies for wetlands, rurality, environmental education, biodiversity, and a District water plan were established as a product of participatory processes in which environmental grassroots movements, scholars, and practitioners were key actors. However, the implementation of these policies was disparate or nonexistent in various District administrations. For example, after a participatory process between 2008 and 2010 the District Policy on Biodiversity (the first for a city in the country) was issued in 2011 (Figure 8).

Figure 8. Front cover of the District's biodiversity public policy document (source: the author).

However, a major corruption scandal involving the District's administration and a group of private contractors was exposed during this period ('*Carrusel de la Contratación*') (Escallón Arango, 2014). Its influence meant that the biodiversity policy and its goals were not achieved and were forgotten. Other measures and policies were also affected by what had happened at the District level.

Meanwhile, the Regional Integral Plan for Climate Change (an initiative supported by the United Nations Development Programme as a global pilot project) and the District Plan on Mitigation and Adaptation to Climate Change helped to position the climate change agenda. Climate change and planning regarding hydrological and ecosystem criteria ('*ordenar el territorio alrededor del agua*') were topics that were explicitly endorsed during Mayor Gustavo Petro's administration (2012–2015) and specifically included in the PDD and the POT modification proposals, yet both were the target of much political opposition and obstacles from real estate interests closely allied with the Colombian oligarchy (Eaton, 2020), despite the fact that the District administration had by then opened the door to public participation in planning through local councils (*cabildos*) (see Photo 9 and Figure 9). The original commitments of these policies were distorted because of changes in national, regional, and district administrations, which was evident during Enrique Peñalosa's second administration (2016–2019).[23] A new POT proposal has been drafted by the current administration of Claudia López. It seeks to replace the current instrument, which has eluded change and updating since 2004. Despite some awareness and commitment to the environment from the administration[24], the proposal has not been exempt from controversy.

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[23] Although Peñalosa's administration issued an updated climate change plan (*Plan Distrital de Gestión del Riesgo de Desastres y Cambio Climático para Bogotá D.C. 2018–2030*), the plan was critically received by local environmental practitioners and experts due to its distortion of the original 2015 plan, in favor of real estate developments and urban land-use speculation in flood risk areas. The plan is available here: http://www.ambientebogota.gov.co/c/document_library/get_file?uuid=b9735535-be17-4115-a27f-26a5fb471111&groupId=10157 (Last retrieved, July 29, 2020).

[24] Before being elected as mayor (2019), López endorsed and signed a political commitment called '*Compromiso Ambiental por Bogota*' that was promoted by an environmental organizations' coalition. This coalition has been closely overseeing the commitment's enforcement during her administration.

Photo 9. A meeting organized by District agencies to discuss a POT reform (source: author's personal archive, 2013).

Figure 9. Front cover of the POT's modification proposal during Gustavo Petro's administration, which included participatory land-use planning for climate change and risk criteria (source: the author).

Bogotá it is still an unequal and strongly socio-spatially segregated urban space, despite the improvement of its socioeconomic indicators and the city region's development of a set of internationally known urban planning initiatives and land-use tools over the last three decades (Arias Sánchez, 2018; Berney, 2010; Duque Franco, 2008; Montero, 2018; Rossbach and Montandon, 2017), including initiatives with environmental and climate change criteria (Lampis, 2013; 2016). Urbanization has resulted in a loss of unique wetland areas and soils of highly productive potential (Calvachi, 2003; Carrizosa, 2009), and high-impact activities such as landfills and quarrying have been allocated to rural and marginalized urban areas (Ordoñez et al, 2013; Molano Camargo, 2019). Similarly, a constant dynamic has been the urban development of low-income housing in peripheral hilly areas with streams and wetlands that not only provide ecosystem benefits but are also vulnerable to disasters such as floods or landslides. In these areas land-use speculation networks (connected with organized crime) are making their presence felt and exploiting vulnerable sections of the population searching for housing (Quimbayo Ruiz, 2020a).

Bogotá's urban growth model thus reflects a process of accumulation by dispossession (Harvey, 2003) that is entwined with a volatile political setting marked by public mismanagement, political fragmentation, and the lack of a long-term shared vision from one mayor and administration to the next. What has been constant is the capital flow influencing land-use decisions in the context of economic globalization (cf. Gilbert, 2015; Pérez Fernández, 2010; Zeiderman, 2016), where the concentration of urban services and political and financial power has produced a lack of socio-spatial integration at the metropolitan scale (Thibert and Osorio, 2014; Rojas Morales and Pachón Muñoz, 2017). Environmental challenges from air pollution and deficient public transportation to drawbacks in urban development remain present, for Bogotá is experiencing increasing climate change vulnerability (IDEAM 2017). On June 16, 2020 a constitutional reform led to the creation of the Bogotá-Cundinamarca metropolitan region politico-administrative body. Yet there is no clarity concerning how this body will work, as well as concern among local social and environmental organizations about the lack of democratic participation in this planning process.

5.2   Unveiling environmental conflicts and spatial planning in the Bogotá region

The development of Bogotá's spatial planning timeline presented above indicates that there is no 'absence of planning'; rather, there is a kind of 'over-planning.' Examined closely, much of the progress in environmental policy issues as such fails to overcome the nature-society dichotomy, which remains present in concepts or phrases such as 'ecological structures' and 'ecosystem services.' As Articles III and IV show, this rationality issue (of the nature-society dichotomy) is key to understanding how, contrary to the idea that 'there is no planning,' environmental conflict has emerged from certain planning policies. This is precisely because the early environmental discourse adopted in urban areas like Bogotá was more related to a discursive strategy to justify urban development within the logic of the neoliberal city model, which has been in the ascendant since the early 1990s (Brand, 2007). However, in Subsections 5.3–5.5 we will see that environmental movements have used and re-signified some of these concepts in their practice. We will return to this point later in the subsections, because our focus now is on the planning approach and underlying conflicts.

The planning approach has therefore also been to delimit, zone uses by economic and development sector (the silo approach) (Articles III and IV), and spatialize and allow the materialization of this dichotomy, which separates the human from the non-human. This rationale has been present regardless of political ideology or agenda in the District administration. Furthermore, it is characteristic of a logic that perpetuates the modern capitalist ecology (Patel and Moore, 2017), which in places like Bogotá is also affected by the Latin American history of colonialism and its continuing legacy in internal colonialism and the coloniality of power within contemporary statecraft formation (cf. Quijano, 2007; Cusicanqui, 2010; Alimonda et al., 2017).

To provide a contrast with the information gathered in documents, interviews, databases, and participant observation activities performed during this research, additional sources that have identified environmental conflicts related to spatial planning in the case study area were also consulted. The first of these additional sources was the Environmental Justice Atlas (EJA), which

is a key reference for mapping global environmental conflicts. The EJA has identified the following cases as environmental conflicts in Bogotá: extractive activities in the Tunjuelo river;[25] the conflict around the District's 'Doña Juana' landfill;[26] the situation concerning Bogota waste collectors' inclusive labor conditions,[27] and the impact of the floriculture activities developing in some municipalities within the Sabana de Bogotá.[28]

Meanwhile, a product of a court decision on the environmental degradation of the Bogotá river watershed in 2014 was the establishment by the Watershed Council—constituted by regional and local environmental authorities and civil society representatives—of the Observatory on Regional and Environmental Sustainable Development (Spanish acronym, ORARBO).[29] For the District of Bogotá the ORARBO Observatory has also identified the extractive activities in the Tunjuelo river as an environmental conflict (though reduced to the Mochuelos sector).[30] Other conflicts identified are in the access and management of the water of local communities in Bogotá's Eastern Forest Reserve,[31] and the situation of the Tibanica wetland, which straddles two municipalities, Bogotá and Soacha.[32] Likewise, the recently launched Environmental Conflicts Observatory at the National University of Colombia has identified the conflict on the Thomas van der Hammen Reserve[33] and produced a report about the Doña Juana landfill situation. Finally, a citizen science initiative by the *Humedales de Bogotá* Foundation monitored potential

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[25] Source: https://ejatlas.org/conflict/rio-tunjuelo-bogota-colombia (Last accessed: March 23, 2020).

[26] Source: https://ejatlas.org/conflict/relleno-sanitario-dona-juana-colombia (Last accessed: March 23, 2020).

[27] Source: https://ejatlas.org/conflict/colombian-wastepickers-inclusive-labor-conditions-put-at-risk-by-change-in-policies (Last accessed: March 23, 2020).

[28] Source: https://ejatlas.org/conflict/floricultura-en-la-sabana-de-bogota-colombia (Last accessed: March 23, 2020).

[29] Source: http://www.orarbo.gov.co/es/casos-de-conflicto (Last accessed: March 23, 2020).

[30] Source: http://oaica.car.gov.co/vercaso2.php?id=46 (Last accessed: March 23, 2020).

[31] Source: http://oaica.car.gov.co/vercaso2.php?id=34 (Last accessed: March 23, 2020).

[32] Source: http://oaica.car.gov.co/vercaso2.php?id=98 (Last accessed: March 23, 2020).

[33] Source: http://conflictos-ambientales.net/oca_bd/env_problems/view/20 (Last accessed: March 23, 2020).

environmental conflicts related specifically to the development of the ALO highway on the wetlands in 2015,[34] though this has yet to be completed.

As this research is devoted to to spatial planning conflicts, I propose a characterization of environmental conflicts related to spatial planning and land use based on the information collected through this research and the research articles' results. Essentially, this characterization seeks to outline the type of conflicts that will be presented in the remaining part of this section and that are summarized in Table 1.

5.2.1 Legal and illegal urban and real estate development, and speculation in urban region ecosystems or protected areas

Figure 10. An article from local newspaper *El Espectador* (April 15th, 1990). *'De indiferencia se muere la laguna Juan Amarillo'* (Juan Amarillo's lagoon dies because of indifference). Urban development and environmental impacts on wetlands areas in the early 1990s (source: Luis Ángel Arango Library, Press Archive).

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[34] Source: https://humedalesbogota.com/2015/07/30/por-una-alo-alobien/ (Last accessed: 22 July 2020). As a practitioner consultant and researcher, I took part in the development of this short-term initiative.

The pressure for urban development and housing projects (of all kinds) in important ecological areas has been one of the main urban transformation processes in Bogotá's recent history. Although such an overlap between urban development and ecological areas occurs in many places, decision makers and stakeholders in Bogotá who align themselves with the ideas and promises of urban progress tend to think that the natural environment, water bodies, and biodiversity are obstacles that can be removed or fixed through engineering. As this subsection will later explore, this mindset is a feature of not only housing development but other urban infrastructures. Although ideas and approaches associated with sustainable development have been explicitly involved in urban and spatial planning practices since the 1990s, their articulation in concrete planning practices with ecological criteria, sustainability, and above all spatial justice has presented a difficult challenge.

Articles I and II show that the evidence of such conflict lies precisely in how many of the social organizations' processes have seen the environment and urban nature as vehicles to make it possible to inhabit a less hostile and more just city. Simultaneously, however, conflicts were ignited by the failure of urban progress solutions, proposed especially by the state, to satisfy the needs of communities or the consideration of ecological criteria. Historically, there have been speculative urban developments in wetland areas that are over-susceptible to flooding, creating major challenges to metropolitan sustainability and environmental protection (Osorio Ardila, 2019) (see Figure and Photo 10, and Photo 11).

Photo 10. A group of people near a wetland area where Bogotá's government has erected a noticeboard stating in bold: 'Do not buy wetland lands ... don't be fooled.' The picture dates from the late 1990s (source: Byron Calvachi's personal archive—reproduced by permission).

Photo 11. A set of photographs documenting a community-led wetland restoration process between the late 1990s and early 2000s (source: courtesy of Dora Villalobos—reproduced by permission).

Despite certain advances in the conservation of urban ecosystems and biodiversity, led mainly by social and environmental organizations, and which are described in the four articles, even with the concurrence (though intermittent) of initiatives with state institutions (see Articles I, II, and III), political and economic powers have ultimately undermined many of these initiatives. The real estate sector has exerted enormous political and economic influence, strongly lobbying the state. To fulfill their interests, powerful private concerns have influenced state agencies and institutions like the regional environmental authority (CAR), some district agencies, and Bogotá's city council. Such influence has dismissed the articulation of ecological values in land-use development in the city-region. Indeed, the most recent example (2020) concerns the development of hydraulic adaptation works commissioned by the regional environmental authority (CAR)—developed by private contractors—that have inflicted irreparable damage on several of the region's rivers. According to local activists and practitioners it is assumed that these works are functional for future urban developments but are justified by the fulfillment of judicial decisions regarding environmental protection.

Similarly, both fraudulent and illegal land speculation has historically been a problem, intertwined with the always insufficient supply of decent public housing for the population's most vulnerable people. This may explain how both land invasions and the development of peripheral urbanization (cf. Caldeira, 2017) outside the urban planning system are the most important drivers of urban growth in the District's history. Between 1950 and 2010 the development of informal housing in Bogotá constituted 70% of the city's housing growth (Camargo Sierra and Hurtado Tarazona, 2013). Over the years the state has formalized or regularized most of this development. Similarly, low-income housing is often placed in marginalized places that face several problems in accessing public transportation. Besides, the Bogotá region is a wetland, and most housing projects are allocated to areas that are highly vulnerable to the risk of flooding, and harmful effects have already been seen (Pinzón Ortiz, 2014). It is noteworthy that these settlements' habitation and urban environment conditions have not improved.

Article IV identifies some elements that may shed light on the role various stakeholders play in spatial planning processes. However, it is often very

difficult to establish clear boundaries between the state, civil society, and private interests (cf. Pérez Fernandez, 2010; Quimbayo Ruiz, 2018b; Osorio Ardila, 2019). For example, since the 1990s the Colombian state has delegated the role of licensing urban development to private operators known locally as '*curadurías urbanas*' (Palacio Acosta et al., 2018), arguing that this makes for decentralization and more efficient land-use regulation. The provision of a public service by these private *curadurías* has caused countless disputes with state agencies, the environmental authorities, oversight institutions, and environmental groups because of the influence powerful stakeholders exert in favor of real estate sector interests. More recently, the actual environmental licensing for real estate, housing, and urban infrastructure developments that overlap ecologically protected areas has also been questioned. Bogotá has indeed faced a highly problematic situation with land-use speculation and fraudulent land ownership due to ambiguous law enforcement, where wetland management is one of the key examples of land-use conflict and profiteering. According to some of the interviews conducted for this research with former planners and practitioners, Bogotá has historically had a serious problem with land-use ownership and land-use speculation due to the local political economy (comprising legal, illegal, and fraudulent regimes). Such land-use speculation dynamics have even overlapped key areas for ecosystem protection defined as legally protected, posing several legal and administrative challenges to environmental protection.

5.2.2 Allocation of high-impact activities in urban-rural and rural areas related to urbanization, such as quarrying activities and landfills

The Sabana de Bogotá region is historically the most important in Colombia for building materials (Reina Rozo, 2013). Resource exploitation fronts for building material (sand, gravel, and clay) have been located throughout this region's hills, mostly in the northeast and southwest, and can even be traced to pre-colonial times. However, extractive activities have increased since the late nineteenth century, and have historically been concentrated in the mid-basin of the Tunjuelo river watershed. Extraction activity is referred to locally as mining activity (*actividades de minería*), and one of its main features is the

highly informal way in which it has been conducted, especially with regard to stone-crushing work (*actividades de peña*). In most resource extraction fronts, whether hills or streams, the exploitation has been illegal or contrary to technical regulation (Fierro, 2013; SDA, 2007).

Due to the influence of sector interests on extractive activities, ambiguous geological criteria have supported the establishment of legal resolutions and regulations. Articles III and IV identify an imprecision in the setting of the boundaries for the allowed areas compared with that for areas of environmental compatibility such as special quarrying areas. Moreover, the location of areas with extractive licenses in force toward the city-region's peripheral and marginal areas aggravates the living conditions of the most vulnerable social groups (Osorio Guzmán, 2011), a matter of environmental injustice described in the case of the *campesino* community in Usme and Ciudad Bolívar in Article III (Photo 12).

Photo 12. A landscape scarred by extractive activities for stone and sand in *Ciudad Bolívar* (source: the author, 2016).

Extractive activities have inflicted several effects on local ecosystems, such as landscape degradation, loss of land cover and soils with food-production potential, changes in local-regional morphology and soil instability; water sedimentation, drainage channel streams; and the modification and alteration

of hydrological processes (Ordoñez et al. 2013). Highly mechanized exploitation and excavation of gravel began in the mid-course of the Tunjuelo river in the 1950s, increasing after the 1960s. These activities radically transformed the landscape of the river and its natural course. Four human-made modifications to the course of the river were registered between 1952 and 1998. Floods in May and June 2002 saw what remained of the river's original geometry also being affected. The floods affected several of the area's neighborhoods and were related to these modifications (Sánchez, 2012; 2018).

The impacts related to resource extraction-based production are noise pollution, vibration, and machinery traffic; the emission of particles and gases into the atmosphere; and damage to the road infrastructure by heavy vehicles (Fierro, 2013). This has affected the daily lives of residents, most notably in neighborhoods on the urban-rural fringe. There is a lack of recreational areas, and quarrying activities affect air quality, exposing people and especially children to chronic respiratory diseases (Ordoñez et al. 2013).

Despite being recognized as part of the MES, the mountains of south Bogotá have remained unprotected from past and ongoing impacts of quarrying. This exploitation extended without any planning controls until the late 1990s and early 2000s, just when environmental citizen awareness began to have some influence on national and local political agendas (see Articles I, II, and III). According to official sources (SDA in El Tiempo, 2016) by 2016 there were 107 quarry sites in Bogotá, of which 86 were inactive and without any ecological compensation, 21 had Legal Environmental Management Plans under evaluation, and only six were active, three of which were illegal (see Figure 11). However, the numbers presented in Figure 11 only reveal the number of reported extraction sites, with no information concerning how many were effectively closed with the appropriate compensation for their environmental and social impacts—an indication of the true nature of the situation. No person, organization, or institution has yet taken responsibility for the damage and cost to degraded areas. In 2010 a regional court of justice required the cessation of extraction activities in the mid-Tunjuelo river flood plain, where various incarnations of private companies (involving multinational stakeholders such as Holcim and Cemex), the church (the Archdiocese of Bogotá), and even the Colombian army had exploited the area for more than

four decades. Recently, in the transition toward a post-extractive scenario it has been proposed to develop this area with social housing and green spaces. However, according to some local experts and communities it has not fully recovered from the extractive activities, and increasing latent risks such as floods or landslides remain (CIDER-Uniandes and Ecodes, 2019).
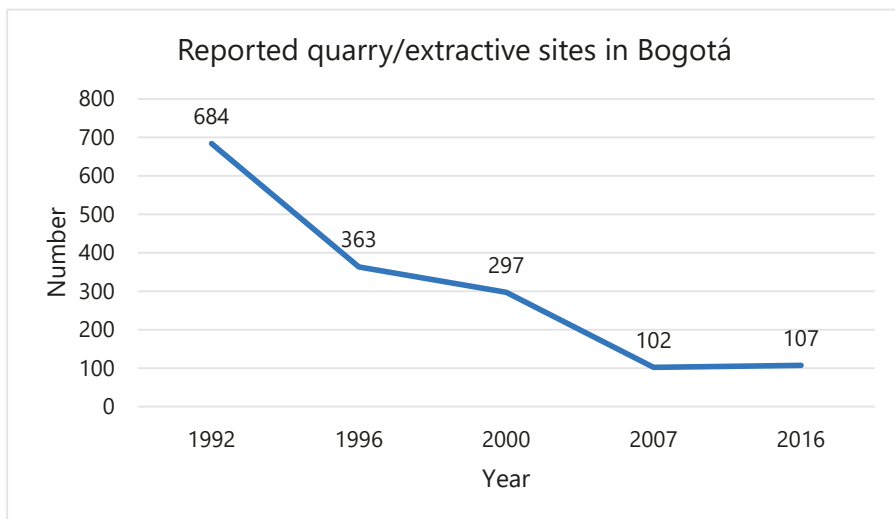
Figure 11. Reported quarry/extractive sites in Bogotá. Data sources: SDA-UNAL, 2007; *El Tiempo*, 2016.

The management of solid waste in Bogotá has become inoperative and is a huge driver of conflict. As Articles III and IV report, this is the result of the lack of waste management in the city, despite attempts to promote recycling *in situ*. It is very profitable to operate a huge city-region landfill (Gallini, 2016; Quintero, 2016). It was argued that the inception of the Doña Juana municipal landfill in the late 1980s was convenient because of its favorable cost-benefit transportation ratio. It was also perceived as an appropriate location because 'no one was living there' formally, but this claim had no basis in reality. Several farming communities had settled in the area with legal land titles (Quintero, op. cit.). They live there to this day, suffering the impacts of the landfill, which receives 6,000 tonnes of waste every day.

The Doña Juana area's geotechnical conditions (cf. Preciado et al., 2005) should have been considered in the landfill's operation, using adequate

technology to meet even minimal stability and safety conditions. However, the failure to address these conditions has had serious consequences. Landslides were officially registered in 1997, 2015, and 2020 (during the Covid-19 pandemic). The first is considered one of the worst environmental disasters in Bogotá's recent history (Molano Carmargo, 2019). An accumulation of waste gases produced an explosion that triggered a landslide of more than one million tonnes of waste, causing a sanitary emergency in the city, especially in the neighborhoods of south Bogotá (Figure 12). On behalf of the affected communities a group sued the District's government for group and individual compensation. The local courts finally ruled in the group's favor, but after more than 20 years the compensation process remains extremely complex, slow, and unresolved. The closure of the landfill demanded by the neighboring farming communities has been a contested issue with the authorities and private contractors, as Article III describes in more detail. The Doña Juana case is considered an example of environmental suffering (Ortíz Díaz, 2019) (Photo 13).

Figure 12. The Doña Juana landslide in 1997 (source: *El Espectador*: https://www.elespectador.com/noticias/bogota/asi-fue-el-derrumbe-en-el-relleno-dona-juana-hace-20-anos-galeria-715204/ Last retrieved: July 22, 2020).

Photo 13. A net from a rural household infested with flies close to the Doña Juana area (source: the author, 2018).

5.2.3 Infrastructure development: highways, roads, transportation, and dams

As in any metropolis, highways, roads, the transportation infrastructure, and dams are key to the development of Bogotá's urban fabric. As Articles I and II report on the basis of claims made by local environmental organizations in recent years, most such infrastructure is associated with real estate developments or housing projects. Although Bogotá has historically suffered from a deficit and shortcomings in urban transportation and infrastructure due to state mismanagement and corruption, important highways and roads have had an impact on urban ecosystems, and especially on wetlands and streams. They have inflicted ecosystem fragmentation and environmental damage, but in the recent past they have also ignited environmental opposition to promises of urban progress (Serrano, 2010). These promises are not necessarily finished projects, but unfinished or long-delayed ones, like the various incarnations since the 1960s of proposals for a heavy traffic viaduct, the *Avenida Longitudinal de Occidente-ALO* (Photo 14). Although never fully materialized, the ALO project has already become one of the

main threats to a set of wetlands on Bogotá's western fringe, resulting in a great deal of confusion about how the project should be developed without affecting them.

Photo 14. A short article from a District publication in 1999 reporting the ALO's progressing 'by leaps and bounds' (scan: the author; source: Bogotá's Municipal Archive).

In the wetlands, as well as in some areas in the surrounding hills, public and private stakeholders, including regional authorities, real estate developers, builders, private contractors, and local inhabitants, have made multiple attempts to develop infrastructure such as cycling routes or trails that usually do not follow environmental parameters and lack participatory mechanisms. Strong tensions between the sectors of environmentalists and urban developers, in which the former are judged as 'enemies' of 'progress' by the latter, have emerged in environmental conflicts. In both my previous work in Bogotá as a practitioner or activist and in my research fieldwork during the present study, I witnessed such social tensions in the various work spaces of environmental policy and spatial planning action. Infrastructure projects encompass luxury housing to infrastructure developments (e.g. heavy infrastructure path trails such as the '*Sendero de las Mariposas*' project) in protected areas such as the Eastern Hills Forest Reserve (Ome,

2017; Rojas-Pinilla, 2017), or urban developments in the Thomas van der Hammen Reserve (Osorio Ardila, 2019) and Cerro Seco areas (Quimbayo Ruiz, 2020a). Articles I, II, and IV discuss these critical issues. It also appears that such conflict is the most referenced in the collected data (Photos 15 and 16). Another interesting aspect of these cases is the mobilization of environmental discourse to justify such urban development projects.

Photo 15. An information board at the Thomas van der Hammen Urban Forest Reserve (source: the author, 2017).

Photo 16. Contested infrastructure works at the Jaboque wetland (source: the author, February 2020).

Meanwhile, the documentation gathered for Articles III and IV of this study revealed that in the first decades of the twentieth century the city administration started to seek alternative sources of secure water provision. In 1928 the municipal council agreed to contract the acquisition of projects and alternatives to resolve the water supply issue. In 1929 the high basins of the Sisga and Neusa rivers, north of the Sabana de Bogotá, and the Teusacá River, in the municipality of La Calera, were purchased (through public expropriation). Moreover, the purchase and acquisition of the Tunjuelo river basin in the La Regadera sector to the south of the city, near the town of Usme and in the area north of the Sumapaz *páramo*, was a major strategic project to solve Bogotá's water problem. This led to the construction of the first dam for the city's water provision in the 1930s (see Osorio, 2007). Several decades later, in the 1970s, the National Institute of Renewable Natural Resources and Environment, also known as INDERENA (a branch agency of the Ministry of Agriculture), initiated the creation of protected areas such as Bogotá's Eastern Forest Reserve and the High Bogotá River Basin Reserve (Resolution 076/1976), and two National Parks in the Bogotá region in the high mountains and *páramos* of Chingaza and Sumapaz in 1977. In Chingaza, for example, two infrastructure phases for the provision of water, including interventions such as the Chuza dam and a watershed transfer (from the Orinoco to the watershed of the Bogotá-Magdalena rivers) were developed to obtain water. Noteworthy on the regional scale because of their environmental impact are the San Rafael (connected to Chingaza) and Tominé dams.

These political decisions were taken in the context of the environmental imperative to guarantee the city's water supply by protecting the Bogotá river basin and developing hydropower and water supply infrastructure such as dams and power plants. The developments created tension in rural communities around their access to land and water that remains latent in contemporary rural water-use measures (Arrieta, 2019) and land-use planning for key ecosystems like the *páramo* and its relationship with *campesino* communities (see Article III).

5.2.4 Social conflict due to biodiversity conservation (access or dispossession)

Articles II, III, and IV describe conflicts around protected area management due to problematic administrative interventions such as those associated with the engagement of local communities, recent retreats in public policy concerning wetland protection, and urban forest reserves. As described above in this section, most of the hills of the Bogotá region have suffered not only from urban development pressures but above all from the placement of high impact activities such as quarrying or landfill operations. Articles II and III show that these land-use conflicts are most harmful and concentrated in the south of the district.

Moreover, in most of the regional and urban reserves the protection measures have historically either been unenforced by the authorities or mired in endless legal disputes and actions because of ambiguous interpretations of legal agreements and institutional fragmentation, as seen in cases such as the Eastern Forest Reserve since its establishment in 1976 (Rojas-Pinilla, 2017). Most protected areas' management issues that this research has identified are a result of the existence of a 'fortress' conservation approach that has usually condemned the most vulnerable sectors of Bogotá's population. Historically, the former populations of these spaces have been victims of eviction and forced double displacement. Many have fled the internal Colombian armed conflict; more recently, they have been joined by Venezuelan refugees. These actions have even been justified in the name of conservation or risk and disaster management (due to landslides and floods)—for example, in the Eastern Hills Reserve (cf. Ome, 2017), Entrenubes Park (Quimbayo Ruiz, 2012), or some flood areas of west Bogotá (Pinzón Ortiz, 2014).

On many occasions evicted people have not received decent housing or living solutions after their eviction, despite having been welcomed by state programs, whose implementation has been precarious and limited. Similarly, the settlements in these zones are directly related to the problems of use and tenure of urban land previously described in this section, posing a serious land-use regulation issue for local authorities. In peripheral areas especially these dynamics are related to criminal structures and gangs, known locally

as '*Tierreros*,' who offer false titles for housing to vulnerable populations, as Article II describes concerning the case of the Cerro Seco reserve in Ciudad Bolívar, south Bogotá. These criminal structures are connected with paramilitary death squads and drug-trafficking networks, and they are suspected of having links with the public forces and the local authorities. Even during the coronavirus pandemic in May 2020 families were evicted and became victims of police brutality in the Altos de la Estancia[35] sector (also in Ciudad Bolívar), which was declared an area highly vulnerable to landslides, and which public campaigns had sought to convert into a public recreational park. Suspected evictions and criminal actions by the *Tierreros*, such as burning protection areas for illegal occupation, also occurred in the Entrenubes park area.

Finally, as Article III shows, the development of a regulatory framework for conservation measures in the creation of several protected areas has ignored the social dynamics of the inhabitants and landowners, especially in rural areas. This has led to conflicts between state-led action, land-use rights, and biodiversity and water resource protection (Arrieta, 2019), and has indirectly allowed environmental degradation to persist. (Para)military strategy and securitization to justify developmentalist and extractive interventions in favor of the city have also been deployed in this respect (Peña, 2016).

In the light of the four articles Table 3 summarizes the four types of conflict described above. The table lists some emblematic cases and specific issues related to them. Figure 13 shows how the conflicts are spatialized in the city and surrounding region through the *chorème* spatial model technique proposed by Roger Brunet (2010).

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[35] Due to the dramatic character of these events, this case received international media coverage by *The Guardian* and *The Washington Post*:
'"Stigmatized, segregated, forgotten": Colombia's poor being evicted despite lockdown.' https://www.theguardian.com/global-development/2020/jun/02/colombia-coronavirus-poor-evicted-lockdowns (Last retrieved: September 4, 2020).
'Officials in Colombia evicting poor families during coronavirus outbreak' https://www.washingtonpost.com/world/the_americas/officials-in-colombia-evicting-poor-families-during-coronavirus-outbreak/2020/06/01/5d3d7e9c-a365-11ea-898e-b21b9a83f792_story.html (Last retrieved: September 4, 2020).

Table 3. Characterization of environmental conflicts in the Bogotá region.

Type of conflict	Emblematic cases	Related issues
Legal and illegal urban development and real estate development, and speculation in urban-region ecosystems or protected areas	Legally protected areas: Wetlands Bogotá's Eastern Hills Forest Reserve *(Reserva del Bosque Oriental de Bogotá)* Thomas van der Hammen Regional Forest Reserve Streams and rivers Non-legally protected urban-rural ecosystems	Land-use conflicts Access to environmental commons: green areas, water, food, etc. Biodiversity loss Soil loss and erosion Loss of cultural heritage (mainly in rural areas) Legal and political disputes Institutional fragmentation
Allocation of high-impact activities to urban-rural and rural areas related to urbanization, such as quarrying activities and landfills	Doña Juana landfill Extractive activities in the Tunjuelo river basin	Pollution and contamination of air, soils, rivers, and streams Impacts on human health Biodiversity loss Soil loss and erosion Loss of cultural heritage (mainly in rural areas)
Development of infrastructure: highways, roads, transportation infrastructure, and dams	Bogotá Water Company's Chingaza System La Regadera, Chuza, San Rafael and Tominé dams ALO Highway—Avenida Longitudinal de Occidente (ALO) Roads and cycle paths on wetlands and hills	Biodiversity loss Soil loss and erosion Legal and political disputes Institutional fragmentation

Type of conflict	Emblematic cases	Related issues
Social conflict due to biodiversity conservation (access or dispossession)	Lack of effective access to green spaces	Access to environmental commons: green areas, water, food, among others
	Entrenubes Park	Water-use conflicts
	Bogotá's Eastern Hills Forest Reserve *(Reserva del Bosque Oriental de Bogotá)*	Land-use conflicts
	Cerro Seco Reserve, Ciudad Bolívar-Soacha	Evictions and urban displacements
	Thomas van der Hammen Regional Forest Reserve	
	Campesino communities in the Tunjuelo river high basin	

Through this characterization it is worth noting that environmental conflicts are not simply the results of specific issues or linear outcomes, but are rather socio-ecological ***processes*** with a non-linear history that remain unfinished and have multiple trajectories. It could be argued that all these conflicts are based on conflicting rationales of the city model (Watson, 2003), as well as the influence sought by sectors of power in developing their political agenda, mutually intertwined with accumulation by dispossession (cf. Harvey, 2003) and social inequalities in the metropolitan space. Although this characterization (still incomplete) contributes to the somewhat scarce and disparate information available concerning environmental conflicts in the Bogotá region, this information does not inform how power relations, especially in planning and land-use issues, have occurred, and how the trajectories of these conflicts have evolved in time and space during this study's period of interest. Nor does it show how power among social actors (and nature) has circulated through strategies, practices, and knowledge of urban nature. To address these concerns, the remaining parts of this section will delve into the research articles' analysis of the roles of social collectives and communities, their relationship with the state, other sectors of interest in spatial planning processes, and their relationship with urban nature.
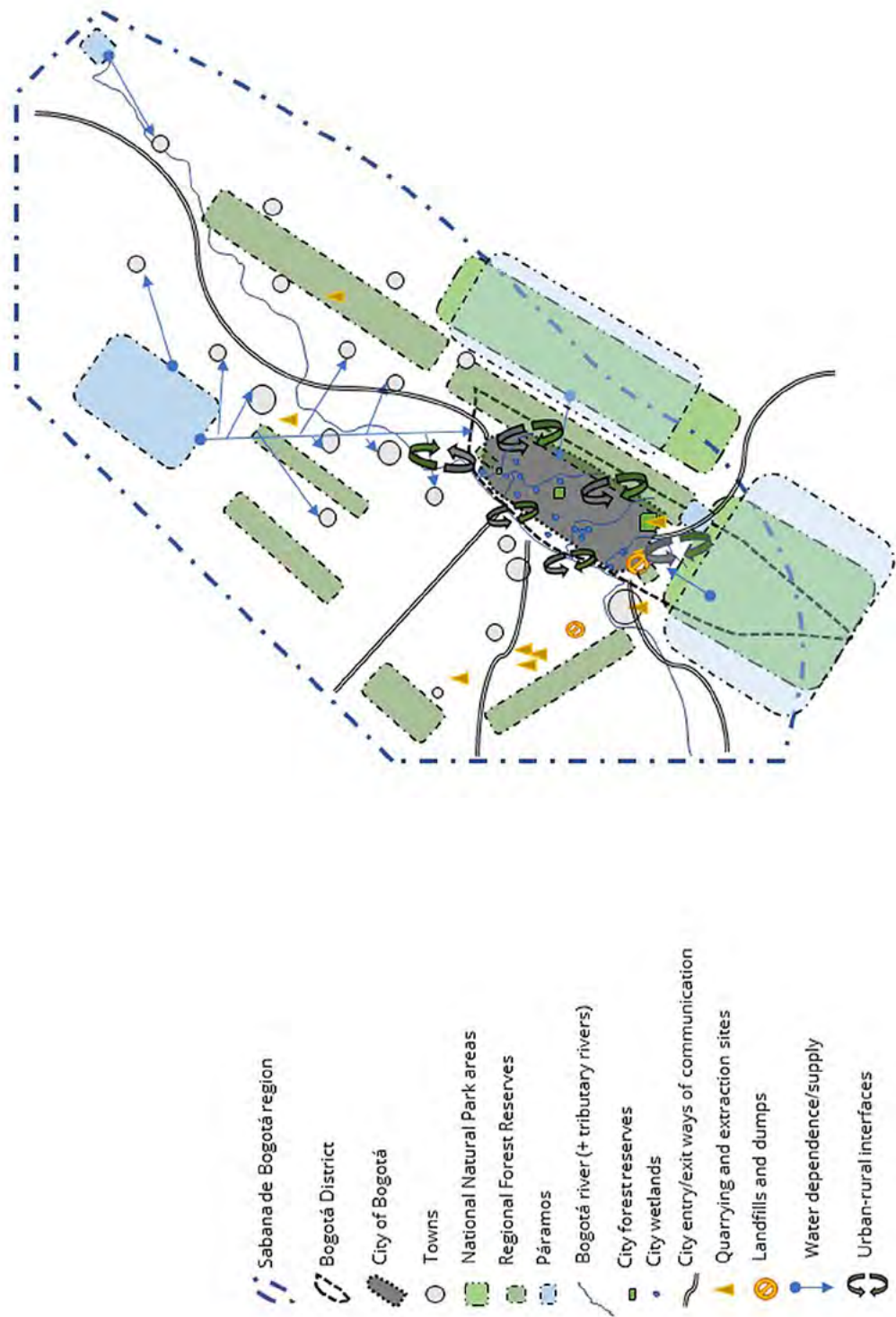
Figure 13. *Chorème* of Bogotá's environmental conflicts.

Sabana de Bogotá region

Bogotá District

City of Bogotá

Towns

National Natural Park areas

Regional Forest Reserves

Páramos

Bogotá river (+ tributary rivers)

City forest reserves

City wetlands

City entry/exit ways of communication

Quarrying and extraction sites

Landfills and dumps

Water dependence/supply

Urban-rural interfaces

113

5.3 Social movements' strategies and practices in urban nature advocacy

Article I discusses and documents how urban nature in Bogotá has been used as a vehicle by social movements to contest urban commons from the 1990s to the present. The methods and tools delivered by local environmental organizations on behalf of nature, especially in land-use and planning processes, including watershed management, are also identified. Local environmental awareness has its most important roots among the working class and grassroots, supported by intellectuals, experts, and practitioners. Social movements have helped to keep the environmental conflicts associated with spatial planning accountable and visible, as well as keeping the political debates about such conflicts alive in the public sphere (see Photo 17). People and organizations have contested the scattered and weak implementation of regulatory measures by using tools provided by the institutionalization of environmental concerns in law (Photo 18). Using social media platforms to prompt technical and legal arguments to counteract official acts by various state-level authorities and private stakeholders has recently been key.
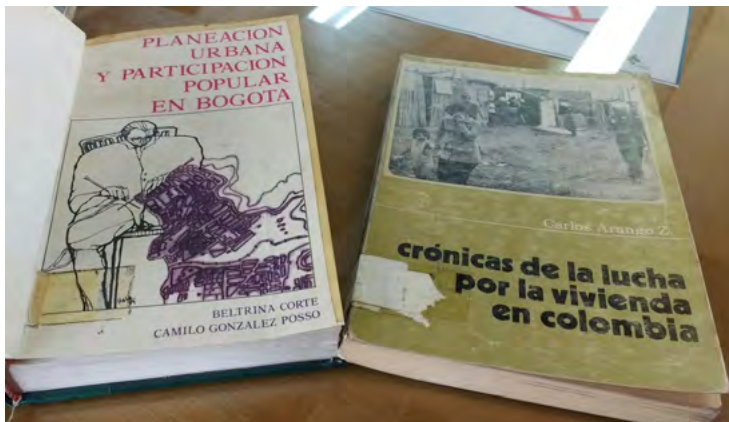
Photo 17. Publications on urban planning and grassroots participation, and housing struggles dating from the 1980s (source: the author, 2017).
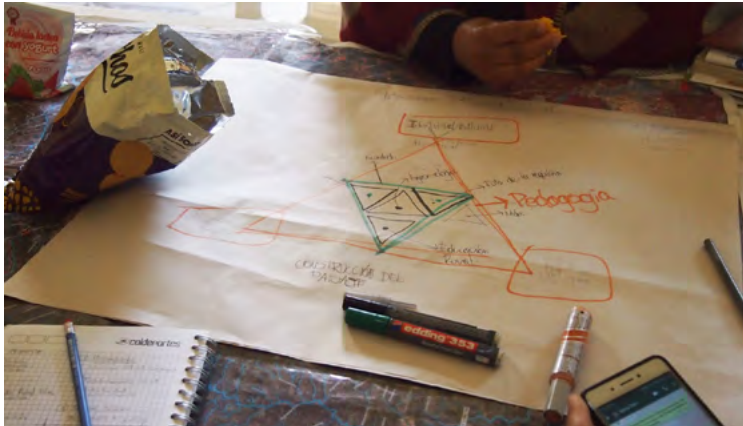
Photo 18. A sketch for the design of a local spatial planning strategy made at a meeting in rural Bogotá (source: the author, 2018).

Although social movements in urban and rural Bogotá have had the opportunity to participate in planning practices, the crucial political decisions on planning have ultimately been taken by the few belonging to the local status quo. This restricted democracy shows that the mechanisms of citizen participation have ultimately developed in a context in which the economic and political power has vitiated these spaces, exploiting the socioeconomic limitations and instability of many social groups, especially in the most vulnerable urban sectors. For example, existing participation mechanisms are often manipulated to restrict the participation of certain social actors and stakeholders who can oppose the proposal or approval of particular environmental regulations or policies (cf. Osorio Ardila, 2020). Moreover, participation mechanisms are often also manipulated to justify the requirements of the legal procedures in participatory cases (e.g. the management of announcements and attendance lists, etc.) and then skip any social consultation with certain actors. Articles II and III address all these participation problems, as well as noting their presence in some participant observation activities conducted during meetings about spatial planning (2017–2019).

The local political setting has therefore conditioned the strategies and practices of political mobilization in defense of territory and urban nature. There have been times when local governance has opened spaces for

inclusive social participation (cf. Gilbert, 2015; Eaton, 2020), in which local leaders, regardless of their condition and social background, have come to hold public office or belong to work teams at state entities responsible for district and regional environmental issues. However, administrative and bureaucratic structures, as well as political practices tending to favor specific groups (even marginalized organizations), have unfortunately diminished efforts to include conservation initiatives such as communitarian restoration ecology projects, or planning practices such as the drafting of a policy or plan. Aspects of the bureaucratic and administrative order in political action are addressed in the advocacy for wetlands and urban forest reserves described in Article II. Although the article does not investigate this in detail, the existing socio-ecological inequalities are highlighted as creating the conditions in environmental mobilization for spatial planning conflicts. Following different contributions regarding the assessment of environmental conflicts (Cárcamo and Mena, 2017; Merlinsky, 2013; Seguel, 2010), these features in the political setting are a key issue to consider if future research is to understand the trajectory or changes in social movements, or civic leaders' role in the evolution of environmental conflicts.

Yet urban nature in Bogotá is a kind of unique Andean ecology, as the case study's description and the articles describe. Despite the enormous impacts of urbanization and the loss of biodiversity it has caused, the diversity of endemic plant and animal species that still occur in the region is surprising. However, this diversity is fragile and subject to multiple pressures, and it is likely, according to the local experts consulted, that many species and local ecological processes remain unknown to science. Although ecology and biodiversity knowledge has been extensive given that Bogotá has multiple research centers, universities, and even a metropolitan botanical garden (the José Celestino Mutis Botanical Garden), Article IV shows that the interest in producing knowledge of urban nature has also stemmed from people's and social groups' curiosity arising from their situated experience in their neighborhoods, backyards, and everyday spaces, regardless of their social condition. This has even resulted in citizen science or restoration ecology initiatives.

I wish to stress that the significance of nature for many citizens in Bogotá has ignited not only a sense of ecological awareness but of achieving a better life in the city. It has become a vehicle for the pursuit of the right to territory in the urban space. It has even mobilized, materialized, and politicized the ecological notions and concepts of spatial planning plans and mainstream environmentalism. This has occurred between and within the cracks that urban capitalism has left behind. In the spirit of Anna Tsing's (2015) ideas, nature in the urban has emerged with people's assistance, claiming an equal and legitimate value to that of any endangered rainforest. I analyze this point further in the next subsection.

In sum, the idea of urban nature in the Bogotá region has evolved ambiguously in land-use and spatial planning as the environmental imperatives from the sustainability agenda have become mainstream and institutional, as well as in how people's placing of environmental issues in the public agenda articulates nature in their everyday life. The articulation of nature in urban life is characterized by multiple territorialities that produce various conflicts through situated ecological knowledge. Before moving to the next subsection, which explores territoriality and situated knowledge in Bogotá, it is important to stress that these insights are valuable beyond this case, illustrating that environmental conflicts are an unfinished process of socio-ecological interactions, conflicting rationalities, and inequalities.

5.4   De/reterritorialization processes and situated ecological knowledge

Article II introduces notions on territory/territoriality as analytical tools to grasp tensions between claims for the right to territory and the prescriptive spatial management notion conducted in planning practices. For example, the territorial attachment through the reappropriation of elements of urban nature such as hills, wetlands, rivers, and streams in Bogotá has been referred to as environmental territory, a notion mobilized by several environmental organizations regarding urban commons advocacy (Julio and Hernández, 2014). Not only one but several other environmental territories therefore

exist, coherently aligned with struggles for the right to the city. Articles I, II, and III show that multiple territories and de/reterritorializations (exclusions/inclusions) have taken place through the development of environmental conflicts.

However, in the conflicts and cases covered by this research environmental struggles could not be considered situational dissensus in planning practices (cf. Lewis and Ernstson, 2019). What has enabled situated ecological knowledge is that urban nature defense has been shown to be able to articulate struggles for the right to the city and the territory through legal and technical elements, destabilizing the monopoly of the state's technical and legal knowledge. Through the environmental mobilization described in Articles II and III local actors and communities have deployed situated knowledge that is intertwined with normative and technical-scientific concepts, in which the legitimacy of knowledge and law is co-created by communities confronting the institutions of state power. These findings can dialogue with previous research on local environmental networks (Palacio et al., 2003) and recent research developments in the Bogotá area regarding urban forest reserves (Ome, 2017; Osorio Ardila, 2019), wetlands (Ramírez et al., 2020), and water use in rural areas (Arrieta, 2019).

Thus, if we consider Rancière's (2010) notions of environmental mobilizations (Brown and Tregidga, 2017; Lewis and Ernstson, 2019), such mobilizations in Bogotá have called for democratic practices in the sense of liberal consensus but of articulating them through struggles that denounce the state's incapacity to safeguard the urban ecological commons. This is a clear act of political agitation in the Colombian context, in which any sign of social protest has been historically stigmatized (and still is), violently criminalized and persecuted. Despite laws and regulatory advances, there is a scenario of restricted democracy. The CINEP's database used in Article I, as well as other documents and resources (i.e. press archives) used throughout this research, reveals this. In this regard, the specificity of the Colombian context contrasts with other places in Latin America (Fuentealba and Verrest, 2020), where struggles for the commons (in a Rancièrean vein) do not necessarily oppose state democratic institutions but seek to rethink those institutions through dissent and for the public common's sake (cf. Quintana, 2020).

For example, Article III explores how the *campesino* community from south Bogotá's urban-rural fringe has been transformed as a response to the urbanization that impacts their livelihoods through the implementation of reterritorialization strategies and practices based on situated knowledge. This is how these communities deal with processes of dispossession of territory and increasing spatial injustice or deterritorialization manifested in Bogotá's peripheral urbanization. Attempts at reterritorialization by the *campesinos* are therefore a response to urban transformation that consists of strategies to resist urbanization and acts of caring for the territory. The case of the *campesino* communities resembles some groups involved in advocacy for wetlands and forest reserves in the most marginalized parts of the city, reported in Articles I and II.

Yet it is worth clarifying that most of the groups and individuals belonging to the cases analyzed in this investigation perhaps had a more deliberative and less confrontational character than other groups that were not consulted or considered in this investigation. In some cases local communities could eventually support policies that promote the expansion of infrastructure in fragile ecosystems. In other cases some may favor compensation mechanisms in conservation policies, despite criticism from environmental justice movements. This has some similarities with cases documented elsewhere in the LAC region (de Castro et al., 2015).

On the other hand, planning practice is not only a matter for 'planners.' Article IV analyzes how ecology has been operationalized in recent planning practice in Bogotá. Besides identifying how ecological concepts entered planning practice, 'roadblocks' on the path to ecologizing urban planning are identified. The extent to which local communities and social movements succeed in their claims to strive for institutional change depends on their interactions with other actors (Lewis and Ernstson, 2019; Sundaresan, 2019). In Bogotá Osorio Ardila (2019; 2020) has already reported how social, political, and technical networks in spatial planning participation have been immersed in controversies around nature and the production of ecological realities.

It is therefore also important to underline that social actors and organizations are not homogeneous entities (see Article II) and as such can be made up of several different power groups, interests, and positions that

can change over time. For example, Articles I and II describe tensions between activists due to access to certain resources. It also touches on the issues around participation mechanisms and bureaucratic structures concerning the state already mentioned in this section. In contrast, local government occasionally clashes with central government by developing alliances with local communities or other state agencies at various territorial levels. Bogotá's status as the Capital District is thus distinguished by the fact that its ecosystems have local, regional, and national governance regimes that usually overlap. These dynamics produce processes of multiple territorialities (Haesbaert, 2013) in which situated ecological knowledge (expert, non-expert, peripheral) can play a crucial role in establishing the political standpoints at stake or the kind of conflicting views concerning urban natures that may exist (Photo 19).

In recent years citizen science exercises in Bogotá have contributed significantly to the action and protection of biodiversity in urbanized environments. Noteworthy examples are the *Fundación Humedales Bogotá* (wetlands), *Grupo Ecomunitario* (ecological structures and urban pollinators) (cf. Mejía, 2017), and groups monitoring air quality, such as the CanAir. io network. Likewise, recent efforts to systematize technical and political training initiatives in local environmental conflicts (Quiroga and Uscátegui, 2019) and transition alternatives to 'post-extractive' landscapes in south Bogotá (Heredia Moreno et al., 2019) have begun to develop and become known. Environmental education through the promotion of cycling and urban forest restoration is present in initiatives such as '*Diplomado Ambiental en Bici*' and '*Sembradores van der Hammen*' respectively. The monopoly on scientific knowledge has ended, and there is now strong cooperation between organizations, research institutions, academia, and practitioners in biology and ecology—though it is not always constant. This may be seen as a continuation of the environmentalization of social movements since the 1990s (Article I), forming alliances with natural scientists, lawyers, intellectuals, and local political figures.

Photo 19. Landscape layers and multiple territorialities in Bogotá's urban-rural fringe in the Usme area (source: the author, 2018).

5.5 Environmental conflicts and socio-ecological inequalities in planning practices

Based on my self-reflective expertise, some dynamics and processes related to environmental conflicts that I overlooked during my previous experiences began to emerge for me in the development of this dissertation. For example, when I served as a practitioner on environmental issues for government entities, the excessive institutional ideological burden clouded my view of multiple and even subtle inequalities. When I was engaged in activism, I was less aware of the inequalities in the day-to-day practices of environmental mobilization and the contradictions posed by promoting dialogue instead of confrontation with state institutions. Despite a desire to be actively engaged in some debates about environmental conflicts in everyday life and the field in Bogotá, my physical distance and role as a researcher helped me pay better attention to what I had underestimated in previous experiences.

Colombia is one of the most critical places in the LAC region in terms of environmental conflicts and injustice (Pérez et al., 2018; Pérez-Rincón,

2015). It is also one of the most dangerous places in the world to be an environmental activist (Global Witness, 2020; Front Line Defenders, 2020). Although the situation is less serious in the Bogotá region, there have been recent escalations of state violence. Environmental conflicts and threats to environmental protectors remain. Bogotá has an unsustainable city growth model that is embedded in a volatile political landscape, marked by fragmented governance and the lack of a long-term shared vision enduring from one mayor and administration to another. State agencies have thus been exposed to political manipulation and seem unable to achieve an urban planning system with a sufficient level of ecosystem protection and management (Quimbayo-Ruiz, 2016).

Historically, there has been a tacit acceptance of the institutionalization and neo-liberalization of environmental action in both environmental discourse and practice. I argue that it is tacit because many alternatives proposed in recent years by social organizations, activists, practitioners, and some decision makers to promote environmental solutions have sought to adjust to such an institutionalization process as a strategy to achieve certain environmental rights. In other investigations conducted in the Latin American context (Dupuits et al., 2020; Parra-Romero, 2020), it has been possible to identify a 'depoliticization' of environmental practices in a growing process of transnationalization in environmental movements' politics.

In Bogotá this 'depoliticization' has conditioned environmental mobilization in urban and regional planning (Osorio Ardila, 2020). However, existing research (including this study) does not give a stronger account of how life circumstances mediated by class or gender relations conditions the adoption by both individuals and organizations of 'depoliticized' planning practices (or those with a neoliberal logic). According to this research evidence most of Bogotá's environmental movements have acted (and are still acting) within the limits set by contemporary neoliberal urbanization. This should not be viewed as surprising given the multiple interactions local environmentalism has had in the neoliberal state formation process. It may be seen as a limitation in overcoming concrete socio-ecological inequalities embedded in a restricted and unequal democratic setting. This study has identified indications that 'depoliticized' practices are often connected with precariousness and

conditions of exclusion and marginalization (cf. Lawhon et al., 2014). It has often even been a strategy for survival and making a living (Article I).

Everyday practices are thus also conditioned by exclusions along the lines of class and gender, and they are dealing with paradoxes and contradictions between discourses and concrete action. It will thus be important in future research on environmental issues crossed by multiple inequalities to document certain socio-ecological phenomena more deeply and respectfully through participatory ethnographic initiatives such as the reconstruction of institutional, community, or local leaders' life stories. Recent research initiatives have started to take these concerns seriously (Prada Uribe, 2020).

However, throughout the information collected for this research, which includes technical and previous academic research in the case study area, the absence of more comprehensive analyses related to socio-ecological inequalities has become clear. Although important and relevant, much of the research in the field of environmental and ecosystem management in Bogotá tends to hold a very limited vision in that it does not relate environmental issues to problems of social exclusion and segregation, and there has not a genuine dialogue with the social sciences and environmental humanities. It will always be desirable to promote more and better green infrastructure in the city, as well as to foster ecological connectivity strategies on an urban-regional scale. However, merely 'going green' does not necessarily translate to the achievement of urban justice, as has been documented elsewhere (Kotsila et al., 2020). Unfortunately, local conversations and debates around urban green spaces still lack a more radical view in the articulation of the public value of nature beyond existing regulatory frameworks under a market logic.

Interviews, observations in the field, and my own experience suggest that some ontologies of urban nature in Bogotá appear to be defined by the filter of neoliberal urbanization. To be precise, this filter does not allow urban nature to be democratically articulated in the appropriation of the commons. For example, there has been at least a discursive intention to articulate ecological and social justice issues, but this has not been always been materialized in more persistent practices. Local movements and people may be genuinely concerned with these issues, but it is striking that even

among some local environmentalists the idea of 'vigilance and control' prevails as the only effective way to guarantee the protection of protected areas, especially wetlands, which face multiple environmental issues such as dumping, debris, or occupation by homeless people. When this happens, the solution is often to require more police or state control in the governance of protected areas. Environmental issues thus tend to be managed through policies and coercive approaches to dealing with these situations. Although my research does not analyze these topics in detail, more research is required on these issues for the sake of urban protected area management.

Some of the local citizen science initiatives therefore deserve to be closely followed to identify their potential to address the social problems that directly affect biodiversity and ecosystems, including just access to green spaces or work with the homeless, who often live in protected wetland areas. Moreover, assessments of Bogotá's metabolism often continue to be viewed from the limited political-administrative perspective within its artificial borders. Initiatives are already underway by Bogotá's neighboring municipalities to position a more decentralized vision, led by citizen groups and professionals such as *Rediacción* (*Red de Investigación y Acción Regional Metropolitana*) and regional movements against the state-led destruction of river and water bodies such as *Voces del Río*. No less important, there is a need for a more radical rethinking of nature's ontology that may allow us to recognize socio-ecological processes at the metropolitan scale, and beyond this to decenter and escape the exclusionary neoliberal city's gaze. Indigenous accounts in this regard are already present in the Bogotá region, embraced mostly by the Muisca's *cabildos* in Bosa and Suba (cf. Valencia, 2016; Sánchez-Castañeda, 2020), and ethnic groups in the city like the Afro-Colombians. Various networks of guardians of seeds and urban agriculture (Hoinle and Castro, 2019) in which the leadership of women is fundamental, like the *Colectivo Huertopía* experience (Prada Uribe, 2020) and queer initiatives by the LGBTIQ community in the localities of Los Mártires and Kennedy, are just some of the countless signs of the emerging new perspectives of urban nature in Bogotá. At the time of writing, in November 2020, the Bogotá Council approved the declaration of a state of Climate Emergency (the first in a Latin American megacity) in response to a citizen movement, and a proposal to recognize

the territory of Bogotá as a 'hydropolis' was also underway. Although these initiatives are very important, they remain disputed because of the existence of several unresolved environmental injustices.

In sum, urban nature in Bogotá has already allowed a door to be opened to the possibility of democratic participation in planning. Yet there remains a need to follow more realistic ways of achieving urban ecological transitions in the face of the challenges posed by urbanization. Addressing these challenges requires a political and cultural change that will depend on the resolution of the many unresolved and ongoing injustices in the Colombian context. Currently, it seems environmental conflicts are but unfinished processes of the materialization of various and conflicting rationalities around nature, which in this case take place through the territorialities of urbanization.

6 Conclusions

6.1 Original aims *against* and *with* open-ended results

In Bogotá in recent decades there have been conflicting visions around urban nature, which together have triggered socio-ecological inequalities and new possibilities for urban politics to overcome them. This research project offered a conceptual basis for the design of an alternative roadmap in the understanding and management of environmental conflicts related to (spatial) planning and urban nature in Bogotá and beyond.

The different research articles enable a characterization and documentation that serve to contextualize a series of environmental conflicts that do not correspond to a 'lack' or 'absence' of planning. Instead, they correspond to the consolidation of a city model that deepens segregation and inequality, and is promoted by sectors of political and economic power. However, the research also succeeds in showing that political practices in planning processes has shaped, disputed, and negotiated this urban process. These practices have been mobilized through ecological knowledge by social organizations and various citizen sectors that have flourished from the 1990s to the present, coinciding with the placing of environmental imperatives on the neoliberal urban agenda.

The impacts of both initiatives and policies on urban ecosystems have been successful in some cases (mostly due to citizen pressure and some marginal institutional efforts), as in others it has helped to reinforce socio-ecological inequalities in the metropolitan territory. In consultation with some studies of the ecology in this region and local experts, the need to advance in the analysis of ecological connectivity in the metropolitan space has also become evident. However, the absence of ecological studies that establish links with the issues of segregation and social exclusion is also clear. The latter is crucial, given the existence (and persistence) of the cases of environmental injustice and suffering that remain unresolved in the Bogotá area. In turn, this confirms that environmental conflicts are not the result of a specific issue, but the product of an unfinished socio-ecological process

intersected by disputes, controversies, and political opportunities for just urban transitions.

'Depoliticized' technical green solutions alone will not be the way to manage environmental conflict. This concerns more than greening, though it is necessary to take the good ideas already advanced on different fronts by collectives and even in some institutional spaces in Bogotá. Although in 2021 the relevance of the biodiversity and ecological values of the Bogotá region is already recognized in the public sphere, it is necessary to raise such recognition as the perfect vehicle to resolve spatial injustices and historical segregation. Ecological reparation and revolution (cf. Patel and Moore, 2017; Büscher and Fletcher, 2020) are needed, and situated ways beyond the limits of the current *status quo* and mainstream environmentalism are required. This is urgent if the accumulated effects of classist, racist, and patriarchal political violence that have afflicted the human and non-human are to be eased. Bogotá is not exempt from these discomforts.

6.2   Research gaps and future challenges

Throughout this research the lack of knowledge of ecological processes (not ecological inventories) such as ecological connectivity regarding specific ecosystems, landscapes, or species, according to the analyzed data collected from documents, interviews, participant observation, and press resources, was noticeable.

One of the study's limitations is the absence of a deeper analysis of the kinds of exclusion and constitutive ecological effects produced by de/reterritorialization processes embodied in the several environmental conflicts it reports. It is urgent to further research the everyday making of the socio-ecological inequalities that sustain environmental conflicts and multiple environmental dispossessions. There is still insufficient (counter-)mapping of ecosystem values and their relationship with socioeconomic exclusions along class, race, or gender lines. A consideration of such exclusions is key for assessing territorial vulnerabilities to climate change, as well as cultural evaluations of nature for climate change adaptation, for such evaluations

remain scarce. Any such exclusion and various evaluations of nature must be addressed in further research if the concrete territorial socio-ecological inequalities caused by contemporary challenges are to be understood.

Furthermore, another research gap is the counting of the *longue durée* environmental liabilities in the Bogotá region, such as the impact of extractive activities or the imposition of the Doña Juana landfill. Likewise, there are serious conflicts in the city-region that require further research and documentation, such as cases of water injustice for rural and urban marginalized populations, or critical assessments of food security and sovereignty. Moreover, while the focus of this research was on land use and urban nature (ecology), many other interrelated environmental conflicts must be examined, such as air pollution, waste management, and the impacts of industrial flower production. Citizen science initiatives have indeed been tackling these conflicts, decentering the expert knowledge of ecological matters. Yet such initiatives should go hand in hand with local social and urban justice initiatives, engaging vulnerable populations in the city like people enduring precarious labor, such as street vendors, transgender sex workers, and the homeless.

Tracing the trajectory of various actors in the evolution of various environmental conflicts is a challenge, and this is an issue that should be addressed deeply in future research for each of the cases of environmental conflict identified in this study. It is therefore expected that this research's inputs will be useful for such an undertaking. I propose that it is necessary to adopt a more radical rethinking and reworking of concepts and practices regarding spatial planning conflicts and ecological processes, because traditional ways still exert and seriously limit the conception and practice of democratic spatial planning. Such spatial planning practice is unavoidably political and embedded in conflicting values around nature. The transition to new possibilities of urban coexistence, especially in a post-pandemic world, therefore needs to overcome the primacy of the capitalist ecology.

The idea of nature in urban planning in Bogotá consists of a heterogeneous and unstable assemblage of narratives, practices, and local governance techniques. A conception of planning that transcends the dualisms of state and society and is immersed in conflicting visions of nature may afford new opportunities to understand the democratic practices fostering situated urban

ecologies. The current land-use and planning tools in Bogotá urgently need to address urbanization without traditional politico-administrative boundaries of zoning polygons, or which perpetuates nature-society dichotomies. They should further consider other approaches such as the indigenous, decolonized, feminist, and queer perspectives of spatial planning that this research lacked the space to describe. The mobilization of urban nature advocacy in Bogotá through individual and collective political mobilization, driven by continuous learning and contextual reform, has always addressed the question of who urban space should be for. Estanislao Zuleta's ideas resonate with this in a country that has often resolved its problems by killing the other and otherness—which includes the non-human.

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Annex 1

First-stage interviews, 2017

April 3/2017

2 unstructured interviews: a *campesino* leader (female) and an environmental practitioner (male) in wetlands

April 6/2017

2 unstructured interviews with practitioners: one in human rights (female); the other in environmental issues (male).

April 7/2017

1 group interview with a local NGO (4 people: 2 males and 2 females).

April 17/2017

1 unstructured interview with a practitioner (female)

Second-stage interviews, 2017–2018

Planners/officers/ practitioners (Thematic interviews)	Brief profile	Interview date
1	Officer of the Environmental Secretariat of the Municipality of Bogotá (SDA), since 1998 (male).	December 13, 2017
2	Consultant; former Head Officer at Housing and Planning Secretariat of the Municipality of Bogotá (2012–2015) (female).	December 15, 2017
3	Environmental consultant of several Colombian governmental agencies (male).	January 12, 2018
4	Officer at the Environmental Secretariat of Municipality of Bogotá (SDA), since 1995. (male)	January 17, 2018

Planners/officers/ practitioners (Thematic interviews)	Brief profile	Interview date
5	Consultant; former Planning Director of the Municipality of Bogotá (1990s); former Director of Land Planning at the Ministry of the Environment of Colombia (2000); former Project Coordinator at Humboldt Institute of Biodiversity Research (2009-2014) (female).	January 1, 2018
6	Scholar; former Head Officer of the Planning Secretary of the Municipality of Bogotá (2012–2015). Three interview sessions were expected, but there were only two (male).	January 19, 2018; January 31, 2018 (unfinished)
7	Ecologist at Javeriana University, Bogotá. Staff member of NGO CI-Colombia, a consultancy body for the formulation of the Public Policy on Biodiversity of Bogotá (2008–2010) (male).	January 26, 2018
8	Consultant/former Head Officer at Planning Office of Municipality of Bogotá (2000–2003) (female).	February 8, 2018
9	Ecologist. Consultant. Former Director at the Planning Secretariat of the Municipality of Bogotá (2012–2015) (male).	February 12, 2018
10	Former officer at the Environmental Secretariat of the Municipality of Bogotá (SDA) (1997–2017) (female).	February 13, 2018
11	Ecologist. Consultant for several projects related to urban-regional projects and plans (male).	February 13, 2018
12	Consultant with long expertise. Former Head Director of the regional environmental authority Autonomous Corporation of Cundinamarca (CAR) (male).	March 7, 2018
13	Consultant with long expertise. Former Director at the Environmental Secretariat of the Municipality of Bogotá (SDA).

This was schedule to take place in Bogotá. However, there was insufficient time. It was possible to conduct the interview by email (female). | April 2017/ Unfinished |

Scholars/ practitioners unstructured interviews	Brief profile	Date Interview
1	Geographer. Professor at the Geography Department of National University of Colombia, Bogotá (female).	November 24, 2017; February 22, 2018
2	Engineer. Researcher of urban metabolism of Bogotá (female).	January 23, 2018
3	Practitioner at the Housing Secretariat of the Municipality of Bogotá (male).	January 23, 2018; March 1, 2018
4	Geographer. Professor at Los Andes University, Bogotá (male).	January 30, 2018
5	Engineer and Dean of the Engineering Faculty at University Antonio Nariño, Bogotá (female).	February 12, 2018
6	Consultant at the '*ProBogotá Región*' think-tank (female).	February 13, 2018
7	Practitioner. Master's student at IDEA, Universidad Nacional de Colombia, Bogotá (male).	March 12, 2018
8	Project coordinator (female) and a prac-titioner (male) at Corporación Ambiental Empresarial (CAEM), Cámara de Comercio de Bogotá affiliate member.	March 20, 2018
9		
10	Biologist – Local expert in urban biodiversity and wetlands (male).	April 5, 2018
11	Two ecologists (one female; one male) and former researchers at the Botanical Garden of Bogotá.	April 5, 2018
12		
13	Biologist – Local and national expert in bio-diversity (male).	April 6, 2018
14	Local naturalist (male).	April 9, 2018

Social/civic leaders (Individual and group interviews; with participant observation)	Brief Profile	Date Interview
Group interview	Collective formed by young advocates at Ciudad Bolívar, south Bogotá (4 people: 3 female).	December 6, 2017
Local leaders in Usme (unstructured; participant observation at a community cultural activity)	Organization process related to advocacy for peasant and farming way of life against urban expansion (mostly female).	January 13, 2018
Local leader (unstructured interview)	Social activist and consultant. Head of NGO Corvif: Corporación vida Río Fucha (male).	January 22, 2018
Group interview	Collective of young advocates, practitioners, amongst others, involved in the defense of the reserve's project in north Bogotá. (7 people: 5 females)	February 28, 2018 (unfinished)
Local leader (thematic interview on a tour of the landscape).	Environmental activist involved in the defense of 'La Vaca' wetland in Kennedy, south Bogotá (female).	March 8, 2018
Local leader (thematic interview on a tour of the landscape)	Environmental activist involved in the defense of the 'Tibanica' wetland in Bosa, southern periphery of Bogotá (female).	March 9, 2018
Workshop with *campesino* community on the urban-rural fringe in Usme, south Bogotá	Organization process related to advocacy for peasant and farming way of life against urban expansion (5 people: 3 female).	March 21, 2018
Local leader and practitioner (thematic interview on a tour of the landscape of urban-rural areas of Ciudad Bolívar)	School teacher, researcher, and former inhabitant/local activist of Ciudad Bolívar (female).	March 22, 2018; April 12, 2018

Annex 2

- Planting trees at the Thomas van der Hammen Urban Forest Reserve (La Salitrosa, Conejera, Suba)
- Visiting the urban-rural fringe in Usme, south Bogotá (Vereda La Requilina)
- Visiting urban wetlands: La Vaca y Vaca Sur (Kennedy), Tibanica (Bosa/Soacha)
- Visiting the area of Sabana de Occidente, which is subject to urban sprawl (Bojacá, Funza, Mosquera)
- Visiting the urban-rural fringe of Ciudad Bolívar, south Bogotá: Casa de Teja, Divino Niño, Mochuelo Bajo, Mochuelo Alto, Pasquilla, Quiba Baja.
- Parque Entrenubes

Additional field visits were made in early 2019 and February 2020. The places were the same, as well as other localities in Ciudad Bolívar (Cerro Seco) and some locations in Kennedy and Engativá.

Annex 3

ENCAUZAN AGUAS NEGRAS DEL SUROCCIDENTE

Con un costo de tres mil millones de pesos, la Empresa de Acueducto y Alcantarillado de Bogotá (EAAB) inició el pasado 31 de julio la construcción del colector Ismael Perdomo , para solucionar los problemas de drenaje sanitario y publial de los sectores residenciales e industriales de Cazucá, Bosa y parte de Ciudad Bolívar. El gerente de la entidad, Santiago Borrero Mutis, dijo que la obra fue iniciada por el Consorcio Fajardo-Nieto, con interventoría directa de ingenieros de la EAAB y que deberá estar concluída a finales de julio de 1991.

20 de septiembre de 1990

http://www.eltiempo.com/archivo/documento/MAM-59643

(Ríos, autoridades, normas urbanas)

AUN SE PUEDE FRENAR UNA GRAN TRAGEDIA ECOLOGICA EL RÍO BOGOTÁ: UNA AMENAZA

El Río Bogotá, convertido en una alcantarilla envenenada, gracias a la acción de las industrias que le arrojan toda clase de desechos químicos y orgánicos, no solo carece de vida vegetal y animal, sino que está contaminando parte de los alimentos que produce la Sabana y que consumen los habitantes de la capital. Un estudio elaborado por la Empresa de Acueducto y Alcantarillado de Bogotá (EAAB), encontró contaminación en las verduras que son regadas con esa agua. Igual sucedió con la carne y la leche producida por animales que abrevan en el Río Bogotá.

Por: RAMIRO CASTELLANOS Redactor de EL TIEMPO

4 de noviembre de 1990

http://www.eltiempo.com/archivo/documento/MAM-2972

(Ríos, autoridades, normas urbanas)

HOY, DOS MIL FAMILIAS RECIBEN VIVIENDA EN CIUDAD BOLÍVAR

El proyecto más grande de autoconstrucción en la historia de Colombia, 10.600 unidades de vivienda del proyecto Ciudad Bolívar, al sur de Bogotá, arroja hoy sus primeros frutos. Este sábado, 2.200 familias recibirán un número igual de viviendas, que construyeron con sus propias manos, a pico y pala, lo que les garantiza por fin un techo propio.

15 de diciembre de 1990

http://www.eltiempo.com/archivo/documento/MAM-37592

(Vivienda, Ciudad Bolívar)

RIESGO PARA MÁS DE UN CENTENAR DE BARRIOS

En Bogotá el invierno no llega solo. De los 440 barrios que están en proceso de legalización actualmente, por lo menos 130 están en riesgo de ser afectados por deslizamientos a causa de los aguaceros. Todos son desarrollos espontáneos localizados sobre el cauce de una quebrada, un pozo subterráneo o en una ladera.

Por: NULLVALUE

13 de marzo de 1991

http://www.eltiempo.com/archivo/documento/MAM-42338

(Riesgos urbanos, deslizamientos, inundaciones, Tunjuelo, condiciones socio-económicas, conflictos urbanos)

RECUPERACIÓN DEL RÍO BOGOTÁ SERÁ POR FIN UNA REALIDAD

El 12 de agosto próximo, el Alcalde Mayor, Juan Martín Caicedo Ferrer, firmará el acuerdo final entre la Nación y el Distrito Capital para la recuperación del río Bogotá. El proyecto denominado

Estrategia de manejo del río Bogotá será suscrito, además del alcalde, por el Director del Departamento Nacional de Planeación, Armando Montenegro, el gerente de la Empresa de Acueducto y Alcantarillado de Bogotá (EAAB), Santiago Borrero Mutis, el Director de la CAR, Eduardo Villate y el Director del DAMA, Agustín Vélez.

Por: NULLVALUE

3 de agosto de 1991

http://www.eltiempo.com/archivo/documento/MAM-130494

(Ríos, autoridades, normas urbanas)

EN TRES ETAPAS RECUPERARÁN EL BOGOTÁ

Después de veinte años de estudios, que concluyeron siempre sobre la urgencia de recuperar el río Bogotá, la Nación y el Distrito firmarán el próximo 23 de agosto un convenio en el cual se traza la estrategia que se seguirá para iniciar las obras respectivas. El convenio, que será suscrito a las 11 de la mañana en la Casa de Nariño, contempla que para los trabajos de saneamiento los 365 kilómetros de recorrido del río sean divididos en tres sectores.

Por: NULLVALUE

14 de agosto de 1991

http://www.eltiempo.com/archivo/documento/MAM-136580

(Ríos, autoridades, normas urbanas)

ALCANTARILLADO SE PAGARÁ POR VALORIZACIÓN

Un proyecto de Acuerdo por medio del cual se autoriza el cobro de valorización por las obras del Programa Bogotá V, pertenecientes al Plan Maestro de Alcantarillado, presentó al Concejo el Alcalde Mayor, Juan Martín Caicedo Ferrer. La valorización será cobrada por la propia Empresa de Acueducto y Alcantarillado de Bogotá.

Por: NULLVALUE

15 de noviembre de 1991

http://www.eltiempo.com/archivo/documento/MAM-191031

(Ríos, autoridades, normas urbanas)

$4.800 MILLONES BAJO LA TIERRA

Cuando el Presidente César Gaviria y el Alcalde Mayor de Bogota, Juan Martín Caicedo Ferrer, inauguren este domingo el colector de aguas negras y lluvias del barrio Ismael Perdomo, nadie creerá que bajo los pies de los dos mandatarios se encuentran sepultados 4.800 millones de pesos. Bajo la avenida que une a la Autopista del Sur con la avenida Agoberto Mejía pasa el alcantarillado que beneficiará a más de un millón de habitantes de Ciudad Bolívar y a una docena de barrios de Bosa.

Por: NULLVALUE

13 de diciembre de 1991

LA MAYOR OBRA DE ALCANTARILLADO

La Empresa de Acueducto y Alcantarillado de Bogotá (EAAB) entregó el colector de aguas lluvias y negras del Ismael Perdomo, obra que beneficia a más de un millón y medio de habitantes de 400 hectáreas desarrolladas urbanística e industrialmente en los sectores de Ciudad Bolívar, Cazucá y Bosa. La obra, considerada como la de mayor envergadura en materia de alcantarillado urbano hasta el momento en el país, fue realizada por el consorcio de ingenieros colombianos Fajardo y Nieto, con la interventoría directa de la Empresa de Acueducto y Alcantarillado de Bogotá.
Por: NULLVALUE
16 de diciembre de 1991
http://www.eltiempo.com/archivo/documento/MAM-209396
(Ríos, autoridades, normas urbanas)

HOY UNA LAGUNA, MAÑANA UNA INVASIÓN

En 1970 eran 250 hectáreas. Hoy quedan 190 y dentro de unos pocos años será un barrio más de invasión en Bogotá si las autoridades distritales no aplican los mecanismos legales para impedirlo. Se trata de la laguna Juan Amarillo, un estanque natural cuya misión es recoger las aguas negras y lluvias de la cuenca del río Salitre.
Por: RAMIRO CASTELLANOS
3 de marzo de 1992
http://www.eltiempo.com/archivo/documento/MAM-52447
(Humedales, urbanización, autoridades, norma urbana, sociedad civil)

ARTE POR UNA CAUSA ECOLÓGICA

Los humedales de la Sabana de Bogotá son el hábitat de tres especies y ocho subespecies que no se encuentran en ninguna otra región del mundo. Pero en los últimos cuarenta años, los pantanos han sido destruidos por el relleno y la desecación para cultivos y desarrollo de viviendas. Durante la temporada invernal, sirvieron de refugio para cientos de miles de aves

acuáticas provenientes del hemisferio norte. Su abundancia fue tal, que la cacería llegó a ser una de las principales actividades populares.
Por: NULLVALUE
3 de marzo de 1992
http://www.eltiempo.com/archivo/documento/MAM-52441
(Causas ambientales, sociedad civil, autoridades, humedales)

PUGNA POR NO INCLUSIÓN DE LOTE AL PERÍMETRO URBANO

La no incorporación de un terreno de 47 mil metros cuadrados al perímetro urbano de Bogotá originó enfrentamientos, demandas, conceptos jurídicos, consultas a la Contraloría y la Personería Distrital e intrigas. El lote, denominado Fe y Alegría (vecino a la Fundación que lleva este nombre), se encuentra en el sector de Kennedy y colinda con el Condado de Castilla, Pío XII y Rincón de los Angeles.
Por: GLORIA VALLEJO
30 de marzo de 1992
http://www.eltiempo.com/archivo/documento/MAM-79302
(Urbanización, norma urbana-Acuerdo 6 1990-, autoridades, sectores privados)

POR FALTA DE LUZ PUEDE HABER INUNDACIONES

El gerente de la Empresa de Acueducto y Alcantarillado de Bogotá (EAAB) Santiago Borrero Mutis, solicitó a su colega de la Empresa de Energía, Lázaro Mejía Arango, que estudie la posibilidad de no someter a racionamiento durante los aguaceros a las zonas en donde están ubicadas las motobombas que mandan las aguas negras al río Bogotá. Mejía dijo que a este diario que analizará la situación en el próximo comité de gerencia de la EEB, ya que no se había previsto esta situación.
Por: RAMIRO CASTELLANOS
8 de mayo de 1992
http://www.eltiempo.com/archivo/documento/MAM-109705
(Inundaciones, ríos, humedales, urbanización, autoridades)

EL AGUA PARA BOGOTÁ Y LA SABANA

Como van las cosas, al finalizar la década de los 90 el servicio de acueducto requerido por las 30.000 hectáreas de desarrollo urbano de Bogotá, reducirá el agua para riego en las pocas zonas que actualmente lo tienen en servicio o programado, dentro de las 100.000 hectáreas de suelos planos rurales que quedan en la Sabana. Para entender esa triste realidad es necesario hacer un balance del recurso hídrico disponible para acueducto y para riego.

Por: JAIME ARIAS RESTREPO

29 de agosto de 1992

http://www.eltiempo.com/archivo/documento/MAM-189292

(Autoridades, agua, normas urbanas, servicios públicos)

BOGOTÁ NO AGUANTA UN CHAPARRÓN

Bogotá podría sufrir problemas de inundación en caso de que el invierno sea intenso, debido a que algunas redes del alcantarillado están prácticamente taponadas por basuras y desechos, y la Empresa de Acueducto no ha podido entrar a la limpiarlas. La amenaza, que no es un cuento, obedece a que se están invadiendo sin contemplación las riberas y las rondas de los ríos, las chucuas y las lagunas de amortiguamiento y a que poco a poco las aguas negras y lluvias se están quedando sin canales por dónde salir.

Por: RAMIRO CASTELLANOS

26 de septiembre de 1992

http://www.eltiempo.com/archivo/documento/MAM-210076

(Inundaciones, ríos, humedales, urbanización, autoridades)

POR FIN OBRAS AMBIENTALMENTE SANAS

Hasta hace poco, primero se hacía una obra de ingeniería y después empezaban los golpes de pecho y las acusaciones por el impacto ambiental que producía, en la mayoría de los casos, con daños irreparables. Hoy la situación es diferente, o al menos no hay excusa para que así lo sea.

Por: GLORIA VALLEJO

24 de julio de 1993

http://www.eltiempo.com/archivo/documento/MAM-177675

(Tunjuelo, Canteras, ríos)

$400 MIL MILLONES PARA ACUEDUCTO

Con una inversión de 400 mil millones de pesos, la Empresa de Acueducto y Alcantarillado ejecutará el más ambicioso plan de obras de toda su historia, del cual, en noviembre, se abrirán las primeras licitaciones. La entidad se propone desarrollar el programa denominado Santa Fe, que tiene como objetivos reducir la vulnerabilidad en sus sistemas, cubrir el atraso en el alcantarillado, extender la cobertura de los dos servicios a toda la ciudad, y ampliar la capacidad del acueducto para atender las necesidades futuras del Distrito.

Por: NULLVALUE

28 de septiembre de 1993

http://www.eltiempo.com/archivo/documento/MAM-231008

(Agua, barrios, Ciudad Bolívar)

BOGOTÁ TIENE RESERVA EN POZOS SUBTERRÁNEOS

Según la Empresa de Acueducto, basada en un estudio de Ingeominas, la RAMIRO Bogotá no tiene problemas en materia de producción de agua para el consumo humano. El problema está en la distribución porque no hay por donde sacarla , dijo el gerente de la Empresa de Acueducto, Francisco Javier Ochoa Franco. El funcionario se refirió a los comentarios del Ombusdman de EL TIEMPO el pasado domingo en el sentido de que nada se saca con tener redes de distribución si no hay agua suficiente, y respondió que el consumo diario de la Sabana es de 17 metros cúbicos por segundo, y que a esto se le deben sumar 9 metros cúbicos por segundo que los particulares están destinando al riego.

Por: CASTELLANOS

7 de octubre de 1993

http://www.eltiempo.com/archivo/documento/MAM-237691

(Agua, pozos subterráneos, servicios públicos)

CIUDADELA NUEVA TIBABUYES: UN EJEMPLO DE VIVIENDA POPULAR

En Colombia se han construido y desarrollado varios programas de vivienda popular. Pero en pocos se ha aplicado el concepto de hábitat, que entiende la vivienda como parte integral de un todo y comprende los espacios públicos

y privados y las relaciones sociales y culturales. Con base en esta filosofía, la AVP Asociación de Vivienda construye la Ciudadela Nueva Tibabuyes, localizada al noroccidente de Bogotá, en la jurisdicción de Suba.
Por: REDACCIÓN EL TIEMPO
09 de octubre 1993
http://www.eltiempo.com/archivo/documento/MAM-237798
(Vivienda popular, ambiente, agua, movilización social, Rafael Colmenares Fundación AVP)

NO SOLO EL RÍO BOGOTÁ TIENE QUÍMICOS

La Corporación Autónoma Regional de las Cuencas de los Rios Bogotá, Ubaté y Suárez (CAR) dijo que no solo el río Bogotá está contaminado con sustancias peligrosas para la salud como el mercurio, cadmio, cromo y detergentes, sino también los ríos Juan Amarillo, Fucha y Tunjuelo. El Director Ejecutivo de la entidad, Alfonso Pérez Preciado, dio a conocer por primera vez los resultados de las investigaciones sobre contaminación química de los ríos de la ciudad, con base en los muestreos más recientes de la CAR (1990 y 1991) y de la Empresa de Acueducto y Alcantarillado de Bogotá.
Por: NULLVALUE
23 de noviembre de 1993
http://www.eltiempo.com/archivo/documento/MAM-266307
(Inundaciones, ríos, humedales, urbanización, autoridades)

EN USME EL DESIERTO CAMBIA DE COLOR

La zona que solo producía grava y otros materiales para construcción, se encuentra hoy en un proceso de rehabilitación y en sus taludes crecen plantas nativas como la acacia, el retamo liso y el espinoso, al lado del eucalipto. También existen alfombras verdes de pasto y están volviendo las palomas, los copetones, las mirlas sabaneras y las garzas, al tiempo que a una de sus lagunas la naturaleza le está regalando peces.
Por: RAMIRO CASTELLANOS
6 de febrero de 1994
http://www.eltiempo.com/archivo/documento/MAM-34457
(Cementeras, río Tunjuelo, desviación del río, rol autoridades, minería urbana)

ALTO RIESGO EN CIUDAD BOLÍVAR

En Ciudad Bolívar se sigue en el mismo estado de pobreza. Hoy hay 42 mil viviendas ubicadas en zonas de alto riesgo, expuestas a que, en épocas de lluvias, se desmoronen como si fueran de mentiras y todavía no tienen uno de los servicios elementales: agua. Para sacarlas de esa postración, el Distrito tendría que invertir más de 31 mil millones de pesos para construir 20 mil soluciones de vivienda y dotar de servicios a 12 mil adicionales.

Por: NULLVALUE

11 de febrero de 1994

http://www.eltiempo.com/archivo/documento/MAM-39719

(Riesgos urbanos, Ciudad Bolívar, deslizamientos, inundaciones, Tunjuelo, condiciones socio-económicas, conflictos urbanos)

EL RÍO TUNJUELITO, ALCANTARILLA ABIERTA DE USME

La explotación de gravilleras y la contaminación del río Tunjuelito son los principales problemas ambientales de Usme, según el diagnóstico elaborado por la agenda ambiental de esa localidad. En el primer caso, la industria extractiva ha ocasionado un deterioro del suelo y un movimiento de masas que amenaza a los residentes vecinos con futuros deslizamientos.

Por: NULLVALUE

21 de febrero de 1994

http://www.eltiempo.com/archivo/documento/MAM-50381

(Conflictos ambientales, río Tunjuelo, cementeras, minería, barrios)

CÚMULO DE CONTAMINACIÓN EN CIUDAD BOLÍVAR

En Ciudad Bolívar el medio ambiente es mucho menos que medio. No hay zonas de recreación; el aire está altamente contaminado; los cerros están habitados en su mayoría; las fuentes hídricas son alcantarillas, y el suelo presenta carcavamientos. De acuerdo con la agenda ambiental elaborada por el Dama y el Instituto de Estudios Ambientales (Idea) de la Universidad Nacional, existen terrenos en los que se presentan procesos activos de erosión que se muestran en cárcavas o barrancos que ya alcanzan varios metros de profundidad.

Por: REDACCIÓN EL TIEMPO

21 de marzo 1994
http://www.eltiempo.com/archivo/documento/MAM-80668
(Conflictos ambientales, Ciudad Bolívar, barrios)

POR QUÉ SE INUNDA BOGOTÁ

Aguacero que cae en Bogotá se vuelve inundación. Cada temporada invernal trae consigo emergencias a lo largo y ancho de la ciudad, pero especialmente en los barrios subnormales, donde viven las gentes de más escasos recursos. La pregunta que se hacen quienes viven aquí o vienen de otra parte es: Por qué se inunda Bogotá?
Por: RAMIRO CASTELLANOS
10 de abril de 1994
http://www.eltiempo.com/archivo/documento/MAM-97661
(Inundaciones, ríos urbanos)

LOS HUMEDALES, A PUNTO DE PERECER

Con el ánimo de verificar el estado actual de los humedales, las rondas de los ríos y los rellenos, el Departamento Administrativo del Medio Ambiente, DAMA, realizó ayer un sobrevuelo por las zonas más afectadas en Bogotá para determinar las medidas inmediatas para su recuperación y así evitar que estos ecosistemas, necesarios para la dinámica de los ríos, desaparezcan. Los humedales, muchos de los cuales están a punto de perecer, son cuerpos de agua naturales o artificiales como los nacimientos de agua, riachuelos, lagunas, embalses y chucuas o pantanos, que sirven como amortiguadores de las crecientes de los ríos. En el caso de Bogotá, los humedales actúan como escape de los ríos Tunjuelo, Fucha, Bogotá y Juan Amarillo, cuando estos se encuentran por encima de su cauce normal.
Por: NULLVALUE
3 de junio de 1994
http://www.eltiempo.com/archivo/documento/MAM-142478
(Humedales, ríos urbanos, contaminación, urbanización)

CONCEJO DIRÁ HOY SÍ AL ENDEUDAMIENTO

Por: NULLVALUE

13 de junio de 1994

http://www.eltiempo.com/archivo/documento/MAM-149655

(Barrios populares, inversiones públicas, instituciones distritales)

PROYECTO COMO EL CERREJÓN

En la actualidad son huecos de, más o menos, 30 metros de profundidad de donde se extrae arena y grava; pero en 30 años, esas enormes cárcavas que bordean el río Tunjuelito podrían ser un gran embalse. Así lo plantea un estudio que presentó el director del Departamento del Medio Ambiente (Dama) Germán Gómez, al Comité de Canteras del Ministerio de Minas.

Por: NULLVALUE

17 de agosto de 1994

http://www.eltiempo.com/archivo/documento/MAM-198694

(Tunjuelo, cárcavas, minería, sectores económicos, autoridades)

ARRECIA POLÉMICA AMBIENTAL

La polémica en torno a proceso que puso en marcha la administración distrital para descontaminar el río Bogotá sigue abierta. El consultor ambiental y ex director de la CAR, Alfonso Pérez Preciado respondió las críticas que hicieron algunos especialistas del tema según las cuales, con la construcción de tres plantas de tratamiento de aguas residuales no se va a solucionar la contaminación del río, pero sí se comprometieron los recursos de inversión ambiental de 30 años.

Por: NULLVALUE

25 de agosto de 1994

http://www.eltiempo.com/archivo/documento/MAM-206630

(Ríos urbanos, conflictos ambientales, cuencas urbanas, autoridades)

CUÁNTOS DESECHOS VAN AL RÍO BOGOTÁ

El río Bogotá arroja diariamente al Magdalena 79 kilogramos de plomo, igual cantidad de cromo, 20,4 toneladas de hierro, 5,2 toneladas de detergentes, 1,47 toneladas de sólidos en suspensión, además de mercurio y otros metales

pesados. Ese es el diagnóstico que se presenta en el pliego para la licitación de la primera etapa de descontaminación del río Bogotá.

Por: NULLVALUE

26 de agosto de 1994

http://www.eltiempo.com/archivo/documento/MAM-201395

(Cuenca río Bogotá, Tunjuelo)

FRENO A LOS URBANIZADORES PIRATAS

Otro convenio encaminado a combatir la actividad de los urbanizadores piratas en los barrios subnormales, firmaron el viernes la Administración Distrital a través de la Empresa de Acueducto y los propietarios de los predios Agrológicas III de la localidad de Bosa, para construir soluciones de vivienda para unas 100.000 personas. Los particulares se comprometieron en una primera etapa a hacer obras de infraestructura de acueducto y alcantarillado por más de 1.000.000.000 de pesos en los predios Cartagenita, Barlovento, El Junco, la Tingua, El Erial, Júpiter y San Diego, con el fin de poder levantar 20.000 viviendas de interés social que contarán con todos los servicios públicos, parques, calles bien trazadas y pavimentadas y zonas verdes.

Por: NULLVALUE

12 de septiembre de 1994

http://www.eltiempo.com/archivo/documento/MAM-211983

(Urbanizadores 'piratas', inundaciones)

EN BUSCA DE UNA ESPERANZA VERDE

El clima de Bogotá cambió. ya no se puede hablar de un piso térmico frío en términos generales. El sur es más caliente que el norte, y no es precisamente por que la rumba le suba la temperatura.

Por: JULIO RICARDO CASTAÑO

22 de octubre de 1994

http://www.eltiempo.com/archivo/documento/MAM-236042

(Gestión ambiental urbana, políticas, Bogotá)

BOSA, 14 MIL VIVIENDAS INUNDABLES

En el borde occidental de la localidad de Bosa, al sur de la ciudad, hay más de 14 mil familias que viven con la zozobra de que sus viviendas resulten inundadas a cualquier momento.
Por: NULLVALUE
29 de diciembre de 1994
http://www.eltiempo.com/archivo/documento/MAM-269840
(Inundaciones, Tunjuelo, barrios marginales)

INAUGURAN LA SEGUNDA ETAPA DE DOÑA JUANA

Hoy se inaugura la segunda etapa del Relleno Sanitario Doña Juana el cual, a diferencia de la primera etapa, contará alta tecnología en el tratamiento de las basuras.
Por: NULLVALUE
3 de febrero de 1995
http://www.eltiempo.com/archivo/documento/MAM-298602
(Doña Juana, relleno sanitario,conflicto ambiental, Ciudad Bolívar)

DE UN PELADERO NACERÁ UN INMENSO PARQUE PARA EL SUR

La mina conocida como La Fiscala de donde la empresa Cementos Diamante extrae desde hace más de sesenta años los minerales para la producción de concreto, será, en diez años, un parque abierto al público de sesenta hectáreas por donde correrán libremente cabras y conejos.
Por: NULLVALUE
23 de febrero de 1995
http://www.eltiempo.com/archivo/documento/MAM-290675
(Minería, Usme, Ciudad Bolívar, Tunjuelo)

HOY, LA ÚLTIMA EMISIÓN DE JUNGLA DE ASFALTO

Con una síntesis sobre la problemática ambiental de la ciudad, hoy, a las 8 de la noche, por la cadena Uno, se transmite el último de los veinte programas de televisión Jungla de Asfalto.
Por: REDACCIÓN EL TIEMPO
18 de marzo 1995

http://www.eltiempo.com/archivo/documento/MAM-277774
(Movilización ambiental, medios, ciudadanía)

CRITICAN PLAN PARA LIMPIAR RÍO BOGOTÁ

Un grupo de concejales le solicitará al Ministerio del Medio Ambiente que niegue la licencia que solicitó la Administración Distrital para el proyecto de descontaminación del río Bogotá.
Por: NULLVALUE
20 de mayo de 1995
http://www.eltiempo.com/archivo/documento/MAM-329604
(Río Bogotá, rio Tunjuelo, políticas públicas)

RECUPERAN LA CHUCUA DE LA VACA

Con el propósito de conservar el humedal de la Chucua de la Vaca, de la localidad de Kennedy, como un pulmón ecológico de la ciudad, el Dama y la Alcaldía local cercaron todo su borde y sembraron 1.700 árboles alrededor.
Por: NULLVALUE
3 de agosto de 1995
http://www.eltiempo.com/archivo/documento/MAM-379929
(Humedales, urbanización, comunidades)

EXCESO DE BASURAS CAUSA INUNDACIONES

Como lo había previsto el Instituto de Hidrología, Meteorología y Estudios Ambientales (Ideam), en la noche del miércoles y la madrugada del jueves se presentaron lluvias en la región del Alto Tunjuelo. Sin embargo, el nivel del río Tunjuelito, aunque subió, no representó un grave riesgo para los habitantes de los barrios ribereños.
Por: NULLVALUE
19 de julio de 1996
http://www.eltiempo.com/archivo/documento/MAM-430020
(Río Tunjuelo, Inundaciones)

INTENTAN DAÑAR MURO DE CONTROL DEL TUNJUELO

La Empresa de Acueducto y Alcantarillado de Bogotá (EAAB) denunció que desconocidos intentaron dañar la estructura número 2 que controla las crecientes del río Tunjuelito y evita que haya inundaciones en el suroccidente de la ciudad.

Por: NULLVALUE

24 de julio de 1996

http://www.eltiempo.com/archivo/documento/MAM-425325

(Inundaciones, río Tunjuelo, autoridades)

PLAN MAESTRO DE ACUEDUCTO Y ALCANTARILLADO

El mejoramiento de los servicios públicos básicos (acueducto, alcantarillado, aseo y luz) es una de las preocupaciones de la actual administración, que ha visto como en los últimos meses se ha incrementado el flujo poblacional y las actividades comerciales por las expectativas generadas por los trabajos de mejoramiento y readecuación de la vía a Santafé de Bogotá.

Por: REDACCIÓN EL TIEMPO

06 de agosto 1996

http://www.eltiempo.com/archivo/documento/MAM-467683

(Agua, servicios públicos)

EMERGENCIA EN EL SUR POR DERRUMBE EN DOÑA JUANA

Una emergencia sanitaria se presentó en la tarde de ayer en el sur de la ciudad por un derrumbe de basura en el relleno sanitario de Doña Juana, a donde se llevan los desechos que genera la ciudad.

Por: REDACCIÓN EL TIEMPO

28 de septiembre 1997

http://www.eltiempo.com/archivo/documento/MAM-631011

(Doña Juana, desastre ambiental, desigualdad)

UN PLAN ESTRATÉGICO PARA BOGOTÁ

Se acaba de efectuar la entrega formal del Plan Estratégico Bogotá 2000, en cuya elaboración se trabajó durante tres años continuos, con la participación de distintos expertos en la problemática urbana contemporánea. Se trata de

un plan ambicioso que, de llevarse a cabo de acuerdo con las proyecciones, habrá logrado para el año 2010 la transformación completa de Bogotá, y entonces ya no será la caótica ciudad capital que hoy padecemos y amamos, sino una urbe competitiva o, en otras palabras, una ciudad vivible y grata para todos sus habitantes.

Por: REDACCIÓN EL TIEMPO

06 de noviembre 1997

http://www.eltiempo.com/archivo/documento/MAM-687166

(Planeación urbana, Plan Estratégico Bogotá 2000)

DOÑA JUANA, UN AÑO DESPUÉS

Al cumplirse un año del derrumbe de basuras en el relleno sanitario Doña Juana sigue en evidencia la falta de una política integral para el manejo de basuras en la ciudad. Esta es una de las conclusiones de un foro organizado por EL TIEMPO para hacer un balance sobre lo que se ha hecho después de la emergencia.

Por: REDACCIÓN EL TIEMPO

20 de septiembre 1998

http://www.eltiempo.com/archivo/documento/MAM-740512

(Doña Juana, desastre ambiental, desigualdad)

SOBREVIVIENTES DE LA CONEJERA

Estaban tomando el sol. De vez en cuando sumergían sus picos o agitaban las alas.

Por: REDACCIÓN EL TIEMPO

25 de enero 1998

http://www.eltiempo.com/archivo/documento/MAM-764931

(Humedales, movilización social)

EL HUMEDAL DE LA CONEJERA:

Editorial

Por: REDACCIÓN EL TIEMPO

04 de diciembre 1998

http://www.eltiempo.com/archivo/documento/MAM-816752

(Humedales, movilización social, políticas urbanas, infraestructura)

ENTRE DOÑA JUANA Y MONDOÑEDO

El nuevo relleno sanitario de Bogotá promete ser un nuevo tema de polémica entre la Corporación Autónoma Regional (CAR) y el Distrito.

Por: REDACCIÓN EL TIEMPO

12 de marzo 1999

http://www.eltiempo.com/archivo/documento/MAM-881759

(Doña Juana, desastre ambiental, desigualdad)

HUMEDAL DE CÓRDOBA, EN PELIGRO

Los vecinos del humedal de Córdoba no se explican por que el 30 de agosto se quedaron sin 129 árboles que lo resguardaban del tráfico de la Avenida Suba.

Por: REDACCIÓN EL TIEMPO

14 de septiembre 2000

http://www.eltiempo.com/archivo/documento/MAM-1260581

(Humedales, movilización social)

EL HUMEDAL DE CÓRDOBA:

Señor Director:

Por: REDACCIÓN EL TIEMPO

26 de abril 2003

http://www.eltiempo.com/archivo/documento/MAM-997187

(Humedales, movilización social)

DE NUEVO EL HUMEDAL DE CÓRDOBA:

Señor Director:

Por: REDACCIÓN EL TIEMPO

04 de diciembre 2003

http://www.eltiempo.com/archivo/documento/MAM-1042441

(Humedales, movilización social)

NO SE SALVÓ NI EL COLCHÓN

A los esposos Monroy-Aldana y a sus cinco hijos: José, Angie, Daniel, Luis y Carlos, solo les queda un par de bolsas plásticas con la ropa y los zapatos

que una señora del barrio les regaló ayer por la tarde, luego de que las aguas del río Tunjuelo arrasaran con todas sus pertenencias y, de paso, con las de otras 600 familias.
Por: NULLVALUE
10 de junio de 2002
http://www.eltiempo.com/archivo/documento/MAM-1370765
(Inundaciones, río Tunjuelo, autoridades)

Doña Juana, apto para el proyecto

De acuerdo con un estudio realizado por la Environmental Protection Agency en 1996, un relleno se considera atractivo para un proyecto de aprovechamiento del biogás cuando cumple con las siguientes características:
Por: REDACCIÓN EL TIEMPO
29 de noviembre 2006
http://www.eltiempo.com/archivo/documento/MAM-2294294
(Doña Juana, desastre ambiental, desigualdad)

Renuevan el humedal Córdoba

El proyecto incluye la construcción de dos miradores en zonas altas y dos en las bajas.
Por: REDACCIÓN EL TIEMPO
27 de julio 2014
http://www.eltiempo.com/archivo/documento/CMS-14309823
(Humedales, movilización social, autoridades, política urbana)

Reportan emergencia en el relleno sanitario de Doña Juana

Un talud se desprendió. Líderes señalan que son preocupantes los riesgos para la salud.
Por: REDACCIÓN EL TIEMPO
02 de octubre 2015
http://www.eltiempo.com/archivo/documento/CMS-16392938
(Doña Juana, desastre ambiental, desigualdad)

Minería en Bogotá, un problema sin dueño

Mientras muchos de los representantes de las canteras de explotación minera no aparecen para responder por los daños ocasionados, las deudas ambientales de esta actividad en la capital siguen afectando la calidad del aire, las reservas subterráneas de agua y los ecosistemas endémicos.

Reportaje Especial Multimedia por: EL TIEMPO

4 de julio de 2016

http://www.eltiempo.com/multimedia/especiales/mineria-en-bogota/16636271/1

(Extracción de recursos minerales, minería urbana, desigualdad)

En Ciudad Bolívar siguen invadiendo zona de riesgo

Terreno se desalojó en 2010 y 2015 por derrumbes. Urbanizadores piratas siguen vendiendo lotes.

Por: Redacción EL TIEMPO

27 de septiembre 2016

http://www.eltiempo.com/bogota/ciudad-bolivar-siguen-invadiendo-zona-de-riesgo-29373

(Riesgos, urbanizaciones ilegales, Ciudad Bolívar, desigualdad)

Se cumplen 20 años del derrumbe en el relleno Doña Juana

El 28 de septiembre de 1997, entre 600 mil y un millón de toneladas de basura cayeron al Tunjuelo.

Por: BOGOTÁ

27 de septiembre 2017

http://www.eltiempo.com/bogota/se-cumplen-20-anos-del-derrumbe-en-el-relleno-dona-juana-135102

(Doña Juana, desastre ambiental, desigualdad)

El campesino que vio cómo su tierra se convirtió en Doña Juana

Tras dedicar su vida a cultivar, ahora la mayor lucha de Laureano es alejar las moscas de su casa.

Por: Nicolás Cortés Mejía

29 de septiembre 2017

http://www.eltiempo.com/bogota/historia-de-como-el-mochuelo-se-convirtio-en-el-botadero-de-dona-juana-en-bogota-135894

(Doña Juana, desastre ambiental, desigualdad)

Proponen gestión conjunta del agua en Bogotá y la Sabana

Expertos dicen que se está poniendo en riesgo el abastecimiento de este recurso en la región.

Por: José David Rodríguez Ribero

25 de octubre 2017

http://www.eltiempo.com/bogota/expertos-proponen-gestion-conjunta-del-agua-en-bogota-y-la-sabana-144910

(Agua, ciudad y región, servicios públicos)

Ancho del cauce del río Bogotá pasó de 30 a 60 metros de Soacha a Cota

La CAR terminó la adecuación hidráulica de los 68 kilómetros de ese trayecto a su paso por Bogotá.

Por: Redacción Bogotá

07 de noviembre 2017

http://www.eltiempo.com/bogota/termino-obra-de-adecuacion-hidraulica-del-rio-bogota-en-68-kilometros-148772

(Ríos urbanos, río Bogotá)

Revive la discusión por senderos en los humedales

Ambientalistas se oponen a que se elimine prohibición de adecuar andenes en zonas protegidas.

Por: Bogotá

20 de noviembre 2017

http://www.eltiempo.com/bogota/polemica-por-nuevo-decreto-permite-la-construccion-de-senderos-en-los-humedales-de-bogota-153094

(Humedales, movilización social, políticas urbanas)

La exposición que muestra cómo sería Bogotá en 2038

Una exhibición del Museo de Bogotá permite visualizar cómo sería la ciudad dentro de 20 años.

Por: Bogotá

12 de enero 2018

http://www.eltiempo.com/bogota/exposicion-en-el-museo-de-bogota-muestra-como-seria-la-capital-en-2038-170504

(Ciudad, política, ambiente)

Articles

ARTICLE I
Quimbayo Ruiz GA (2018). People and urban nature: the environmentalization of social movements in Bogotá. *Journal of Political Ecology*. 25: 525–547.
https://doi.org/10.2458/v25i1.23096

ARTICLE II
Quimbayo Ruiz GA (2020) Territory, sustainability, and beyond: Latin American urbanization through a political ecology. *Environment and Planning E: Nature and Space* 3(3): 786–809.
https://doi.org/10.1177%2F2514848619887933
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ARTICLE III
Quimbayo Ruiz GA, Kotilainen J and Salo M (2020). Reterritorialization practices and strategies of campesinos in the urban frontier of Bogotá, Colombia. *Land Use Policy* 99, December 2020, 105058
First online September 23, 2020
https://doi.org/10.1016/j.landusepol.2020.105058

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ARTICLE IV
Quimbayo Ruiz GA, Salo M, Hiendapää J and Kotilainen J. Ecologizing urban planning in Bogotá: situated practices and conflicting rationalities. Manuscript proposed for publication.

ARTICLE I

Quimbayo Ruiz GA (2018). People and urban nature: the environmentalization of social movements in Bogotá. *Journal of Political Ecology*. 25: 525–547. https://doi.org/10.2458/v25i1.23096

People and urban nature: the environmentalization of social movements in Bogotá

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Abstract

Using research conducted in Bogotá, Colombia, I discuss in this article how urban nature has been used as a vehicle by social movements to contest urban commons. The article explores the "environmentalization" of strategies and repertoires of social movements in urban struggles dating back to the 1980s, which developed in parallel with public urban planning debates. In recent years these were nurtured in turn by environmental discourse in a quest to change the city's growth paradigm. I suggest that the legitimacy of knowledge and law about urban nature advocacy is co-created by communities confronting institutions that are supposed to represent state power. This case study analyses conceptualizations of urban nature in and from Latin America, and shows that urban politics and environmental issues are part of a process in which political mobilization is a key element to overcome socio-ecological inequalities.

Key words: urban social movements; political ecology of urbanization; situated knowledge; socio-ecological inequalities; Latin America

Résumé

Dans cet article, je discute de la manière dont la nature urbaine a été utilisée par les mouvements sociaux pour contester les biens communs urbains. À l'aide de recherches menées à Bogotá, en Colombie, l'article explore "l'environnementalisation" des stratégies et répertoires des mouvements sociaux dans les luttes urbaines des années 1980, qui s'est développée parallèlement aux débats publics sur l'urbanisme. Au cours des dernières années, le discours sur l'environnement s'est inspiré de ces discours pour tenter de changer le paradigme de la croissance de la ville. Je suggère que la légitimité du savoir et du droit en matière de défense de la nature urbaine soit co-créée par les communautés confrontées aux institutions censées représenter le pouvoir de l'État. Cette étude de cas analyse les conceptualisations de la nature urbaine en Amérique latine et à partir de celles-ci. Il montre que la politique urbaine et les problèmes environnementaux font partie d'un processus dans lequel la mobilisation politique est un élément clé pour surmonter les inégalités socio-écologiques.

Mots clés: mouvements sociaux urbains; écologie politique de l'urbanisation; connaissances localisées; inégalités socio-écologiques; Amérique latine

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Resumen

A través de una investigación llevada a cabo en Bogotá, Colombia, en este artículo argumento cómo la naturaleza urbana ha sido usada como un vehículo por movimientos sociales en la lucha por los comunes urbanos. El artículo explora la ambientalización de estrategias y repertorios de los movimientos sociales en luchas urbanas que se remontan hacia la década de 1980, en paralelo con debates públicos de planeación urbana. Aquellos debates, a su vez, fueron enriquecidos en años recientes con el discurso ambiental como una apuesta para cambiar el paradigma del modelo de crecimiento de ciudad. En el artículo también sugiero cómo la legitimidad del conocimiento y la ley sobre la defensa de la naturaleza urbana es co-creada por las comunidades que confrontan las instituciones que se supone representan el poder estatal. Este estudio de caso es una contribución para traer juntas conceptualizaciones acerca de la naturaleza urbana en y desde América Latina. Asimismo, la investigación ofrece algunas lecciones sobre cómo la política urbana y las preocupaciones ambientales son parte un mutuo proceso en donde la movilización política es un elemento clave para superar desigualdades socio-ecológicas.

Palabras clave: movimientos sociales urbanos; ecología política de la urbanización; conocimiento situado; desigualdades socio-ecológicas; América Latina

1. Introduction

Recent conceptualizations of social movements and environmental struggles in Latin America have fallen within the "commodities consensus" debate (Svampa 2012). Social movements in Latin America have been receiving attention because of the rise of environmental struggles against a set of state-led growth-oriented development paths embodied in extraction and exploitation activities such as mining, hydrocarbon exploration, land grabbing for food, and other energy industries (Burchardt and Dietz 2014; Gudynas 2009; Martínez Alier *et al.* 2014; Martínez Alier *et al.* 2015; Pérez-Rincón *et al.* 2018). However, in this debate such movements and their eco-political actions are often portrayed romantically. There is a lack of analysis in this debate about how situated knowledge intertwines with normative and technical-scientific concepts in everyday environmental struggles, particularly in urban settings. Moreover, the role of social movements in socio-ecological processes, including urbanization, is just beginning to be explored by researchers in Latin America (Quimbayo Ruiz and Vásquez Rodríguez 2016; see also Arboleda 2016a; Parra and Gitahy 2017).

This article seeks to identify the specific role of social movements in advocating for urban nature in Bogotá, the capital of Colombia. I argue that ideas of urban nature embodied in hills, wetlands, rivers, and streams in Bogotá have been used as a vehicle by social movements to reclaim the urban commons. This article thus explores the environmentalization of strategies and repertoires of such movements in urban struggles dating back to the 1980s, in parallel with urban planning initiatives. Since the late 1980s a set of social organizations in Bogotá have been promoting urban nature advocacy, emerging as a local environmental movement (*movimiento ambiental*). This social movement comprises grassroots organizations, scholars, and practitioners, who formerly advocated for better urban services, but later strengthened their interests throughout urban nature advocacy. Moreover, they have been building a territorial attachment with some elements of urban nature through the re-appropriation of the scientific-political concept of 'Main Ecological Structure' (*Estructura Ecológica Principal*) (henceforth, MES) (van der Hammen 1998) which was developed as a structural framework for environmental planning in the Bogotá region. "Environmental territories" (*territorios ambientales*)[2] are socio-political constructions that reflect multiple appropriations of urban nature in the everyday life of people and their neighborhoods (Julio and Hernández 2014).

While the urbanization process in the Bogotá region has been conditioned in many ways by the socio-political order of a country struggling to put an end to a long armed conflict, I shall not discuss these matters directly. Rather, the article attempts to understand how environmental mobilization is framed in such a setting. Therefore, Bogotá as a whole, throughout this article, is presented as a case study with multiple environmental

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[2] Here the concept of *territory*, in Spanish *territorio*, is akin to the one discussed by Echeverría and Rincón (2000); Santos (2000); Haesbaert (2013), and Schwarz and Streule (2016).

conflicts related with urban nature at the metropolitan scale. The time frame of my research is from the late 1980s to the present. Although each individual conflict identified within this time frame is not scrutinized in depth, their most relevant features are highlighted with the aim of understanding how the environmentalization of social mobilization has taken place through advocacy of urban nature.

The article is structured as follows. First, I introduce my key concepts related to social movements and their engagement with environmental issues, highlighting the relevance of these matters for urban Latin America. Along with this, I describe the case study, methods, sources of materials and the methods of the research. In the empirical section, I explore the role the role of social organizations in Bogotá, and the environmentalization of their actions in struggles for urban commons. I also describe how environmental advocacy became institutionalized, highlighting notable contradictions in everyday practices of people and social organizations. In the final section the main points of the article are summarized as concluding remarks.

2. Framing the environmentalization of urban social movements

Social movements and their engagement with environmental issues are reflected in myriad organizations embracing countless struggles and interests (Armiero and Sedrez 2014; O'Neill 2012). Such issues are not exempt from socio-economic inequalities and material shortcomings related to class, gender, race, or identity (Wolford and Keene 2015). Indeed, most environmental concepts have origins outside the scholarly world, at the grassroots in, for instance, the Environmental Justice Movement (Martínez Alier *et al.* 2014; Temper *et al.* 2015). Therefore, environmental struggles are necessarily involved in advocating for the right to live in other ways different of those established by the contemporary neoliberal economy, and, at the same time, in promoting alternatives for sustainability transitions (c.f. Scheidel *et al.* 2018).

The action of environmental movements in urban settings has been most commonly referred to in the context of conflicts concerning the management and disposal of hazardous waste, particularly in poor or racialized neighborhoods (Auyero and Swistun 2009; Di Chiro 2008). Nevertheless, there has recently been an increasing amount of conflict related to urbanization, and how the urban space is used in land speculation, mainly for real estate developments, affecting ecosystems such as wetlands (Pintos 2017). Land speculation can also transform landscape values which embody means of life, for instance, for farming communities living at the metropolitan urban-rural fringes (Gómez *et al.* 2016). Although the articulation of values around urban nature (Ernstson and Sörlin 2013; Erixon Aalto and Ernstson 2017) and social production of urban ecosystem services (Ernstson 2013) have been studied, less attention has been paid to how peoples' daily actions produce diverse social movements in urban nature advocacy. The exercise of advocacy means how people can take action on behalf of nature, and how such action can become a legitimate vehicle in broader struggles for urban commons.

In addition, the causes and drivers of environmental conflicts are many. In such conflicts, materiality cannot be separated from its symbolic meanings in everyday practices (c.f. Shillington 2011) of environmental mobilization, and political and ideological drivers, environmental movements' repertoires of action and the resulting outcomes come together to shape and produce a *place* (c.f. Ulloa 2015). To enable the politics of *place* it is important to take into account how *places* are produced, and, moreover, how global concerns are also being produced at the local scale (c.f. Massey 1992). Repertoires of action of such movements are therefore not only local, because they are actually related to multi-scalar struggles.

On the other hand, urban commons are also environmental commons (Harvey 2012), and they are constantly shaped and negotiated by situated knowledge and daily actions of social movements in specific places, that take part in struggles to overcome socio-ecological inequalities (Lawhon *et al.* 2014; Loftus 2012). Such inequalities can be understood, following the contribution made by Schlosberg (2007), as having three dimensions:

(1) distribution: associated with access to environmental goods and services, and economic and
social benefits related to their use, enjoyment and exploitation, and, likewise, to whom the

impacts or negative effects of use or exploitation fall (i.e. processes of pollution, contamination, or environmental harm);

(2) participation: corresponding to the injustices that are produced in decision-making and legal procedures associated with the use or management of environmental or natural property and services;

(3) recognition: to achieve equality, it is important to recognize others, their culture, rights, cosmologies, ontologies, amongst others.

In this sense it is important to explain an environmentalization of everyday politics of urban commons in order to understand broader political mobilizations for overcoming socio-ecological inequalities (c.f. Agrawal 2005; Buttel 1992).

Therefore, debates around social movements and urban nature can contribute to increasing interest in recent uprisings elsewhere that are related to urbanization (Dikeç and Swyngedouw 2017; Erensü and Karaman 2017; Merrifield 2013). Environmental issues have also been co-opted by transnational capitalism whose sustainability agenda, including urbanization, is biased toward market-based approaches (Allen *et al*. 2016). Imperatives such as "green cities" (c.f. Haase *et al*. 2017) or addressing climate change (Di Chiro 2016) have become totalizing narratives forced into the daily life of people, undermining instead of improving their conditions, or even neutralizing their political capability to make social change as subjects or communities (Davidson and Iveson 2015). From a Latin American perspective, while urban politics in the region have long related to demands for social justice, it is also important to document how such demands are articulated through environmental imperatives (see Zeiderman 2016a, for risks and climate change). Recently, there have been important contributions that address issues such as the use of urban space (Fernández Álvarez 2012), allocation of toxic materials in poor areas (Auyero and Swistun 2009), water (Delgado 2015), or unequal flows of energy and materials in urban environments (Arboleda 2016a, b).

It is important to go further in the theorization of Latin American social movements campaigning for urban nature, taking into account the socio-ecological features of urbanization embedded in this 'megadiverse' region (Pauchard and Barbosa 2013) characterized by extreme inequalities (Oxfam 2016). These particular Latin American political ecologies of urbanization (see also Sedrez 2013) present potential challenges in conceptualizing how knowledge about nature is generated in peoples' daily lives through political mobilization (Quimbayo Ruiz and Vásquez Rodríguez 2016). Moreover, there is a need to understand how situated knowledge intertwines with normative and technical-scientific concepts at the everyday level of environmental struggles (c.f. Li 2015).

Situated knowledge, sometimes also referred as "local environmental knowledge", is not fixed. Instead, it is part of wider networks, both influenced by, and influencing, broader political, economic, and social forces such as globalization of markets, technologies, and so forth (Horowitz 2015). Moreover contradictions, paradoxes, or power relations can also be found amongst environmental movements, which can suffer inequalities of class and gender. Indeed, these everyday circumstances challenge problematic depictions of romantic eco-political action in scholarly research on environmental movements. Instead, acknowledging such circumstances, and understanding how situated knowledge is articulated through environmental action, can lead to useful reflections on how best to face sharp socio-ecological transformations and urbanization processes. This article attempts this by focusing on one of many environmental issues: urban nature as an urban commons, and how this issue has been articulated through social justice politics and urban planning in the recent history of the city.

3. Situating Bogotá and its urban nature

Bogotá, the capital of Colombia, is an autonomous municipality known as the Capital District (*Distrito Capital*) composed of 20 local political-administrative units or *localidades*.[3] In 2015, the population of Bogotá was over 7,980,000 (16.6% of the national total) (DANE cited in DNP 2015)[4], and the total surface area of the District is 1,635 km[2], of which 250 km[2] are urban, 29 km[2] for planned urban expansion, and 1,227 km[2] rural (Alcaldía Mayor de Bogotá 2004; SDP 2017). Bogotá's contribution to the Colombian Gross Domestic Product (GDP) in 2015 was 26%[5], and it has maintained a strong macroeconomic performance mainly based on the service sector of the economy; trade and retail, tourism, banking, entertainment, information technology services and real estate developments (DNP 2015). The District forms part of the *Sabana de Bogotá*, a high Andean plateau (2,600-3,800 meters above sea level) that has been declared a strategic ecosystem for Colombia (Article 61-Law 99/1993). This ecosystem is embodied in hills, wetlands, rivers, and *páramos* (high altitude wetlands) all framed under the scientific-political concept of MES (see Figure 1). This concept was originally coined by Dutch-Colombian ecologist Thomas van der Hammen (1998) for the Environmental Action Plan for the *Bogotá River*'s watershed. It has since been used by several Colombian environmental scientists, and it has been included in urban planning policies such as the Master Plan for Land-use in Bogotá (*Plan de Ordenamiento Territorial* – henceforth: POT), which offers this definition:

> (…) The Main Ecological Structure is based on the ecological, geomorphological, and original biological structure existing in the territory. The hills, the alluvial valley from the Bogotá river and the plains are part of this basal structure. The set of reserves, parks and remains of the natural vegetation of streams and rivers are an essential part of the desirable main ecological structure and carrying out ecological restoration is fundamental for its realization. The purpose of the Main Ecological Structure is the conservation and recovery of natural resources such as biodiversity, water, air and, in general, the environment desirable for man (sic), fauna and flora(…). (Alcaldía Mayor de Bogotá 2004. Article 72, Decree number 190)

While this definition could be seen to portray a nature/city dichotomy, it is, rather, a socio-ecological product, in which the Bogotá-region unfolds as a hybrid socio-natural entity (c.f. Swyngedouw 1996; see also Ándrade *et al.* 2013; Gallini and Castro 2015). Although Bogotá has certainly been improving some of its socio-economic characteristics and its urban development outcomes compared to the beginning of 1990s, so far urban growth in the city-region has resulted from an overt process of producing uneven geographies with insufficient urban planning, and, foremost, from social exclusion, poverty, and violence. These factors are linked to a national armed conflict, and state intervention that led to forced migration from rural to urban areas (PNUD 2011).

In addition, concentration of urban services, and political and financial power, has resulted in a metropolis that has not promoted sustainable socio-spatial integration at the urban region level (Carrizosa 2014; Thibert and Osorio 2014). This results in a negative urban footprint beyond the city limits (Díaz 2011), which has fuelled conflicts around water shortages and the critical pollution of the *Bogotá* River, land-use, and energy supplies. In effect, this kind of urbanization has also both depleted pre-existing conditions embodied in the MES, and transformed such conditions through a dynamic and mutual socio-natural constitution (as in Figure

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[3] These are: *Usaquén*, *Chapinero*, *Santa Fe*, *San Cristóbal*, *Usme*, *Tunjuelito*, *Bosa*, *Kennedy*, *Fontibón*, *Engativá*, *Suba*, *Barrios Unidos*, *Teusaquillo*, *Los Mártires*, *Antonio Nariño*, *Puente Aranda*, *La Candelaria*, *Rafael Uribe Uribe*, *Ciudad Bolívar*, and *Sumapaz*. Most of these political-administrative units are completely urban, except *Ciudad Bolívar*, *Usme*, *Santa Fe*, *San Cristóbal*, and *Suba*, which have both urban and rural areas. *Sumapaz* is completely rural.

[4] The metropolitan area of Bogotá is not legally constituted, but its relationship with other municipalities (23) is a sort of *de facto* metropolitan area. By 2020, it is expected that the total share of population between the District and the metropolitan area will be almost 10 million inhabitants (SDP 2014).

[5] The total for the country was estimated as US$295.1 billion.

2). Urbanization has caused the loss of unique wetlands areas[6] as well as rich soils to grow food in, and allowed high-impact activities in marginalized and rural areas like the "*Doña Juana*" municipal landfill or quarrying (mining) activities in the *Tunjuelo* river's watershed in south Bogotá.[7] Similarly, urban development for low-income housing has usually been located on the periphery of the city or outside the boundaries designated by the municipal administration: on stream banks, wetlands and hilly areas that are vulnerable to disasters such as floods or landslides. This is how socio-ecological inequality and urbanization drive each other in Bogotá.
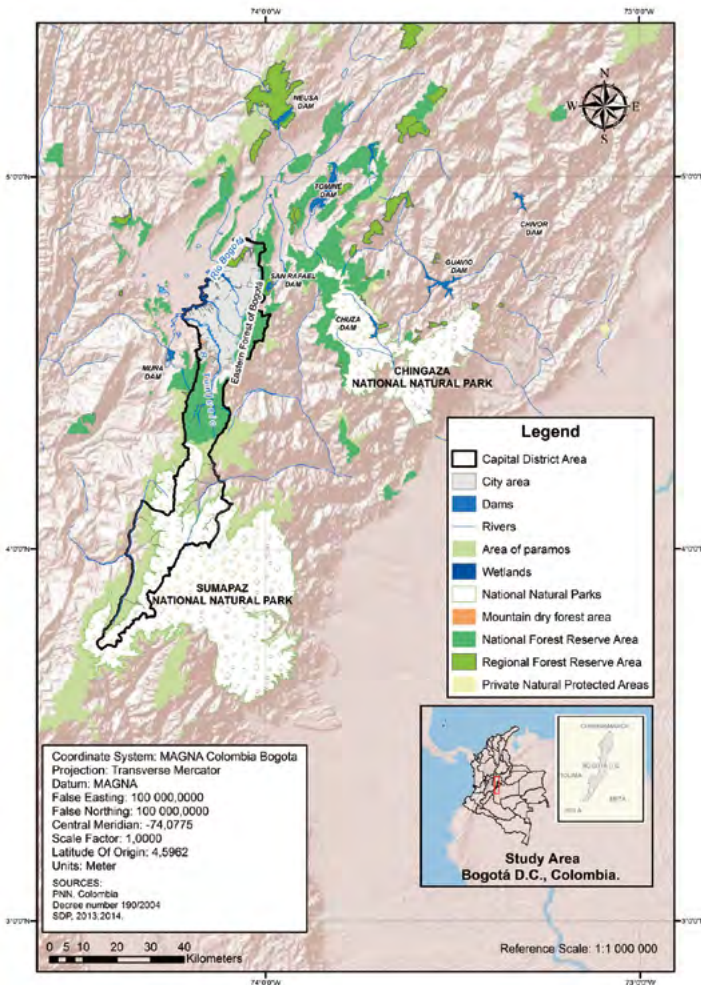
Figure 1: Sabana de Bogotá high plateau and some elements of the MES. Source: the author.

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[6] Bogotá-region is a land of water. Ecological transformation of pre-existing wetland areas it had reduced them from 50,000 hectares in 1938 to only 500 in 2005 (Gallini 2014 *et al*.). This had direct implications of biodiversity loss, for instance, of endemic bird species (Calvachi 2003).

[7] These conflicts are reported in the *Environmental Justice Atlas*: https://ejatlas.org/
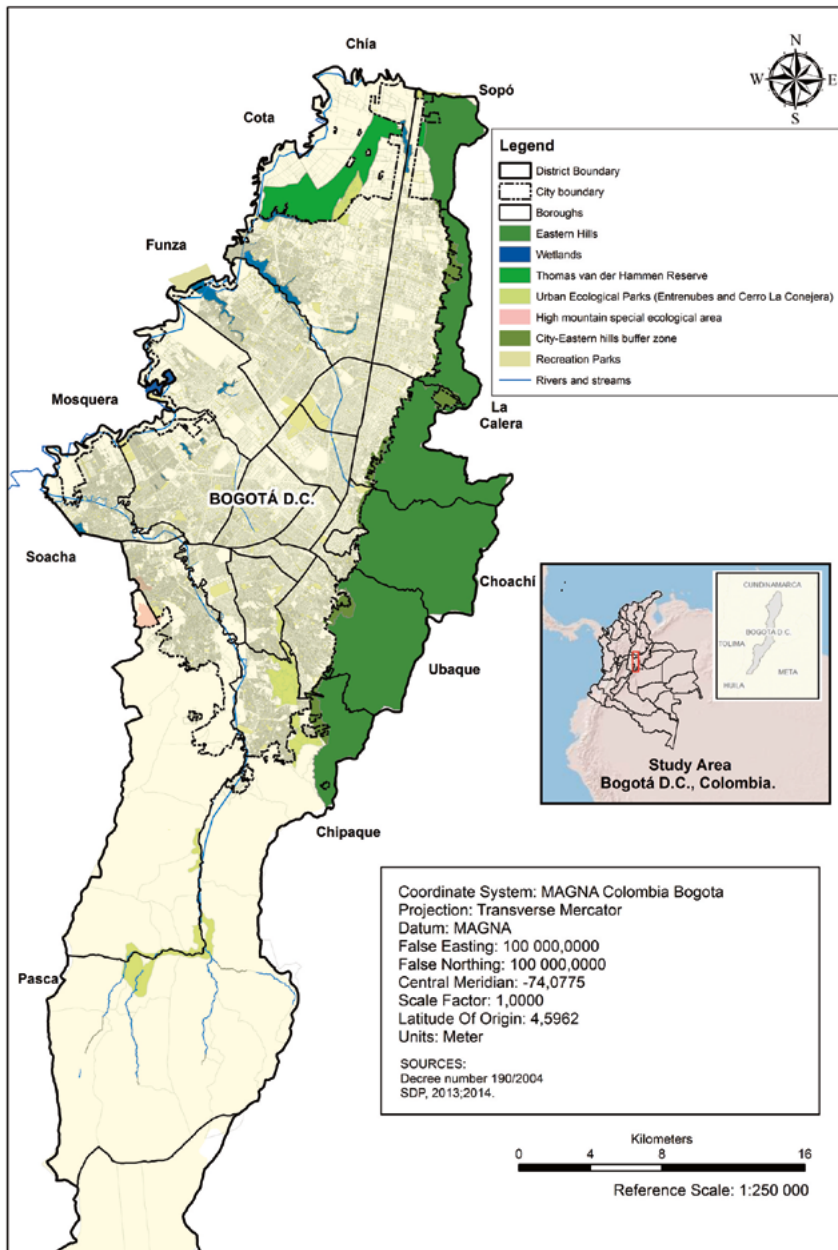
Figure 2. City of Bogotá and some elements of the MES. Map: the author.

4. Methodology and research sources

The research conducted in Bogotá covers a time frame from the late 1980s to the present. My research approach considers Bogotá as a case study of multiple environmental motivations, conflicts, and stakeholders driving urban nature advocacy at the metropolitan scale. My research is mainly based on the review and content analysis of governmental and policy documents, reports, scholarly literature, and some documents produced by social and civic organizations. Most of the material was collected during my previous professional experience in Bogotá working as a practitioner and consultant in several policy-making and research roles among different institutions, including ongoing engagement with local key organizations. Additional documentation was collected during two field trips (April 2017 and November 2017-January 2018), during which I also conducted unstructured interviews with two social leaders and three practitioners, and one group interview with five members of a local NGO.[8] I also traced the social mobilization of environmental issues using the Social Struggle Data Base produced by the Center for Research and Popular Education in Colombia (CINEP). The research materials also include participatory observations and field notes.

5. Findings: people, urban planning, and nature

From housing struggles to a city-region environmental movement

Since the late 1980s a set of social movement organizations in Bogotá has been promoting urban nature advocacy, emerging as an environmental movement (*movimiento ambientalista*). They have been building a territorial attachment with some elements of urban nature through the re-appropriation of regulations, and technical-scientific concepts, such as the MES. As noted in the introduction, the term used for this sort of attachment is "environmental territories" (*territorios ambientales*) (Julio and Hernández 2014). Upon the re-appropriation of the MES concept, people involved in urban nature advocacy have managed to achieve a level of consensus and identity and have boosted a participatory process, using their situated knowledge to intervene in urban planning debates. Table 1 summarizes the environmental concerns related to the main stakeholders in Bogotá.[9]

This process of political mobilization around environmental issues has been a way to contest unequal urbanization that destroys the urban commons through urban development in protected areas and the unequal allocation of high impact activities, such as quarrying or landfills. But, how did this environmentalization of social mobilization take place?

It is noteworthy that although a number of settlements and communities overlapped with, or were located near, ecosystems now framed under the MES, most of their claims about the right to the city between the late 1970s and late 1980s were not presented in terms of rights to 'nature.' However, with hindsight, those claims would have been totally pertinent in an environmental struggle. For instance the housing supply failed to keep up with the burgeoning demand generated by increasing urban growth and densification. The housing shortage was both quantitative and qualitative, and became a serious problem for urban planning policy (Hataya 1996). The mode of acquisition of sites for housing was mainly through illegal occupations or acquired through informal contracts from so-called "pirate developers" (*urbanizadores pirata*). Likewise, the quality of housing suffered due to inadequate construction and unavailability of basic urban infrastructure services like water, sewerage, and electricity. Although legal regulations existed, the state was overwhelmed with increasing urbanization and the growth of informal settlements. The most critical issue was the powerful real estate agencies exercising influence over local authorities, and private interests indulging in land speculation (Jaramillo 1992). As a result, regulations became increasingly ambiguous, favoring these interests. This situation was a driving force for many urban struggles (Naranjo Botero 2014).

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[8] Due to reasons of confidentiality the names of people interviewed are not given.

[9] Certainly there have been more organizations involved which are not listed due to the research scope. In addition, some NGOs such as *Corporación ECOFONDO*, The Center for Research and Popular Education-*CINEP*, *Medio Ambiente y Desarrollo-ENDA América Latina*, and *Fundación para la Investigación, Educación y desarrollo para el Hábitat Popular-FIDHAP*, have actively supported several grassroots mobilizations.

Environmental concern or value	Main social movement organizations and NGO involved
Eastern Hills (*Cerros Orientales*) Defense	*Mesa de Cerros Orientales*, *Amigos de la Montaña*, *Fundación Cerros de Bogotá*, *Veeduría Ciudadana por los Cerros Orientales.*
Bogotá River Defense	*Somos Río Bogotá*, *Fundación al Verde Vivo.*
Urban Wetlands Defense	*Red de Humedales* (Late 1990s – Early 2000s), *Fundación Humedales Bogotá*, *Fundación Humedal La Conejera*, *Fundación Humedal Torca-Guaymaral*, *Fundación Asinus*, *Fundación Grupo de Semillas*, *Fundación Adessa.*
The *Tunjuelo* River Watershed	*Proceso Asamblea Sur*, *Mesa de Concertación Interlocal Usme-Ciudad Bolívar*, *Territorio Sur*, *Parque Entrenubes.*
The *Fucha* river	*Corporación Vida del Río Fucha CORVIF.*
The *Salitre* river	*Amigos del Salitre-AMISALITRE.*
Farming and Peasant Organizations	*Mesa de Concertación Local de Usme*, *Sindicato Agrario*, *Fensuagro*, *Sintrapaz*, *Corpoagrofusunga*, *PROCAMSU*, *ASOSUMAPAZ Horizonte Verde.*
Regional Forest Reserve of North Bogotá (Since 2011: the Urban Forest Reserve *Thomas van der Hammen*)	*Veeduría Ciudadana por la Reserva Thomas van der Hammen*, *Sembradores de la Reserva Thomas van der Hammen.*
Cerro Seco Defense, at south Bogotá.	*Mesa Ambiental de Ciudad Bolívar*, *Colectivo "No le Saque la Piedra a la Montaña.*

Table 1: Environmental concerns related to main stakeholders in Bogotá. Source: Julio and Hernandez 2014; EAAB-CI 2003; SDP, SDH, and Patrimonio Natural 2015; and unpublished sources.

In the second half of the 1980s, the Colombian government, in alliance with the United Nations Development Agency, promoted projects for state decentralization functions in urban planning such as "Integrated Actions in Popular Urban Settlements" in Bogotá. The aim was to propose administrative mechanisms of action that would make it possible to overcome alarming levels of underdevelopment of housing in boroughs[10] such as *Ciudad Bolívar*, *Santa Fe*, *San Cristóbal* and *Suba*. This opened a space for mainstreaming urgent needs of communities, and led to the formulation of Local Emergency Plans (PEZ)[11], a participatory exercise which allowed communities to organize their needs through local workshops. But the PEZ was not a state initiative; rather, it was a materialization of an idea promoted at the National Communal Congress held in the city of Pasto, in 1985. The original intention was to confront state programs which claimed to apply "participatory planning", because local communities saw those programs as a means of political co-optation. Through the PEZ they actually were seeking to negotiate with government agencies without any other mediation. This experience became a blueprint in participatory urban planning in Bogotá (Corte and González Posso 1989).

Beside needs such as water supply and sewerage, public transport, education and human security, in the case of *Ciudad Bolívar* the PEZ included a claim about making improvements in "recreation, arts, and ecology." According to practitioners interviewed who worked with social organizations in the 1980s, environmental issues were already in discussion by then. Indeed, environmental awareness had also entered discussions outside academic circles. For instance, the First National Congress of Ecologists "*Econgente*", held in the city of Pereira, in 1983, was a blueprint for the formal establishment of the "Colombian environmental movement"

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[10] Before 1992 such areas were known as *zonas*.

[11] Except for MES or POT, since here I favored the use of the acronyms used in Spanish.

(see Tobasura Acuña 2007).[12] However, environmental issues only got on the governmental agendas in the following decade (Uribe 1998). Meanwhile, Bogotá was suffering deteriorating urban environmental conditions, such as lack of green areas, landfills in the middle of suburbs (*Gibraltar* and *El Cortijo*), and a worrying situation with the dramatic pollution of the Bogotá River which flooded the poorest settlements. At the end of the twentieth century, researchers including biologists and ecologists began to turn their gaze to their own neighborhoods in the city, away from the tropical forests beaten up by the armed conflict (c.f. Ruiz 2008); likewise, intellectuals and elites were promoting environmental awareness through new ways in the public sphere. Moreover, three international and national milestones boosted environmental discourse at the local level and, above all, reaffirmed the claims for social justice: first, the publication of *Our common future* (WCED 1987) had an enormous impact on local scholars and NGOs; second, ecological principles were established at the National Constitution of 1991 and; third, the Earth Summit was held in Rio de Janeiro in 1992. As one interviewee said:

> From daily life and need, the environment [discourse] enriched the effort <u>to pursue a dignified life</u>. In that sense, that is why many people and groups saw in the city [referring to urban ecosystems] ... fragments of the city, fragile, spaces to recover (…). (Practitioner 1. Emphasis by the author).

After the enactment of a new National Constitution in 1991, the release of Law 1421 in 1993 established the Organic Statute (*Estatuto Orgánico*) re-organizing Bogotá's political-administrative structure and tax regime (República de Colombia 1993a). This allowed authorities to legalize dozens of neighborhoods, expand basic urban services, and improve public space. At this point, it is important to mention two prominent civic action structures in Bogotá: the Communal Action Boards (JAC) and the Local Management Boards (JAL). JAC were institutionalized in the late 1950s and were defined almost as the only channel of communication between communities and state entities, but becoming the locus of patronage (Gutiérrez 1998). Later, after the release of the Law 1421, the JAL were established at the level of boroughs with the premise of decentralizing power and promoting participatory democracy. However, the result was quite the opposite. Although most of basic urban services were resolved by state intervention, in the last few decades both the JAC and JAL have lost their influence in mobilizing people and promoting participation in local politics, because of co-optation by particular political interests. This meant that social movements in Bogotá were no longer exclusively organized by specific neighborhoods or under traditional democratic institutions alone, as they used to be.

In some of the most segregated boroughs, such as *Ciudad Bolívar* and *San Cristóbal*, most social movement organizations have been engaged in contentious collective actions to create new spaces for political participation as a means to contest both state policies of repression over marginalized and stigmatized communities, and the eruption of paramilitarism, drug-trafficking and crime in their neighborhoods (Peña 2014; Zibechi 2008). Such contentious collective actions were reflected in the emergence of myriad resources and structures all driven by communities, youth groups, urban dwellers, and farmers of Bogotá's rural areas, networks in daily life[13] (i.e. friends, families, neighborhoods), networks of organizations, and local workshops (Julio and Hernández 2014; Torres Carrillo 2002). Organized groups started to work under various common cultural, religious, and environmental interests. Moreover, technical and financial support coming from different sources, not only from state agencies but also from NGOs or international cooperation, was an important driver force behind political mobilization.

After the Rio Summit in 1992, and the enactment of a new National Constitution in 1991, Colombia strengthened the implementation of environmental institutions and regulations. Among these were the endorsement of the Convention on Biological Diversity, the Ramsar Convention, some commitments about natural risks and disasters (c.f. Brand and Thomas 2005), and the enactment of Law 99 in 1993 (República de

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[12] This movement has been moving constantly back and forth from conservationism, environmental management, and eco-efficiency to environmental justice and popular environmentalism; likewise, it has embraced scholars, intellectuals, practitioners, and grassroots members in rural and urban areas.

[13] The leadership of women in these networks has been fundamental.

Colombia 1993b), which set up an institutional arrangement called the National Environmental System (SINA). This allowed the creation of the Ministry of the Environment as a lead authority to guide the rules for different levels of administration and action due to state decentralization. For instance, environmental authorities were established for the main cities and metropolitan areas. In Bogotá, the Municipal Environmental Office (first a Technical Department: (*DAMA*), later a Municipal Office (*Secretaría de Ambiente*) was established as the environmental authority in the urban area of Bogotá, whereas the authority in rural areas was a regional autonomous office, *CAR-Cundinamarca*.

In terms of participatory environmental democracy, legal tools and other mechanisms were also established. For instance, between 1993-1994 there was an exercise engaging several stakeholders in proposing "Environmental Local Planning" agendas (*Agendas Locales Ambientales*) for each borough. These agendas promoted participatory and concrete environmental programs and actions, as a part of a big program of environmental education and participation called "*Viva Bogotá Viva*" commissioned by the Municipal Administration. However, the existence of this institutional setting did not ensure an improvement of environmental management and policy (Quimbayo-Ruiz 2016). Social movements and activists have complained about institutionalized means of participation, because those means have become a formality manipulated by certain political interests (Londoño 2008). Nonetheless, people and organizations have had to mobilize using the available mechanisms established by the National Constitution of 1991, including the right to making popular claims (Law 472) (República de Colombia 1998).

In the debates over environmental concerns, land-use and urban planning, including watershed management have been crucial topics (i.e. for the Bogotá River), and in this regard, the concept of MES has taken an important place. Existing legal regulations are rather ambiguous, because ecosystem considerations in land-use regulations have been treated as an obstacle for land development (c.f. Rubiano Galvis and Esteban García 2016). In Bogotá urban planning debates have formed one of the most important arenas of action for social movements regarding these matters. Foremost, the formulation of the POT (District Decree 619-2000) based on the National Law 388 of 1997, and a later update (District Decree 190-2004) were approved without having any reform ever since and with no regard to other proposals, and this became a highly debated topic (Ardila 2003; Confluencia Social y Académica 2009; Alcaldía Mayor de Bogotá 2013). In addition, the District Agreement 12 of 1994 established a consultancy body for urban planning - the District Territorial Planning Council, or CTPD - the members of which are representatives from civil society (Concejo de Bogotá 1994).

Public debates around the POT embraced grassroots movements, practitioners, and scholars in the context of several hearings and citizens meetings convened either by the Municipality through its offices or by the environmental movement organizations. Elements of the MES such as hills, wetlands, rivers and streams, have been the main components in these urban planning debates, and social movement organizations have pushed authorities to take into consideration the value of urban nature, mobilizing environmental concerns at the city-region level. In so doing, situated knowledge from people at the *territorios ambientales* has interacted with scientific and technical expertise in urban ecology and law, coming from engaged practitioners and scholars.

In fact, environmental mobilization around protection of elements of the MES, such as rivers and their watersheds, has been remarkable. The case of the *Tunjuelo* watershed, in south Bogotá, deserves special attention. The *Tunjuelo* is the largest of four watersheds in the District with a total human population approaching two million (around 25% of city's total population). The socio-ecological imbalances of the urban-rural continuum that characterize the District's southern area are clear in this watershed (Osorio 2007). Such imbalances are due to socio-spatial segregation, insufficient urban planning, and disastrous flooding in the middle and lower river basin (Sánchez 2012). There is also high-impact activities such as quarrying for the building sector (Fierro 2013), or the municipal landfill "*Doña Juana*". Because of such imbalances, important grassroots mobilizations have emerged in the watershed, including associations of farming communities from the rural-urban fringe (Gómez *et al*. 2016), and local protected areas, such as *Entrenubes* park, have been established (Quimbayo Ruiz 2012).

Wetlands are other important elements of the MES, with biodiversity values persisting despite the negative effects of urbanization (Calvachi 2003). Springing from neighborhoods close to wetlands,

environmental movements have been very active since the 1990s in the conservation of these spaces against urban development. They mobilized politically through social and legal advocacy, later being supported by other concerned stakeholders such as biologists and lawyers (c.f. Remolina 2015). Although wetlands were recognized by local authorities in the mid-1990s, it was not until 2004 via the POT, and later in 2006 under the formulation of a specific public policy (Decree 624 2007), that they became legally protected as a result of social mobilization. This policy-making process has been considered one of the most important achievements of local environmental advocacy, mainly by the emergence of a network of social mobilizations —*Red de Humedales*— (Palacio *et al*. 2003) whose two focal points were *La Conejera* and *Córdoba* wetlands, in *Suba*, northwest Bogotá. In 2018, 11 of these urban wetlands were designated by the Colombian state as RAMSAR wetlands.

Finally, one of the most long-lived environmental struggles has developed around the ambiguous status that the National Protected Forest Reserve of the *Cerros Orientales* has had since its creation in 1976. The protection measures of the Reserve became embroiled in legal disputes (Rojas-Pinilla 2017), as well as conflicts involving people from neighborhoods dating from before the establishment of the Reserve, some which faced eviction in the name of disaster risk reduction (Allen *et al*. 2015). Much of this housing was built by illegal developers, but some of these communities have since established *Ecobarrios* as a means to claim their right to live in the hills area in a more sustainable way (Ome 2017). In 2013 a National Court recognized the reality of the area and committed to reconciling conservation with social problems among stakeholders. However, the struggle for the *Cerros* continues to create tensions between local and regional authorities, real estate developers and the local inhabitants. In 2016, a Citizen's Observatory *(Veeduría)* was established to maintain social accountability.

In sum, the stakeholders involved in urban nature advocacy in Bogotá include a wide array of social groups from diverse socio-economic conditions and backgrounds (see Table 1 above). They engage in a variety of means of actions (see Table 2) where everyday practices and knowledge informs urban planning initiatives aimed at protecting nature. The organizations reflect the complex geographies of the city-region, as they are from both urban and rural areas (around 75% of total land of the municipality) in Bogotá, and involve farmers, peasant organizations, and recognized indigenous groups such as the *Muisca* people.

Advocacy of nature institutionalized

The pathway taken by Bogotá's environmental movement has been marked by its relationship to the state. During Mayor Enrique Peñalosa's first administration (1998-2000), heated debates took place between environmental movement organizations and state authorities around urban planning and the protection of areas with ecological interest such as wetlands (Serrano 2010). With backing from other levels of government (i.e. regional and national), the protection of such ecological areas through political mobilization and legal advocacy was achieved (see Table 2). This stopped, at least momentarily, development intentions coming from Peñalosa's administration. Since the 2000s, an important number of activists from environmental mobilizations have held positions in public offices in recognition of their advocacy work. This also might be a result of local elections which brought political parties into the Municipal Government that favor social concerns.[14] In addition, some grassroots organizations established affiliations with these parties, gaining political influence. As a result, social activists and organizations were not only lobbying the City Council of Bogotá but also reaching positions there as councillors (*concejales*), or as civic dignitaries (*ediles*). Other representatives of grassroots organizations became staff or obtained leading administrative roles in government institutions. During the period 2004–2015, official documents concerning participatory action on environmental concerns reported steps towards enhancing actions and policies between institutions and communities (Figure 3).

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[14] Two of the three administrations in that term, Mayor Luis E. Garzón, and Mayor Samuel Moreno. Their mandate heading into local elections was under a left coalition *Polo Democrático Alternativo*-PDA. Moreno's administration was involved in a big corruption scheme to carry out urban infrastructure projects. The *Carrusel de la Contratación* involved politicians from across the political spectrum, and private contractors. Moreno was sentenced in 2016 to 18 years in prison for his direct involvement in the case. Gustavo Petro, who used to be a member of PDA, won the elections in 2011 with his own political party *Progresistas*, and after denouncing the corruption scheme.

Goals and actions	Instruments, tools, activities
Participation to reach informed consent	Petitions of right (*Derecho de petición*), newsletters, etc.
Participation in urban planning and environmental policies, and regulation debates	Popular legal advocacy initiative Public Hearings Participation in discussions about specific urban planning and environmental policies instruments (i.e. POT, City Administration Plans, district policies)
Political participation	Popular consultancy Citizen oversight and accountability Open councils
Participation in administrative decision-making processes	Consultancy boards Prior consultancy actions Environmental administration intervention Participation in environmental authorities board of directors meetings
Participation in justice administration	Action of Trusteeship (*Acción de tutela*) Popular claim (*Acción popular*) Compliance action (*Acción de cumplimiento*) Penalty actions
Other activities	Eco-villages (*Ecobarrios*) Communitarian ecological restoration Education and awareness-building Urban gardening and farming Walks and rallies in urban ecosystems Fair trade, eco-business, among others, eco-tourism and/or environmental consultancy

Table 2: Means of action of environmental organizations in Bogotá. Original source: Julio and Hernandez 2014. Modified by the author.

A similar level of engagement was also seen in the Municipal Water Company (*Empresa de Acueducto*), in the management of the city's water system, including wetlands, rivers, and streams. The explicit support of environmental issues during Mayor Gustavo Petro's administration (2012-2015) is noteworthy. As Zeiderman (2016a) has described, Petro and his staff found in the issue of climate change a valid vehicle to promote progressive urban politics and social justice. This allowed the administration to redesign governance institutions around risk management and climate change mitigation, engaging communities and organizations in the implementation of a range of adaptation initiatives, such as watershed management plans, early warning systems, and participatory budgeting workshops. The proposal to revise the POT to include ecosystem and climate change criteria was the most remembered of such initiatives. However, Petro's administration faced strong opposition:

…[from those] who saw Bogotá's future through the lens of capital investment, and his [Petro's] revised master plan [the POT] was a lightning rod for criticism. (Zeiderman 2016a: 390)

Figure 3: Documents reporting joint work between government institutions and civic organizations. Scans: the author.

Despite advances across urban planning policies relating to urban nature, there are still conflicts around protected areas management, including failed interventions and administrative discontinuities, and recent retreats in public policy for wetland protection. For instance, the current administration of Mayor Enrique Peñalosa (his second term: 2016-2019), has announced large-scale urban development projects overlapping with important elements of the MES; among others, the Urban Forest Reserve *Thomas van der Hammen* (henceforth: TvdH). This reserve in northern Bogotá seeks to consolidate 1,395 hectares for public uses such as ecological restoration, education, and recreation. Interests coming from the real-state sector, with respective lobbying in state agencies, have completely blocked the full materialization of such a project, because they are instead interested in developing the area (see Ardila 2003; Rubiano Galvis and Esteban García 2016). The opposition to development by social organizations has been ignored, in spite of the previous administration having been active in consolidating the Reserve. Social organizations have been spreading technical and legal information through social media platforms, such as Twitter and Facebook, amongst many others, as a way to offer key elements for the public debate, and to counteract official acts coming from the municipal administration. This has helped, for example, to reinforce legal advocacy against state institutions made by citizen oversight groups who defend the TvdH reserve. The situation with the TvdH reserve resonates with that of many other climate change policies mobilized by the environmental movement, while Peñalosa's administration is drafting a new POT for the next 12 years disregarding several environmental issues.

The successive administrations and mayors of Bogotá from the 1990s to the present day, regardless of political affiliation, have distinguished themselves (although with different approaches) by promoting urban transformations in a context of economic globalization, and the influence of national and transnational capital flows, including large investments in marginalized areas. This urban political process has been embedded in a volatile political landscape (see Gilbert 2015) marked by corruption and the lack of a long-term shared vision enduring from one mayor and administration to another. The City Council has also been criticized by civil society, because representatives usually favor particular interests and are erratic in their promotion of progressive policies. Political processes in Bogotá are characterized by a technocratic emphasis, especially in the late 1990s and early 2000s, better in terms of social justice in the 2012-2015 period. Thus urban and environmental policies in recent years form a heterogeneous assemblage and an unstable combination of ideas and techniques of local governance, and would not have been possible without the everyday agency of people (c.f. Pérez Fernández 2010; Pérez 2016; Suárez 2017; Zeiderman 2016a).

Contradictions in everyday practices

Common concerns emerged in interviews conducted with participants in the environmental movement. It seems that the participatory spaces promoted by government institutions were designed with the premise of guaranteeing diversity in participation, but without full success:

> (…) the thing is that there are a lot of complaints, raised by the same people who took part, regarding how these policies have not been implemented as they should have been. [For instance], let's say there is a policy which on paper is very good, and it has many positive things, but in practice they have not been able to implement it (…). (Local leader 1).

Likewise, some social leaders and activists noted disengagement among the people involved, who only get together for specific events such as a demonstration, or a tree-planting working bee. There is a common complaint among them that participatory mechanisms and institutionalization have actually helped to fragment social mobilization.

> Listen, there are no such environmental movement organizations anymore, they are persons. When we met *La Conejera*, there were leaders; Petro [former mayor] arrived and they vanished. And they were only one person, not an organization. For example, one of the leaders says to represent an organization, but is only that person. (Local leader 2)

It also seems that contradictions in the *ethos* of being an activist (*ambientalista*) and the lack of persistence of the movement are conditioned by material or financial resource shortcomings in everyday life:

> (…) This is an issue that we have pointed out many times, which is basically that to be an activist does not feed us [laughs], then there is a lot of resignation. (…) We have to fall into the institutions or do another job to survive...It's the same feeling, even for those who usually criticize the very institutions but end up working for them. (Local leader 1. Emphasis by the author).

This could explain why other social leaders and activists decided to adopt a more entrepreneurial approach, creating NGOs to do consultancies or offering services such as ecotourism, environmental education, and bird watching (Table 1). Moreover, some participants pointed out in a group interview that there were individual cases of people who were accused of benefitting personally from doing politics with government agencies, and thus "betraying" the activist movement. Another feature expressed was the kind of experience lived by some individuals when they worked in governmental offices or agencies. No matter if they were a social worker or a

head officer, even with enough political will at the forefront of decision-making, people faced tough bureaucratic mechanisms frequently restricting or distorting the application of policies (c.f. Pérez 2016).

On the other hand, there seems to have been little social impact in terms of mobilization of the environmental movement in Bogotá, according to the Social Struggle Data Base produced by CINEP. Out of 2,451 events observed between 1990 and 2014 in Colombia, only 43 (1.75%) (and 29 in Bogotá, 1.18%) corresponded to actions (i.e. mobilizations, protests, demonstrations or strikes) claimed by civil society and explicitly related with environmental motivations such as pollution and impact on natural resources. In fact, only seven (0.28%) of those actions were events promoted by social movement organizations certainly recognized as environmental activists. Other motivations claimed by social movement organizations in Bogotá that could be related with environmental issues as well, such as housing, water supply, sewerage, waste management, impacts of megaprojects, land use conflicts, natural risks and disasters, and human and labour rights, raise the number to 61 (2.48%).

These numbers began to increase in recent years. During the National Agrarian Strike (*Paro Nacional Agrario*) in 2013, for instance, it was worth noting the importance of cities like Bogotá in welcoming a significant number of demonstrations against the recent opening of extractive agricultural or mining-energy activities across the country (CINEP 2014). But environmental conflicts in Bogotá region were not reported as much, although at the national level environmental conflicts have recently increased (Pérez-Rincón 2015; Pérez-Rincón *et al.* 2018). Finally, the records from CINEP corroborate claims by interviewees about the peaceful character of the movement, because most of these events were marches and mobilizations. Nevertheless, some individuals and organizations suffered verbal and physical violence, even with fatal consequences. Even though in Bogotá violence rates have decreased noticeably in the recent years, historically, Colombia is still one of the most dangerous places to be a social activist, and, even more so for those involved in environmental conflicts.[15]

Stepping back from the CINEP records, during the last year (2017–2018) environmental conflicts concerning urban nature in Bogotá have raised political tensions. Peñalosa's administration and several groups of citizens are struggling over not only the TvdH reserve, but other issues related to unequal urbanization and the urban commons in Bogotá-region as well. For instance, there is a movement called "*No le saque la piedra a la montaña*" ("Don't enrage the mountain") against illegal quarrying activities for building materials in the southern hills in *Ciudad Bolívar*. Young activists are insisting on the right to live in a worthy landscape, in a marginalized area, through the promotion of a protected area called *Cerro Seco*. However, this social movement organization has not received the same visibility as its counterpart on the north of the city (TvdH), which has more resources, and allies among certain intellectuals. Even so, to gain visibility people in *Ciudad Bolívar* have begun to refer to *Cerro Seco* as "*la van der Hammen del sur*" ("the van der Hammen reserve of the south").

6. Concluding remarks

Environmental awareness in Bogotá has its most important roots among the working class and grassroots, backstopped by intellectuals, experts, and practitioners. Struggles around basic urban services are environmental struggles. Colombian social movements reflect a complex process of pursuing the democratization of social and political mobilization (Archila 2006; Velasco 2014), and the idea of a "long-standing" democratic system and the rule of law have been called into question by systemic corruption by the State, a long armed political conflict, and the persistence of paramilitarism, drug-trafficking, and crime. Such a setting has constrained democratization, as the CINEP's database records suggest. However, the main role of Bogotá's environmental movement has been to keep alive environmental concerns within local urban planning agendas and debates.

People and organizations from social movements have mobilized concepts such as the MES to show how administrative or political boundaries are effectively useless in addressing concrete socio-ecological inequalities. Situated knowledge exists in the struggle to address socio-ecological inequalities throughout urban-rural continuums and it is included in efforts to establish urban commons, regardless of specific political-

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[15] Recently, Global Witness has been tracking this horrific trend: https://goo.gl/keudKf (Last accessed 31 January 2018).

administrative divisions. But, paradoxically, social movements have also contested the scattered and weak implementation of regulatory measures by using available legal tools provided by the institutionalization of environmental concerns in law. More recently, the use of social media has also facilitated the formalization of legal and institutional arrangements. This is how situated knowledge intertwines with normative and technical-scientific concepts, strengthening social struggles. Power is not only legitimated by hegemonic expert knowledge represented by state institutions and legislation. Rather, the legitimacy of knowledge and law is co-created by communities confronting the institutions that represent state power.

Situated knowledge practices are among the main driving forces in negotiating change in most political struggles (Tilly 1999), something that is very important to take into account in ongoing environmental struggles in Latin America. Socio-economic circumstances, inequalities, and power relations are shaping social movement organizations action at the everyday level. This article shows that there is a myriad of social movement organizations with different interests nuanced by class, gender, or privileged positions. More research is needed to understand how situated knowledge intertwines with normative and technical-scientific concepts to shape the everyday dynamics of each one of the environmental conflicts mentioned in this article. Also, while the focus here is on urban nature, many related environmental conflicts in Bogotá must be also examined (i.e. air pollution, waste management).

Austin Zeiderman's work in Bogotá (2016a, b) has already shown how environmental issues such as climate change imperatives can offer lessons for current urban debates. This article has shown how situated sustainable narratives are embodied in mechanisms such as the MES which, at the same time, promote debates over who has the right to the city. Bogotá, like other urban areas, experiences increasing climate change vulnerability (IDEAM 2017), and environmental concerns are today under daily scrutiny in the public sphere, especially among younger advocates. As Bulkeley *et al*. (2013, 2014) argue, it is necessary to keep in mind that urban climate change issues must be addressed differently in particular geographies, with the aim of avoiding misleading conceptual generalizations or totalizing narratives (i.e. "green cities"). Social movements in Bogotá have had the opportunity to be participants but not always decision-makers, in the construction of public policies, whereas urban planning is still dominated by experts (Beuf 2016) and crucial decisions are still taken by the few (Gallini 2016). Nevertheless, among such organizations there lies a process of social innovation for urban nature advocacy through individual and collective actions - political mobilization that addresses the question of *for whom* urban space should be. Maintaining the struggle to protect urban nature is still a legitimate vehicle to overcome urban injustices.

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ARTICLE II

Quimbayo Ruiz GA (2020) Territory, sustainability, and beyond: Latin American urbanization through a political ecology. *Environment and Planning E: Nature and Space* 3(3): 786–809.
https://doi.org/10.1177%2F2514848619887933
(First online November 13, 2019)

Article

Territory, sustainability, and beyond: Latin American urbanization through a political ecology

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Abstract
In this article, I identify how territory is a useful concept to explore the political ecologies of urbanization. In the Latin America region, territory is a key concept to explore urban and rural connections between (neo)extractivism, violence, and dispossession, with socio-ecological transformations in the configuration of urban spatialities. Following recent calls to re-locate both urban theory and political ecology beyond the Anglophone debate, the article proposes a dialogue between the Latin American theorization on territory and the political ecology of urbanization. Based on an empirical analysis of urbanization in Bogotá, Colombia, the article also discusses implications for urban justice with respect to territory and sustainability. Finally, the article offers some remarks to further the research agenda on the political ecology of urbanization with a focus on territory.

Introduction

The Latin America and the Caribbean region (henceforth: LAC)[1] is one of the most urbanized regions in the world (UN-Habitat, 2016). Among the environmental struggles occurring in the region, territory has been a key socio-spatial concept which has been mobilized to claim land rights and to oppose dispossession. However, environmental struggles in urbanization processes are just beginning to be explored by researchers. In recent debates on the reconfiguration of the "commodity boom" (Svampa, 2012, 2019) and its connection with current discussions on democracy (Mezzadra and Gago, 2017), the political ecologies of

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urbanization need of more attention. The challenges facing sustainability (including climate change) and urbanization are not a new issue in political mobilization in the LAC region (De Castro et al., 2015), and despite initial efforts (cf. Quimbayo Ruiz and Vásquez Rodríguez, 2016), a sufficient number of critical analyses and research are still missing.

In this article, I identify how territory is a useful concept to explore the political ecologies of urbanization, where concerns such as (neo)extractivism, dispossession, violence, and socio-ecological transformations, exist in relation to urban spatialities. I propose a dialogue between urban political ecology and the Latin American theorization on the territory, to engage with current debates on climate change and urban sustainability, which is still so much anchored in Western-Europe and North America. As cities across the world have been called to "save the planet" and urban social movements have engaged with the climate justice movement (Turhan and Armiero, 2019), it is important to recognize territorial differences and the local dynamics of the (re)territorialization of urban commons. I thus offer an empirical analysis of the concept of territory addressing uneven urbanization in Bogotá, Colombia. The struggles concerning urban commons and the territory in Bogotá have already been present in land-use conflicts and local political mobilization on environmental issues since the 1990s.

This article is a contribution to contemporary debates related to urban theory (cf. Buckley and Strauss, 2016; Oswin, 2018; Robinson and Roy, 2016; Zeiderman, 2018), urban political ecology (Loftus, 2019), environmental justice (Pulido and De Lara, 2018), urban policy (Allen et al., 2016), and the everyday urban nature (Lawhon et al., 2014). These scholarly contributions have warned about the risk of claiming theoretical universalisms regarding urban political ecologies. Also, I contribute to the growing field of the Latin American political ecologies of urbanization (Quimbayo Ruiz and Vásquez Rodríguez, 2016). I foster the idea of seeking ways to promote a dialogue between different knowledge traditions on territory and the political ecology of urbanization. I will explore different articulations of the concept of territory from European, Anglo-American, and Latin American knowledge traditions, and its relationship with the political ecology of urbanization.

The next sections of this article are as follows: First, a review of the different knowledge traditions concerning the concept of territory and its relationship with the political ecologies of urbanization is provided. In the next section, an empirical analysis drawing on my research in Bogotá is presented regarding struggles concerning commons and urban territory which have been present in land-use and urban planning conflicts. The research in Bogotá, which is the place where I born and raised, belongs to a larger research project on these conflicts. Also, this is a research subject I have engaged with in person for a decade in the case-study area through different professional experiences. I reviewed documents from state agencies, academia, and local organizations. Additionally, I used excerpts from interviews I conducted with local environmental activists in 2017–2018. Some names and places presented in this article were changed or anonymized in order to protect the person and to guarantee community privacy. In the last parts of this article, it provides a discussion toward a research agenda on territory and the political ecology of urbanization, as well as a conclusion.

The territory and the political ecology of urbanization

"Embracing" territory

Territory is a notion which is mostly seen as a spatial strategy for social control (territoriality) of land, natural resources, and human populations (cf. Moore, 2015; Sack, 1986). Similarly, territory and borders are often thought to be part of the exclusive domain of the

nation-state, and the theorizations on the territory have often analyzed bounded spaces (cf. Agnew, 2009). However, these theorizations tend to simplify complex socio-spatial processes on multiple scales (Sassen, 2006, 2014). A wave of rethinking on territory has been proposed as a dynamic process beyond the conventional sense of solid land with geophysical limits (Elden, 2010; Peters et al., 2018; Usher, 2019). This wave of rethinking is mostly based on exchanges between the Anglophone and the French schools of thought on post-structuralist and critical spatial theory (Elden, 2013; Gottmann, 1973; Raffestin, 2012), in which territory, territoriality, and de/reterritorialization are understood in a Deleuzo-Guattarian vein as assemblages of multi-scalar interrelations (Massey, 2005).

Nevertheless, European and Anglophone academic circles still dominate other theorizations on territory produced outside their epistemic bubble. It seems that most of the arguments on relational spatialities are losing the point when it comes the moment to understand differentiation in specific geographies. Spatial differentiation is present when territory and territorialization have a polysemy of meanings (Beuf, 2017). Although the polysemy of territory is not a unique feature of the LAC region (cf. Lehtinen, 2011), it is very much present due to the existence of a cultural pluriverse and difference (i.e. indigenous and Afro-latinxs). Thus, a polysemy of meanings can also be registered when space is articulated through different cultures and languages present in the region, producing multiple territories (Ulloa, 2015). For example, Western notions of territory have been widely re-appropriated in national indigenous movements, acquiring a remarkable subtleness and complexity that set it apart from its mere normative meaning in the animal territoriality sense, as well as with the senses implied in the land-rights struggles (Echeverri, 2005).

In the LAC region, there has been a long discussion on territory, which is closely engaged with social movements, but, simultaneously extended to scholarly discussions on land-use and regional planning. Based upon the Latin American social science traditions and hand in hand with grassroots movements encompassing indigenous, Afro-Latinxs, peasants, and urban dwellers, it can be said that territory means a socio-political process that reflects multiple symbolic and material appropriations of a specific place on every day by people through de/reterritorialization strategies and practices. The present article takes this theoretical elaboration which is rooted in the contributions made by authors who have influenced most of the regional discussions such as Santos (2000), Fals Borda (1996), Montañez and Delgado (1998), Echevarría Ramírez and Rincón (2000), Ulloa (2015), Reboratti (2001), Serje (2005), Herrera (2007), Porto-Gonçalves (2009), Escobar (2010), Zibechi (2012 [2008]), and Haesbaert (2013 [2004]), among many others.

In particular, Latin American, decolonial, critical thinking is one of the main common grounds for the Latin American Political Ecology (Alimonda et al., 2017), which represents a leveraged approach encouraging "cross-pollination" between different knowledge traditions to understand the political ecologies of urbanization through territory. I will summarize some important elements from these Latin American theoretical contributions on the concept of territory.

Often, territory is an unfolding of knowledge and experience of territoriality. Thus, identities and subjectivities claim the right to exercise difference and otherness in specific geographies (Escobar, 2010). This varies regarding gender and class as a part of geohistorical power relations (Ulloa, 2015). Additionally, territory can be exercised, either individually or collectively by those who inhabit and wonder about their own place in the world manifested in different territorialities (Echevarría Ramírez and Rincón, 2000). Processes of territorialization or de/reterritorialization entail the material and symbolic processes embodied through the socio-political mobilization of the territory (Porto-Gonçalves, 2009; Santos, 2000).

Although it is true that social movements and grassroots have conceptualized and mobilized territory in relation to claiming territorial resistance (Streule and Schwarz, 2019; Zibechi, 2012 [2008]), this is only one part of the story. Claims to territory are usually accompanied by struggles for the care of the territory (Ulloa, 2015). In such a way, Haesbaert (2013 [2004]) has claimed in his reading on Deleuze and Guattari's *L'Anti-Oedipe* (2005 [1987]) that spaces and landscapes become territorial assemblages where stakeholders with different land-use interests and values engage in de/reterritorialization processes concerning either dispossession of land and means of life or the political struggles to contest it.

Most of these Latin American contributions to the concept of territory have fostered the promotion of strategies and actions for sustainability and territorial management (De Castro et al., 2015). It is worth noting how the circulation of ideas on territory has developed between different systems of knowledge across the region. Moreover, an important number of Latin American scholars and practitioners on territorial issues have been influenced (or trained) by North America, Europe, or elsewhere. Some of the epistemological contributions from European and North American currents have been articulated in local contexts. It is not uncommon to find academia and grassroots movements in engagement with territorial concerns because of a wave of multiculturalism and state decentralization which emerged in many of the LAC countries in the late 1980s. This latter helped to "hybridize" Western scholarly notions on territory with situated local knowledge. For example, this "hybridization" is present all across the LAC region in land-use planning practices and regional governance policy (Montero and Chapple, 2018).

The concept of territory is very much present in public debates on land-use and land-rights issues. It deserves special attention that the notion of territory in the LAC region has also been circulating in partisan politics regardless of the political ideology, such as in official circles and NGOs. This is mostly anchored in official state multiculturalism (legitimized through national constitutions) in some of the LAC countries such as Colombia, and more recently Ecuador and Bolivia, which has been used to neutralize rights to the land for cultural minorities or historically segregated social groups (cf. Walsh, 2015). After the wave of state decentralization, spatial and land-use planning became a focus in the development of new territorial policies in most of the LAC region. This was highly influenced by the guidelines from the Council of Europe Conference of Ministers responsible for Spatial Planning in 1983 (Massiris-Cabeza, 2002). Thus, the notion of territory has also been circulating with disparate and ambivalent meanings, which have especially affected legal struggles for rights of land and nature (cf. Correia, 2019; Offen, 2003; Rawson and Mansfield, 2018).

Another critical issue in territorial struggles is territorial dispossession (deterritorialization), which produces differentiated territorialities for the most vulnerable individuals or communities. For example, this issue affects the access to land and water for peasant women victims of war and violence (Ojeda, 2016), and raises the issue of state-led dispossession (Camargo and Ojeda, 2017), structurally racialized criminalization of communities in contested urban territories (Alves, 2016), or struggles for the right to the city for vulnerable transgender communities (Ritterbusch, 2016). The notion of territory and the right to the city are starting to gain attention not only in Latin American regional debates but also beyond (Halvorsen, 2019; Streule and Schwarz, 2019). However, more exploration of how territory relates to the political ecologies of urbanization is needed.

Territorializing the political ecology of urbanization

Urban political ecology "(...) more explicitly recognizes that the material conditions that comprise urban environments are controlled, manipulated and serve the interests of the elite

at the expense of marginalized populations" (Heynen et al., 2006: 6). In light of criticisms toward the "citydism" of urban political ecology (Angelo and Wachsmuth, 2015), urbanization must be understood as a socio-ecological process that breaks away from the primacy of the historical entity known as the city. Although urbanization is also a political process of producing "urban life" (cf. Lefebvre, 1991 [1976]), morphological expressions of contemporary capitalist urbanization are also visible far beyond cities through massive undertakings transforming natural resources and landscapes with uneven development, homogeneity, and fragmentation (Arboleda, 2016).

Therefore, instead of an urban political ecology, we must think in terms of a political ecology of urbanization, which is the critical analysis of socio-ecological systems regarding urban processes (Loftus, 2019). Specifically, crucial concerns to inquire in social and environmental injustices are who have access and how to the material and energy flows which make possible urban life, and who are the most impacted from negative outcomes of urban metabolism (i.e. waste and pollution). It is about the production of urban territories (Janos, 2020) in addition to the territorialization and deterritorialization of the urban metabolism (Holmes et al., 2019).

On the other hand, socio-ecological inequalities are rising in the LAC region (Pérez, 2015; Pérez et al., 2017), and urbanization is also producing unequal geographies, reinforcing territorial imbalance due to the exploitation of natural resources and environmental commons in rural, peri-urban, and city spaces. In the research into socio-ecological inequalities in the LAC region, the mutual relationship between means of production in rural areas and the capital flows in the configuration of urban spaces is often overlooked. Thus, there is a need to recast the socio-spatial ramifications related to activities such as extractive economies as part and parcel of the contemporary global urban condition (Arboleda, 2016). For instance, projects focusing on the development of infrastructure, transportation, telecommunications or logistics, such as the initiative for the Integration of the Regional Infrastructure of South America, facilitate the production of cities at the expense of peripheral territories. In the same manner, it is important to understand how the politics of dispossession of rural lands are exercised from city centers through these sorts of development initiatives.[2]

There are contributions in the literature toward understanding the political ecologies of urbanization in the LAC region, addressing territorial issues such as the use of urban space (Álvarez, 2012; Pintos, 2017), the allocation of toxic materials in poor areas (Auyero and Swistun, 2009), or water issues (Boelens et al., 2016; Duarte-Abadía and Boelens, 2016; Holmes et al., 2019; Parra and Gitahy, 2017). Nonetheless, in terms of urban and regional sustainability concerning food, water, and energy, the estimation of the urban footprints is still an incipient area of research (Delgado, 2015).

Quimbayo Ruiz and Vásquez Rodríguez (2016) have highlighted the necessity to better understand how unequal urban socio-ecological transformations can be related to knowledge production throughout the political mobilizations present in the region. This understanding would enable the promotion of proper democratic participation in social relations between people and between people and the environment. While urban politics in the LAC region has long been related to social justice, it is equally important to document how it is being articulated through environmental imperatives such as climate change (Zeiderman, 2016a, 2016b). Therefore, the notion of territory is an opportunity to re-frame concepts such as the people's rights to the city (Lefebvre, 1968 cited in Harvey, 2012), which is a concept grounded in ongoing social uprisings elsewhere in the region set against processes of accumulation and dispossession of biodiversity, water, urban space, and housing, among other things.

Different patterns of social mobilization in support of the right to the city concept and urban commons can be seen across the region (Schiavo et al., 2017). The right to territory through different rural and urban identities and subjectivities has been emerging as a vehicle to contest dispossession. This is happening as the influence of urbanization can be also found in remote rural areas, and many of the urban systems are located in biodiversity hotspots such as tropical rainforests or high mountain ecosystems (Pauchard and Barbosa, 2013). Simultaneously, several places in the LAC region have recently been experiencing extreme events related to climate change vulnerability and risks such as floods or mudslides, impacting human settlements, crops, urban infrastructure, and so forth, costing hundreds of human lives.

Although it is true that urbanization shares common patterns across the region (Caldeira, 2017; Sedrez, 2013), there is no such a thing as a single "Latin American urban experience." It is important to recognize local particularities in existing urban morphologies and understand urbanization processes as context-specific and situated socio-spatial processes (Schwarz and Streule, 2016). Moreover, human mobilities are often overlooked in the assessment of urbanization. Historically in the LAC region, the main cities and metropolitan areas share a common pattern of migration of people coming from rural areas to city centers and towns. In each sub-region or country such migration has been driven by different socio-economic and political processes. Today there is a huge transnational forced migration across the Americas[3] related to social inequality, poverty, political conflict, and violence, all intertwined with non-human processes. A critical example regarding the restriction of mobility is related to women and feminized identities engaged with precarious national and transnational economies of care (Esguerra Muelle et al., 2018), transgender sex-workers (Ritterbusch, 2016), homeless people (Ritterbusch, 2017), or vulnerable communities caught between marginalization and urban crime (Alves, 2016). These communities are often victims of patriarchal and racist violence and territorial dispossession. The right to urban territory entails a reterritorialization to conceive more just and sustainable urban geographies.

On the other hand, in the LAC region, throughout environmental struggles the notion of territory has been a key concept which has been mobilized to address different socio-ecological inequalities and dispossession of commons. However, territorial struggles in the LAC region are often portrayed romantically and embracing essentialist accounts by some scholars. There is a need for more rigorous engagement, which requires intellectual responsibility, and a pluralistic and self-reflective commitment to socio-ecological struggles pursuing alternatives of development and capitalism (cf. Asher and Wainwright, 2018). I thus connect this premise with the need to re-locate the theory and to rethink how the urban environment is understood (cf. Robinson and Roy, 2016). To acknowledge territorial differences in this way (Ulloa, 2015) is a step toward dislocating the current urban theory (Zeiderman, 2018), and situating the political ecologies of urbanization.

Bogotá urban political ecologies: Territory and sustainability

The political ecologies of Colombian urban territories

Colombian urban geographies are embedded in one of the most important megadiverse global hotspots (Instituto Alexander von Humboldt, 2014), which is a complex geographical setting (Carrizosa, 2014) where biophysical processes are mutually intertwined with human-dominated processes nested in a cultural pluriverse (Escobar, 2018).[4] This "megadiverse" geography represents multiple territorialities which can be converged or opposing each

other. While urbanization in Colombia has been rather a recent phenomenon compared to other countries in the LAC region such as Argentina, Brazil, or Mexico, its pace of growth has been one of the fastest, yet recent growth rates are declining (cf. León and Ruíz, 2016).

In Colombia three-quarters of the population[5] live in urban centers encompassing over 1100 municipalities mainly concentrated on the country's Andean–Caribbean axis. Besides Bogotá, which has over seven million inhabitants, there are three large cities with one to three million inhabitants: Medellín, Cali, and Barranquilla; a wide group of mid-size cities (100,000–500,000 inhabitants), and rapidly growing smaller towns (<50,000 habitants) (DNP, 2015). Increasing rates of recent growth in the other national regions such as the Pacific coast, and the Amazon or Orinoco basins have been occurring and have been related to past and ongoing legal and illegal extractive economies (i.e. oil, forestry, or coca crops).

Colombian urban centers are the main engine of the national economy. According to calculations by the National Planning Department-DNP (2013), about 85% of the national gross domestic product (GDP) is generated by activities in these centers, mainly in the third sector of the economy such as retail, tourism, IT services, among others, and followed by the industrial sector. The population increase in Colombian cities has been related to the desire for state modernization and waves of immigrants (mostly internal refugees displaced by war) expelled from the countryside. The political, economic, and social attributes of urban areas in terms of access to markets and expectations of social mobility have consistently captured the interest of the population from rural areas. State policies have tended to be short-sighted and ineffective in promoting structural changes in rural development (PNUD, 2011), which is an overt geography of accumulation caused by dispossession (cf. Harvey, 2003) and state-led rural deterritorialization. Although the National Constitution acknowledges Colombia as a multicultural national territory, the development paths historically delivered by the state, and several other political stakeholders, have ignored multiple territorialities. This is just a reinforcement of the modern national state formation as a continuation of the colonial/modernity project (Quijano, 2007).

The Colombian state of law and democracy has been called into question due to systemic corruption on several levels of the state, and the eruption of paramilitarism, drug-trafficking, and crime. Colombia, unlike some other Latin American countries, has faced the longest armed and political conflicts in the Western hemisphere. Over the course of 30 years (1986–2016), almost seven million Colombians have been forced to leave their homes and towns and move to safer locations due to armed conflict and uncountable human rights violations.[6] Most of these internal refugees are peasants, indigenous or Afro-Colombians. When most of them reach the city, they still often experience urban violence (Morris, 2017; Ritterbusch, 2016), and they mostly live in marginalized areas which have had social tensions with urban populations, or have experienced double forced displacement inside the city (Howe, 2010).

Despite recent attempts toward peace and reconciliation, such as the peace accord between the Colombian state and former Revolutionary Armed Forces of Colombia (FARC), the country is still struggling to overcome the effects of decades of political violence, armed conflict, and corruption, which are rooted in land-use (re)distribution conflicts and overt social inequality. Even recent escalations of state repression intertwined with crime are currently reinforcing this historical path. This socio-political setting has generated severe impacts and spatial injustice in cities. This typically involves differential access to formal housing, public health, education, and transport, which also exacerbates social distress, insecurity, and environmental pollution. Even though Bogotá is the most important center in politics and the economy in the country, and its socio-economic development has

certainly improved compared to the beginning of the 1990s (cf. Gilbert, 2015),[7] the capital district encompasses all those elements of spatial injustice within its own territory.

The Bogotá District is composed of 20 local political-administrative units called localities. In 2018, the population in Bogotá was estimated to be over seven million (https://www.dane.gov.co) living in a total surface area of 1635 square kilometers, of which 250 square kilometers are urban, 29 square kilometers are planned for urban expansion, and 1227 square kilometers are rural (Alcaldía Mayor de Bogotá, 2004; SDP, 2017). The city of Bogotá is a mixture of landscapes, with socio-spatial segregation reflecting a stratified society. There are some high-income neighborhoods, a huge extension of settlements (*barrios*) with different socio-economic settings, and informal low-income settlements on the city outskirts. Even though there are a concentration of high-income settlements in north Bogotá, people from all income statuses, even people in illegal settlements, can share space in one locality. Such a socio-spatial mix creates a quite fragmented urban space.

Urban growth and the concentration of urban services, as well as political and financial power, has resulted in a metropolis that has not promoted socio-spatial integration at the urban region level (Thibert and Osorio, 2014). The overlapping territorialities of rural and urban (neo)extractivism and dispossession have produced this unsustainable, urbanized geography. While the process of capital accumulation, dispossession, and violence have conditioned the urbanization in many ways in Bogotá, it is important to acknowledge the action of local social mobilization on environmental issues and the right for urban territory. In the following parts of this article, some cases of the political ecologies of urbanization and the territory in Bogotá will be presented.

Bogotá and its environmental territories

In Bogotá, in local, recent history, land-use and urban planning (including watershed management) have been crucial topics which have raised environmental concerns and questions concerning the right to the urban territory. Bogotá forms part of the *Sabana de Bogotá*, a high Andean plateau (2600–3800 meters above sea level) that has been declared a national strategic ecosystem (Article 61-Law 99/1993). The *Sabana de Bogotá* ecosystem is embodied in hills, wetlands, rivers, and *páramos* (high altitude moors and wetlands) all framed under the scientific-political concept of the "Main Ecological Structure" (henceforth: MES). This concept was originally coined by Dutch-Colombian ecologist Thomas van der Hammen (1998) and was developed as a structural framework for environmental planning in the Bogotá-region. It has since been used by several Colombian environmental scientists (cf. Ándrade et al., 2013; Gallini and Castro, 2015), and it has been included in urban planning policies. In fact, in 2000, the MES was included in the Land-use Master Plan of Bogotá (*Plan de Ordenamiento Territorial*—henceforth: POT).

Although after the National Constitution of 1991 several statements to meet the social and ecological function of the property were issued, and ecological criteria were acknowledged as necessary in land-use and urban planning (for instance: The National Law 388 of 1997) (República de Colombia, 1997), regulations and participatory democracy tools have ambivalently been interpreted by concerned stakeholders and co-opted by several interests. Furthermore, this situation has allowed environmental injustices and dispossession in several places in the district, the city-region, and beyond.

Even though there are a significant number of green protected areas such as hills or urban wetlands in the city, the population in the urban fabric suffers from effective access to green spaces. It has been recently estimated (Quimbayo-Ruiz, 2016) that the effective public space per inhabitant for Bogotá is only 3.9 square meters (when the norm requires a minimum of

15.9 square meters) and access to a green public space amounts to 6.3 square meters. Similarly, citizens' satisfaction with their access to green areas varies between 28 and 48% (Bogotá Cómo Vamos, 2018). The size of the population, mainly concentrated in the most peripheral localities (especially in the south), is closely correlated with the deficit in access to green areas (the most critical: >0.5 square meters for the locality of *Bosa*). Likewise, there is a deficit of urban trees according to the standard established by the World Health Organization: one tree per person. The localities with the greatest deficit, according to this standard, coincide with historically segregated areas in the localities of *Bosa*, *Los Mártires*, and *Ciudad Bolívar*. Although there are inaccuracies in the measurements regarding the size of the localities, population, and particular environmental conditions (Calvachi, 2012), these deficit indicators coincide with relevant scientific research which highlights the necessity for an increased number of studies of the urban experience and nature in Bogotá (cf. Schopelliti et al., 2016).

Parallel to the development of a regulatory framework, nature conservation measures, including the creation of protected areas, paradoxically have ignored the social dynamics of the inhabitants and landowners, including the district's rural areas. This omission has led to conflicts between state-led action, land-use, and protection of biodiversity and water resources. In this regard, military strategy and securitization in the frame of the internal political conflict has also been deployed to justify developmentalist (and extractive) interventions in favor of the city (Peña, 2016).

Despite some progress in urban planning policies relating to urban nature, mainly because due to pressure from civic groups, there are still conflicts surrounding the management of protected areas, including failed interventions and administrative discontinuities, and recent retreats in public policy, especially concerning wetland protection and urban forest reserves. In rural areas, ambiguous ecological protection measures applied in the isolated conservation polygons have created "paper parks" (Quimbayo Ruiz et al., 2018).

About 75% of the district's area are rural lands, constituted by *páramo* ecosystems, high Andean forests, forest plantations, pastures, and agricultural crops. The main economic and productive activities in rural areas are agriculture, livestock husbandry, rural tourism, as well as social, cultural, and handicraft activities and trade. There are about 734 square kilometers of protected areas, some of them legally protected as a part of the MES, which have mostly been created to safeguard the water supply for the city. Rural Bogotá embraces farmers, small agricultural entrepreneurs, industrial flower farmers, and formally recognized indigenous communities such as the *Muiscas*, encompassing around 17,000 inhabitants (about 0.22% of the district's total population) (Secretaría de Desarrollo Económico, 2015; Secretaría Distrital de Ambiente, n.d.). Transformation of the wetlands and agricultural areas into urban developable land has been a common practice used by both illegal and legal developers. This transformation has overwhelmed urban planning due to the weakness (or complicity) of the government institutions who are responsible and has generated legal conflicts over territorial planning.

It is worth noting the situation in the urban–rural fringe in south Bogotá, which is a transition strip between the rural area and urban consolidation on the *Tunjuelo* River watershed (cf. Osorio, 2007). In contrast to the urban–rural fringes of the city, the southern border is the principal setting for agricultural settlements (Gómez et al., 2016). However, this area presents the most critical environmental conflicts in the city related to the development of urban infrastructure, extraction of sand and gravel for building materials (locally considered as a mining activity) (Fierro, 2013; Ordoñez Potes et al., 2013; Sánchez-Calderón, 2018), and the problematic development of the Bogotá-region landfill "*Doña Juana*" (Quintero, 2016). Local communities and organizations have claimed there is an

"environmental debt" for the accumulated negative impacts of these activities. Underlying reasons for these conflicts include socio-spatial segregation and a problematic set of land-use decisions.

Local administrations in Bogotá have addressed these environmental issues ambivalently while social organizations have had to adapt their accountability toward the state regarding nature in the urban territory. In public debates on the Bogotá's POT, the concept of MES has become an important issue. The formulation of the POT in 2000 was based on the National Law 388 from 1997 and later updates were approved without any reform and with no regard to other proposals. In public debates on the POT grassroots movements, practitioners and scholars have taken part in several hearings and citizens meetings convened either by state agencies or by environmental movement organizations.

Most of these environmental organizations have been creating a special territorial attachment to elements of urban nature through the re-appropriation of the MES. Elements of urban nature, such as hills, wetlands, rivers, and streams, have been the main components of a political mobilization regarding urban commons. Moreover, some of these elements have been called as "environmental territories" (Julio and Hernández, 2014). A multi-class social movement emerged from these organizations has pushed the authorities to take into consideration the value of urban nature, mobilizing environmental concerns at the city-region level. In so doing, situated knowledge from the people's organizations has interacted with scientific and technical expertise in urban ecology and law, coming from engaged practitioners and scholars (Quimbayo Ruiz, 2018). However, this movement is far from constituting a homogeneous entity. There are a myriad of social interests nuanced by class, gender, or privileged positions in these environmental territorialities.

Environmental territories and urban wetlands

"*Today a lake, tomorrow an invasion*" was the headline in the local newspaper *El Tiempo* in March 1992. The newspaper was reporting on the condition of the remaining urban wetlands on the western side of the district along the Bogotá river, due to the informal and illegal settling and development of their ecosystems. Wetlands have often been used as dumping grounds, where trucks come overnight illegally or with a certain complicity of state agencies to throw away tons of debris. This activity, for example, was the easiest way to facilitate fraudulent urban developments.

The greatest impact of urbanization in Bogotá has been seen in relation to prior wetland areas, whose surface area has been reduced from 50,000 hectares in 1938 to only 500 hectares in 2005 (Calvachi, 2003). This has had direct effects on the condition of the regional biodiversity and the loss of endemic bird species (Quimbayo-Ruiz, 2016). This ecosystem transformation is also related to the vulnerability of the city to flooding events (IDEAM, 2017). Some neighborhoods near or in the wetlands, rivers, and streams of the southern Bogotá boroughs of *Bosa* and *Kennedy* dramatically experienced major flooding at the end of 2011. Despite urban growth, the remaining wetlands are important ecosystems regulating local hydrological cycles, mitigating floods, improving air quality, and offering leisure and environmental education.

One of the most important environmental movements in the city is engaged with the conservation of these wetlands. This social mobilization has helped communities to improve their living in the city. Since the 1990s, through different strategies of collective action such as social and legal advocacy, communities have acted on behalf of the wetlands and have later been supported by engaged biologists and lawyers (Remolina, 2015). Although the wetlands were recognized by the local authorities in the mid-1990s, it was not until 2004 via

the POT, and later in 2006 under the formulation of a specific public policy that the wetlands became legally protected as a result of social mobilization (Alcaldía Mayor de Bogotá, 2007). Fourteen wetlands are currently legally acknowledged as local protected areas, and, in 2018, 11 were designated by the Colombian state as RAMSAR wetlands.[8] This policy-making process has been considered one of the most important achievements of local environmental advocacy, mainly due to the emergence of the *Red de Humedales* which is a network of social mobilizations (Quimbayo Ruiz, 2018).

Most of the wetlands in south-west Bogotá disappeared in the 1970–1980s by the urban expansion of informal settlements due to the scarcity of housing and the role of illegal developers. Carmela has been one of the main social leaders advocating for the wetlands, and without women like her and their determination, Bogotá would not have diverse urban wetlands in marginalized areas. She came to Bogotá in the early 1990s as did millions of Colombians who were displaced from the countryside. The only available places for low-income housing were usually located on the periphery of the city on stream banks or wetlands with flood risks. After going through a period of poverty, Carmela and her community got the opportunity to move to the part of the city nowadays known as *humedal* (wetland), which was then considered an unhealthy place to live: a *pichal*.[9] Several communities started to see these spaces as a hope to finally achieve their right to the city. After several struggles directly facing mayors, state authorities, officers, and criminal land-use speculators, Carmela became a well-known environmental activist. During a walk through the wetland she expressed her work-approach toward this ecosystem:

> I'm a self-proclaimed anti-unionist and I do not agree with assistencialism; that is not from me. You do not just give fish to someone, but, instead, teach them how to fish (…) When I was coming as a forced displaced person, I should have the right to get a state-subsidy with my husband and make an easy living on citizenship money, which is not from the government, the money comes from all of us (…) I could have stayed with that, but I did not (…) Then we started to look for work.

Carmela also pointed out the endorsement made by the district administration led by Enrique Peñalosa (1998–2000 and 2016–2019), who has been rather infamously known among the environmentalist movement as the "enemy" of wetlands. In an interview from 2013 conducted by the Humedales Bogotá Foundation's website, one of the most important social leaders behind the advocacy of the *Córdoba* wetland, in north Bogotá, stated: "We are the product, in some way, of Enrique Peñalosa's projects to build cycle paths, [sic] to cut down trees and not decontaminate wetlands' waters."[10] This statement is from an activist of a middle-class neighborhood, who had reacted to urban development projects led by the first Peñalosa's administration (1998–2000), which went against the wetland's values. This case in *Córdoba* helped to trigger the creation of the *Red de Humedales*, which embraced several organizations regardless of their socio-economic status, including Carmela's community in the district's south.

Carmela acknowledges Peñalosa's political will in the recuperation of the wetland compared with previous district administrations that which were supposed to be more committed toward environmental protection (e.g. Antanas Mockus or Gustavo Petro). Carmela's testimony seems not to be aligned to the common beliefs of environmentalists in Bogotá. This suggestion, however, must not be taken as a prior judgment. Instead, I highlight in Carmela's point of view that her situated practices in the care of urban nature and her community have nuances and reflect paradoxes.

Carmela's background has roots in the countryside and she suffered from extreme poverty and marginalization. She stood beside her community, led by women, to choose a path of incremental political creativity as a means of surviving in a hostile urban landscape. Carmela and her community became staff members in field for the District's Environmental Office, which is the authority in charge of the urban wetlands before the law. Besides their traditional work as activists, they started to work with state agencies supporting participatory community activities to take care of the wetlands. Some activists in Bogotá have noted disengagement among the people involved, who only get together for specific events such as a demonstration or to support a legal act. There is also a common complaint among them that participatory mechanisms and the institutionalization of environmental concerns have helped to fragment social mobilization (Quimbayo Ruiz, 2018: 539).

There are more women like Carmela working in marginal urban wetlands. Flora lives in another marginalized area with a lot of social problems, but with an important wetland with unique bird and plant species. After years of struggling on behalf of the wetland seeking useful resources to keep it in a good shape, Flora has experienced an intense contradiction of simultaneously being part of a state institution and participating in a community process. She, like many other activists, also got hired by the District's Environmental Office to carry out activities in the wetlands with both local communities and visitors. When I met Flora, I felt such an intense sentiment of contradiction. It seems that this sentiment is due to ensuring enough financial resources to keep caring for the wetland or to "make a living" for herself without losing her independence as a local activist. According to other interviews, it seems there are individual cases of people who were accused of benefitting personally from state agencies. Another issue expressed was the kind of experience when people worked with state agencies, facing contradictions in their daily work. This latter issue might be the closer to the Carmela and Flora cases.

One of the main achievements of the district's wetland policy was to establish a more democratic form of wetland management, engaging local communities, state agencies, public and private stakeholders in the process. To hire local activists and be rewarded with state support was only a part of a more complex institutional arrangement. In 2006, the participatory formulation of this public policy, several mechanisms were launched for wetland management, from exclusively state-led public efforts to wetland co-management. A District Wetland Board (*Mesa Distrital de Humedales*) was set up as the main consultancy body for decision-making for wetlands and this body was aligned with the formal district planning system.

In the *Mesa*, which has worked regularly and has engaged both old and new generations of wetland advocates, there is oversight of these ecosystems. Yet this participation space is far from achieving a full consensus or staying free of conflicts or controversies. Some tensions came to rise when a group of activists was pursuing a unitarian political position against a decision from the district administration. In late 2017, the District's Environmental Office issued a legal resolution without any discussion in the *Mesa* and without any other prior consultancy with local communities. The resolution pursued land-use change requirements for all the district wetlands, in favor of large-scale recreational uses, instead of making public use and conservation a priority. Some social organization representatives decided to start legal action against the district, while others declared a conflict of interests because at the time they were hired by a district agency. At last, support from other social organization delegates required for the legal action was resolved, but the case is still in dispute. It is quite uncertain how these kinds of new measures would affect wetlands like the ones Carmela or Flora represent.

In the territory there are still land-use conflicts surrounding the wetlands' management. These public spaces always seem to be a perfect scenario for economic profit-making, and

the city faces a highly problematic situation with land-use speculation and fraudulent land ownership due to ambiguous regulation and enforcement. Powerful real estate interests, which have a strong lobby in the state, undermine local conservation efforts. In addition, a long-delayed heavy traffic viaduct project, the *Avenida Longitudinal de Occidente*, has become one of the main threats to several wetlands. This project has not materialized yet, but there seems to be a great deal of confusion about how exactly it should be developed. In the meantime, people advocating for the wetlands have been doing their best to navigate through political uncertainty between activism and the state.

Environmental territories and urban forest reserves

Bogotá's surrounding hills are an integral part of the city-region landscape's character and hold a special territorial attachment for the *bogotanos*. The Eastern Hills (*Cerros Orientales*) represent one of the most important environmental assets of Bogotá, featuring on city postcards and embracing the history of the city and its relationship with nature (Osorio, 2008). In 1976, the National Government issued a legal frame establishing a National Protected Forest Reserve and specifying it as the eastern boundary of urbanization. However, since the declaration of the reserve, the protection measures have been either not enforced by the authorities or have become swamped in legal disputes due to ambiguous interpretations of the agreement (Rojas-Pinilla, 2017). Different social and political powers have become involved and there are tensions between local and regional authorities, real estate developers and builders, and the local inhabitants. Such tensions span from luxury housing to infrastructure developments (e.g. path trails) in the protected area.

On the other hand, the outgoing district administration of Mayor Enrique Peñalosa (2016–2019) announced large-scale urban development projects overlapping with ecological areas, such as the Thomas van der Hammen Urban Forest Reserve (henceforth: *TvdH*). The reserve seeks to consolidate 1395 hectares for public uses such as ecological restoration, education, and recreation. Interests from the real-estate sector, with respective lobbying in state agencies, have blocked the full materialization of such a project, because they are instead interested in developing the area. This dispute in northern Bogotá goes back to the early 2000s, when the same mayor was also in office (cf. Ardila 2003; Rubiano Galvis and Esteban García, 2016). The opposition to development from social organizations has been ignored. Social organizations have been spreading technical and legal information through social media platforms to raise key elements for public debate, and to counteract official acts coming from the municipal administration (Osorio Ardila, 2019; Quimbayo Ruiz, 2018).

Although the ongoing political tensions surrounding the *Cerros Orientales* and the *TvdH* reserve are key for the sake of the long-term sustainability of the city-region, other marginal spaces where urban nature also struggles to blossom have sparked less attention. Most of the surrounding hills of the city have been suffering not only from the pressure of urban development, but, foremost, the allocation of high impact activities, such as legal and illegal quarrying or the operation of landfills. These land-use conflicts are the most harmful and are concentrated in the south of the district on the urban–rural fringe of *Ciudad Bolívar* and the border with the neighboring municipality of Soacha.

In these hills, there are semi-arid and wetland ecosystems, which are currently supporting major endemic biological and characteristic species of birds and plants, some of them newly described to science. The ecosystem belongs to an Andean semi-arid ecosystem (at 2550–2900 meters above sea level) (Calvachi, 2012). In the capital district area, the

semi-arid sector is located in its south-western part extending from the low *Tunjuelo* River valley, to the south of the *Sabana de Bogotá*.

There is a movement of young social leaders who are claiming against illegal quarrying activities for building materials and speculative urban developments in the *Ciudad Bolívar*'s hills. Also, these young leaders belong to a diverse set of different locals and political organizations in the area. They are insisting on the right to live in a worthy landscape in a marginalized area, through the promotion of a long planned protected area called *Cerro Seco*. The area has a conflict because there is a plan to develop a large urban low-income housing project in parallel with the presence of a para-state which is behind local land-speculation. This area is controlled by the *terreros*, a para-military gang working for the land-speculators. The *terreros* are also connected with drug-trafficking, trade in illegal weapons, and "social cleansing." Illegal quarrying activities in the area are part of "money laundering" activities and land-speculation.

The social movement organization in *Cerro Seco* did not achieve the same visibility at the beginning of its mobilization as its counterpart on the north of the city the *TvdH* did with more resources and allies among local intellectuals. To gain visibility people began to refer to *Cerro Seco* as "the *van der Hammen* reserve of the south." In a group interview with some of the members who advocate for *Cerro Seco*, one of them claimed: "(...) well, for us, the name is less meaningful, the meaningful thing is we are here defending it [*Cerro Seco*]."

Concerning the general environmental activism in Bogotá, in the same interview, there was a revealing reflection on this movement's political path in *Ciudad Bolívar*:

> (...) the environmental movement is very diverse, in Bogotá there are a lot of struggles... (...) even, among the friends who are defending the van der Hammen reserve, some said the Doña Juana land-fill must remain in operation, but the [ecological] structure should be cared for (...) because these mountains belongs to the district's south, it does not have any environmental potential.

This quote could suggest the existence of ecological elitism which neglects to acknowledge an environmental value in a marginal area of the city. This is a value which is urgently needed for the people to require more green spaces, as confirmed by the statistics presented above in this article. At this point, the role of biodiversity in science supports the cause, which, as in the *van der Hammen* reserve (Osorio Ardila, 2019), has been fundamental within the public debate defending environmental commons. Another excerpt of the group interview confirmed this: "(...) this is part of the process we have fully tried to internalize and incorporate into our mobilization work (...) These are things that have come to the discussion table (...) but we have changed the approach (...)."

What the people at *Cerro Seco* meant by "changed the approach" was how to use biodiversity science to legitimize their right to the city in their territory through ecological values, becoming a powerful reason to use against dangerous stakeholders who are leading profit-driven land-speculation. Here lies an interesting connection with the cases regarding the wetlands and the incremental political creativity toward the right to the city amidst everyday precarity. In this case in *Ciudad Bolívar*, it is important to recall the politicized tradition of taking contention collective action in support of the urban commons in this area of south Bogotá, considering its historical marginalization (Peña, 2014). In the meantime, and as in the wetlands case, *Cerro Seco* is also facing many pressures even coming from state agencies. The few legal conservation measures protecting *Cerro Seco* were recently discarded by the district administration, and communities have reported intentionally caused fires in the surrounding area at the beginning of 2019. Although the perpetrators of the fires have

not been identified, it is quite clear that these acts were committed to create confusion in the territory.

One thing must be said. The organizations in *Cerros Orientales*, the *TvdH* reserve, *Cerro Seco*, and even in most of the wetlands have already achieved common solidarity. They have realized that they are challenging the same political forces who are also linked to land-use speculation for profit-driven urbanization. At the moment of finalizing this article, after strong pressure from several local organizations, in particular environmentalists, the city council discarded a new POT proposal proposed by the outgoing Enrique Peñalosa's administration, which was setting several land-use regulations favoring of speculative real-estate developments, and even was proposing to get rid of the concept of MES for spatial planning. The pressure made by environmental organizations was also politically strengthened because the recently elected new mayor, Claudia López, endorsed during her campaign a political commitment with the environmental organizations called "*Compromiso Ambiental por Bogotá*", which is expected to be materialized during her administration starting in January 2020. At least, this joint advocacy effort has given the social organizations some extra time to fight against territorial urban dispossession.

Territorializing the political ecologies of urbanization: Steps for a research agenda

In Bogotá, the territory has been a key concept in dispute of the rights to the urban space. This case shows how much it is needed to acknowledge geohistorically situated political ecologies of urbanization. The fluidity of legal/illegal and planned/not-planned activities divides the agency of the less well-off populations, and the improvisation in constructing the city intertwined with inequality, all together transforms how urban politics are set (Caldeira, 2017). Due to the land-use and urban planning conflicts, people's attitudes to the territory have become ambivalent. The appropriation of the MES set by local social movements as an environmental territory produces a socio-ecological product, in which the Bogotá-region unfolds as a hybrid socio-natural entity (cf. Swyngedouw, 1996). As long as urban struggles for the right to the city have existed in cities like Bogotá, at the same time such struggles have always been environmental struggles. Although the restricted democratic setting in Colombia has constrained the country's full democratization, social organizations and movements have mobilized through political and democratic participation in many creative ways to overcome socio-ecological inequalities and territorial dispossession.

Some lessons on environmental mobilization to address socio-ecological inequalities can be taken from Bogotá, in order to understand how urban nature perceptions and socio-economic conditions are mutually intertwined. Likewise, these lessons may help to understand how the re-articulation of values, positionalities (representation), and socio-ecological inequalities may lead to better accountability in policies and democratic participation. Social inequalities emerge in socio-ecological processes, represented in the use, appropriation, and access to natural resources; as well as the (re) distribution of such resources; and the capability of stakeholders involved to overcome or cope with changing environmental conditions through territorial participation and recognition (Schlosberg, 2007). In this regard, the Bogotá case also shows research gaps that need to be addressed in further research.

The different articulations of the environmental territories through identity, gender, and class positionalities are a key point to consider concerning the political ecologies of urbanization. The lines of privilege crossed by racism, sexism, and class, as such are not only reproduced or perpetuated through new forms of the transformation of nature, but these

social categories are already inscribed in the forms of practices through which nature is produced (Dietz, 2018). Among the research available on territorial sustainability in Bogotá, there is not yet a stronger valuation of urban nature by the most marginalized communities such as those living in the city outskirts (including indigenous people, see Valencia, 2016) or transgender sex-workers or the homeless who have suffered the most urban violence and crime as well as state repression (Ritterbusch, 2016, 2017). They are the most vulnerable to the effects of climate change and risks (i.e. landslides and floods).

Although urban biodiversity in the LAC region requires special attention, spatial planning practices necessarily must go beyond in "re-wild" the urban landscape. The promotion of green cities and planning through nature-based solutions are often understood as taken for granted. Nevertheless, some of these solutions became a suitable narrative to legitimate urban dispossession (Anguelovski et al., 2019) or as a governance tool to politically neutralize local communities (Davidson and Iveson, 2015). It is important to achieve a balance between the desire to "re-wild the city" and the sort of nature people must have the right to enjoy in the urban space. By ignoring power relations in the urban space, we do not recognize how urban environmental conflicts are precisely the outcome of a deterritorializing capitalist urbanization.

In land-use environmental planning it is needed to specify the types of treatment wanted which would be good to implement in urban areas according to their socio-economical setting. This approach can pose a powerful methodological challenge to the politics and power relationships in the everyday life of urban governance (Cornea et al., 2017), and to ensure a more effective ecological and socially inclusive land-use planning. For instance, how would it be possible to employ different but complementary traditions such as urban political ecology, environmental justice, and decolonial border thinking to challenge unjust geographies (cf. Pulido and De Lara, 2018). The urban metabolism is embodied in politics and is not just a metaphor (Doshi, 2017). In this latter regard, it is important to engage with research already conducted on the urban metabolism of Bogotá (Díaz, 2011; Reina Rozo, 2013). The analysis of territorial socio-ecological conflicts leads us to consider how establishing typologies of urban ecosystem services without considering specific features of territorial urban conflicts can be counterproductive.

The democratization of urban commons contrasts with a restricted democracy like the one that exists in Colombia. The country is one of the most dangerous places to be an environmental activist in the world. Although violence against activists in Bogotá is much less present compared to other regions in the country, rural and urban peace and reconciliation depend on how much can be enabled by the co-existence of multiple territorialities. The implications of integrating science and situated knowledge with politics and urban planning are fundamental.

Conclusion

In this article, I identified how the territory is a useful concept to explore the political ecologies of urbanization. The concept of territory in the research of the political ecology of urbanization has research potential to de-center both urban theory and political ecology, creating a dialogue between different epistemological traditions. In the LAC region in social and environmental uprisings and struggles surrounding commons, the territory has been mobilized as a socially constructed space through a series of concrete and specific practices of socio-political appropriation of space, and these have included ecological issues. However, the inclusion of such issues in land-use and urban planning has been incomplete.

The types of nature and the environment in the LAC region are diverse while it is also important to acknowledge territorial differences between different urban geographies.

In the case presented about Bogotá, the territory/territoriality can be framed as an intertwined experience divided between claiming for the right to the urban territory and the prescriptive spatial management carried out through land-use and urban planning. The intersection of identity, gender, and class must be addressed to challenge concrete territorial socio-ecological inequalities. As long as urban struggles have existed for the right to the city, at the same time those struggles have always been for the sustainability of the urban territory. When urban space becomes re-territorialized, is when urban geographies became a space to achieve radical changes which may overcome concrete socio-ecological inequalities. This conceptual and political endeavor offers an opportunity to nurture the inquiry into the political ecologies of urbanization not only in Bogotá or the LAC region but also beyond.

Highlights

- Territory is a useful concept for examining uneven geographies of urbanization in the LAC region and beyond.
- The political mobilization of the concept of territory in the LAC region recognizes territorial differences toward dislocating the current urban theory, situating the political ecologies of urbanization.
- In this article, the political ecologies of urbanization in Bogotá, Colombia, are a perfect example of political mobilization concerning territory in land-use and urban planning conflicts.
- There is a need for further research on the political ecology of urbanization to characterize urgent sustainability challenges which acknowledge territorial differences and the intersection of identity, gender, and class positionalities.

Declaration of conflicting interests

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Notes

1. In this article, I refer to the region as Latin American and the Caribbean instead of Latin America. I refuse to accept the idea of ignoring the historical influence that the Caribbean has had on the entire region in terms of culture, politics, and nature (cf. Toro Pérez, 2017: 118).
2. Here it is worth mentioning the bribery case of the Brazilian company Odebrecht.
3. Examples of this forced migration process are seen from countries such as Nicaragua, El Salvador, and Guatemala to the United States, or other well-known cases such as Venezuelan and Haitian diasporas who also have had to flee to other countries in the region looking for safety, better, and new life opportunities.
4. The Colombian National Constitution recognizes over 700 indigenous groups, settled in *Resguardos indígenas*, and roughly 200 black community organizations, represented by the *Consejos Comunitarios de Comunidades Negras*, without counting an ethnic "pluriverse" embodied in a myriad of peasant communities (*comunidades campesinas*) with their own organizations and livelihoods. These identities are also shaping urbanized geographies.
5. According to the last national census projections the total population is around 48 million.
6. Figures according to a research project which includes a spatial visualization initiative, which is called *Conflict Urbanism: Colombia*. More info at: https://centerforspatialresearch.github.io/colombia_site/ (accessed 21 November 2017).
7. In 2015, Bogotá contributed 26% to the Colombian GDP (DNP, 2015).
8. However, according to a citizen-science research conducted by *Humedales Bogotá* Foundation, it has been acknowledged that at least 20 more wetlands do not have legal protection measures. See more at: *Mapa de los Humedales*: http://humedalesbogota.com/mapa-humedales-bogota/ (accessed 9 March 2019).
9. This was a pejorative adjective used to refer to swamp or wetlands areas.
10. Translation by the author. The original source is in Spanish: http://humedalesbogota.com/2013/05/07/mauricio-castano-defensa-de-los-humedales/ (accessed 5 March 2019).

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ARTICLE III

Reterritorialization practices and strategies of *campesinos* in the urban frontier of Bogotá, Colombia

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ARTICLE INFO

ABSTRACT

Much of the research on urbanization has focused on how rural populations move to cities for work opportunities. This paper takes a different perspective on the relations between rural populations and urbanization. The livelihoods of rural dwellers on the outskirts of the city of Bogotá in Colombia are increasingly affected by the expansion of urban activities and infrastructure. Therefore, urbanization takes place in the areas of residence of the rural populations; these people do not migrate to the city but, rather, the city migrates to them. Consequently, rural ways of life face growing competition from the production of commodities and services on the urban-rural fringe, including quarrying and landfills serving the needs of industries and urban populations. We explore how rural populations and their livelihoods have transformed as a response to these urban dynamics and the expansion of the city. We focus on the strategies that the rural populations employ to deal with the physical and socio-ecological impacts of this change. The defense of peri-urban livelihoods through these strategies is simultaneously social and spatial and has been partially successful. However, increasing social and environmental inequality, including worsening access to land, water and vital ecological functions, tends to lead to a general reduction in the quality of life in the urban frontier.

"The countryside (*el campo*) has been seen as backwardness." Quote from a Colombian practitioner in an interview in Bogotá, January 2018.

1. Introduction

In 2007, the United Nations declared that for the first time in human history more than half of the world's population was living in cities and towns (United Nations, 2007), and the trend has been increasing since (United Nations-DESA 2019). As planetary urbanization megatrends (Brenner, 2014; Buckley and Strauss, 2016) and *depeasantization* (Araghi, 1995; McMichael, 2012) are part and parcel of contemporary global changes, we ask, what happens when peasants do not migrate to the city but, rather, the city expands to their areas of residence? Debates questioning the urban-rural binaries in relation to the planetary urbanization address how rural life is present in urbanization processes and actively shapes them (Arboleda, 2016). In fact, rural aspects are an irreplaceable element of many (if not all) urbanization processes (Angelo and

Wachsmuth, 2015; Arboleda, 2016), frequently resulting in hybrid urban-rural spaces in metropolitan regions. These territorial assemblages (Deleuze and Guattari [1987], 2005; Haesbaert, 2014) whose local inhabitants produce counter-spaces to contest urban capitalism (Lefebvre [1974], 1991) are different from inter-urban agglomerations associated with the concept of conurbation (Pérez Martínez et al., 2011). This difference becomes visible in "peripheral urbanization", as outlined by Caldeira (2017) in her account of how people construct urban space. We add to her argument the notion of rural populations and their identities in spaces that are consumed by the urban expansion in Latin American cities such as the Colombian capital Bogotá. This is our point of departure in this article to re-evaluate specific transformative processes taking place in the urban-rural interface.

Most rural areas in Bogotá, despite being legally recognized as areas for farming activities and ecological protection, have been considered by planners and real estate stakeholders as areas for urban development, or they have been employed to allocate extractive and waste disposal activities away from the city core. Often, state action has failed to recognize rural communities and their established ways of life and local

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economies as key to the development of the city region, yet those communities have managed to overcome this limitation through joint action with state institutions when needed.

In this article, we explore the practices and strategies employed by rural populations in response to the expansion of physical urban infrastructure into areas previously considered rural and the associated spread of urban lifestyles and power-relations. Consequent landscape transformations involve the conversion of land cover, exploitation of non-renewable resources, loss of local biodiversity, disruption of ecosystem functions, forced migration of farmers, and changes in livelihoods and commuting patterns. In order to deal with the situation, rural populations in Bogotá construct their own space by engaging in territorial practices and strategies which are often based on rural identities and situated knowledge. These practices and strategies are our main research interest in this paper, as we aim to understand how the agency and environmental mobilizations of the rural populations seek to reterritorialize their spaces of dwelling.

Our case-study emphasizes that both the strategies and the practices are based on situated knowledge that interacts with environmental discourse, and involves an incremental development of expert knowledge on ecology and land-use law. Consequently, traditional means of life become combined with external influences and expertise from rural populations' relationships with state institutions and academic centers to sustaining everyday lives in rural properties and households despite the urban growth. As a dialogical cycle of production of knowledge and reterritorialization, the process of reterritorialization has been, in turn, producing particular forms of situated knowledge of nature in rural Bogotá.

In the following section, we present the conceptual and theoretical elements of the rural characteristics of urbanization in this case-study, including initial reflections on the reterritorialization process in the urban frontier and the social and political context for understanding the situation for the peasant communities (*comunidades campesinas*) in Colombia and Bogotá specifically. In the third section, we describe our research methods and materials. The fourth section is devoted to describing the key elements of the social and political context for rural spaces in Bogotá, including land-use issues and the ways in which the *campesino* communities have been organized. The fifth section presents the main outcomes of our research, highlighting strategies and practices of the *campesino* communities in *Usme* and *Ciudad Bolívar*. Before the conclusions and policy recommendations, the sixth section offers discussion on our empirical findings against the conceptual framework related to the transformations of urban space.

2. Rural characteristics of urbanization

2.1. The urban frontier and reterritorialization

The notion of peri-urbanization has connotations that link it to the gaze of the urban planner, working on maps over the areas where the city spaces are designed to expand. In our view, rather than planned urban extensions, these spaces often become territorial assemblages (cf. Deleuze and Guattari [1987], 2005; Haesbaert, 2014; Pérez-Martínez, 2016) where stakeholders with different identities, land use interests and values deliver de/re-territorialization processes producing space and landscapes. We understand a territory as a socio-spatial product that reflects multiple symbolic and material appropriations of a specific place on an everyday basis through people's strategies and practices of *territorialization* (Quimbayo Ruiz, 2020). What is crucial in a process of territorialization is that the subjects are related to one another and to the characteristic features of the space in question. Through these relations, the subjects claim the space as their own and thereby discursively construct their territory. Thus, the relational tendency of the features of space to change also causes territories not to be fixed but in flux. Deterritorialization, in turn, means the dissolution of the existing territorial formations, while reterritorialization is the formation of new

territories in place of pre-existing ones (Haesbaert, 2014).

Following this idea, it can be argued that the identities of rural dwellers are territorial. Expanding urban capitalism is de-territorializing the spaces in which the rural populations live and practice their livelihoods. These rural dwellers, in turn, are facing the urbanization processes, seeking to re-territorialize their living environments, which causes a clash between the visions and actions of the city's urban planning system and the perceptions, identities, and actions of the rural dwellers. In order to get closer to the ideas of the local population in Bogotá, we refer to the notion of the urban frontier. By employing the notion of frontier, we wish to point out that the urban fringe is undergoing constant changes. Locally, it is called the border territory (*el territorio de borde*), where powerful urban stakeholders push the limits of the urban areas to consume rural space. According to Pérez-Martínez (2008: 68), in Bogotá, "[t]hese territories are immersed in a twofold dynamic of occupation, with which we refer to fringes between the urban periphery and the defined suburban areas in which rural communities live, where there is still no great densification and there is still an intense subdivision of small plots, which share their means of production with recreational residences of urban dwellers, housing centers of social interest or, even dormitories of urban employees". This is where the *campesinos* of southern Bogotá live.

2.2. Colombian campesinos

The capital of Colombia, Bogotá, is an autonomous municipality (Capital District, *Distrito Capital*), with an estimated population of about 7,300,000 (DANE: http://www.dane.gov.co) in 2018. The district is composed of 20 political administrative units called *localidades* (hereafter locality), most of which are completely urban while some include relatively large rural areas. In Bogotá there are several types of inhabitants in the rural spaces that are being taken over by urban expansion. These include farmers who work as private small-scale or medium-scale entrepreneurs, but also farmers and agricultural workers with alternative means of living and agricultural production. Furthermore, there are rural inhabitants who see themselves as indigenous people (*Muisca* people) and seek formal recognition of this position (Vargas Mariño, 2015; Valencia, 2016). Many different ingredients of rural identities then may combine in one person or community. In our work, we focus on people who self-claim themselves to be *campesinas* (feminine) and *campesinos* (masculine) and who identify themselves as belonging to the rural communities[1] . The closest translation of such notions from Spanish to English are *peasants* (as people) and *peasantry* (as a community).

According to Marc Edelman (2013: 13) "(…) [t]he terms "peasant" and "peasantry" and their cognates in other languages have long and complicated histories that reflect both peasants' deep presence in most societies – even today – and their political and social subordination in those societies". Recently, the United Nations Human Rights Council (UN-HRC) (2018) issued the declaration "on the rights of peasants and other people working in rural areas", offering this definition:

"(…) a peasant is any person who engages or who seeks to engage alone, or in association with others or as a community, in small-scale agricultural production for subsistence and/or for the market, and who relies significantly, though not necessarily exclusively, on family or household labor and other non-monetized ways of organizing labor, and who has a special dependency on and attachment to the land." (Article 1)

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[1] Language matters. As authors, we are aware of the importance of inclusive language and gender equality. For instance, in Spanish, peasant communities are referred to as feminine: *comunidades campesinas*. Therefore, the reader should assume when we use the words *campesino* or *campesinos*, these words are encompassing all rural people whether they belong to women, men, or non-binary identities.

Although this declaration acknowledges the myriad ways of being a peasant, it is utterly production-oriented (Duarte, 2018) and, rather than providing an analytical definition of peasantry, presents the lowest common denominator. The Colombian National Constitution acknowledges only the productive nature of the peasantry and the peasants, without explicitly recognizing them as a subject of special constitutional protection entitled to their own identity and cultural practices. Nevertheless, peasants are not only productive subjects, but a group of people seeking to maintain their own identity and cultural traits. At the same time, in a globalized capitalist world they are not detached from urbanization understood simultaneously as a social, political and economic process often leading to processes of *depeasantization* (Araghi, 1995; McMichael, 2012; Vanhaute, 2012; Kay, 2016), with adverse phenomena such as proletarianization, including increasing relative poverty and inequality, and acculturation, including loss of traditional livelihoods (Alavi and Shanin, 2003).

Despite demands made by Colombian peasant movements supported by allied politicians and experts to promote a constitutional reform in the country, only indigenous and Afro-Colombian communities, but not peasant communities, can obtain a legally recognized status. Claims for this same kind of recognition for peasant communities have been opposed by scholars and activists who fear that while indigenous and Afro-Colombian people are also peasants, granting this same status for peasant communities in general could eventually create tensions between different groups (Hoffmann, 2016). In the context of Latin America, a legally established status for peasant communities is not a rarity, however. For example, in Peru peasant communities can obtain a legally recognized status granted through specific associated legislation (Ardito, 1997).

The legal exclusion of those Colombian *campesinos* who are not recognized with an ethnic status as indigenous or Afro-Colombian (though who are also historically excluded populations) has reinforced their marginalization, stigmatization, and criminalization, making them one of the most vulnerable sectors of population in the country (Gutiérrez Sanín and García Reyes, 2016; Ojeda and González, 2018). Moreover, the state, market forces, media and academia, have all depicted *campesino* identities in diverse and often contradictory ways oscillating between indispensability and expendability (García Becerra and Ojeda, 2018). Simultaneously, in the context of the internal armed conflict, the *campesinos* have been an object of multiple material and symbolic dispossessions committed by state forces, paramilitary death squads, guerrillas, and some representatives of private business (Hoffmann, *op. cit.*). Nonetheless, despite constant attacks against their rights to the land, there is also the longstanding and creative political mobilization by peasant organizations (Osorio 2016). This mobilization has resulted in a growing political culture that presents the peasant identity as a constitutive element of Colombian society (Departamento Nacional de Planeación-DANE, 2020).

In Bogotá, the *campesinos* form various separate communities that are located in specific places in the peri-urban and rural areas of the District. The *campesinos* tend to see their communities as social and spatial units, with territorial dimensions. The communities are held together by common identities consisting of, among others, ethnic or livelihood-related features. The level of political mobilization to improve living conditions in the communities varies, and there are also individuals and organizations within the communities who hold formally recognized positions in development projects coordinated by state level administrations.

2.3. Peripheral urbanization and the campesinos

The impacts of urbanization on rural Bogotá can be traced through material and symbolic implications in the everyday rural way of life. Urban dwellers in Bogotá (*bogotanos*) are still mostly unaware of the existence of rural populations at the periphery of the city, even though the recent positioning on the district political agenda has allowed the

acknowledgment of these *campesinos* as *bogotanos*. For example, campesinos are seen as people helping with water conservation or as food providers for urban dwellers. They are also seen as people without political agency. Moreover, when they are recognized as part of the district, they are associated with an environmentally romantic and urban-centered depiction, where concrete socio-spatial injustices are absent (García González et al., 2020). Probably this situation is also related to the common imagery regarding the rural way of life as being marginal or backward, as the quote cited at the beginning of this article shows.

On the other hand, Teresa Caldeira's notion of "auto-construction" (2017, 5) emphasizes the agency of marginalized inhabitants in urban spaces and points out how residents in cities tend to construct their own urban environments. Auto-construction is related to the "peripheral", which nevertheless does not mean that auto-construction would necessarily occur in the hinterlands. It is rather that the residents who have a crucial role in the production of urban space are considered peripheral in relation to the formal planning system. While auto-construction takes place outside the administrative urban planning system, the construction of urban space by the marginalized populations is often very well planned by the inhabitants themselves. The residents are not simply consumers of spaces developed and regulated by urban planners and managers of businesses, but clear agents of urbanization. It is only that the logic of auto-construction occurs transversally with the formal planning logic. This logic of urbanization has been similar to the one experienced in Bogotá's peripheral neighborhoods (*barrios*), where people and communities have used collective actions to struggle for their right to the city (cf. Julio and Hernández, 2014; Peña, 2014; Quimbayo Ruiz, 2018).

Following Caldeira's conceptualization of Latin American urbanization processes (Caldeira, 2017), it can be emphasized that there are certain processes of urbanization that produce new modes of politics together with the emergence of hybrid urban-rural spaces in metropolitan regions. In Bogotá, such spaces in the periphery is where the *campesinos* live. There are significant differences between Caldeira's use of auto-construction (2017) and our research subject; her emphasis is on the construction of explicitly urban space while our research focuses on the reconstruction of rural space within the expanding urban space. We draw on the idea behind Caldeira's notion and the tendency of the rural residents to construct their own environments within the expanding urban space. In our case, what is constructed is not only physical space but also a variety of *campesino* ways of life involving different agricultural activities in the urbanizing environment.

Therefore, we are interested in the strategies of the *campesinos* in their struggle to deal with urbanization. We explore how the campesinos perform various reterritorialization practices that seek to impact on the de-territorializing processes. These processes are reflected in environmental conflicts against state-led and joint public-private development projects, where profit maximization and financial capital accumulation are often the priority (cf. Pérez Rincón, 2015; Pérez-Rincón et al., 2017). Through such practices and strategies the *campesinos* may employ situated knowledge and draw on environmental imperatives to agitate political action. Situated knowledge arises from a subject's physical presence in, experience on, and understanding of a specific spatially defined context (Haraway, 1988). Such knowledge is not fixed, but part of wider networks influenced by and influencing broader political, economic, and social forces such as globalization of markets and technologies (Horowitz, 2015, 243). Situated knowledge can also intertwine with technical-scientific concepts in everyday environmental struggles (Li, 2015), enabling the emergence of counter expertise at the local scale towards politically legitimated notions of the environment. Nevertheless, we acknowledge that the actions in environmental struggles at specific places also incorporate contradictions and paradoxes (Lawhon et al., 2014; Loftus, 2012), such as historically marginalized communities becoming involved with political instrumentalization or cooptation by partisan politics of their cultural traditions in their relationship

with the state.

3. Methods and materials

Our research focuses on the localities of *Usme* and *Ciudad Bolívar* within the administrative boundaries of Bogotá where farming settlements on the high Andean plateau of *Sabana de Bogotá* and its surrounding mountains are affected by urbanization advancing on the southern urban-rural fringe of the city (Map 1 and Image 1). The case study belongs to the first author's doctoral project on environmental conflicts related to spatial planning in Bogotá (Quimbayo Ruiz, 2018, 2020). The project has created plenty of research material, including public documents (and statistics), interviews and participant observation. The earliest data from public sources is from the 1990s, while the interviews and observations are from the period beginning in 2017. The documents collected are from public sources and they deal with land use planning issues in Bogotá. First, documents by state agencies available online were retrieved from their web pages. Second, documents were collected in public archives of the state institutions in Bogotá. Third, documents originally public but currently not publicly available were collected in private archives of particular interviewees. We narrowed down the full body of research material used in this article, as described below.

We draw on 39 out of the 118 documents collected, including documents in three categories: scientific and technical reports; administrative and policy documents including legal decrees; and official statistics published by the city administration of Bogotá. These documents were retrieved from physical archives in Bogotá, and through official and institutional web pages. We carried out a qualitative content analysis of the materials to identify the socio-ecological transformations in land use issues and forms of social organization in rural Bogotá. Although the topics of the documents included urban planning and nature broadly, the selection criteria for the 39 documents used here was that they are explicitly related to rural issues in the Capital District of Bogotá. The documents were organized using ATLAS.ti software. In addition, these documents were later complemented with a literature review on empirical research related to our case study area to provide a potentially different perspective that could be compared with and contrasted to our findings in the documents.

In addition, in order to triangulating the information found in the documents and research literature, and with the purpose of identifying territorial strategies and practices mobilized by the *campesinos*, we relied on interviews, visits to the field, and participant observation. The fieldwork was conducted from late 2017 to early 2018. It consisted of, first, interviews with planners, experts, practitioners and local activists working on land use planning and development of rural areas of the city, and second, participant observations in events dealing with the issues related to the planning process and impacts of urbanization in rural Bogotá. We used the strategy of locating key informants who could guide us to the topics we were focusing on. The key informants were planners, practitioners and social leaders and activists. For the larger project, the first author carried out a total of 32 thematic and unstructured interviews. In addition to the interviews with individuals, there were a number of focus group interviews. Again, although the topics of the interviews broadly included urban planning and nature, the subject of rural and non-urban developed areas was covered as a specific topic. For this article, when analyzing the findings in the interviews, we focused on the *campesino* communities' responses to the impacts of urbanization. Therefore, we narrowed the total of 32 interviews down to 8 interviews used for this article: 2 with planners, 3 with practitioners, and 3 with social activists. The names and the detailed positions of the individuals are not disclosed in order to guarantee personal and community privacy. The interview notes were qualitatively analyzed coding the mentions of urbanization, livelihoods and ways to deal with the transforming landscape.

There were also visits to the field with the intention of observing the physical transformations of the landscape in the study area. A second purpose of the visits was participant observation. The first author visited three times the locations where the *campesinos* live (twice in *Usme* and once in *Ciudad Bolívar*) to take part in and observe their activities and to meet with local social leaders to discuss their practices and strategies of dealing with the pressures of urbanization. The form of these discussions was free, with no detailed questions prepared in advance. The data collected this way was used to complement the information from the documents and the interviews. In *Usme*, the participant observation activities included one community workshop and one social and cultural happening. In *Ciudad Bolívar*, a guided tour was conducted through the urban-rural fringe, led by a local practitioner. During the tour impacts of urbanization were discussed, and there was also time to talk with the rural inhabitants. The observations were recorded in a field diary. Finally, inputs from previous professional experiences of the first author in the case-study area were used to contextualize the findings (cf. Gomez et al., 2017).

4. The rural within the city in Bogotá

4.1. Land use issues

The Land-Use Master Plan of Bogotá (in Spanish: *Plan de Ordenamiento Territorial*, hereafter, POT[2]) identifies three types of land: urban

Map 1. Case-study area in Bogotá (Elaboration: First author).

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[2] We favor here the acronym in Spanish because this is how it is best known locally.

Image 1. Urban rural fringes in south Bogotá: Left: *Ciudad Bolívar*; right: *Usme*. (Photo credit: First author).

(*urbano*), rural (*rural*), and planned urban expansion (*suelo de expansión urbana*). The Capital District's total surface area of $1635\,km^2$ is comprised of 23 % urban, 2% planned urban expansion, and 75 % rural areas (Alcaldía Mayor de Bogotá, 2004; Secretaría Distrital de Planeación -SDP, 2017). About 70 % of the rural land is constituted of *páramo* ecosystems (high Andean moors and wetlands), 9% of high Andean forest and scrub, <2% of forest plantations, 16 % of pastures and 3% of crops (Secretaría Distrital de Ambiente, n.d.). There are also protected areas (about 734 km^2), some of them legally protected as part of the so-called "Main Ecological Structure" (*Estructura Ecológica Principal*, henceforth MES) of Bogotá. Most of the protected areas have been created to safeguard biodiversity and water supply for the city-region.

Rural Bogotá embraces different territorialities including those of the farmers, small agricultural entrepreneurs, industrial flower farmers, and recognized indigenous communities such as the *Muiscas*. The main economic and productive activities are agriculture, livestock husbandry, rural tourism, social, cultural and handicraft activities and trade. The Rural Census of Bogotá (Secretaría de Desarrollo Económico, 2015) states that there are 4221 housing units (*viviendas*) in rural areas of the Capital District, with a total of 4353 households (*hogares*) and 16,787 people (3.9 persons per household); this is about 0.22 % of the total population of Bogotá. Our study areas, the localities of *Usme* and *Ciudad Bolívar*, have the highest rural population percentage in the Capital District (about 62 % from the total share of rural population). About 49 % of the Capital District's rural properties (*finca* or *predio rural* in Spanish) are owned by the residents themselves while the other half is divided between usufruct, lease, sharecropping, and, in a few cases, *de facto* possession (Secretaría de Desarrollo Económico op cit.).

Our focus of research is on a transition strip between the rural area and urban consolidation belonging to the *Tunjuelo* River watershed (See Map 1). In contrast to the northern, eastern and western urban-rural fringes of the city, the southern border is the principal setting for agricultural settlements (Gomez et al., 2017, 121). Likewise, the upstream basin of the *Tunjuelo* is closely connected to the *Sumapaz* region, which has a long tradition of agrarian struggles (cf. Fajardo et al., 1975; Marulanda-Álvarez, 1991; Londoño-Botero, 2011) and where high mountains harbor part of the largest continuous area of *páramo* ecosystem in the world and a national park.

Simultaneously, this area presents the most critical environmental conflicts in the city region related to the development of urban infrastructure (social housing projects, dams for water supply, roads, and logistics infrastructure), the extraction of sand and gravel, and waste disposal in landfills and dumps. The underlying reasons for these conflicts include historical processes of socio-spatial segregation and a problematic set of decisions related to urban planning. Broadly, the urban growth towards the south of Bogotá (which historically has been a marginalized area) has shown how land use is driven by political and economic interests where the rural areas are considered insignificant, only existing to support and give way to efforts to build a "modern city" (cf. Jaramillo, 1992; Zambrano, 2004, 2007). In this development model, rural areas provide commons and resources such as water and food, recreational spaces, as well as materials to build the city such as limestone, sand, clay, or gravel (Secretaría Distrital de Ambiente and Universidad Nacional de Colombia, 2007; Sánchez-Calderón, 2018).

Since the establishment of the current Colombian National Constitution in 1991, environmental imperatives have been increasingly included in the urban agenda, associated with an expanding space for participatory practices in urban planning. Social movements in marginalized areas have banded together in political mobilization for the right to the urban territory (Quimbayo Ruiz, 2018) resulting in the inclusion of most of their claims in policy agendas. This has also been possible through the modernization of urban planning practices, mainly after the first POT was issued in 2000. The consequent introduction of ecological principles of urban-rural sustainability has acknowledged the relevance of rural areas for nature and water resource conservation (Table 1).

Nevertheless, the development of the regulatory framework has had mixed outcomes, particularly in relation to law enforcement. Nature conservation measures, including the creation of protected areas, paradoxically have ignored the social dynamics of the inhabitants and landowners in the rural areas. This omission has created conflicts between state action, land-use, and protection of biodiversity and water resources. Likewise, ambiguous ecological protection measures applied in isolated conservation areas have created paper parks, which are clear on official maps but not effectively existing on the ground. Thus, the strategy of raising nature conservation issues relating to the formal planning process through the political system as interpreted by the farming communities has brought about mixed results (Comunidad Rural de Usme, 2018).

Other regulations were also declared through the POT to develop high impact activities such as quarrying in areas referred to as Mining-Industrial Parks *(Parques Minero-Industriales-PMI)*. Despite being recognized as part of the MES, the mountains of southern Bogotá remain unprotected from the impacts of quarrying. This affects the daily lives of

Table 1
Legal regulations regarding rural Bogotá. Elaboration for this research based on Martínez Sierra (2010) as cited in Pérez-Martínez et al (2011).

Period	Legal regulation	Purpose
1986–1990	District Accord 9 of 1986	Political-administrative act recognizing *Sumapaz* as part of the Bogotá's District.
1990–1995	District Accord 6 of 1990	Statute for the Land Use Planning of the Special District of Bogotá. This specified the land use for agricultural uses.
	District Accord 9 of 1990	The Technical Administrative Department of the Environment was created. This institution regulates rural and farming activities.
1995–1997	Decree 482 (1996)	The District Agrarian System (*Sistema Agropecuario Distrital*SISADI) was created in addition to Local Technical Assistance Units (ULATAS).
1997–2004	District Decree 619 of 2000	The Land Use Master Plan for the Capital District was adopted (POT).
	District Decree 463 of 2003	The POT was first revised.
	District Decree 190 of 2004	The provisions contained in the District Decrees 619 of 2000 and 469 of 2003 were compiled. This reaffirmed the current POT and established guidelines for land use planning for rural areas through specific instruments (*Piezas rurales*).
2004–2008	Accord 257 of 2006	Basic norms on the structure, organization and operation of the administrative organizations of Bogota, Capital District, were dictated.
	Decree 327 of 2007	The Public Policy of Rurality of the Capital District was adopted.
2008–2018	Decree 234 of 2008	The establishment of the Local Units of Local Development (ULDER). The election procedure for these unites was established for the delegates from social organizations and rural population sectors.
	Decree 42 of 2010	The Sustainable Management Plan for Rural Development (PGDR) was adopted.
	District Decree 435 2015	The Rural Planning Unit (*Unidad de Planeamiento Rural*-UPR) for regulation of Northern Bogota's rural area was adopted.
	District Decree 552 2015	The UPR for the regulation of *Sumapaz* area was adopted.
	District Decree 553 2015	The UPR for the regulation of *Río Blanco* area was adopted.

the residents most notably in the urban neighborhoods at the urban-rural fringe. First, there is a lack of areas for recreation, and, second, quarrying activities affect the air quality and expose the inhabitants, children especially, to chronic respiratory diseases (Ordoñez et al., 2013). Furthermore, since the 1950s, the *Tunjuelo* River at its mid-course has suffered massive and irreparable impacts due to open pits for gravel extraction. Such impacts have affected the natural dynamics of the river and have been linked to serious flooding events affecting the surrounding poor neighborhoods, most of which were former settlements of low-income workers (Sánchez 2018). Despite attempts to change the land-use regulations regarding the PMI, the environmental damage has not been repaired.

Likewise, in the late 1980s, the District's landfill *Doña Juana* was located in the areas of *Mochuelo Bajo* and *Mochuelo Alto* in *Ciudad Bolívar* upon the justification that the location had a favorable cost-benefit ratio for transportation. Moreover, as one interviewed practitioner stated, it was also perceived as an appropriate location because officially "no one lived there". This, however, was counterfactual because several farming communities had settled in the area with legal land titles (Quintero, 2016). These communities live there to this day, suffering the impacts of the landfill that receives 6000 tons of waste per day. The landfill should be operated using technologies adapted to the geotechnical conditions of

the site to meet minimum conditions of stability and safety (cf. Preciado et al., 2005). This, however, is not the case.

Failures in meeting these conditions can have serious outcomes, as exemplified by the three landslides officially registered in 1997, 2015 and 2020. The first of these two is considered as one of the worst environmental disasters in the recent history of Bogotá (Molano Camargo, 2019). A collective group on behalf of the communities affected in rural and urban areas sued the state for the damages and impacts caused by a landslide of about 1.2 million tons of waste which affected the environment and human health even beyond the landfill in the surrounding six localities of south Bogotá. A court approved the demand in 2012, and the City District had to financially compensate to about 600,000 pre-registered affected people, but after more than 20 years since the disaster, the compensation process is only beginning. In the third major event, in late April 2020 (amid the covid19 pandemic sanitary emergency), the waste landslide was around 80,000 tons. The closure of the landfill that has been demanded by the neighboring communities continues to be disputed between the communities, authorities and private contractors. At the same time, the authorities have sanctioned fines on the contractors following several operational failures at the landfill[3], yet a concrete solution towards a transition to a different waste management system has not been achieved (see Gallini 2016). In fact, there is constant resistance to waste disposal operations from the inhabitants in the peri-urban neighborhoods, peasant and farming communities, who have claimed several times for definitive closure of the landfill after more than three decades of living and working under a situation of "environmental suffering" (Ortiz Díaz, 2019).

Finally, the promotion of formal housing and urban planning projects in the POT such as *Operación Nuevo Usme* generated additional tensions (Comunidad Rural de Usme, 2018). The first set of buildings of this housing operation known as *Ciudadela Nuevo Usme* were ready in the late 2000s and are blocks of eight floors that rise in the middle of crop fields and country houses surrounding the old town (*pueblo*) of *Usme*. The housing operation was planned to be larger, but in 2007 a unique archaeological finding located in the point known as *Hacienda El Carmen* stopped some of the original intentions. The finding is an ancient *Muisca* cemetery, claimed by local campesino and environmental activists (*Mesa Usmeka*) as proof of the *Muiscas'* ancestral link to the territory. The archeological finding has been used in the activists' arguments opposing any further urbanization development, and after many years of social struggle, in 2020 the District's administration approved the creation of an archeological park[4].

Most of the housing projects were promoted as a plan to build government subsidized homes for people who had been forced to flee from the countryside or other towns because of the Colombian internal armed conflict. However, this housing scheme has been problematic for the beneficiaries because it segregates these refugees from the wealthiest zones of the city, and the housing conditions have not been optimal for living (e.g., small flats are not suitable for the residents with their former rural livelihoods). For the *campesinos* of *Usme*, the arrival of the newcomers has meant that the city is conquering their land and creating new social tensions in the territory. Some of the *campesino* leaders have joined the *Nuevo Usme* community leaders who have raised their voices because of the failed promises by the city administration for suitable housing and the right to the city, but with little effect (Vargas Mariño, 2015).

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[3] "Superservicios sancionó con millonaria multa al operador del relleno sanitario Doña Juana". *Revista Catorce6* https://www.catorce6.com/actualidad-ambiental/18685-superservicios-sanciono-con-millonaria-multa-al-operador-d el-relleno-sanitario-dona-juana (Last retrieved: May 25 2020).

[4] "Usme por fin tendrá su parque arqueológico". *El Tiempo*: https://www.elti empo.com/bogota/bogota-usme-por-fin-tendra-su-parque-arqueologico-529588 (Last retrieved: August 19 2020).

4.2. How the campesinos organize

In the rural lands, the POT recognizes rural settlements as *centros poblados rurales*, which are small nucleated rural settlements that combine housing and services (public, social, welfare, administrative, recreational and cultural) for the scattered population of the surrounding *veredas* (the smallest administrative sub-unit in the municipality). These settlements are the heart of rural political life. In our focus area there are the following *veredas* facing urban expansion: in the *Usme* area *Uval*, *La Requilina*, *Corinto*, *Soches* and *Agualinda-Chiguaza*, and in the *Ciudad Bolívar* area *Mochuelo Alto* and *Mochuelo Bajo*, *Quiba Baja*, *Quiba Alta*, and *Pasquilla*. In the *veredas*, the basic form of organization is the Community Action Board (*Junta de Acción Comunal-JAC* or, henceforth, *Junta;* see Fig. 1). The *junta* is governed by the national law 743 from 2002, which declares the following:

"The *junta de acción comunal* is a civic, social and community organization of social management, non-profit, of solidary nature, with a legal status and its own assets, and voluntarily integrated by the residents of a place joining efforts and resources to seek integral and sustainable development based on the exercise of participatory democracy" (Congreso de Colombia, 2002: Article 8a).

According to the law, each *junta* should establish statutes such as denomination, objectives, affiliates, agencies, dignitaries and their form of election, economic, fiscal and disciplinary regimes. However, the *junta* is not the only organizational body or institution existing in the area. There are other types of *juntas* related to the administration of rural community aqueducts (*acueductos veredales*). Likewise, there are local NGOs, and legally constituted participatory spaces (*instancias de participación* or local forums) where individuals and organizations in the community can converge for specific and common concerns. These forms of organization have been used by community members in periurban areas in Bogotá to advocate the *campesino* way of life. Although this could be a general frame to explain local social organization, the actual process in our case study is far more complex, as our empirical findings will show. Thus, we will present some examples that illustrate how this socio-political organization has incrementally been progressing to advocate the *campesino* way of life.

One of the most remarkable examples is the creation of an agropark (*Agroparque*) in the *vereda* of *Los Soches* in Usme. The idea of the agropark is based on a territorial strategy to contend with urban expansion (*estrategia de borde*). The park was born after the District Accord Number 6 was issued in 1990 establishing an urban expansion zone in the area. The main leader of the development of the agropark has been Belisario

Fig. 1. Political and administrative nesting of the *Junta* in the *veredas* of south Bogotá.

Villalba, a locally well-known peasant and environmental activist in Bogotá. In the late 1990s, after many struggles, even facing harassment and persecution and attempts of assassination, Villalba and his community achieved the right to stay in their *vereda* and this was acknowledged by the City Council and District agencies, in particular the Environmental Office (nowadays *Secretaría Distrital de Ambiente*). At the time of issuing the first POT in 2000, the area was excluded from the urban expansion areas and acquired a protected area status (as *Agroparque*). In 2002, Villalba and his community founded their own legal organization called *Corporación Eclipse*. Since then, they have been agroecological producers, and have engaged in ecotourism and rural tourism activities. In so doing, the people at *Los Soches* have been mobilizing their identity and way of life as *campesinos*, inherited from their ancestors and bequeathed to their children. Such an identity is a strong component of community social commitment, as Villalba has stated in a recent interview made by Ortiz and Quiroga (2018), 61–64):

"It feels rewarding to see how, from *Los Soches*, things are organized and spreading around, especially the idea of defending the territory. Now, when the urban expansion arrives at the *veredas Uval*, *La Requilina*, and even *Olarte*, people no longer get scared but start to defend the area and work together. At this moment we already have the regional proposal of the southern edge [the proposal to contain urban expansion: *propuesta regional del borde sur*]. So, this makes me happy because after going through so many trials and tribulations, because this project caused me to shed many tears, one sees fruits and the *campesinos* are not so far apart, and they [people outside the community] no longer say 'no' to everything."[5]

Local leaders like Villalba have been influential in mobilizing the *campesinos* in south Bogotá. The organized community has often tried to "invite" and persuade state-institutions to work with them, rather than refusing potential collaboration between the parties, although not forgetting the constant tension in how the state has historically considered the rural areas. In addition, after the District's Public Policy of Rurality was issued in 2007, formal mechanisms and participation venues were strengthened resulting in interaction and joint work between local populations and representatives of state agencies or local government to improve conditions in these areas. For instance, this was manifest in the work of local organizations in local units and committees for planning and development (i.e., local unit: ULDER, *Consejos de Planeación Local*, and *Concejos Ambientales Locales*) jointly with the local councils and organizations. Another example in organizational terms, also in *Usme*, has been the establishment of the participation space called "*Mesa de concertación borde urbano rural*" ("Urban-rural fringe dialogue roundtable") or *Mesa de Concertación*, which has been a meeting point led by organized communities to establish agreements and encourage action from state institutions, engaging further participation by other spaces established by the Rurality Policy. The roundtable emerged more than 15 years ago as a response to urban expansion, especially formal housing and urban planning projects such as *Operación Nuevo Usme* but it has managed to promote additional tools for local land-use planning.

Moreover, we can identify *campesino* organizations engaged in rural tourism to promote the exchange of practices between concerned communities (rural and urban), as well as strategies using sustainable approaches such as the production of vegetables and dairy products, and the improvement of water resource use, and land-cover and stream protection through rural aqueducts (cf. Gomez et al., 2017; Comunidad Rural de Usme, 2018; van der Hammen et al., 2018). Such activities have been the product of constant demands from local communities to state agencies to channel technical and social support, and to build connections with universities, research centers, and other stakeholders (see Table 2). This is happening especially in the *Pasquilla* area, but the situation is much harder in other areas because of the influence of high impact activities such as the "*Doña Juana*" landfill, or quarrying
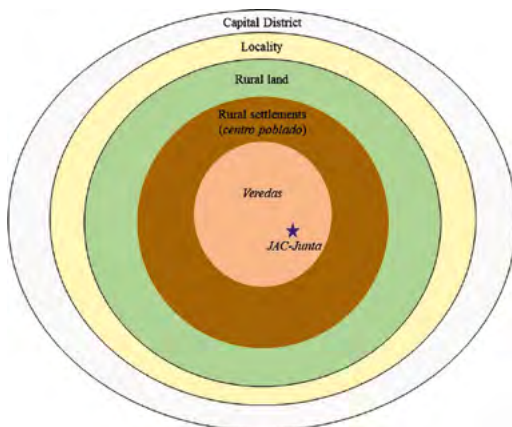
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[5] Our translation. The original source is in Spanish.

Table 2

Actors present in *Usme* and *Ciudad Bolívar*. Adapted from: Pérez-Martínez et al., 2011, 2014; Hernández Gómez and Rojas Robles, 2015.

Type of actor	Level of action	Actor examples	Role
Community organization	Local	JAC, and committee members in relation with local and District authorities	Setting in a common agreement about the local actions inside the community
Organization for attending community services	Local	JAC, specific committees on water management (*acueducto veredal*), among others	Setting the rules of managing community commons
Educational Institutions	Local, District, National	District's public schools (*Instituciones Educativas Distritales-IED*), Colombian Family Welfare Institute (ICBF) shelters, National Training Service of Colombia (SENA)	Mainly of public nature. These institutions besides providing basic rights like education and social care also can be engaged with other social and cultural activities.
Government Institutions	District, local	City and local councils (*Alcaldía Mayor y Alcaldías locales*)	Key role in setting and enforcing the land-use normative regime
State Agencies and public-private corporations on planning, rural technical assistance, environmental authorities, social welfare, and housing	District, Regional, National	District agencies (i.e. Environmental and Economic Development Offices, and District's Botanical Garden), regional environmental agency (CAR); Corpoica, Ministry of the Environment, among others	Key role in setting and enforcing the land-use normative regime targeted on environmental and rural affairs
Local Organizations, and local NGOs	Local	Community organizations, youth environmental culture and peasant community	Supporting social and cultural community activities
NGOs	District, National	Focused on environmental and human rights, education and culture	Developing social, humanitarian or charity activities with local inhabitants
Small-scale agriculture and livestock producers	Local	Producer associations	Leading the local agricultural production
Promoters of rural tourism	Local	Local entrepreneurship organizations	Developing local potential for rural tourism and environmental education for locals and visitors
Universities and research centers	Local, District, National	For example: Universidad Nacional de Colombia;	Bringing technical and scientific assistance to local productive and

Table 2 (*continued*)

Type of actor	Level of action	Actor examples	Role
		Universidad Distrital, Pontificia Universidad Javeriana, Universidad Minuto de Dios, Uniagraria, Universidad de La Salle, Universidad de Cundinamarca	agroecological initiatives
Local and political leaders	Local, District	Community representatives and local politicians	Mainstreaming local concerns to the District's political agenda
Local traders	Local	Trade such as small shops, restaurants, among others	Offering local services and amenities
Transport	Local	Local transportation associations (for products to supply food retailers in the city)	Offering transport and commuting services inside the area and to the city, and supplying markets
Agriculture and extractive industries	Local	Productive associations, and private producers: quarrying, or agriculture and milk producers	Production of agricultural and building-sector goods, and provision of local jobs

activities (Hernández Gómez and Rojas Robles, 2015).

It can be said that in the case-study area there is a regular presence of state authorities at different levels (district, regional and national, in Table 2). However, according to the interviews analyzed for this article the efficiency of state-agencies has been insufficient and their performance depends on the political agenda of the local/regional government in office.

5. Community strategies and practices in *Usme* and *Ciudad Bolívar*

Based on the analysis of the documents, interviews, and recorded participant observations, our data shows that *campesino* communities have been organizing and mobilizing using several strategies to cope with the urban expansion. We can typify two forms of strategies that the *campesinos* employ to reterritorialize their environments. The first of them is more focused on creating impacts through social-political processes, the second on executing more material impacts. The strategies of the *campesinos*, their related practices and outcomes of the strategies and practices are synthesized in Table 3.

We argue that each of the strategies has been mobilized through situated knowledge practices, and as a consequence they draw on environmental imperatives to agitate political action. This situated knowledge can be considered to be local expert knowledge which interacts with ecology and law through the relationships that the *campesinos* have been developing with actors from the national, district and local levels, and with the landscape the *campesinos* construct and live in. In the following part of this section, we provide details of each strategy and their impacts on the processes of deterritorialization in the urban-rural fringes of south Bogotá.

5.1. Political mobilization

The first form of the strategies employed by the *campesinos* occurs through social-political processes. In previous parts of this article, we

Table 3
Community strategies in the urban-rural fringes of southern Bogotá.

Strategy	Specific Practices	Outcomes
Political Mobilization	Acts of resistance in everyday life against high impact activities such as landfills or quarrying	Strengthened legitimacy of land ownership claims
	Interlocution with state and government agencies ("knocking on doors")	Reallocation of public resources targeting rural technical assistance (although intermittent)
	Interlocution with academia and professionals to receive technical assistance	Inclusion (although still limited) of rural and environmental interests in the urban governance agenda
	Contentious collective actions such as using existing legal tools and joining urban planning policy processes	Issuing of laws and regulations on rural issues at District level
Landscape management	Transition to more ecologically sound farming production and land-use practices: • Agroecological production and sustainable livestock husbandry • Rural tourism to promote the exchange of practices among concerned communities (rural and urban) • Improvement of water resource use, land-cover and streams protection through rural aqueducts	Improvement of local environmental conditions in some of the rural properties Strengthening of community ties through agroecological practices Legitimization of political strategies through concrete and functional land-use practices

referred to some acts of resistance in everyday life against high impact activities, such as the *Doña Juana* landfill, the quarrying extraction fronts in the urban frontier of the *Tunjuelo* River watershed, or housing projects such as *Nuevo Usme*. However, we must understand these acts of resistance as a part of a larger set of practices of a repertoire of political mobilization. They have some similarities to the means of action of social movements focusing on Bogotá's urban nature (Quimbayo Ruiz, 2018: 537), and although they are not exactly the same, some overlap can be identified as revealed by our research.

First, the *campesinos* have been mobilizing their political strategies through institutional channels. As direct action, this consists of a concrete practice of approaching the authorities personally and requesting them to make changes in the urbanization policies. We call the practice here "knocking on doors". The *campesinos* also collectively use the available legal mechanisms enabling them to reclaim their land use rights. Based on the definition of the situated knowledge above, we could understand the knowledge that the *campesinos* have been accumulating on the legal mechanisms and tools, as part of situated knowledge they are possessing. This is because they only become knowledgeable of these legal mechanisms through their presence in the landscape and in the communities; *the campesinos* have not studied or been educated on issues of law. The legal mechanisms also only make sense to them through the specific situations in which they are related to the tangible and material transformations in the landscapes which the *campesinos* inhabit.

Second, there have been successful bottom-up social and political claims that have helped rural issues reach the development agenda of the Capital District. This has enabled financial resources to be channeled to help engage local community leaders with state-led or community projects, or even hiring them as staff at governmental institutions mostly in the environmental sector and at different levels of the state administration. Furthermore, this has allowed technical assistance for the promotion and construction of infrastructure for rural production and

social and environmental improvements. This technical assistance by the administrative bodies to the *campesino* communities has been operationalized and reshaped through the utilization of situated knowledge on traditional agricultural techniques deployed by the *campesinos*.

According to our research materials, *campesino* leaders value the work done for their territory through collective actions and by community organizations. However, the strategies by the *campesinos* have not always been successful. The *campesino* communities have had a role in how the environmental narrative was introduced into urban planning in Bogotá. In the late 1990s when the national law on land use planning (*ley de ordenamiento territorial*) was issued, the planners did not understand how to manage the rural areas. When those areas were included in the first POT in 2000, environmental issues were considered, although not from the outset. According to our research materials, environmental issues came into planning from the rural and farming organizations making their demands. As a result of these demands and the development of the POT, the formulation and issuing of the Public Policy for Rurality of The Capital District was one of the main success stories of this development. This also led to a stronger interlocution with academia and professionals, for the *campesinos* to receive technical assistance. However, according to the *campesino* community leaders, the public policy targeting the rurality has mostly failed in its implementation. During field visits it was noticed that people have been discontented with being used by the state agencies and NGOs who have favored development projects instead of the communities. It seems that this has created problematic relationships between the state agencies and NGOs on one hand, and communities involved in the mobilization of resources, efforts, and projects to improve the social conditions of the rural people and their landscape, on the other.

5.2. Landscape management

A different kind of strategic action by the *campesino* communities can be typified, which is more material and less focused on having social impacts than the political action presented above: landscape management. This strategy also relies on situated knowledge practices. There are productive activities promoting more ecologically aware practices in the campesinos' households, appealing to the *campesino* way of life. Agricultural production initiatives such as agroecological production farms and sustainable livestock husbandry, agroecological rural tourism, and fair-trade agricultural products have all been promoted in projects between communities and state-led agencies, or between communities, universities and research centers. This was observed during the field visits and in meetings with the *campesino* social leaders. Although many of these initiatives are marginal and face challenges due to limitations in funding or administrative or legal restrictions, they have often led to an exchange of sustainable practices among concerned rural and urban communities.

The *campesinos* have also developed strategies to use and manage the landscape which they are part of. The existing agroecological activities have been supported by university researchers and occasionally by state programs (Ortiz et al., 2019). Moreover, in recent years a state-supported initiative called *Mercados Campesinos* (Peasant Markets) has been acting as a platform to bring campesinos' products to urban markets in Bogotá although with mixed results. Therefore, some *campesino* communities have relied on autonomous initiatives of seed exchange (Hoinle and Castro, 2019). The *campesino* farmers have tried to intensify their production systems to use the reduced areas available for agriculture more efficiently (Image 2). Another way forward is to try to show the importance of agroecological principles in bringing about both productive and sustainability benefits. Moreover, the farmers are relatively knowledgeable about the importance of aspects of biodiversity for their everyday lives. According to a recent research they use up to 231 species of native plants, mostly for medicine, while other major uses are for food and fiber (Pérez and Matiz-Guerra, 2017, 72). This kind of

Image 2. Agricultural area in *Pasquilla*, locality of *Ciudad Bolívar* (Photo credit: First author).

ecological information is relevant for the *campesinos* and it has been used by them to strengthen their claims to reterritorialize their living space against urbanization.

Gomez et al. (2017) recount joint action by representatives of local communities and municipal (*Secretaría Distrital de Ambiente*) and national level (*Alexander von Humboldt Institute*) institutions in *Usme* and *Ciudad Bolívar* in 2014. These actors have jointly defined comprehensive landscape management systems that combine means of social organization with legal instruments, though the latter have not yet been legally enforced. The proposed solutions have ranged from protected farming landscapes (based on Category V of the International Union for Conservation of Nature) to "agropolitan" parks (*Agroparques*) (included in the Rural Public Policy). Most of these solutions were included in land-use plans for urban expansion (e.g., *propuesta regional del borde sur*) developed by the *campesino* communities themselves, and formally presented to the Capital District authorities (Comunidad Rural de Usme, 2018). Among these landscape strategies, the role of the rural aqueducts (*acueductos rurales*) has been fundamental for the water supply of the communities (van der Hammen et al., 2018), and they have facilitated the emergence of social organizations among farmers and rural producers for local water use and management according to their needs and means of life (Arrieta, 2019). It is worth noting that although not always recognized, *campesino* women (*campesinas*) have had a central role in these activities (Liberato Táutiva, 2019). Again, situated knowledge combining ecology and law has been a vehicle to agitating political action as a strategy to reterritorialize the *territorio de borde*.

6. Discussion

Teresa Caldeira's (2017) concept of auto-construction emphasizes the agency of the people who are peripheral in relation to the formal systems of urban planning, politics and development. While auto-construction originally refers to the construction of urban space by the peripheral inhabitants themselves, we would like to see auto-construction as reterritorialization, and including more broadly the agency of the rural inhabitants in constructing and reconstructing the spaces and landscapes which they inhabit within the expanding urban areas. Applied to the urban-rural fringe (*territorio de borde*) of south Bogotá, we see that the strategies and practices of the *campesinos* are reterritorializing the spaces impacted by the expanding urban development. This reterritorialization process should not be understood only as construction of their own physical environments but rather as reconstruction of their own rural ways of life in the urbanizing frontier

of the city. Precisely, among community leaders in *Usme* there is a growing understanding that the rural is "another way for being in a city" (Gomez et al., 2017). Negative impacts of urbanization are being contested by *campesino* action to subvert an ideology that promotes unavoidable desirability of city life (cf. Angelo and Wachsmuth, 2015). Campesino communities perceive this ideology as pushed by planners and other land-use stakeholders who view rural spaces ambivalently in their planning practices. Such ideology is reflected in relocating undesired aspects (dumps and quarries) of city life away from the central urban areas, or conservation of water reserves or food provision for urbanites, without considering the material and symbolic conditions which sustain such spaces and the *campesinado*.

Our findings confirm that peripheral populations in Bogotá construct their own space by engaging in territorial strategies. The strategies and the respective practices that were identified coincide with findings from previous work related to rural areas in Bogotá (Pérez-Martínez et al., 2011; Vargas Mariño, 2015; Arrieta, 2019). Our case-study in *Usme* and *Ciudad Bolívar* emphasizes that both the strategies and the practices of the *campesinos* are based on situated knowledge which interacts with environmental discourse and involves an incremental development of expert knowledge on ecology and land-use law from the *campesino* communities bottom-up. This means that the *campesinos*' experiences on their traditional means of life are combined with external influences and expertise in order to sustain the everyday life in their rural properties and households despite urban growth. As a dialogical cycle of production of knowledge and reterritorialization, the process of reterritorialization is in turn producing particular forms of situated knowledge of nature in rural Bogotá.

Although the *campesino* identity is a crucial feature of the rural dwellers' strategies to maintain their land and livelihoods, this is just one part of the story. Throughout their struggle to deal with urban growth, they have performed reterritorializing actions mobilizing the *campesino* way of life but adding some "urbanite" practices, even finding solidarity among inhabitants of peripheral city neighborhoods who are also impacted by the effects of unequal urbanization. Considering that the most severe impacts of urbanization in the Capital District impact their territory, the organized *campesinos* attempt to find incremental and creative land-use solutions in their everyday life and try to engage state-agencies or other stakeholders from the city such as universities, research centers or other concerned social actors. Indeed, this implies the creation of a set of public-private networking initiatives for local governance, similarly to other places in Latin America (cf. Méndez-Lemus et al., 2017). This action pattern is clearly visible in the

political mobilization and landscape management strategies described in the previous section. Our results also coincided with Marcela Arrieta's ethnography on *Usme*'s rural aqueducts (Arrieta, 2019) that power is not only legitimated by hegemonic expert knowledge represented by state institutions and legislation. Rather, and following Tilly (1999), the legitimacy of knowledge and law is co-created by communities confronting the institutions that represent state power.

Therefore, the strategies and practices identified in our case study are not only emerging locally but are also a product of collaborative actions with state or other external agencies, temporary as they might be. Similarly, Osorio Ardila (2020) suggests that the social, political, and technical networks related to environmental protection in the northern urban fringe of Bogotá are embedded in controversies over nature and the production of ecological realities. Notably, however, some of the *campesinos* we met in Bogotá's urban-rural fringe, especially in *Usme*, were less in conflict against the state compared to other *campesino* leaders and communities in *Mochuelo Alto* (*Ciudad Bolívar*) or in other parts of the Bogotá-region such as those living in the areas of *Cruz Verde* and *Sumapaz*. This situation was confirmed by the interviews with practitioners, former planners, local activists, the participant observations in the field, and through former projects where the first author of this article has engaged with these types of initiatives (Gomez et al., 2017). Communities in *Cruz Verde* and *Sumapaz* are more politically outspoken and explicitly struggling towards food sovereignty as a political *leitmotif*. Some nature conservation measures especially in *Sumapaz* have led to conflicts between state action, land-use, and protection of biodiversity and water resources ignoring the social dynamics of the inhabitants and landowners. Moreover, military interventions and securitization in the frame of the Colombian internal political conflict have also been deployed to justify developmentalist and extractive interventions (Peña, 2016).

It seems that sustainability policies addressing rural issues are not working. Most rural areas of the Capital District, despite being legally recognized as areas for farming activities and ecological protection, have been considered by urban planners and stakeholders in the real estate sector as areas for urban expansion, or they have been employed to allocate extractive and waste disposal activities away from the city core. In the most extreme cases, rural areas and inhabitants have been ignored by planners who have failed to recognize them as established communities with their established ways of life and local economies. However, as this research has shown, some of these communities have managed to overcome this through joint action with state institutions (especially environmental authorities) when needed. In the meantime, the *campesinos* are caught between advocating their way of life, bringing in all the possible allies, and trying to harmonize things with the city. After all, the city of Bogotá has been constructed from rural areas through its history.

7. Conclusion

At the beginning of this article, we posed the question: what happens when peasants do not migrate to the city but, rather, the city expands to their areas of residence. To address this question, we have explored the different ways in which the *campesinos* living within the administrative city limits of Bogotá seek to cope with the urban expansion towards the rural spaces they inhabit. We have also investigated the context of urbanization that concretely includes the actions of administrators, planners, and private developers. While urbanization is a large-scale global phenomenon with multiple political-economic mechanisms driving it, these are the actors who create the tangible conditions locally against which the *campesinos* implement the strategies and practices that help them to keep up with the changing physical and social environment. The strategies and practices that we have identified suggest that the urban expansion into rural spaces and over the places that are inhabited by rural populations leads to diverse forms of action by the populations. Given the importance of urbanization as a phenomenon globally, these

strategies and practices are also interesting in a broader perspective than just Bogotá.

In terms of the context for the actions of the *campesinos*, according to the findings from the research, the rural spaces in Bogotá have been deliberately used by the planning authorities and private contractors to locate activities that would be undesirable within the urbanized space, such as landfills and extractive activities. The rural spaces have also been defined as "valuable" for the city only because they have a role in water supply or housing development. Both of these development options ignore the *campesino* settlements. At the same time, urbanization-driven decisions over the land use inevitably affect the *campesino* communities and the rural landscapes. We can identify here a process of deterritorialization concerning the originally rural spaces where the *campesino* communities of Bogotá are located.

Our findings reveal that the *campesino* communities wish to maintain their *campesino* identity despite the ongoing socio-ecological transformations caused by the urbanization and the economic drivers for these transformations ranging from the local to the global scales. We have explored how the *campesinos* have been implementing reterritorialization strategies and practices that are based on situated knowledge, so as to better deal with the social and ecological impacts of urbanization. While the urbanization can be seen as a part of deterritorialization, or processes of dispossession of territory and increasing spatial injustice, in our study we have seen attempts at reterritorialization as a response to these transformations. Reterritorialization here consists of resistance strategies against urbanization, and acts of caring for the territory.

Within these attempts at reterritorialization, we have identified strategies and practices that the *campesinos* in the southern urban frontier of the city of Bogotá employ to deal with the pressures of urbanization in their everyday environments. These include actions of political mobilization related to conflicts over environmental issues, active resistance to urban development, and improved management of the physical landscape and its biodiversity. We have focused on local strategies and how the *campesino* communities have achieved institutional collaboration with the authorities. They have put forth initiatives concerning their preferred forms of land-use in the context of urbanization of the rural spaces within the city boundaries. Nevertheless, while public policies, partly following the demands by the city inhabitants, have been progressing in favor of peripheral communities and towards environmental sustainability, the interests of authorities and private developers remain a dominating factor in the development of the rural spaces for other purposes than those preferred by the *campesinos*. Despite the occasional successes to raise awareness of the importance of the *campesino* issues, most inter-institutional initiatives have failed to meet the social, economic, and environmental necessities of the *campesino* communities.

7.1. Policy recommendations

Finally, we would like to take a step towards suggesting a number of relevant options for public policies in order to mitigate the currently adverse situations in which the *campesinos* operate. Following from our findings, current land-use and urban planning tools in Bogotá would urgently need to address the realities of contemporary urbanization within the rural spaces impacted. Therefore, administrative binaries such as the city/rural would need to be rethought to manage spaces such as the *territorio de borde* in *Usme* and *Ciudad Bolívar*. Our research results show that reconstructing and documenting trajectories of environmental and land-use conflicts helps to present in detail the impacts of current and future interventions on particular urban/rural territories.

It would be truly important to assess and redefine the existing legal instruments in land-use and urban planning in Bogotá and elsewhere by taking into account the geo-historical perspectives. Although the planning instruments have been useful to a certain extent for the case of the *campesino* communities, as such they are still very limited in their ability to foresee and manage the rapid changes brought about by the

urbanization. Moreover, bureaucratic shortcomings would need to be overcome, for instance, in relation to the environmental authorities' narrow approach towards ecosystem management that currently is based on urban/rural dichotomies. At the same time, in order to better consider the rural conditions, state action should not be subordinated to sectors of private interest such as real estate, logistics, and infrastructure.

Finally, from the perspective of the *campesinos*, one additional strategy among all the *campesino* communities that was not identified within our empirical research material could be to follow a twofold agroecological process of production at the scales of the landscape and the household. Overall, the existing limitations in the planning instruments are a reminder of a call for solutions that would be more than technical, and they also point to a need for political commitment in favor of fair land-use planning practices that take into account the challenges posed by urbanization.

Funding

CRediT authorship contribution statement

Germán A. Quimbayo Ruiz: Conceptualization, Methodology, Investigation, Formal analysis, Writing - original draft, Funding acquisition. **Juha Kotilainen:** Conceptualization, Methodology, Formal analysis, Writing - original draft, Writing - review & editing. **Matti Salo:** Conceptualization, Methodology, Formal analysis, Writing - original draft, Writing - review & editing.

Declaration of Competing Interest

The authors report no declarations of interest.

Acknowledgments

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ARTICLE IV

Quimbayo Ruiz GA, Salo M, Hiendapää J and Kotilainen J. Ecologizing urban planning in Bogotá: situated practices and conflicting rationalities. Manuscript proposed for publication.

Ecologizing urban planning in Bogotá: Situated practices and conflicting rationalities

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Abstract

We explore the emergence of ecological concerns in urban planning, using the case of Bogotá, Colombia. Although ecologizing urban planning has been a recurrent theme in Bogotá for almost three decades, in practice the urban planning processes have been unable to adequately address the serious sustainability problems the city is facing. We analyze urban planning by triangulating data from interviews with local stakeholders, policy document analysis, and participant observation insights. We pursue the evolving idea of city nature by reconstructing the situated ecological knowledge of the local actors participating in urban planning processes. Environmental imperatives circulating in these processes (i.e. ecological structures) form the core of the idea of nature in the city. However, in moving beyond the "implementation-failure" approach and state and society dualisms, a more radical rethinking and reworking of planning practices is required if more just urban environments are to be achieved.

Keywords: Latin America; Colombia; planning; urban nature; situated ecologies

1. Introduction

Today's international sustainability agenda considers cities leverage places for climate change adaptation through nature-based solutions (Frantzeskaki et al., 2019). Improved planning practices are at the forefront of this development (Haase et al., 2017). Consequently, the ecosystem approach and related concepts such as ecosystem services have been introduced and tested in urban planning. We claim that such environmental imperatives have found their niche in local urban planning processes and become constitutive of the idea of urban nature. However, even the identified urban sustainability best practice often falls short of providing solutions to current urban challenges. The urban sustainability discourse that builds on a combination of the *green* (nature-based) and *grey* (technological) solutions has often reinforced the urban inequalities not only in relation to questions of access to nature and its values but to other urban resources (Wachsmuth and Angelo, 2018).

In the Latin American context Colombia has been acknowledged as having among the most advanced and inspiring urban planning legislation (e.g. Law 388 1997 of territorial development) and planning systems (Rossbach and Montandon, 2017). Narratives of Colombian "urban miracles" commonly circulate at international urban planning fora, referring to best practice learned in cities such as Medellín and Bogotá (Leite et al., 2020; Berney, 2010) (see, for example, initiatives such as *Urbanismo Social*, the famous bus rapid transit system *TransMilenio*, and the *Ciclovía* Sundays and holidays carless streets event). However, these achievements have also been questioned as better illustrating the circulation of ideas among urban planners than forming actual solutions to current urban challenges in public transportation and the use of public space (Franz, 2018; Montero, 2018). Simultaneously, the country's democratic system and rule of law are questioned because of the widespread and deep inequalities rooted in the persistence of restricted democratic rights and participation due to political conflict and violence. Stories of urban sustainability success in Bogotá may have helped conceal the ecological issues at stake. We refer here to the state of and threats to nature embodied in the hills, wetlands, rivers, streams, and green areas, with their related ecological processes that form part of the

city and its surrounding region. Focusing on specific cases like the Colombian capital reveals a richness of detail in the craft of planning urban nature.

Most studies of urban planning in Bogotá have reflected urban planners' perspectives (Salazar Ferro, 2007), or presented critiques related to the concept of urban centralities and their implications for metropolitan urban growth (Beuf, 2016). With few exceptions (Ándrade et al. 2013) ecological considerations have been external or absent in these studies. In this article we analyze how ecological issues have been incorporated in urban planning in Bogotá from the 1990s to the present. We follow the evolution of the idea of urban nature and analyze how planners (and related actors) have sought to incorporate ecological considerations in their practices, reflecting the broader emergence of ecological issues in policymaking in the Colombian capital. For example, concepts such as ecological structures (*estructuras ecológicas*) or related to ecological connectivity have been key to framing the urban and regional ecology in Bogotá (Gallini and Castro, 2015). Our contribution is to provide a better understanding of the operationalization of ecology in urban planning practices. Drawing on the contradictions and failures, and some successful experiences, in Bogotá, we identify justifications for the call for a more radical rethinking and reworking of current practices and concepts (cf. Metzger, 2018) to identify possible ways to ecologize urban planning. To understand how to achieve ecological urban planning in specific geo-historical conditions, it is therefore necessary to challenge common assumptions about the state, society, nature, and relationship with planning. This article attempts to respond to these questions: How have land-use planners incorporated ecological considerations in their planning practices? What insights does this offer for broader planning theory and land-use practice?

2. Conceptual approach: Urban planning and urban nature

Land use and urban planning can be defined not only as a technical procedure and political process (Murdoch, 2006), but as a practice and field of ideas (Mehmood, 2010), or even as a modernist craft *par excellence* (Metzger, 2018). Nature in the city was long a question of two separate domains in urban planning, but urban environments

undoubtedly have a geographical history as products of intertwined natural and social processes (Harvey, 1996; Swyngedouw, 1996). When Ian McHarg (1969) published his influential work "*Design with Nature*," it marked a pathway for a practice labeled "Ecological Design." McHarg's work is still a grounding point of reference for contemporary approaches to ecological planning, including those that have more recently incorporated the ecosystem approach and the concept of ecosystem services (BenDor et al., 2017).

The role of ecology has become more evident in contemporary planning, positioning environmental imperatives in global and local urban sustainability agendas (Roberts et al., 2009). Yet planners' and decision makers' opportunities to interpret environmental imperatives may be reduced by specific ecology-related legal and administrative requirements, or even power structures. The role and significance of ecology are not as evident in the actual planning practices as the imperatives might suggest. Likewise, green strategies are not necessarily ecologically oriented but may rely on more complex interactions between nature, capital, society, and technology (Wachsmuth and Angelo, 2018). Moreover, where the ecological considerations have led to the implementation of nature-based solutions and climate change adaptation, this has frequently helped mobilize and legitimize land-use approaches that tend to reinforce the existing urban land-use injustices (Di Chiro, 2016; Haase et al., 2017; Kotsila et al., 2020).

Amid these contradictions, when certain environmental discourses, ideas, and practices are locally articulated, situated urban ecologies arise (Ernstson, 2013; Lawhon et al., 2014; Haase et al., 2017). Ecological functions such as those of vegetation in the regulation of water runoff and the microclimate, and other features like patch dynamics, connectivity, and edge effects, may become important for urban ecologies. Yet situated urban ecologies are ecological structures and functions grounded in specific geo-historical contexts and human-nature networks, and assigned with local significance (Ernstson and Sörlin, 2019). We thus consider situated urban ecologies as the overt knowledge people have of their natural surroundings (Epstein et al., 2014). For example, this is knowing how specific features of green space function to regulate waterflow or the local microclimate.

In our research we refer to *ecologizing urban planning* as the process in which planning practices incorporate ecological considerations. We are interested in how planning practices may succeed in making environmental imperatives work. This can be understood from the perspectives of ecological knowledge, because it results from an academic discipline and various kinds of expertise, and as situated ecological knowledge arising in specific land-use and productive practices. Based on Haraway's notion of situated knowledge (1988), situated urban ecology is a concept that refers to practical knowledge of how a particular piece of urban nature seems to work. We are not necessarily interested here in subjects' embodiment but in the key socio-spatial scale of analysis regarding the subjectivity and situatedness of planning practices, and their intersection with urban ecology.

An analysis and assessment of situated urban ecologies therefore also requires the challenging of certain assumptions about planning practices, especially if our focus is on postcolonial contexts or the so-called "Global South" and comparative approaches (Ernstson and Sörlin, 2019). We draw on arguments aligned with an understanding of planning beyond dualist conceptualizations such as state *and* society, reaching for an analysis of interactions between natures, networks, actors, and politics. We also recognize that planning practice is not only carried out by "planners" but involves a broader set of actors and natures (Lewis and Ernstson, 2019; Osorio Ardila, 2019; Sundaresan, 2019) embedded in power structures and a maelstrom of conflicting rationalities. In our analysis we refer to conflicting rationalities concerning the understanding and weighting of substantial and procedural issues of land-use planning (Watson, 2003). Our arguments are in line with recent reconsiderations of urban theory that recast how the urban is understood beyond the dominance of the European and North American traditions (Buckley and Strauss, 2016; Robinson and Roy, 2016; Caldeira, 2017; Oswin, 2018; Zeiderman, 2018; Arboleda, 2020).

In Latin America (or the Latin America and Caribbean region: henceforth, the LAC), certain urban theories and approaches to planning and development have been imported and then further developed, reinterpreted, and circulated in the region (Valencia, 2013). The

LAC has not been a mere spectator of the city and regional planning debates, or a passive adopter of foreign ideas (Chapple et al., 2012). Since the 1930s various approaches to city, regional, and development planning have been reinterpreted, adapted, and developed by decision makers and stakeholders, depending on the country or context, from infrastructure construction (1930s–1940s), economic geography (1950s–1970s), to political-economic (1980–1990s) and (environmental) governance (1990s–2010s). From ideas of modern urbanism to the circulation of best urban practices, this planning development has recently become embedded in the sustainability agenda (Angotti and Irazábal, 2017).

Similarly, the intertwining of urban processes and nature in the LAC is unique (Sedrez, 2013). The LAC is simultaneously the most urbanized part of the world and one of the most biologically diverse regions (Pauchard and Barbosa, 2013). However, it is also often characterized by "weak" environmental governance, a high level of social and economic inequality, and a mismatch between the understandings of local social and ecological processes and spatial planning practices (Dobbs et al., 2019). In both the LAC and Colombia there is an increasing interest in urban nature and its relationship with the promotion of comprehensive and strategic planning in land development (Mejía, 2017). Although the re-emergence of environmental ideas and values has affected city and regional planning in several cases in the LAC region, the meanings, goals, and outcomes of what is meant by "sustainable" or "green" remain contested (Quimbayo Ruiz and Vásquez Rodríguez, 2016; Anguelovski et al., 2019) and require a more exhaustive assessment.

3. Materials and methods

All the fieldwork to collect data, including interviews, participant observation and collection of documentary data, was carried out by the first author in 2017–2018 as part of a doctoral research project on environmental conflicts related to land-use planning in Bogotá. The case context, which includes the city-region area known as *Sabana de Bogotá*, has been described elsewhere (Quimbayo Ruiz, 2016; 2018; 2020). We analyzed planning

policies and practices through the triangulation of data from interviews with local stakeholders, policy documents, and participant observations. Our research builds on qualitative methods and draws on some ethnographic tools. We thus used content analysis for this dataset to identify issues related to the impact of ecological concerns on urban planning.

In the first method for collecting data there were 32 interviews with planners, practitioners, and social leaders who have participated in the urban planning processes in Bogotá in the last 30 years. The first group of interviewees consisted of people who had previously been heads of planning offices at state agencies in the Capital District, current officers, professional planners, and experts in urban ecology with scientific and non-scientific training. The second consisted of social leaders who used to work as staff in state agencies as part of the joint efforts of the public administration and local communities to advance local community-based projects. Of the total of 32 interviews, 12 were thematic, exploring the role that ecological concerns have played in the planning practices and the main challenges these concerns have posed. Twenty were unstructured, and carried out as individual and group interviews. The purpose of the unstructured interviews was to complement the situational interpretation created by the field experience and thematic interviews.

In the second data collection method participant observations were made by the first author during planned visits to the case study area. It was conducted by participant observation activities during meetings and public events dealing with land-use planning organized by social organizations and state agencies. As in the interviews, the participant observation focused on the role of ecological concerns in urban planning practices. The topic of ecological concerns was isolated from larger discussions during the observed meetings and events.

Third, the research collected a large body of technical and policy documents addressing the city-region's urban planning. The documents spanned the period from 1970 to 2018. We compiled the main body of documents from physical public and private archives in

the city of Bogotá. The first author was given access to the private archives by the interviewees, who indicated the existence of such archives. Other publicly available documents were found on the internet. To find the documents on the internet, we used the Spanish term *Ordenamiento Territorial* (which translates as spatial planning) and *Bogotá* as search words. We were able to collect a total of 118 documents from the physical and digital archives. They concerned the topics of urban, metropolitan, and environmental land-use planning, as well as urban biodiversity and urban ecology. The documents were then organized according to theme by coding their content and using the ATLAS.ti software to facilitate their management.

4. Results

4.1. Ecological structures: ecologizing the planning practice

Land-use legislation and planning tools in Bogotá include many ecological concepts and criteria. The documents analyzed for this article included about 430 different concepts or terms concerning ecology, geology, geomorphology, and hydrology. However, most of these terms appeared in the body of data only once. Others were used interchangeably or disparately to mean *the environment*, such as "*ambiente*," "*medio ambiente*," or "*medio ambiente natural*. Still others constituted key vocabulary across the texts, including terms like "*estructuras ecológicas*" (ecological structures) and "*conectividad ecológica*" (ecological connectivity). The knowledge behind this ecological terminology stems mainly from the national universities and research institutes providing technical and scientific information regarding the ecosystem features of the *Sabana de Bogotá* region.

Environmental and planning initiatives in Bogotá have been aligned with principles from the National Constitution 1991, and mainly from municipal planning legislation such as Law 99 from 1993, and Laws 152 from 1994 and 388 from 1997. Law 152 concerns the Municipal Development Plans (henceforth: PDD) issued by each district or local government for its four-year term, and 388 to the Municipal Land-Use Plans. The PDDs have been very important since their first formulation. However, the environmental

imperatives were much more explicit in the formulation of the Master Plan for Land Use (*Plan de Ordenamiento Territorial*, henceforth, POT) in 2000. The POT has become the main reference for guiding urban planning in the city and the formulation of specific projects for each administration. It has a maximum horizon of 12 years, but thus far—and despite several failed attempts to renew it—its goals have been updated and legally bound only once, in 2004. The PDD is for the short term, and it has a relationship with the POT that defines some budgets for implementing projects or land-use measures during each government's administration. The POT also defines three components (general, urban, and rural) and three planning structures: the Main Ecological Structure (henceforth: MES); the Functional and Services Structure; and the Socioeconomic and Spatial Structure. Finally, the POT must be aligned with other spatial planning mechanisms like the Watershed Plans, or POMCA (Spanish acronym).

The concept of the MES was initially introduced by the Dutch-Colombian ecologist Thomas van der Hammen (1998) in his study called the "Environmental Plan of the Upper Bogotá River Basin: Analysis and Orientations for Land Management," prepared for the environmental authority of the Regional Autonomous Corporation (CAR) of Cundinamarca, the environmental authority for rural land in Bogotá. This planning proposal was developed when Bogotá was preparing its first POT. To be approved, the POT needed (and still needs) the CAR first to agree the environmental matters of regional importance. This was the first explicitly ecological input for the city-region's spatial planning.

The ecological aspects of the POT process not only started the ecologizing of urban planning in Bogotá but unleashed a long-term urban development-nature conservation conflict at the city's northern edge. After political and legal disputes between the District Administration and the CAR to resolve this issue, the Ministry of the Environment intervened, based on insights from a commissioned panel of experts (cf. Ardila, 2003). Its decision was that the POT needed to abide by and comply with the Ministry's decision in favor of protecting the important ecological areas on the northern edge of the city as in

the rest of the District. The MES was therefore incorporated in the POT, following this definition:

> "(...) The Main Ecological Structure is based on the ecological, geomorphological, and original biological structure existing in the territory. The hills, the alluvial valley of the Bogotá river, and the plains are part of this basal structure. The set of reserves, parks, and remains of the natural vegetation of streams and rivers are an essential part of the desirable main ecological structure, and carrying out ecological restoration is fundamental to its realization. The purpose of the Main Ecological Structure is the conservation and recovery of natural resources such as biodiversity, water, air, and in general, the environment desirable for man [sic], fauna, and flora (...)."
>
> (Alcaldía Mayor de Bogotá 2004. Article 72, Decree No. 190)

The concept of the MES is currently used by most environmental scientists and experts, and it has also been explicitly included in land-use planning and planning instruments such as the POT. Public debates around the POT have involved grassroots movements, practitioners, and scholars through hearings and citizen meetings convened either by the Municipality through its offices or the environmental movement organizations. Social organizations and environmental activists have also mobilized this concept for various causes (Quimbayo Ruiz, 2018).

Certain ecological concepts building on the MES are dominant in the analyzed documents and interviews. They concerned "ecological structures" (*estructuras ecológicas*) and terms related to ecological connectivity (e.g. *conectividad ecológica*, *conectividad biológica*, *conectividad funcional*). The primary motivation for using them was to prioritize the role of the District's protected areas system, which was first established in the POT. A renowned biologist and environmental expert from the Bogota region explained the origin of the MES concept in an interview:

" [About the MES] What Professor van der Hammen did not say was that the ecological structure was not completely his idea, but was an idea rejected in the Netherlands in the 1980s. (...) He took part in it [its development] in the Netherlands, but it was rejected (...) It ended up being called "Green Networks" ... (...) or perhaps there was another idea called the main ecological structure, and that was brought to Colombia (...) But let's say that Professor van der Hammen adapted and applied it, having a basin as a unit of study (...) is very interesting (...) It shows two land-use elements in one: a natural basin on a planning element for land use (...) That document on the study of the ecological structure is a milestone. "

(Interviewee #10)

Besides, another renowned expert biologist, who has not only had a technical influence but has accompanied the social processes of the defense of wetlands, argued even more incisively about the technical nature of the concept of the MES:

"All the reviews I've done, and everything that's been said, everybody talks about the ecological structure. But for me that work is barely sketched. In my view, what did van der Hammen do? He created that concept and let's say he socialized it. He made it known. But he also said that this work was unfinished, and all of that still remained to be done. Indeed, I've checked it. For me, it's always frustrating. For example, when I worked on the *Acueducto* [Bogotá's Water Company], one of my weapons to convince the engineers was "the ecological structure," but what is that? Where is it? What is it like? One only has a map outline, but what does [the map] contain? ... (...) That's what you have to work on (...) You have to show people: well what is the ecological structure about [referring to a work that the interviewee has been doing with another colleague]?"

(Interviewee #9)

Although the interviewed biologist highlighted the need to conduct more studies of ecological processes such as ecosystem connectivity, ecosystems services, specific ecological function per species, and so on, the claim about the need to fill in the content of the MES map contrasts with the high level of appropriation the concept displays among

the variety of interested or conflicting parties. This means the level appropriation of the MES from professionals, experts, social leaders, or even state officials and planners.

Concerning the role of the ecological elements that constitute the MES, such as hills, wetlands, and rivers, the first of the two biologists remarked:

> "Bogotá is the knowledge center of Colombia. And it has the largest number of universities of environmental sciences (…) This has helped many professors and students become aware of the wetlands (…) It is no coincidence that there is a center of thought formed by a group of universities (…) Some of the [social] leaders started making promises to nature (…) that click [sic] (…) I don't know if that person knew then about the wetlands. Those clicks [sic] were accompanied by technical arguments (…) And with those technical arguments, it was easier to convince the community. Then there is another outbreak, groups of young people using electronic means (…) They mobilize opinions (…) Then they [the young people] form networks (…) They're part of the debates."
> (Interviewee #10)

The MES therefore seem sufficiently technical and scientific to function as a tool to foster and trigger political mobilization for ecologizing planning. In other words, the role of urban ecology has not been only something ecological in the traditional scientific sense, but has been connected to social and political mobilization by various means, including community-based work, citizen science initiatives, and the dissemination of ecological knowledge by social media. Local communities have played an important role in mainstreaming the ecological ideas (and even imagination) stemming from the MES. A former expert officer from the District's Environmental Office (SDA) pointed this out in saying that before 2000, during the formulation process of the first POT:

"The environmental [concern] was taken [seriously within the institutions] after the communities mobilized (…) The environmental [concern] in the city was [the advocacy of] wetlands and the participatory urban agendas, and in the rural areas it was peasant mobilization."

(Interviewee #11)

This expert officer used to work for a state agency in a joint effort with local communities. Her statement confirms the central role of the environmental organizations and local communities in the art of positioning ecological ideas in land-use and urban planning debates (Quimbayo Ruiz, 2018). The peasant communities of the District, their organizations, and leaders have been very active in their use of a repertoire of socio-spatial strategies to cope with the negative effects of urbanization in their everyday way of life and in addressing sustainability concerns from this position (Quimbayo Ruiz et al., 2020).

This social pressure also included support from independent scholars and intellectuals in the field of ecology and environmental management. These processes of social mobilization and their underlying ecological considerations were the product of a set of situated ecological knowledge. Such situated knowledge was a fundamental element in the promotion of more comprehensive urban-regional planning between the city and its surroundings, including water, food, and energy provision. This situated knowledge emerged from the regional discussions developed by the Regional Planning Board (*Mesa de Planificación Bogotá-Cundinamarca*). The establishment of this board also coincided with a consensus to keep the areas vital for Bogotá as sources of water, food, and energy safe, or even to "securitize" them against armed threats (Peña, 2016). This then translated to integration efforts between the city and its surrounding region, which had begun by the 2000s. In this process the concept of the MES became more visible, and the environmental imperatives were later enthusiastically included in planning agendas not only in the Capital District but at the regional and national levels. This relatively positive institutional environment for the inclusion of ecological considerations has existed during the 2000s and most of the 2010s. Indeed, the influence of mainstreaming the MES when

the POT was assessed for its first short-term modification in 2003 was evident, as a former head of the District's Planning Office confirmed:

(…) [our] POT was basically based on the MES principle (…) (Interviewee #8)

Yet environmental commitment in Bogotá (and the surrounding region) has been noticeably challenging, and is dispersed between various state administrations. Although planning has become increasingly ecologized, at least on paper and in official declarations, political commitment has been abandoned amidst the exigencies of a very hectic and volatile local political setting (Escallón Arango, 2014; Gilbert, 2015). During Mayor Gustavo Petro's administration (2012–2015) there was an explicit intention to address socio-spatial segregation through climate mitigation and adaptation imperatives, but this intention was highly contested by political and economic powers with an influence on urban development and infrastructure (Zeiderman, 2016; Eaton, 2020). The constant political changes in national, regional, and district administrations meant some intentions from the environmental policy were disputed or even distorted. This was particularly visible in Enrique Peñalosa's second administration (2016–2019). Moreover, within the complex local bureaucratic system, ecological concerns have also been subordinated by development sectors such as urban infrastructure. Urban-regional and metropolitan planning between the District and its surrounding region has been caught in a similar political and administrative quagmire (Thibert and Osorio, 2014).

4.2 Roadblocks on the path to ecologizing urban planning

There is a noticeable consensus among the interviewees that the normative framework could help in achieving sustainable land-use planning practices in Colombia. This epistemic community also shows a high level of expertise in the ecological aspects of land-use planning. For example, an urban lawyer who was formerly the main officer of both the District Office of Planning and the District Office of Housing commented on a common assumption among practitioners in making explicit environmental criteria in planning practice:

> There is no such thing as environmental land-use planning (*ordenamiento territorial ambiental*). Spatial planning (*ordenamiento territorial*) is already environmental, and that's different.
>
> (Interviewee #2)

Concerning the ecologizing of land-use planning in the Bogotá region, another interviewee, who is a prominent Colombian expert and disseminator in environmental matters and has worked as a regional environmental planning consultant with a focus on climate change adaptation, said:

> (...) [in the Bogotá region] there are institutional and legal successes at certain moments, but they are marginal experiences ... (...) How can we make these [experiences] public policy?
>
> (Interviewee #3)

Although this statement succinctly encompasses *what* has happened in the recent history of land-use and urban planning, it does not reveal the social and political entanglements of *why* it has happened (and still happens). District policies have been embedded in a volatile political landscape and suffer from the lack of a long-term shared vision, enduring from one mayor and administration to another. This issue was repeatedly underlined in our interviews, and even the current officers acknowledged it very straightforwardly:

> (...) each [District] administration comes with its different approach, which is very irresponsible (...) This city has used these [environmental] issues to please others, but when one sees the interests that have served to block things out, it's very sad. They [former planners] managed to introduce a plan, but would not implement it (...)
>
> (Interviewee #1)

This lack of a long-term shared vision across administrations is parallel with a constantly high staff turnover rate at state agencies, causing a loss of institutional memory and influencing state budgets according to the political agenda of those holding power (or in

turn in the District's office). Besides this, how planning tools are established in the planning legislation influences administrative decision making. For example, two of the interviewees who had held high-level positions in state planning agencies at the district and national levels became self-reflective during the interviews. They argued that there was an excessive inflexibility in the legal planning system that functioned to define and establish polygons of conservation or productive zoning, reproducing a "silo" management approach, or reinforcing nature and non-nature divides. Interviewees who had in the past worked in state agencies described how they followed technical guidelines in establishing protected areas to advance ecological objectives but simultaneously prioritized the allocation of problematic high impact activities such as the District's infamous "*Doña Juana*" landfill (Ortíz Díaz, 2019) or quarrying activities over marginalized urban-rural fringes or rural areas (Ordoñez et al., 2013).

The adopted planning approach subordinated ecological processes of (neoliberal) urban development. Some of the experts consulted also suggested this was not a sign of ignorance but of an overt political intention typical of many sectoral interests such as real estate and transportation infrastructure with influence and power in partisan politics. This even afflicts decision making in state institutions and urban land-use norms (Palacio Acosta et al., 2018). Thus, besides conflicts of interest, the lack of clarity in the planning rules has also created an uncertain scenario for the ecologizing of urban planning. The long-term constraints of the current institutional setting (and its entanglements) hinder ecosystem protection and management, and planning practices remain locked in endless legal disputes. This issue is particularly noticeable in urban-regional ecosystem planning and management, as institutions from the district, regional, and national levels, which often espouse different political views and planning interests, clash constantly because of their overlapping territorial roles. The three best known are: 1) the recovery of the Bogotá river and its basin; 2) the management and conservation of the Eastern Forest Reserve (*Cerros Orientales de Bogotá*); and (3) the Thomas van der Hammen Reserve. The last case is in an area the Ministry of the Environment established in 2000 as an important element of the urban-regional conservation space on the northern edge of the city. However, it has been subject to many administrative and legal obstacles that have

materialized due to the pressure of real estate interests that exert huge influence on the state and authorities. One of the main ecology experts consulted for this research confirmed that "Nature in Bogotá has become a lawsuit object" (uns.int.#12).

5. Discussion

In Bogotá inputs from ecologists and other experts, such as the concept of the MES, opened the door to (re)thinking how to ecologize land-use and urban planning. Yet this resulted in the simultaneous instrumentalization of the MES, and it is being stripped off its original meaning. Recently, a contested proposal for a new POT led by the District Administration of Mayor Enrique Peñalosa (2016–2019) went as far as to abandon the concept of the MES to prioritize a more "democratic" use of the public space. However, according to local experts and commentators this was an attempt to justify the major state-led real estate operations of land-use change for speculative urban development. At the time of writing the POT remains under discussion, although the current administration (of Mayor Claudia López) has declared the importance of the MES in urban planning in the current District policies, thanks to the local environmental movements' actions.

What happens in terms of political incidence when there is sufficient situated ecological knowledge of development in spatial planning practices? A consideration not fully covered by our study in Bogotá that requires further research concerns how local ecological conditions, processes, and biodiversity shape values and situated knowledge in planning practices. Although there are numerous flaws in urban planning, infrastructure, and effective access to and use of green public space in Bogotá, it is necessary to rethink how ecology is operationalized and made effective in the planning practice instead of underestimating ecological concepts such as the MES. Indeed, a tension between the value of articulating local ecology and the development of urban infrastructures is always present in Bogotá's planning discussions. Yet in the Colombian context, there is much to question in infrastructure development because of shortcomings and overt corruption. The local political elite has for decades diminished

the role of ecological values in favor of for-profit land use and speculation by mobilizing the narrative of "progress" and development aspiration. This issue needs further research.

Our results raise similar concerns, which are identified elsewhere (Haase et al., 2017; Wachsmuth and Angelo, 2018), about the instrumentalization of ecological imperatives, especially on the part of "roadblocks." Yet our case differs from the others in that the inclusion of these ecological concerns in the implementation of land-use planning has been somewhat ambiguous and incomplete, and has had disparate results. Intentions and practices in ecologizing planning have therefore not materialized to form a stable political project of urban governance, despite some of the achieved goals. Paraphrasing Carrizosa (2014), Colombia, and in this case the Bogotá region, is perhaps one of the most complex and diverse ecosystems in the world, but its planning is done by a handful of people. In a volatile political setting and socio-spatially segregated and fragmented urban space with serious land-use challenges, this may simply reinforce a narrow view of land use and the continuation of the colonial/modernity project (Quijano, 2007) by contemporary Colombian state and society formations.

Our case study may shed some light on how complexity in geo-historical contexts is addressed elsewhere. In considering our empirical evidence, we wish to return to a discussion of why it is important to adopt a more radical rethinking and reworking of current ecological planning practices and concepts (Metzger, 2018). Assessing a case-study like Bogotá (or others in the so-called "Global South") under the common "implementation-failure" framework may lead to the complexities of local governance and socio-ecological entanglements being ignored. This may have two outcomes: 1) a failure to address the unbalanced political power among stakeholders who struggle for a way to plan and control the city; and 2) a consideration of a positive perspective to identify a new opportunity to establish more democratic practices in the ecologizing of planning among existing conflicting visions. We further elaborate these ideas in the remaining part of this discussion section.

Planning analysis anywhere, and especially in post-colonial societies (or the "Global South"), should move beyond understanding governance outcomes as dualist conceptualizations of state and society (Sundaresan, 2019) toward an analysis based on networks or power and knowledge in planning practices. In the case of the establishment of an urban protected forest reserve in northern Bogotá, Osorio Ardila (2019, 2020) has pointed out that urban ecology controversies are embedded in controversies around the value of nature and its implications for democratic participation in planning practices.

To these insights we add our disagreement with the common supposition that planning is something carried out only by "planners." In our account in Bogotá and elsewhere (Taylor, 2016; Lewis and Ernstson, 2019) planning practice involves a wider set of actors, networks, and spaces, and inevitably power relationships, interests, and the articulation of urban ecology values. The idea of nature in urban planning in Bogotá therefore consists of a heterogeneous and unstable assemblage of local governance narratives, practices, and techniques. A situated ecological knowledge of planners and social organizations alike has been key to understanding how planning practices evolve toward ecologizing planning.

We can now suggest a possible way to advance toward the achievement of ecologizing planning. The serious limitations of traditional ways of thinking about and doing planning practice need to be acknowledged. A possible way to tackle this issue is to consider planning practice as unavoidably political and embedded in conflicting nature values, or in Vanessa Watson's words "conflicting rationalities" (2003). Instead of starting from the idea of achieving consent in planning, conflict can enable new democratic practices in which the history and paths of situated urban ecologies can be traced, identified, and even mapped (Osorio Ardila, 2019) in the pursuit of more just urban spaces.

Finally, to ecologize planning practices, the types of intervention in situated urban ecologies need to be specified according to the socioeconomic setting, which presents a methodological challenge to the assessment of power relationships in everyday urban governance (Cornea et al., 2017). In Bogotá and elsewhere the question not only concerns

"greening" the urban, but assessing the implications planning decisions will have for sustainability and urban justice. If such implications do not consider a genuine democratic planning practice and situated urban ecologies, they may deepen the city-region's already existing inequalities, which are marked by relations of social exclusion along class, race, and gender lines. Such implications are tackled only through incremental political creativity. In a more-than-human relational urban ecology unique local ecological conditions and nature must also be protagonists in this political endeavor.

Conclusion

The idea of urban nature in the Bogotá region has evolved ambiguously in land-use and urban planning as the environmental imperatives from the sustainability agenda have become mainstream and institutionalized. We reconstructed the policy intentions to link the ecology and planning practices present in Bogotá. We also discussed how ecological concepts had been understood and identified some roadblocks on the path to ecologizing urban planning. Among the interviewed planners and experts there was a concern about how ecological considerations were operationalized and made fully effective in planning practice. Some of the interviewed ecology experts argued that most decisions regarding urban ecology should not be planned under the current guidelines and regulations to avoid them being swamped by legal and bureaucratic disputes. In contrast, some planners (especially former or current state officers), while acknowledging legal and regulatory shortcomings, tended to think that the current planning system still offered some tools that must be fully enforced and operationalized if ecologized planning could begin to be achieved. Our research also revealed that the quality and quantity of scientific ecological knowledge in the Bogotá region was not a major limiting factor to ecologizing planning.

Given our empirical evidence, we believe it is necessary to adopt a more radical rethinking and reworking of current practices and concepts in ecological planning that reveal the importance of situated ecological knowledge. There are serious limitations to traditional ways of conceiving planning practice, and they must be considered unavoidably political

and embedded in conflicting nature values. The idea of nature in urban planning in Bogotá consists of a heterogeneous and unstable assemblage of local governance narratives, practices, and techniques. Acknowledging planning beyond the dualisms of state and society, nature and city, and the conflicting visions of nature they contain may enable new democratic practices and just situated urban ecologies.

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Appendix 1

RESUMEN

Esta tesis doctoral analiza un conjunto de conflictos ambientales contemporáneos en torno a la ordenación del territorio y la naturaleza urbana en Bogotá, Colombia (1990 hasta la actualidad). En esta investigación pregunto cuáles son las relaciones entre los procesos de planeación y ordenamiento territorial de la historia reciente y los conflictos ambientales urbanos contemporáneos. Para responder a esto, me centro en tres preguntas. ¿Cuáles han sido los roles específicos de las autoridades gubernamentales, la sociedad civil y los diferentes actores sociales en los procesos de planificación urbana y preocupaciones ambientales en Bogotá en las últimas décadas? ¿Cuáles han sido los impactos ambientales y sociales de las políticas de planificación en los ecosistemas de Bogotá durante el mismo período de tiempo? ¿Cómo se han relacionado las desigualdades socioecológicas de la ciudad con la ordenación territorial de Bogotá? Por lo tanto, esta disertación analiza la dialéctica entre conflicto y ordenamiento territorial, explorando cómo la naturaleza urbana y los procesos de ordenamiento territorial son una fuente de conflicto ambiental relacionado con las desigualdades socioecológicas en Bogotá. En este estudio analizo el conflicto ambiental como una noción clave para identificar formas más productivas de abordar tal dialéctica en la producción del territorio urbano. Si bien la región de Bogotá ha enfrentado varios desafíos y desigualdades ambientales, la posibilidad de reinventar una naturaleza urbana más justa junto a los conflictos y a través del conocimiento situado ha estado viva en las últimas tres décadas entre los diferentes grupos sociales en las prácticas de planificación. Esta investigación se ubica en la Ecología Política de la Urbanización (PEU) y adopta algunos elementos de la historia ambiental urbana, estableciendo un diálogo entre el análisis del material de investigación cualitativa con la información existente en campos como la ecología y la geografía física. Por tanto, esta tesis introduce una reconstrucción histórica sobre las visiones conflictivas sobre la naturaleza urbana en Bogotá en las últimas décadas. La

documentación de las visiones sobre la naturaleza urbana ofrece una base empírica para el diseño de una hoja de ruta alternativa para la comprensión y gestión de los conflictos ambientales relacionados con la planificación y la naturaleza urbana en Bogotá y más allá.

Palabras clave: ecología política de la urbanización, ordenamiento territorial, naturaleza urbana, conflicto ambiental, Colombia.

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This study argues that the environmental conflicts related to spatial planning and urbanization open opportunities to create more just spaces. By analyzing the environmental conflict cases embedded in Bogotá's socio-ecological inequalities, it analyzes spatial planning practices within situated ecological knowledge to rethink planning processes as a collective political task aiming for more democratic practices, and not only as the duty of planners.

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