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Neoliberal commensuration and new enclosures of the commons: mining and market–environmentalism governmentalities

Bibiana Duarte-Abadía^{a*}, Rutgerd Boelens^b and Emerson Buitrago^c

ABSTRACT

Colombia's Santurbán *páramo* wetlands are vital water supply sources for highland communities' livelihoods and downstream cities such as Bucaramanga. Nevertheless, they face strong degeneration because of large-scale mining extraction. Seeking to harmonize divergent interests between conservation policies, domestic water supply and mining–energy development, the national government laid out land-use zones and delimited use of the Santurbán *páramo* since 2014. This article illustrates how hydro-territorial tensions between the mining company, the government and citizen mobilizations for water end up fencing in the collective assets of smallholder *páramo* residents. To understand this complex enclosure process, we show how foreign mining capital interests, urban citizens' claims for water and government ecological boundary-making paradoxically converge. Commensuration of water meanings and values, while bridging diverse worldviews, generates new enclosures of the commons. Engaging with the conceptualization of 'hydrosocial territories' and neoliberal reconfiguration politics, we contribute to debates on how modernist commensuration works to commodify water and territory, disqualifying peasants' territorial self-governance. We conclude that Santurbán *páramo* residents' hydro-territorial rights are subject to the interests of social forces competing for control over this *páramo* territory, whether to transfer rural water to cities or to establish large-scale mining.

KEYWORDS

hydrosocial territory; commensuration; mining; enclosure of the commons; Santurbán

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INTRODUCTION

The Santurbán high-altitude *páramo* wetlands located in the north-eastern Colombian Andes range from 2800 to 4300 masl altitude and have an area of 142,608 ha (Sarmiento et al., 2013). Covering the departments of Santander and Norte de Santander, these Andean wetlands constitute the water source supplying major cities, including the metropolitan area of Bucaramanga and Cúcuta (Figure 1). Most people living in the Santurbán *páramo* are peasant family farmers. Since colonial times and to this day, human settlements in the municipalities of Vetás and California have also been associated with small-scale gold-mining. These activities drove the foundation of these towns in the 16th century (Buitrago, 2012). More recently, this highland territory has faced the arrival of large-scale transnational mining operations. In opposition to this, in the year 2000, civil society groups in the city of Bucaramanga started to organize the ‘Committee to Defend the Santurbán Water and *Páramo*’ (hereinafter the Committee). This alliance rejected mining in the highland municipalities because of the potential danger it could pose for the city’s water supply. After years of unrest, the first large mobilizations were organized in 2010 when Canadian multinational GreyStart (renamed Eco-Oro Ltda in 2011) attempted to make an open-pit gold mine (Parra Romero, 2019).

To regulate the expansion of mining in fragile, environmentally strategic highlands, the Ministry of Environment and Sustainable Development (MinAmbiente) and the respective regional environmental authority, the Corporation to Defend the Bucaramanga Plateau (CDBM), delimited and zoned the *páramo*. Some mining titles inside the new boundaries were annulated, but many concessions just outside the ‘formalized *páramo*’ territory (even those with close hydrological ties) now became legal. This is the case of the Santander Mining Society (MINESA), owned by a group of Arab Emirates investors. In 2017, this company applied for a new environmental licence to mine for gold underground, in areas bordering the *páramo* at only approximately 300 m distance and very close to the water intakes of the Metropolitan Waterworks of Bucaramanga (Acueducto Metropolitano de Bucaramanga – AMB). In response, the Bucaramanga citizens movement, represented by the Committee, legally opposed this land-use zoning in the *páramo*. They argued that this delimitation and zonification process had not involved the affected population. In October 2017, another mass demonstration in Bucaramanga was supported by municipal governments neighbouring Bucaramanga and the AMB, opposing MINESA’s project, under the slogan: ‘Our gold is our water’ (Duarte-Abadía & Boelens, 2016; Parra Romero, 2019).

This article addresses the question of which techno-political and discursive mechanisms foster hydro-territorial reconfiguration of the Santurbán *páramo*, and how they produce differential water and territorial benefits and burdens for different social groups. Our contribution to the literature is an examination of how mining extractivism, governmental environmental protection and citizens’ water supply defence mobilizations interact, oppose *and* entwine in complex ‘commensuration endeavors’ to establish water’s meaning, values and use priorities (see also Martínez-Alier et al., 1998). As will be argued, governmentality efforts tend to impose modernist knowledge and naturalizing discourses that trigger new chapters of the old tragedy of the commons’ enclosures. We examine how modernist commensuration (in part consciously, but to a large extent unconsciously or invisibly) bridges different worlds; it paradoxically connects social mobilizations, mining extractivism and government’s environmental measures to protect the *páramo*. We argue that these societal forces, *apparently antagonistic*, are fitting together under the same market–environmentalist principles.

Our results show how this ‘commensuration endeavor’ seeks to transform Santurbán *páramo*’s hydrosocial territory into a calculated, quantified space with its water all ordered, distributed and controlled on the basis of a single meaning, uniform value and shared language. In such a

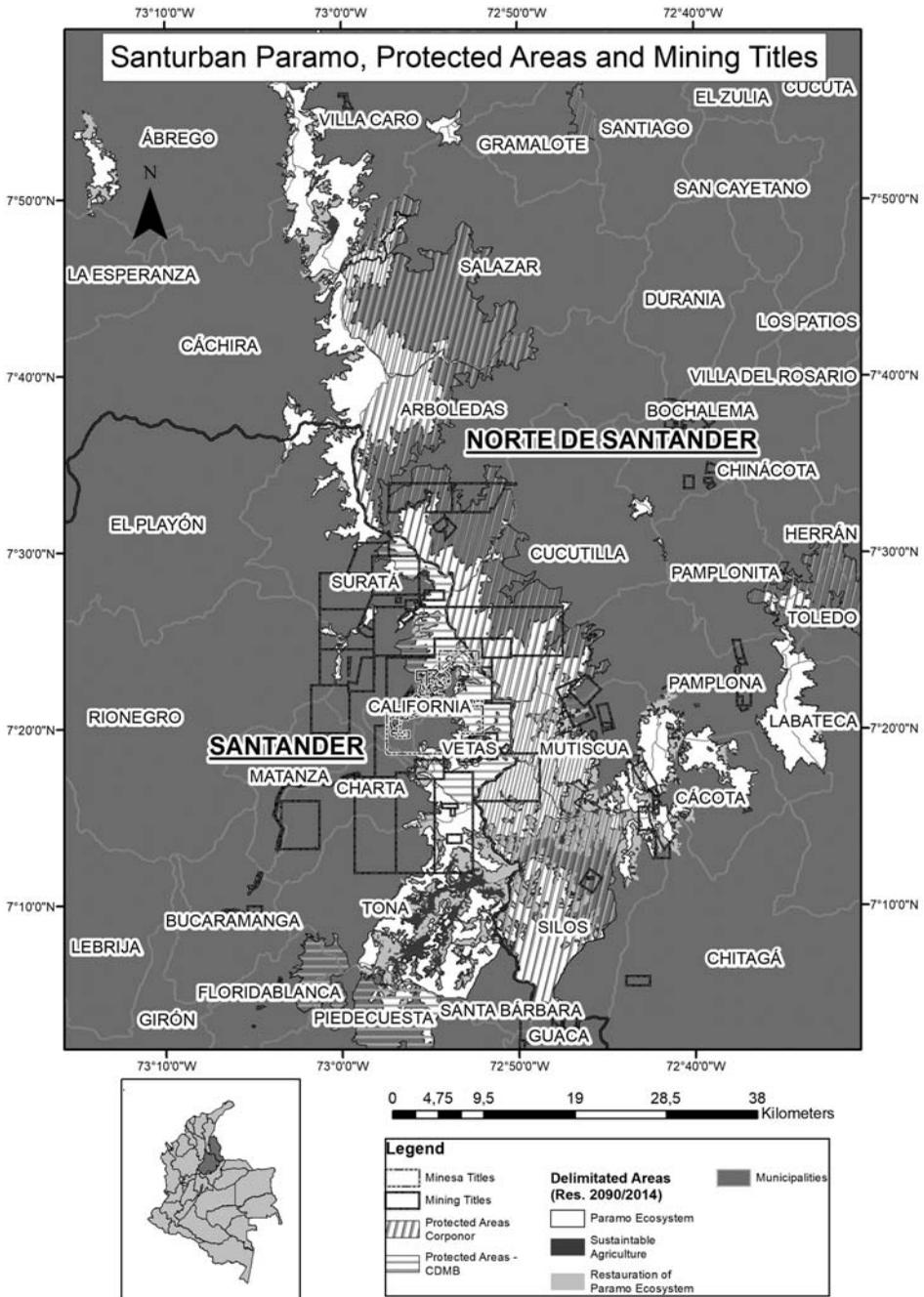


Figure 1. Map of the Santurbán páramo, protected areas and mining concessions.

Map: Emerson Buitrago, based on public information and the following sources: for the administrative political structure, see Instituto Geográfico Agustín Codazzi (IGAC) (2010); for the boundaries of Santurbán páramo, see MinAmbiente (Decree 2090, 2014); for polygons of protected areas, see Registro Único Nacional de Áreas Protegidas (RUNAP, 2020); and for the mining titles, see Sistema de Información Geográfica para la Planeación y el Ordenamiento Territorial Nacional (SIG-OT, 2017).

neoliberalism-flavoured commodification dream, the market takes the responsibility for redistributing water (whether for transnational mining or responding to the city's financial capacity). Meanwhile, this territorial transformation changes the lives and livelihoods of *páramo* small-holders, making it increasingly impossible for them to stay there and govern their own local territory.

Field findings and data presented in this article were collected during two research periods. The research focused on four key actors: environmental research institutions and authorities; the mining company MINESA; members of the Committee to Defend the Santurbán Water and *Páramo* (including the AMB); and the *páramo* inhabitants of the California, Vetas and Suratá municipalities (MINESA project's zone of influence). During the first research period, from 2011 to 2015, the first and third author worked in the area with the Alexander von Humboldt Research Institute. Next to literature and archival research, important methods included open, semi-structured and structured interviews, and participatory cartographic research. Socioeconomic, cultural-political, historical, ecological and agro-productive information was collected together with *páramo* residents. The second research phase took place throughout 2017 with short follow-up field visits in 2018–19. Doing doctoral and action research under the umbrella of the Water Justice Alliance (www.justiciahidrica.org), we focused specifically on rural-urban water transfers and issues of environmental (in)justice in Santurbán's *páramo*. This research period included conducting new interviews with the four key actors to update information; attending public meetings on the environmental impact assessment (EIA) of the mining company; and attending meetings, debates and mobilizations organized by the Committee and the AMB. Next to interviewing *páramo* residents, the additional (22) interviews included those with the manager and staff of the mining company, with the leaders of the Committee, with the manager, project director and engineers of the AMB, and with staff members working on environmental zoning from the regional environmental authority and the Corporation to Defend the Bucaramanga Plateau (CDMB).

The following section outlines the historical processes that have led us to understand the Santurbán *páramo* as a hydrosocial territory, and focuses on its theoretical and analytical implications. We then analyse the disputes and later convergence between mining and environmental policies that shape this territory. Subsequently, we illustrate the mechanisms used by the mining company to commoditize land and water in Santurbán territory according to their interests. The next section centres on describing the actions and contestations taken by the Bucaramanga citizens' movement and their emerging modernist commensuration proposals to transfer rural water to meet urban needs. Finally, we examine how the overlapping of these two forces impacts *páramo* inhabitants' livelihood and their hydrosocial relationships. The last section concludes.

DISPUTED HYDSOCIAL TERRITORIES AND GOVERNMENTALITY ENDEAVOURS

Colombia's *páramos* are considered as strategic hydro-ecological regions because they regulate water flows and most of the country's water originates there.¹ An estimated three-quarters of Colombia's population obtains its water supply from the *páramos* (IAVH, 2011). In addition to providing and regulating water, the *páramos* host high biodiversity and great mineral wealth. They are also the territories of indigenous and rural communities, many of which have escaped from violence and land-grabbing in lower flatlands, while other population groups have lived there for centuries. In the communities' cosmovision, *páramos* are often considered to be sacred places. Twentieth century agrarian reforms made *páramos* into zones of intensive farming that supply a range of regional markets. In the late 20th century, an expanding extractivist model opened these places up for mining development, and it became urgent to take action to protect them. Since 2018, *páramos* are considered territories with special state protection by law (Law

1930, 27 July 2018). Therefore, the state can declare private and communal lands to be areas of public interest, especially those that supply drinking water. At the same time, the decree that establishes the new limits of (among others) the Santurbán *páramo* states that ‘economic activity and private initiative are free within the boundaries of common wealth ...’ (Resolution 2090, 19 December 2014, 4–5).

As will be shown below, the Santurbán *páramo* is a disputed ‘hydrosocial territory’ (Boelens et al., 2016) which is defined by clashes among different actors’ conflicting imaginaries and their strategies to materialize their wished for socio-environmental, multi-scale spatial network. In configuring hydrosocial territories, humans, water flows, technology, financial resources, institutions, legal and economic agreements, and cultural practices are defined, aligned and mobilized by diverse (often opposing) actors who strategize political-economic hierarchies, their knowledge repertoires, and discursive regimes and practices (Duarte-Abadía et al., 2015; Hoogendam & Boelens, 2019; Hoogesteger et al., 2016; Ross & Chang, 2020). To construct the hydrosocial territories they desire, dominant actor alliances mobilize powerful imaginaries (Swyngedouw & Boelens, 2018; Zenko & Menga, 2019), seeking to impose regimes of truth to order the socio-natural relations, materially and discursively (Duarte-Abadía & Boelens, 2019; Hidalgo et al., 2018; Hommes & Boelens, 2017, 2018; Marks, 2019). In this article and case analysis we focus on contemporary ideas of reconfiguring hydrosocial territories in line with neoliberal imaginaries – the ideological and material efforts to shape society through market forces.

Here it is key to see, first, how the state (rather than simply ‘withdrawing’) aims to create and guarantee the conditions for markets to emerge and sustain, so enabling ‘free competition’ among individuals (Achterhuis et al., 2010; Harvey, 2003; Polanyi, 1944). This ideology and plan for societal construction, forged in the Washington Consensus (Svampa, 2015) and reflected concretely in Colombia’s environmental and economic development policies in the 1980s and 1990s, has brought tremendous pressure on Colombia’s highland water sources (Roa-García, 2017; Ulloa, 2014).

Second, dominant groups’ imposition of neoliberal hydro-territorial schemes is discussed in this article under the concept of governmentality (Foucault, 2007, 2008), that is, ‘the art of governing’ populations by seeking their well-being through ordered behaviour and societal self-control. Hereto, the efforts to steer society and manage territory attempt to consolidate the general population’s interest as a single striving and subtly co-opt different aspirations, regardless of existing particular interests (cf. Eaton, 2015; Elden, 2009; Jessop, 2007; Lefebvre, 2009). For this reason, governmentality seeks to ‘conduct social actors’ conduct’ (Foucault, 1991) to achieve appropriate thinking, particular reasoning, normal behaviours, specific subjectivities and moralized practices (Dean, 1999; Huxley, 2008; Li, 2007). In the case of neoliberal water governmentalities (Boelens et al., 2015; Fletcher, 2010; Vos & Boelens, 2018), governments and capitalist companies seek to install proper institutional-legal and moral structures to promote economic incentives, and incorporate local users in the market-based hydro-political order.

Third, key to the governmentality process, and as the central thrust of this article, we analyse mechanisms of modernist commensuration: standardizing life’s diversities and complexities under a common metric, as a way of governmentalizing hydrosocial territories according to a neoliberal logic (Escobar, 1995; Espeland & Stevens, 1998; Ferguson & Gupta, 2002; Hoogendam & Boelens, 2019; Martínez-Alier, 1987, 2002). Commensuration transforms visions, cultural values and knowledge about water and territory and their socio-natural substance and meaning, to make them comparable, compatible, manageable and controllable (see also Martínez-Alier et al., 1998). For instance, in the case of meanings and values related to water, key to the neoliberal hydrosocial territorialization would be its social construction and production as modernist water (Linton & Budds, 2014). We focus in particular on how water’s commensuration in line with market environmentalism (Bakker, 2010) does not necessarily refer to the privatization of water resource ownership and management but can equally entail ‘the

environmental valuation and pricing of resources, the marketization of trading and exchange mechanisms, and the liberalization of governance' (Bakker, 2014; p. 469; cf. Dupuits, 2019; Jackson, 2018; Peck, 2013).

In Santurbán, this market-based governmentality process has become manifest in different ways. One is through monetary investment by MINESEA to purchase, transform and accommodate Santurbán's hydrosocial territory for mining; another is based on the polemics generated by the societal movement of citizens to defend water and reject gold-mining through water's market values; and the third is through efforts led by the Ministry of Environment to delimit, organize and zone the *páramo* in conformity with market demands. Each of these governance efforts affects inhabitants' cultural practices and encloses their communal land-lagoons –micro-mines commons.

The debate of the enclosure of the commons therefore is at the background of our paper (e.g., Neumann, 2004; Sullivan, 2010). Its fierce debate started when Thomas More presented his fundamental and seminal critique of landed elites who fenced off the common land so vital to local commoners, published in his *Utopia* (1516 [1975]). In the ages that followed, Karl Marx and his followers presented political-economic analyses of this extractive process that triggered the rise of capitalism, proletarianization and 'Verelendung' (Marx, 1976). In the last decades, the academic debate has centred around Hardin's (1968) argument in 'The tragedy of the commons' that natural resources necessarily will be depleted unless state or private property rights are installed. Among others, Ostrom and followers (e.g., Dietz et al., 2003; Ostrom, 1990) presented evidence of alternative, common-pool resources management logics based on collective action. Long-standing, well-functioning collective governance systems were often invisibly eroded by policy-makers trapped in the public policy dichotomy of public and private goods (Ostrom, 1990). Colombian *páramo* management and its policy debates are exemplary for this. Harvey (2003) and neo-Marxist scholars renewed the commons debate showing how contemporary neoliberal policies foment the concentration of wealth and power in the hands of a few at local-global scales by dispossessing the public and collective entities of their common resources, 'accumulation by dispossession' (cf. Svampa, 2015).

As Achterhuis et al. (2010) explain, in contemporary capitalism-driven water governance, fencing off and breaking open of the commons go hand in hand. The neoliberal model redefines 'territory', enclosing it for extractive uses through multiple capitalisms (Baud et al., 2019a; Gonzalez-Vicente, 2020). The delinking of water rights from vernacular territory is promoted in order to extend competition and enhance the free trade of water rights to the 'most productive use' via the highest bidder. As the Santurbán case shows, this poses an enormous threat to tenure security of those communities that base their rights on socio-territorial claims. It opens up their water for outside buyers with little or no interest in maintaining collective infrastructures. It generates water transfers to powerful actors outside of the territory and it individualizes and dissolves water rights internally by detaching them from collective place – and rule-making, fostering conflicts.

New enclosure measures call for new control measures, displaying new knowledge, rules and values to facilitate self-regulation and self-correction about how land and water in *páramos* should be used (Baud et al., 2019b; Dressler & Guieb, 2015; Rodríguez-de-Francisco & Boelens, 2015, 2016).

SANTURBÁN'S HYDRO-TERRITORIAL RECONFIGURATION

To comprehend territorial reconfiguration in Santurbán, a brief understanding of Colombia's recent environmental policy and rural intervention background is important. As Castellanos (2011), Ulloa (2014) and Roa-García et al. (2015) explain, environmental protection of *páramo* territories has gone through an extremely harsh, uncontrolled phase of transnational mining

boom and neoliberalization of the countryside over the last two decades (see also Bebbington & Bury, 2013; Perreault, 2014; Roa-García, 2017). In fact, state control has been negligible, and governmental action has merely been limited to providing land titles for extractive industries (Parra Romero, 2019). From 2002 to 2010, the land area with titles for these activities grew from 1.13 to 8.53 million ha, and 122,000 titles were granted in the *páramos* (Rudas, cited in Semana Sostenible, 2016). National and international interests conspired to open up *páramos* to mining capital (De Castro et al., 2016). At the international level, the Canadian International Development Agency (CIDA), along with the World Bank, financed and provided advisory assistance to influence the new Mining Code, Law 685 of 2001, to link with the international market. Especially the Álvaro Uribe-Vélez government (2002–10) tapped international agencies' financial resources to accommodate Colombian legislation supporting mining companies (Duarte, 2012). Pardo (2013) explains how such legal amendments broke environmental, territorial and tax legislation; land-use planning policies are very permissible (Article 38). Companies were granted guarantees that their royalties would not increment, favouring mining concession contracts of 30 years, which are also exempted from paying departmental or municipal taxes (Article 231) as well as presumptive income tax (Article 233). Further, environmental authorities were to delimit the zones to be excluded from mining in direct coordination with mining companies (Article 34) and approval of the EIA had to be a quick exercise, in fewer than 30 days (Article 282). Consequently, market liberalization in the late 20th century subordinated local dynamics to private transnational capital and global forces, facilitated by national policies (cf. Cardoso, 2018; Sosa et al., 2017; Stoltenborg & Boelens, 2016).

In Santurbán, these policies are deeply coloured by the circulation of decision-makers and expert knowledge brokers between the public sphere and transnational capital, a mechanism known as the 'revolving door' that produces conflicts of interest between public and private institutions. Rodríguez-Becerra, former Minister of the Environment, explains how this mechanism became the Uribe government's common exercise in mining and environmental policy:

There are former high-level officials of the Uribe government who have been hooked in as top executives of mining companies to handle concessions and environmental licenses. ... The former Vice-Minister of Justice, Rafael Nieto, is President of Greystar, after his predecessor was unable to get a license to mine the Santurbán *páramo* ... (Rodríguez-Becerra, cited in *El Tiempo*, 2011)

While in recent decades gold-mining was largely restricted to traditional, small-scale artisanal mining, in 2012 there were already 65 large-scale mining titles in effect, of which 29 had over 90% of their area within the *páramo* and 15 with their environmental licences to proceed to the extraction phase (Ungar et al., 2014). Most of these titles are located in Soto Norte province, Departments of Santander and Northern Santander. Around 50,000 ha were concessioned to Canadian multinationals, such as Eco Oro Minerals Corp., CB Gold, White Gold Corporation and Galway Resources (Zapata, 2012).²

In view of this rush of mining expansion by multinationals in Santurbán, the Congress of the Republic saw the need to take action. In 2011, Law 1450 was decreed to formally prohibit any economic activity including mining, agriculture and hydrocarbons in Colombian *páramos*. This called for delimiting the *páramos*; a technical scientific process that was led by the Alexander von Humboldt Biological Resource Research Institute (IAVH). The IAVH crossed key biophysical factors that determine the *páramos* ecosystems, and included a socioeconomic study. The Santurbán delimitation process started in 2014.

Once the IAVH handed in the new delimited areas, the MinAmbiente requested several confidential meetings with the institute's directives and involved experts.³ The new delimitation resulted in a zoning scheme of restoration areas (25,227 ha), sustainable use (5502 ha) and preservation (98,994 ha). In restoration areas, mining activities could continue if permits were

acquired before 2010 (Law 1382), without possibilities for contract extension. These zones matched the mining districts of California-Vetas and the Municipality of Suratá (Figure 1). In fact, there were important differences between the original IAVH and final ministerial proposals for this *páramo* delimitation. The IAVH delivered an initial proposal with technical scenarios including the socioeconomic consequences of each of these. The delimitation decisions made by the government, however, sidelined many of these arguments and tailored the delimitation to its own political interests and agreements with the mining sector. Similar to what Cohen and Bakker (2014) have argued, eco-scalar fixes were produced: scaling environmental governance through new ecological boundaries whereby science's appearance of neutrality and objectivity is used to depoliticize profoundly political decisions and silence protests.

Implicitly, this new configuration of the *páramo* linked local people's realities to multinationals mining interests, legitimating the latter. For example, in the Municipality of California the zoning involved 7500 ha, of which 1500 ha were categorized as 'restoration area' in which current mining with pre-2010 titles can continue. Here most properties have mining titles: 10% of these are owned by small-scale artisanal miners and 90% by multinationals (interview with Hugo Lizcano, then Mayor of California). Furthermore, the mining titles outside but bordering the *páramo* are authorized for large-scale mining once they apply for an environmental licence. This is the case of the Municipality of California: the *páramo* delimitation was set just above many of Eco Oro and MINESA's mining concessions, which guaranteed their continuation. Residents argue, however, that these mines all perforate the *páramo* subsurface area through large tunnels to extract its waters, and hydrologically alter and contaminate aquifers and downstream flow regimes.

The configuration of scales and boundaries to zone and control the Santurbán *páramo*'s hydrosocial territory results from interactions between science, politics and economic interests and the search for a common language and convergent values among these divergent domains. According to the then Minister of Environment Gabriel Vallejo, in December 2014 the reasons for this zoning were to 'protect the environment in harmony with the needs of communities living there' (Castaño, 2014). Luis Alberto Giraldo, government official and leader of this delimitation process, said that this delimitation was proposed to provide representation for local communities and to ensure special management of zones already transformed by human presence (Semana Sostenible, 2016). However, contradictorily, that same official later explained that the zoning consisted of purely technical reasoning:

applying, on the Humboldt Institute's cartography, a mathematical algorithm involving categories such as soil transformation and plant coverage by analyzing satellite imagery from the last 20 years. This is a technical method, not just taking a pencil and moving the line because there is a crop or a mine. (Castaño, 2014)

The Ministry of Mining and Energy, rather than taking direct measures to illegally grant mining titles in *páramos*, passed the formal responsibility on to MinAmbiente but, at the same time, continued to influence the delimitation process: on several occasions it asked the IAVH to change the *páramos* boundaries as they were presented. Long before, in 2011, the IAVH director already pointed at the crux of the matter, acknowledging that: 'delimitation is basically a political decision rather than a technical or scientific exercise per se' (Baptiste, 2011). In fact, rather than constituting either politics or science, hydro-territorial land-use zoning of the Santurbán *páramo* builds on mechanisms that actively *integrate* the two, and that simultaneously seek to conceal this science/politics integration. Based on modernist commensuration, efforts are made to 'compatibilize' the contradictions between mining and environmental health (cf. van Teijlingen & Hogenboom, 2016; Valladares & Boelens, 2017, 2019) and decide about 'optimal' options using one common logic and metric. In practice, this effort is driven by a universalist

‘technification’ exercise and large institutional efforts to harmonize national policies with transnational companies’ economic interests. Or, as Espeland and Stevens (1998, p. 330) state, ‘Commensuration, in propelling decisionism, helps sustain the pretense that facts and values can be separated, that politics can be rendered technical’ (see also Hoogendam & Boelens, 2019; Li, 2011; Li, 2013; Martínez-Alier, 2002). In fact, Santurbán’s zonification and delimitation project presumably democratizes diverging decisions and interests in areas that, because of their ecological and social conditions, are incommensurable with large-scale extractive activities.

MINESA: NEOLIBERAL GOVERNMENTALITY TO ADVANCE EXTRACTIVISM

In the Sotonorte region, the mining company MINESA set out to implement its underground gold-ore extraction project. This company belongs to the Mubadala Investment Development Company, owned by the government of the United Arab Emirates (UAE). Their project is near the *páramo* level of Santurbán (2640 masl altitude, Valle Quebrada of La Baja) and includes the municipalities of California and Suratá. Its area of influence is 2057.86 ha, and its projected underground extraction period is 25 years with an estimated annual production of 2.6–3.0 million tons of useable ore, for an average annual production of 410,000 ounces of gold (INGETEC, 2017). Since 2015, the company has been conducting exploration and, in September 2017, submitted their EIA to the National Environmental License Authority (ANLA) to begin extraction.

In this section we explain the mechanisms by which neoliberal governmentality has increasingly commensurated the Santurbán hydrosocial territory, advancing extractive interests. Power is no longer wielded mainly by the state but largely driven by external commercial and private entities, which are able to present their interests as harmonious with those of national policy and local population needs. The first mechanism is participatory and inclusive, framed by a discourse of local societal well-being. The second is characterized by control and surveillance by the company in order to discipline residents involved in the company’s social projects. As the third mechanism, the company increasingly influences notions of ‘good citizenship’ and the moral need to support ‘societal progress’ with the aim to permeate local knowledge production and the construction of truth around the mine’s (positive) conservation practices and water footprint at the local, national and international levels. This interlinks companies, residents and governments in a shared, commensurated valuation network. Taken together, the effort leads towards establishing a neoliberal water valuation and governance regime that induces particular water-use thinking and behaviours (cf. Bakker, 2014; Cardoso, 2018; Duarte-Abadía & Boelens, 2016; Liso et al., 2020). In particular, this neoliberal water governmentality seeks:

to organize and direct water users’ behavior by approaching users as rational, enterprising agents who economically benefit from water development – more precisely: as individual utility-maximizers who strategically calculate costs and benefits to materialize personal interests. (Vos & Boelens, 2018, p. 288; also see Achterhuis et al., 2010; Fletcher, 2010)

This is all to transfer water to the highest economic value and the most efficient users, following the prescriptions of scientific water knowledge and infusing guilt in users not abiding by these new standards. In effect, use of water and related resources for mining is legitimized and privileged to the detriment of the *páramo*’s peasant farmers who feel the moral need to accept (Duarte-Abadía & Boelens, 2016).

Since MINESA came to the territory, their actions have been framed as increasing local residents’ well-being through underground gold-mining. This is shown by the MINESA social manager’s statements: ‘At MINESA, we are committed to our communities’ sustainable development. We are working for that day-by-day, through different programs, to reach each of them

and satisfy so many needs we have in the region' (MINESA social manager, interview 21 July 2017). MINESA has designed a programme tellingly named 'My territory' to reach communities with infrastructure projects. Through improving communities' quality of life, fixing their roads, upgrading rural sewage and water supply, communities are strategically involved and protests silenced. Escobar (2008) defines these practices as neoliberalism's skill at adapting, absorbing and neutralizing social disagreements.

Once the residents of a region begin receiving benefits from the company, they usually stop interfering with the company's business, partly also because of fear of judicial or other consequences. In case of opposition, the company easily switches from participatory strategies (modern, inclusive governmentality) to vertical, 'sovereign' governmentality (Foucault, 2008). For instance, in October 2017, the company notified workers who took part in the march organized by the Bucaramanga citizens movement that they would be punished, 'first ... because of non-compliance with the mine worker's labor obligations. ... Secondly, because of your participation in the march, which was against the interests of MINESA ...'.

When interviewed, residents answered fearfully, with mistrust and ambivalence, beginning by speaking in the company's favour and ending by acknowledging the damage and aggressive transformation of their territory. They tell how, once they became beneficiaries of the company, they were subject to following the norms and codes of conduct that the company made them sign.

The company used these different and alternating power strategies – subtle/participatory and coercive/imposed – to shape the hydrosocial territory it wanted. As MINESA (2017b) itself points out, they see their role in using their influence to bridge and coordinate between official entities and the 'neediest' communities. This contributes to filling the governance gaps left by the centralized Colombian government.

Like underground rhizomes, the company now also expands its hydro-territorial power to urban life. Taking advantage of their institutional and university educational connections, they influence knowledge production and decision-making in environmental debates in Bucaramanga. Their purpose is to avert any kind of opposition and persuade citizens that mining is possible without affecting the *páramo's* water.⁴

SOCIAL MOBILIZATION FOR URBAN WATER SUPPLY: 'OUR GOLD IS OUR WATER'

Notwithstanding the company's impressive governmentality efforts, many people have not internalized the mining discourse. Attempts by Eco Oro, since 2009, and currently by MINESA, 2017–18, to start mining have given rise to massive mobilizations in the metropolitan area of Bucaramanga, because of the high risk of affecting their water supply. The city's water comes from the Suratá, Tona and Frío rivers, which are part of the upper basin of the Lebrija River (Figure 1). Especially, the Suratá River is vital to Bucaramanga's water supply in the dry season (AMB, 2014). It is fed by tributaries such as the Vetás and Charta rivers that spring in MINESA project's area of influence.⁵

Besides citizen groups' concern for sufficient clean drinking water, a combination of factors forged the urban alliance to protect the city's water interests. For example, local media said the ex-mayor of Bucaramanga, Rodolfo Hernández-Suárez (2016–19), also President of the AMB Board of Directors in 2017, is known to be 'obsessed with urban development'. He is a businessman with major economic power in the Santander region and has built up some of his wealth by dealing with land in other urbanizing regions in Colombia (La Silla, 2017). These factors motivated the mayor's radical opposition to MINESA's project and his full support for the Committee to Defend Santurbán's Water and *Páramo*. This coalition between the mayor, AMB and the Committee has created an increasingly forceful front to stop mining expansion in Santurbán.

The Committee is a civic platform constituted by an extensive and heterogeneous network of in total 40 diverse organizations: the AMB union, student movements, non-governmental organizations, federations of entrepreneurs and industrialists, grassroots neighbourhoods, university professors, political parties, and some international organizations. It was originally founded in response to the irregular granting of mining permits in the Santurbán *páramo*. Its purpose is to lead the societal movement to protect the *páramo* as a key water source for the region, supplying over 2 million people. In 2011, they have succeeded in stopping the Angosturas open-pit gold-mining project by the multinational GreyStar Resources Ltd, subsequently renamed Eco Oro Minerals Corp. For that campaign, the Committee expanded its networking internationally and issued a complaint to the International Finance Corporation (IFC), which is the World Bank's Investment Fund, and the project's main funder. The complaint proved that IFC had breached its policies on social and environmental sustainability by investing in Angosturas as compliance with the principles of Colombia's Constitution, environmental and mining standards was not guaranteed. In 2016, the IFC withdrew its investment from Eco Oro's project.

Another of the Committee's achievements has been the official declaration of the Santurbán Regional Natural Park. Its purpose is to protect the water supply of the Suratá River and its associated micro-watersheds. The only uses allowed in this area of 11,593 ha are conservation, restoration and enjoyment, prohibiting any extraction and agricultural activities (Osejo, 2014).

In addition to confronting transnational powers, the Committee has also refuted the national government's actions. The results of delimiting the Santurbán *páramo*, with its respective zoning, were legally rejected by the Committee, suing for a protection order in July 2015. The denouncement's argument was based on the violation of three fundamental civic rights: first, the right to information as the studies supporting the delimitation results were not publicly disclosed; second, the right to environmental participation, because none of the communities affected by the delimitation was consulted; and third, the right to water that was jeopardized because of the foregone rights violations. On 8 November 2017, the Constitutional Court ruled in favour of the Committee, which led to an annulment of the Santurbán *páramo*'s delimitation and the suspension of the evaluation of MINESA's EIA for up to a year, until the boundaries of the Santurbán *páramo* could be redefined.

The Committee calls the *páramo* 'their water factory' and reiterates their willingness to defend it any way they can. This was clear in the march that the Committee organized on 6 October 2017, where over 100,000 people protested against MINESA's project. In this mobilization, the Mayor of Bucaramanga proclaimed that Bogotá's bureaucracy could not override the rights of Bucaramanga's citizens:

we have to figure out how we will compensate the municipalities of Sotonorte. [...] One way to compensate them is to pay them for their water, and we have already taken that position in the Department's Assembly. To buy their water from them, we have to make an effort as a citizen collective of everyone who receives the benefits of that water factory: to make an economic effort on the water bill, in the costs, to be able to compensate for the damage. [...] Because they must be part of the economic system. [...] We have to join forces to make it possible to buy the water from them, at a very economical price (ex-mayor's speech, 6 October 2017)

Fundamentally, the Committee demanded, with the mayor as its spokesperson, to commoditize the *páramo*'s water. Their proposal to economically compensate the communities living in the *páramo* calls for the latter to reorient their practices toward conserving the ecosystem, transforming them into '*páramo* guardians' (see also Redacción Vanguardia, 2018). Though the Committee's and mining interests are opposed, in terms of instrumental water valuation and human/nature epistemology, this is a similar proposal to the actions by MINESA regarding the

Santurbán hydro-territory: invest in social projects to satisfy unmet basic needs, and thereby accommodate the hydro-territory to materialize their own ends and water access interests.

In sum, the dispute being waged over the *páramo* hydrosocial territory is to commoditize not just its gold but also people's land, the water, its ecosystems and nature itself. Foreign investors, policymakers and urban citizens, all exogenous and alien to the rural territory, claim to be entitled to commoditize the *páramo* through putting a price on it. This economic valorization works as commensuration and subsequently vests decision-making power in the market as the fairest and most efficient authority. The territory's inhabitants do not have a say anymore. Following Sullivan (2009, 2010), commoditizing nature means turning nature into merchandise that can be bought and sold on specialized markets (also see Bakker, 2014; Goldman, 2011; Rodríguez-de-Francisco & Boelens, 2015, 2016). It is crucial in this process for nature to be abstracted, and delocalized to make it substitutable and comparable in market dynamics. In the case of the Santurbán *páramo*, commoditizing means creating the conditions for free competition between two capitals: mining backed by the Arab Emirates' investment, and the city waterworks, backed by Bucaramanga's citizens. In the so established 'market environmentalism', victory will depend on price fluctuations of ore and water.

PÁRAMO INHABITANTS AND THE ENCLOSURE OF THEIR COMMONS

Extracting gold, selling it and enslaving the indigenous peoples have been the basis for the region's colonial urban development during the 16th and 17th centuries, featuring Germans, French, Spaniards and North Americans. However, in fact already since pre-Hispanic times, hydrosocial relations in this area have been configured, alongside small-scale farming, around small-scale gold-mining, especially in the municipalities of Vetás and California. 'Here, we have been miners all our lives, but we are real miners, like the old-time Indians ... working by hand ...' (rural resident of Vetás, interview 12 September 2017). As Buitrago (2012) shows, more than just wealth, gold also represents local history and symbolizes tradition and knowledge. It has become one of the backbones of Santurbán's socioeconomic livelihood and commoning practices.

Artisanal gold-mining, water, farming, livestock-raising, villages and the *páramo* are elements that are intimately interconnected in Santurbán's commons. For most families, production is not about maximizing monetary income but ensuring stability in the long run. Reproduction and subsistence rhythms of these commons and constituting households are directly intertwined. Labour relationships, kinship ties, social favours and community obligations perform an important role and Santurbán's commoners engage in a variety of activities to guarantee sustenance. Reciprocity relationships provide the labour force and other scarce resources needed at family and group levels, also to the less well-off, without having to purchase them in the market. These exchange relationships play a central role in structuring informal organizations, networks and practices in the commons, including water control and access. They allow neighbours' access to springs even if these are located on peasant families' private property-owned farming lots. Importantly, they entail practices that, far from romanticized equity or intrinsic solidarity notions, are shaped by community and cultural values, and manage to conserve water resources crucial for rural livelihoods (cf. Jackson, 2018; Roca-Servat & Ocando, 2019; Wilson & Inkster, 2018; Yates et al., 2017).

Here, some 15 or 20 years ago, the dry season was very harsh, no water left anywhere, so they brought sacred water from Chiquinquirá and we planted that water – and water began to well up ... about 20 years ago, when I bought the farm, I began protecting the springs. ... There are 6 springs here, and I also have 2 or 3 hectares of pure natural forest, a reserve. I didn't plant it; it's natural reforestation ...

the water gets to my neighbors downhill and fills the Vetás River. (smallholder farmer, formerly a miner, from Vetás, interview 3 October 2017)

This is the case of a rural man who worked 35 years in mining and, when he retired, purchased land to plant his own food and harvests water. In fact, many older residents of Vetás and California, after working for years in the mines, invest their savings to buy some land in the *páramo* and steward it, before passing it down to their children and grandchildren.

In the mid-20th century, much of the mining in Santurbán was done by local residents, though it was characterized by local–translocal dynamism: some residents purchased small mines from large miners, and others started extraction on their own (Osejo, 2014). The 1988 Mining Code’s enactment was one of the state’s most rigorous efforts to regulate conflicts between public and private ownership of mining resources (Duarte, 2012). This differentiated among mining exploration and extraction according to its size and technology – large, medium and small, recognizing differentiated requirements and conditions. In the late 20th and early 21st centuries, the panorama changed as multinationals moved in and Colombia signed market agreements such as the Canada–Colombia Free Trade Agreement. This process was accompanied by military security policies on a national level. In Santurbán, the military base of High Mountain Battalion of Los Laches was established to provide security for foreign investment. The expansion of large-scale mining was further legitimized through a discourse about ‘advanced, clean technologies’ that would minimize risks for water quality. Traditional technologies used by local small mining enterprises, on the contrary, were portrayed as potentially more environmentally harmful.

In this context, the environmental authority (CDMB) began closing traditional mines because they could not meet new environmental standards. Rural development programmes that had helped decrease water pollution, too, were stopped. Meanwhile, the multinationals were given a free pass for mining exploration, with no need to obtain any environmental licence, thanks to the amended 2001 Mining Code. Consequently, many people sold their land and mining titles to multinationals.

In California, they came to buy all our land, and we all sold ... my brothers sold the farm then, very cheap, and now they have nothing. That all belongs to the multinationals. They had to sell because small-scale mining was being inspected constantly, and they could no longer meet the standards. By contrast, the big companies can comply. (rural resident from Vetás, 9 August 2017)

Multinational land purchases, in this case by Eco Oro, spread to the lagoon complexes in the *páramos*, limiting free access to these commons.⁶ Alongside these pressures, environmental conservation was imposed, with the Santurbán Regional Natural Park and delimitation of the Santurbán *páramo*. The Municipality of Vetás has been the most affected by these processes: 76% of its territory was covered by restrictions preventing any economic activities, compromising the well-being of approximately 1200 inhabitants. For them, these environmental standards have meant the beginning of a subtle process of displacement. Although these standards do not oblige them to leave the *páramo*, they do forbid them to freely exercise their subsistence activities to support their families, a situation that has forced many to sell their *páramo* land to private parties, who in the long-term hope to engage in ecotourism business.

When the Park was declared, they summoned us there to Bucaramanga. We had to take our property title. They told us that, in the park, 72 properties were affected ... we couldn’t do anything. We couldn’t even cut a tree to fix a fence, because we would be penalized. So I sold that farm, a buyer came around ... the people who work with the government are interested in our land. (interview with a farmer, Vetás, 10 August 2017)

The gradual dispossession of their means of subsistence has meant that many residents of Vetás and California have become workers at MINESA. This situation generates political controversies between friends and neighbours who are struggling to defend their little remaining autonomy, weakens bonds of trust and generates a scenario of great uncertainty. Especially when the local government provides no protection, because mayors and council members reach agreements with MINESA. Multinational takeover of the Santurbán *páramo* intensified and reinforced a new environmental order that facilitated control and surveillance mechanisms by environmental authorities inspecting use and management practices. If they infringe environmental standards, rural people are threatened with imprisonment.

A CDMB official threatened us that, if we kept farming, planting potatoes, they would throw us in jail. ... Then, after a while, they came up with the story that we could no longer keep animals, because they supposedly pollute the water, and there you have it. That is why there are almost no crops around here. ... That is why everyone is getting into large mining now. (interview with a farmer, Vetás, 9 September 2017)

This loss of commoning spaces and networks, such as agricultural labour reciprocal ties, community support and resource exchanges, is eroding the *páramo*'s social fabric, too. Some families who own plots with water sources as lagoons and springs have started to fence them, for instance as part of private ecotourism businesses. But overall, *páramo* inhabitants strongly reject the environmental policies that enclosed and fragmented their territory. *Páramo* delimitation zoning fragmented their production systems, leaving a large part of their land in strict conservation areas and other parts in restoration zones. This reordering, paradoxically, has triggered a boost of illegal mining since some inhabitants urgently look for livelihood strategies to cope with their lands being appropriated by large mines or enclosed through strict conservation laws.

Also, most residents of Santurbán reject mobilizations by citizens in Bucaramanga, because – during their struggle against the Eco Oro company – they were stigmatized as the ones to blame for polluting their water and deteriorating the *páramo*.⁷ Further, as an effect of that mobilization, their territory was enclosed through the establishment of the National Park. This violated their traditional rights to their land and livelihoods. They were never consulted about the implications of this protected area declaration, which ended up imposing on them an order, use and management totally alien to their culture and subsistence practices.

So far, neither the environmental authority, nor the citizenry, nor the governor's office have offered any development alternatives to *páramo* residents in order to address the tensions generated by mining and environmental policies. They are aware that payment for environmental services has been announced for over five years, but they understand that these are transitional actions that by no means will resolve their survival issues,⁸ or compensate for their right to live freely and work on the land they have inherited from their ancestors and want to leave to their grandchildren. Rural people feel the *páramo* can be cared for and conserved only while inhabited by people who know the land and safeguard it through their biocultural memory, which enables them to reproduce their culture.

CONCLUSIONS

This article has explained how governmental highlands conservation policies, extractivist governmentality strategies and even citizen movements' market–environmentalist water conservation dreams all combine to reconfigure Santurbán's hydrosocial territory. They order scales and jointly enclose the Santurbán *páramo* land, exacerbating the vulnerability of residents' livelihood systems. These policies and strategies, supposedly antagonistic, align under a form of neoliberalism-flavoured hydro-territorial design, which attempts to organize individuals and society

under the laws and logic of market values and prices. Such political processes define the scale and delimit the hydrosocial territory of Santurbán.

Here, in particular, government's territorial ordering policies and mining company's extractive interests entwine to harmonize large-scale mining interests with ecological conservation needs in zones near the *páramo*. Through mechanisms of modernist commensuration, they aim to unify and reconcile divergences that are not compatible. As a result, the smallholders' hydrosocial commons are materially and discursively enclosed by a combined extractivism-based, ecological zoning policy framework. These efforts to commensurate a coexistence of mining and conservation, along with (paradoxically) the citizen movement's claim for protecting their right to water, ultimately reorients, controls and disciplines the socioeconomic and biocultural reproduction practices of *páramo* residents. The new social forces that seek to transform the *páramo* hydrosocial territory, apparently adversaries, end up converging in proposals that transform the qualities of the Santurbán *páramo* into calculable, comparable and negotiable quantities, through delimitation, zoning and extraction. This standardizes the diversities existing in this territory to lead them toward a common economic-rationalist measurement language.

First, governmental ecological zoning policies aim to transform the historical modes of living in and belonging to the *páramo*, rendering them invisible and irrelevant, transforming existing livelihood qualities into commensurable quantities and imposing control. Its zoning efforts pretend neutrality and scientific objectivity but are deeply political; they install decontextualized values and means of comparison across very different cultural worlds (e.g., local peasant farming and global gold-mining) and so enable economic transactions and evaluations that foster the entrance of transnational markets.

Second, MINESA transforms and commodifies hydrosocial territory through social investment, examining and covering unmet basic needs to create transitory well-being for local residents. Its modernist commensuration efforts not just aim to introduce market price values to land, water and local labour in order to negotiate and purchase inhabitants' local resources, but also it seeks to produce new social relations and new identities. Such mining-aligned identities deeply manifest commensuration's constitutive power to alter and conform people's thinking and behaviour towards pro-mining and calm socio-environmental conflicts. In effect, the production and export of commodified minerals is facilitated.

Third, besides common citizens' rightful claims to access safe drinking water, Bucaramanga's elites strategize, reinterpret and mobilize this right to water in order to materialize their interests in large-scale urban expansion. They seek to transform and manage the Santurbán territory as a 'water factory' by installing a governance system based on market-economic incentives, organizing the city's financial capacity to 'buy *páramo* inhabitants' orderly behavior' in exchange for restricting their livelihood practices and making them provide the water. This is yet another way to commoditize the *páramo* and pave the way for the market to define how to commensurate such diverse issues as, on the one hand, water extraction and *páramo* enclosure and, on the other, inhabitants' cultural and livelihood practices for making a living and investing life with meaning. The efficiency of market-based territorial governance directly depends on objectifying land and water resources as resources without cultural values and meanings, depersonalized and commodified, following universalistic frames of rule-making. It denies politics and power relationships and reduces the relevance of local governance contexts and embeddedness in particular cultures and territorial histories.

Therefore, modernist commensuration, following market-styled norms, values and discourse to reshape territory, drives the renewed mode of simultaneously enclosing *and* breaking open the commons: to regulate, normalize and discipline local societal relations that foster outside interests. In the end, these actor alliances openly or subtly expropriate the right to define local ways of life and living, and appropriate the power to simplify complexity imposing a particular metric for judging about diverse values and meanings. Their disputes over the Santurbán hydrosocial

territory violently enclose the lives of *páramo* inhabitants. By dispossessing them of their livelihoods, fencing in their socioeconomic practices, their traditional land rights and their rights to access water are subtly taken away from them, day by day.

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NOTES

1. These are located between the upper limit of the Andean forest and, if it is the case, the lower limit of the glaciers. They are composed of special vegetation, such as shrubs, grasses and roseate plants. Their soils have a high level of organic content, moisture and a low pH. However, these conditions have been changed through direct human intervention and global warming.
2. In the Municipality of Vetás, for instance, Canadian multinationals had purchased 70% of small private mining titles, taking the 14 small-scale mines that existed in the early 20th century to only four remaining by 2012 (Buitrago, 2012). Local miners who transferred or shared their land rights or mining titles with multinationals became laborers for these companies (Duarte-Abadía & Boelens, 2016).
3. This information comes from two of this article's authors who, by that time (2011–15), worked as researchers with IAVH.
4. Among other arguments, MINESA claims not to alter water quality or quantity (MINESA, 2017a). They argue that groundwater is used without affecting surface water. All water would be treated before returning it to water sources supplying the Bucaramanga. They assure using only 0.4% of the Bucaramanga's average demand (in 2016, 2223 l/s, which would make the company only using 33 l/s). They also claim that the municipal water utility has major unreported losses of 462 l/s: the water they require would be only 7% of that water wasted. However, their exploration work had several shutdowns because of massive leaks, which have taken days to get under control (interview with the mining company, October 9, 2017).
5. The sustainability report published by Bucaramanga's Metropolitan Waterworks (AMB) in 2016 shows the average discharge taken from these three rivers was 2261 l/s: the Suratá provided 839 l/s, the Frio, 474 l/s, and the Tona, 948 l/s, sufficient to cover the city's demand (AMB, 2014). The AMB reported increased overall catchment, with average annual flow from the three rivers at 8417 l/s, and a water treatment capacity of 4100 l/s, to cover a demand of 22,235 l/s, to serve 260,000 homes (AMB, 2016). Especially in the context of projected continuous urban expansion, the Suratá River becomes increasingly crucial: an annual growth of 10,500 users is expected, which means that by 2085 the city would need to supply 729,350 users (Kilo, 2017). For this reason,

in 2014 they began building a regulation reservoir on the Tona River with a storage capacity of 18 million m³, in order to supply 1200 l/s.

6. Some of these areas are peasant family and community-owned commons; others are public commons that are part of national natural heritage.

7. As Dupuits et al. (2020) show, multi-actor, multiscale alliances provide new opportunities for grassroots claims, but incorporating professional language and expertocratic standards in societal movements' strategies (as illustrated in Bucaramanga) can also entail serious impacts that harm the grassroots.

8. According to the *páramo*'s smallholders, moreover, payments are so low that these can never guarantee their subsistence. They have already been notified that it is forbidden for state capacity-building institutes to provide them any training or service projects in the highland's zones.

REFERENCES

- Achterhuis, H., Boelens, R., & Zwartveen, M. (2010). Water property relations and modern policy regimes: Neoliberal utopia and the disempowerment of collective action. In D. Boelens, A. Getches, & G.-G. Out (Eds.), *Out of the mainstream: Water rights, politics and identity* (pp. 27–56). Earthscan.
- Acueducto Metropolitano de Bucaramanga (AMB). (2014). *Usos, oferta y demanda de Agua Potable. Informe de Sustentabilidad. Bucaramanga*. AMB.
- Acueducto Metropolitano de Bucaramanga (AMB). (2016). *Informe de Gestión*. Bucaramanga.
- Bakker, K. (2010). The limits of 'neoliberal natures': Debating green neoliberalism. *Progress in Human Geography*, 34(6), 715–735. <https://doi.org/10.1177/0309132510376849>
- Bakker, K. (2014). The business of water: Market environmentalism in the water sector. *Annual Review of Environment and Resources*, 39(1), 469–494. <https://doi.org/10.1146/annurev-environ-070312-132730>
- Baptiste, B. (2011, October 11). La importancia de Santurbán. [Blog] *Conciencia Ciudadana*. <http://concienciaciudadana.org/la-importancia-de-Santurbán/>.
- Baud, M., Boelens, R., & Damonte, G. (2019a). Nuevos capitalismos y transformaciones territoriales en la región Andina. *Estudios Atacameños*, 63, 195–208. <https://doi.org/10.22199/issn.0718-1043-2019-0033>
- Baud, M., Boelens, R., de Castro, F., Hogenboom, B., Klaufus, C., Koonings, K., & Ypeij, A. (2019b). Commoning Xela: Negotiating collective spaces around a Central American intermediate city. *European Review of Latin American and Caribbean Studies*, 108(108), 267–279. <https://doi.org/10.32992/erlacs.10584>
- Bebbington, A., & Bury, J. (Eds.). (2013). *Subterranean struggles: New dynamics of mining, oil, and gas in Latin America*. University of Texas Press.
- Boelens, R., Hoogesteger, J., & Baud, M. (2015). Water reform governmentality in Ecuador: Neoliberalism, centralization and the restraining of polycentric authority and community rule-making. *Geoforum*, 64, 281–291. <https://doi.org/10.1016/j.geoforum.2013.07.005>
- Boelens, R., Hoogesteger, J., Swyngedouw, E., Vos, J., & Wester, P. (2016). Hydrosocial territories: A political ecology perspective. *Water International*, 41(1), 1–14. <https://doi.org/10.1080/02508060.2016.1134898>
- Buitrago, E. (2012). *Entre el Agua y el Oro: Tensiones y Reconfiguraciones Territoriales en el Municipio de Vetás, Santander, Colombia* [Bachelor thesis]. Universidad Nacional, Bogotá.
- Cardoso, A. (2018). Valuation languages along the coal chain from Colombia to the Netherlands and to Turkey. *Ecological Economics*, 146, 44–59. <https://doi.org/10.1016/j.ecolecon.2017.09.012>
- Castaño, D. (2014, December 20). Con la delimitación, la minería tiene una 'puerta' entreabierta en Santurbán. *Vanguardia*. www.vanguardia.com/economia/local/292032-con-la-delimitacion-la-mineria-tiene-una-puerta-entreabierta-en-santurban.
- Castellanos, C. M. (2011, March 4). Consideraciones para no conceder la licencia ambiental del proyecto Agostura explotación a cielo abierto de minerales Auroargentíferos en el *páramo* de Santurbán. [Presentation to defend Santurbán *páramo*]. *Luis Carlos Pérez Attorneys' Collective*. <https://www.colectivodeabogados.org/porque-no-se-le-ha-negado-la-licencia-ambiental/>.

- Cohen, A., & Bakker, K. (2014). The eco-scalar fix: Rescaling environmental governance and the politics of ecological boundaries in Alberta, Canada. *Environment and Planning D: Society and Space*, 32(1), 128–146. <https://doi.org/10.1068/d0813>
- Dean, M. (1999). *Governmentality. Power and rule in modern society* (2nd ed.). Sage.
- De Castro, F., Hogenboom, B., & Baud, M. (2016). *Environmental governance in Latin America*. Palgrave Macmillan.
- Dietz, T., Ostrom, E., & Stern, P. (2003). The struggle to govern the commons. *Science*, 302(5652), 1907–1912. <https://doi.org/10.1126/science.1091015>
- Dressler, W. H., & Guieb, E. R. (2015). Violent enclosures, violated livelihoods: Environmental and military territoriality in a Philippine frontier. *The Journal of Peasant Studies*, 42(2), 323–345. <https://doi.org/10.1080/03066150.2014.991718>
- Duarte, C. (2012, June 1). *Gobernabilidad Minera: Cronologías legislativas del subsuelo en Colombia*. [Blog]. <http://governabilidadminera.files.wordpress.com/2012/01/gobernabilidad-minera-cronologicc81as-legislativas-del-subsuelo-en-colombia.pdf>.
- Duarte-Abadía, B., & Boelens, R. (2016). Disputes over territorial boundaries and diverging valuation languages: The Santurbán hydrosocial highlands territory in Colombia. *Water International*, 41(1), 15–36. <https://doi.org/10.1080/02508060.2016.1117271>
- Duarte-Abadía, B., & Boelens, R. (2019). Colonizing rural waters: The politics of hydro-territorial transformation in the Guadalhorce Valley, Málaga, Spain. *Water International*, 44(2), 148–168. <https://doi.org/10.1080/02508060.2019.1578080>
- Duarte-Abadía, B., Boelens, R., & Roa-Avenidaño, T. (2015). Hydropower, encroachment and the re-patterning of hydrosocial territory: The case of Hidrosogamoso in Colombia. *Human Organization*, 74(3), 243–254. <https://doi.org/10.17730/0018-7259-74.3.243>
- Dupuits, E. (2019). Water community networks and the appropriation of neoliberal practices: Social technology, depoliticization, and resistance. *Ecology and Society*, 24(2). <https://doi.org/10.5751/ES-10857-240220>
- Dupuits, E., Baud, M., Boelens, R., de Castro, F., & Hogenboom, B. (2020). Scaling up but losing out? Water commons' dilemmas between transnational movements and grassroots struggles in Latin America. *Ecological Economics*, 172, 106625. <https://doi.org/10.1016/j.ecolecon.2020.106625>
- Eaton, K. (2015). Disciplining regions: Subnational contention in neoliberal Peru. *Territory, Politics, Governance*, 3(2), 124–146. <https://doi.org/10.1080/21622671.2015.1005126>
- Elden, S. (2009). *Terror and territory: The spatial extent of sovereignty*. University of Minnesota Press.
- El Tiempo*. (2011, July 10). Estamos a puertas de una tragedia ambiental: Exministro de Minas (Interview Manuel Rodríguez-Becerra). *El Tiempo*. www.eltiempo.com/archivo/documento/CMS-9866464.
- Escobar, A. (1995). *Encountering development. The making and unmaking of the third world*. Princeton University Press.
- Escobar, A. (2008). *Territories of difference: Place, movements, life, redes*. Duke University Press.
- Espeland, W. N., & Stevens, M. L. (1998). Commensuration as a social process. *Annual Review of Sociology*, 24(1), 313–343. <https://doi.org/10.1146/annurev.soc.24.1.313>
- Ferguson, J., & Gupta, A. (2002). Spatializing states: Toward an ethnography of neoliberal governmentality. *American Ethnologist*, 29(4), 981–1002. <https://doi.org/10.1525/ae.2002.29.4.981>
- Fletcher, R. (2010). Neoliberal environmentality: Towards a poststructuralist political ecology of the conservation debate. *Conservation and Society*, 8(3), 171–181. <https://doi.org/10.4103/0972-4923.73806>
- Foucault, M. (1991). Governmentality. In G. Burchell, C. Gordon, & P. Miller (Eds.), *The Foucault effect: Studies in governmentality* (pp. 87–104). University of Chicago Press.
- Foucault, M. (2007). *Security, territory, population*. Springer.
- Foucault, M. (2008). *The birth of biopolitics*. Palgrave MacMillan.
- Goldman, M. (2011). The birth of a discipline: Producing authoritative green knowledge, world bank-style. *Ethnography*, 2(2), 191–217. <https://doi.org/10.1177/14661380122230894>

- Gonzalez-Vicente, R. (2020). The liberal peace fallacy: Violent neoliberalism and the temporal and spatial traps of state-based approaches to peace. *Territory, Politics, Governance*, 8(1), 100–116. <https://doi.org/10.1080/21622671.2018.1550012>
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243–1248. <https://doi.org/10.1126/science.162.3859.1243>
- Harvey, D. (2003). *The new imperialism*. Oxford University Press.
- Hidalgo, J. P., Boelens, R., & Isch, E. (2018). Hydroterritorial configuration and confrontation: The Daule–Peripa multipurpose hydraulic scheme in coastal Ecuador. *Latin American Research Review*, 53(3), 517–534. <https://doi.org/10.25222/larr.362>
- Hombres, L., & Boelens, R. (2017). Urbanizing rural waters: Rural–urban water transfers and the reconfiguration of hydrosocial territories in Lima. *Political Geography*, 57, 71–80. <https://doi.org/10.1016/j.polgeo.2016.12.002>
- Hombres, L., & Boelens, R. (2018). From natural flow to ‘working river’: Hydropower development, modernity and socio–territorial transformations in Lima’s Rímac watershed. *Journal of Historical Geography*, 62, 85–95. <https://doi.org/10.1016/j.jhg.2018.04.001>
- Hoogendam, P., & Boelens, R. (2019). Dams and damages. Conflicting epistemological frameworks and interests concerning ‘compensation’ for the Misticuni project’s socio–environmental impacts in Cochabamba, Bolivia. *Water*, 11(3), 408. <https://doi.org/10.3390/w11030408>
- Hoogesteger, J., Boelens, R., & Baud, M. (2016). Territorial pluralism: Water users’ multi–scalar struggles against state ordering in Ecuador’s highlands. *Water International*, 41(1), 91–106. <https://doi.org/10.1080/02508060.2016.1130910>
- Huxley, M. (2008). Space and government: Governmentality and geography. *Geography Compass*, 2(5), 1635–1658. <https://doi.org/10.1111/j.1749-8198.2008.00133.x>
- INGETEC. (2017). *Estudio de Impacto ambiental para el proyecto de explotación subterránea de minerales auroargentíferos ‘Soto Norte’*. INGETEC.
- Instituto Alexander Von Humboldt (IAVH). (2011). *El gran libro de los páramos*. Proyecto páramo andino.
- Jackson, S. (2018). Water and Indigenous rights: Mechanisms and pathways of recognition, representation, and redistribution. *WIREs Water*, 2018, 5. <https://doi.org/10.1002/wat2.1314>
- Jessop, B. (2007). *State power*. Polity.
- Kilo, E. (2017, June 3). Acueducto de Bucaramanga llegaría a más zonas de la meseta y áreas vecinas. *Vanguardia*. www.vanguardia.com/area-metropolitana/bucaramanga/399599-acueducto-abre-posibilidad-de-llevar-agua-a-mas-zonas-de-la-me.
- La Silla, V. (2017, June 18). Rodolfo Hernández-Suárez. *La Silla Vacía* <http://lasillavacia.com/quienesquien/perfilquien/rodolfo-herandez-suarez>.
- Lefebvre, H. (2009). *Dialectical materialism*. University of Minnesota Press.
- Li, F. (2013). Relating different worlds: Mines, aquifers and sacred mountains in Peru. *Anthropologica*, 55(2), 399–411. <http://www.jstor.org/stable/24467345>
- Li, T. M. (2007). *The will to improve. Governmentality, development, and the practice of politics*. Duke University Press.
- Li, T. M. (2011). Rendering society technical: Government through community and the ethnographic turn at the World Bank in Indonesia. In D. Mosse (Ed.), *Adventures in Aidland* (pp. 57–81). Berghahn.
- Linton, J., & Budds, J. (2014). The hydrosocial cycle: Defining and mobilizing a relational–dialectical approach to water. *Geoforum*, 57, 170–180. <https://doi.org/10.1016/j.geoforum.2013.10.008>
- Lliso, B., Pascual, U., Engel, S., & Mariel, P. (2020). Payments for ecosystem services or collective stewardship of Mother Earth? Applying deliberative valuation in an indigenous community in Colombia. *Ecological Economics*, 169, 106499. <https://doi.org/10.1016/j.ecolecon.2019.106499>
- Marks, D. (2019). Assembling the 2011 Thailand floods: Protecting farmers and inundating high–value industrial estates in a fragmented hydro–social territory. *Political Geography*, 68, 66–76. <https://doi.org/10.1016/j.polgeo.2018.10.002>
- Martínez-Alier, J. (with Klaus Schluepmann) (1987). *Ecological economics*. Blackwell.

- Martínez-Alier, J. (2002). *The environmentalism of the poor*. Edward Elgar.
- Martínez-Alier, J., Munda, G., & O'Neill, J. (1998). Weak comparability of values as a foundation for ecological economics. *Ecological Economics*, 26(3), 277–286. [https://doi.org/10.1016/S0921-8009\(97\)00120-1](https://doi.org/10.1016/S0921-8009(97)00120-1)
- Marx, K. (1976). *Capital: A critique of political economy; Vol I, II, III*. Penguin Harmondsworth.
- Minesa. (2017, October 14). *Cuentas Claras Sobre el Agua. Opinión Juan Camilo Montoya*. Hechos de Agua.com [Blog]. <http://hechosdeagua.com/cuentas-claras-agua/>.
- Minesa. (2017, October 19). *Interview Jaime Arteaga* [Youtube Video]. Retrieved October 19, 2017, from <http://www.youtube.com/watch?v=JMPBnBvjf1Y>
- More, T. (1975[1516]). *Utopia*. Penguin Classics.
- Neumann, R. P. (2004). Nature–state–territory: Toward a critical theorization of conservation enclosures. In R. Peet, & M. Watts (Eds.), *Liberation ecologies* (pp. 179–199). Routledge.
- Osejo, A. (2014). *Caracterización del posicionamiento de los actores frente al uso, manejo y conservación del Complejo Jurisdicciones – Santurbán–Berlín*. [Internal research document]. IAvH.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Pardo, L. A. (2013). Propuestas para recuperar la gobernanza del sector minero colombiano. In J. Viana, O. Alarcón & R. Medina (Eds.), *Minería en Colombia* (pp. 9–19). Imprenta Nacional and Contraloría General de la Republica.
- Parra Romero, A. (2019). *Producción y movilización de conocimiento en conflictos socioambientales: minería a gran escala y defensa del agua en el páramo de Santurbán-Colombia* [Doctoral thesis]. Universidade Estadual de Campinas.
- Peck, J. (2013). Explaining (with) neoliberalism. *Territory, Politics, Governance*, 1(2), 132–157. <https://doi.org/10.1080/21622671.2013.785365>
- Perreault, T. (2014). *Minería, Agua y Justicia Social en los Andes. Experiencias Comparativas de Perú y Bolivia*. CBC and Justicia Hídrica.
- Polanyi, K. (1944). *The great transformation: The political and economic origins of our time*. Farrar and Rinehart.
- Redacción Vanguardia. (2018, July 31). Estudian esquema de pagos por servicios ambientales en el Páramo de Santurbán. *Vanguardia*. www.vanguardia.com/area-metropolitana/bucaramanga/estudian-esquema-de-pago-para-servicios-ambientales-en-el-páramo-de-santurban-FBv1440588.
- Roa-García, M. C. (2017). Environmental democratization and water justice in extractive frontiers of Colombia. *Geoforum*, 85, 58–71. <https://doi.org/10.1016/j.geoforum.2017.07.014>
- Roa-García, M. C., Urteaga-Crovetto, P., & Bustamante-Zenteno, R. (2015). Water laws in the Andes: A promising precedent for challenging neoliberalism. *Geoforum*, 64, 270–280. <https://doi.org/10.1016/j.geoforum.2013.12.002>
- Roca-Servat, D., & Ocando, L. P. (2019). ‘Sí a la vida, al agua y al territorio’: Relaciones hidrosociales alternativas en Colombia. *European Review of Latin American and Caribbean Studies*, 107(107), 117–138. <https://doi.org/10.32992/erlacs.10389>
- Rodríguez-de-Francisco, J. C., & Boelens, R. (2015). Payment for environmental services: Mobilising an epistemic community to construct dominant policy. *Environmental Politics*, 24(3), 481–500. <https://doi.org/10.1080/09644016.2015.1014658>
- Rodríguez-de-Francisco, J. C., & Boelens, R. (2016). PES hydrosocial territories: De-territorialization and re-patterning of water control arenas in the Andean highlands. *Water International*, 41(1), 140–156. <https://doi.org/10.1080/02508060.2016.1129686>
- Ross, A., & Chang, H. (2020). Socio-hydrology with hydrosocial theory: Two sides of the same coin? *Hydrological Sciences Journal*, 65(9), 1443–1457. <https://doi.org/10.1080/02626667.2020.1761023>
- Sarmiento, C., Cadena, C., Sarmiento, M., Zapata, J., & León, O. (2013). *Aportes a la conservación estratégica de los páramos de Colombia: cartografía de los complejos de páramo a escala 1:100.000*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- Semana Sostenible. (2016, March 9). El fracaso de la delimitación del páramo de Santurbán. *Revista Semana*. <http://sostenibilidad.semana.com/medio-ambiente/articulo/Santurbán-el-fracaso-de-la-delimitacion/34878>.

- Sosa, M., Boelens, R., & Zwarteven, M. (2017). The influence of large mining: Restructuring water rights among rural communities in apurimac, Peru. *Human Organization*, 76(3), 215–226. <https://doi.org/10.17730/0018-7259.76.3.215>
- Stoltenborg, D., & Boelens, R. (2016). Disputes over land and water rights in gold mining: The case of Cerro de San Pedro, Mexico. *Water International*, 41(3), 447–467. <https://doi.org/10.1080/02508060.2016.1143202>
- Sullivan, S. (2009). Green capitalism, and the cultural poverty of constructing nature as service provider. *Radical Anthropology*, 3, 18–27.
- Sullivan, S. (2010). ‘Ecosystem service commodities’: A new imperial ecology? Implications for animist immanent ecologies, with Deleuze and Guattari. *New Formations*, 69(1), 111–128. <https://doi.org/10.3898/NEWF.69.06.2010>
- Svampa, M. (2015). Commodities consensus: Neoextractivism and enclosure of the commons in Latin America. *South Atlantic Quarterly*, 114(1), 65–82. <https://doi.org/10.1215/00382876-2831290>
- Swyngedouw, E., & Boelens, R. (2018). ‘... and not a single injustice remains’: hydro–territorial colonization and techno–political transformations in Spain. In R. Boelens, T. Perreault, & J. Vos (Eds.), *Water justice* (pp. 115–133). Cambridge University Press.
- Ulloa, A. (2014). Geopolíticas del desarrollo y la confrontación extractivista minera en territorios indígenas en América Latina. In B. Gobel, & A. Ullao (Eds.), *Extractivismo minero en Colombia y América Latina* (pp. 425–458). Universidad Nacional.
- Ungar, P., Osejo, A., Roldán, L., & Buitrago, E. (2014). Caracterización del sistema social asociado al territorio. In C. Sarmiento, & P. Ungar (Eds.), *Aportes a la delimitación del complejo de páramos Jurisdicciones–Santurbán–Berlín* (pp. 54–58). IAVH.
- Valladares, C., & Boelens, R. (2017). Extractivism and the rights of nature: Governmentality, ‘convenient communities’, and epistemic pacts in Ecuador. *Environmental Politics*, 26(6), 1015–1034. <https://doi.org/10.1080/09644016.2017.1338384>
- Valladares, C., & Boelens, R. (2019). Mining for mother earth. governmentalities, sacred waters and nature’s rights in Ecuador. *Geoforum*, 100, 68–79. <https://doi.org/10.1016/j.geoforum.2019.02.009>
- van Teijlingen, K., & Hogenboom, B. (Eds.) (2016). Debating alternative development at the mining frontier: Buen Vivir and the conflict around El Mirador Mine in Ecuador. *Journal of Developing Societies*, 32(4), 382–420. <https://doi.org/10.1177/0169796X16667190>
- Vos, J., & Boelens, R. (2018). Neoliberal water governmentalities, virtual water trade, and contestations. In R. Boelens, T. Perreault, & J. Vos (Eds.), *Water justice* (pp. 283–301). Cambridge University Press.
- Wilson, N. J., & Inkster, J. (2018). Respecting water: Indigenous water governance, ontologies, and the politics of kinship on the ground. *Environment and Planning E: Nature and Space*, 1(4), 516–538. <https://doi.org/10.1177/1177/2514848618789378>
- Yates, J. S., Harris, L. M., & Wilson, N. J. (2017). Multiple ontologies of water: Politics, conflict and implications for governance. *Environment and Planning D: Society and Space*, 35(5), 797–815. <https://doi.org/10.1177/0263775817700395>
- Zapata, J. (2012). *Análisis de jurisdicciones Santurbán y Berlín, relativa a los procesos de ordenamiento territorial y actividad minera* [consulting report]. IAVH.
- Zenko, M., & Menga, F. (2019). Linking water scarcity to mental health: Hydro–social interruptions in the Lake Urmia Basin, Iran. *Water*, 11(5), 1092. <https://doi.org/10.3390/w11051092>