

Do we inhabit the same mountain? Towards ontological openings in páramo conservation

Adela Parra-Romero ^I
César Camilo Castillo Estupiñán ^{II}

Abstract: The biodiversity of the high Andean mountains has made it urgent to conserve the Páramos, which are recognized as essential ecosystems for the hydrological cycle and climate change mitigation. Colombia, which has 50% of these ecosystems in the world, has been cartographically delimiting the páramos since 2012 to promote their conservation. For the communities, the maps do not reflect the care work and practices with which they inhabit the páramo on daily life. Through ethnography and documentary review, we make an ontological analysis of the delimitation process and the conflicts it originated in the regions of Santurbán and Sumapaz. We argue that the environmental challenges faced by the high mountain demand the need for a reflexive conservation of its own ontology and to conduct environmental policy from an ontological openness that conceives the páramo as a permanent material composition of situated practices where different ways of making-world intervene.

^I UNIMETA, Villavicencio, Meta, Colombia.

^{II} Department of Thematic Studies, Linköping University, Sweden.

Keywords: Páramos; conservation; socio-environmental conflicts; Political Ontology; Colombia.

São Paulo. Vol. 26, 2023

Original Article

DOI: <http://dx.doi.org/10.1590/1809-4422asoc20210133r1vu2023L1OA>

Introduction

Two hours into a hearing on the delimitation of Sumapaz páramo, as a renowned environmental researcher was in the middle of her report on the state of the páramo, a member of the audience stood up from his chair and, holding a sheet of paper with a map printed on it, raised his voice to express his disagreement with what had been presented so far. Meanwhile, at the other end of Colombia, the inhabitants of Santurbán páramo are still holding talks about the issue of delimitation, discussing their own proposal of where the páramo should begin and which areas should be designated for conservation, transition and sustainable use. Both situations are part of the discussions on páramos in Colombia, which, by that point, had already entered the public sphere in different parts of the country, the issue of their delimitation being one of the most contentious.

Up until 2010, conversations about páramos had remained within the realm of the sciences, which understood them as important ecosystems due to their rich biodiversity, their role in water regulation, and in climate change mitigation as carbon sinks (HOFSTEDE et al., 2003; MORALES-RIVAS et al., 2007). As part of the conflict over large-scale gold mining, the Colombian state commissioned the Humboldt Institute of Colombia, the technical branch of the Ministry of Environment on biodiversity issues, to carry out a project to delimit the páramos whereby the boundaries of these ecosystems would be drawn on a map. These lines would determine the uses that could be made of the páramo, such as buffer zones, restitution, sustainable production, reconversion or conservation. However, this project led to socio-environmental conflicts because it did not have the participation of the communities historically settled in the páramo, nor of social movements fighting to protect water. Campesinos and small-scale miners, whose activities and settlements fell inside the demarcation line, began to organize themselves to confront the restrictions placed on their territories. A peopleless map is inadequate for those who, through their practices, see the páramo as a living space. At the same time, social movements in defense of water, in their struggle against large-scale mining, have mobilized the páramo stressing its value as a water producer. In this political dispute over the confines of the páramo, these different forms of páramo-making are vying for their place in the co-production and stabilization of the páramo, which is more than just a biological place, a living space or a mining site (DE LA CADENA, 2015). According to the law, since the páramo is a strategic ecosystem, no extractive, agricultural or hydrocarbon activity can be carried out inside it. This is a dispute in which science, politics, activism and communities all deploy their versions of the páramo seeking, through conflict, to stabilize some of them or at least to negotiate them.

This situation highlights a national problem related to two issues: a) the central government's authority to decide on the management of territories and its enforcement in the case of extractive industries; and b) the tensions that emerge between a centralized production of knowledge based on generalization and its associated techniques, and the more localized knowledge held by the inhabitants and social organizations of the territories. We argue that the tensions that arise in the second point are not epistemological but ontological, thus making it necessary to understand environment-society relations and the

challenges facing the conservation of the Andean high mountains. It is, with this goal in mind, that we examine the delimitation of páramos in Colombia. First, by analyzing the way in which science and politics articulate to produce a mappable páramo, and second, by investigating the reconfiguration of environment-society relations brought about by the delimitation of two páramos: Santurbán and Sumapaz. In Santurbán, miners, urban movements defending water, the government, and multinational mining companies are engaged in a socio-environmental conflict over which activities may be carried out in the páramo, who should benefit from the water that springs from it, and the way in which historically constituted relationships between gold, water and small-scale miners in the area are being destabilized. Sumapaz páramo is located in a region historically affected by the Colombian armed conflict and inhabited by campesinos, who in their struggle against latifundia and fleeing political violence, found in the páramo a refuge and an essential territory where they could develop their autonomous projects, which they now see threatened by a conservation policy from which they were excluded.

Based on interviews, ethnography and document analysis, we propose an ontological analysis of the socio-environmental conflicts surrounding the conservation of the high Andean mountains. Based on Science and Technology Studies (STS) and its encounters with environmental anthropology, we seek to broaden the discussion on conflicts over protected areas and the tensions between environmental conservation and communities, highlighting the need to recognize alternative ways of understanding nature/culture relations, while at the same time investigating other practices in relation to the environment that may enable conceptual constructions that do not flatten differences (RUIZ SERNA; DEL CAIRO, 2016; ULLOA, 2001).

By ontological we refer to world-making practices, which, in the context of the páramo, are the socio-environmental relations that determine ways that the mountain is allowed to be and not to be. For the ontological analysis we draw from anthropology by following campesinos, activists, miners and scientists, allowing ourselves to be surprised by their respective ways of world-making. From STS, we bring the idea of opening science to its own practices, of not separating a priori science from politics, nature from culture, and taking seriously the agency that non-human entities have in conflicts. We argue that the conservation policies of the Andean páramos must advance towards an ontological opening in the governance of the territories, that allows the recognition of their inhabitants as political subjects and incorporates care as a key and differentiated concept of conservation. These policies should reflexively address the role of science and institutions, which, through the centralization of decisions and the reduction of territorial management to mere technical procedures, take advantage of an asymmetrical power structure to develop practices that impose environmental policy. As we explore in this article, all these issues acquire a new meaning when they are considered from the standpoint of ontological openings, which reveals a tension of differentiated ways of world-making and of organizing its entities and elements (DE LA CADENA, 2015).

The article is divided into four sections: in the first, we provide a theoretical review of the ontological approach to environmental conflicts; in the second, we trace

the historical trajectory of regulations that led to the delimitation policy and explore the socio-technical practices that shaped the delimitation of páramo as lines drawn on a map. In the following sections we expose two ways of constructing the páramo from the ground up: we show how the inhabitants of Santurbán relate to what they consider to be a false dilemma between gold and water; and the need for a conservation “with them inside” proposed by the campesinos of Sumapaz. The páramo as construed from above (satellite maps, 1:25,000 scale, at the central government level) – the mappable páramo – is imposed on the páramo as constructed from below (on the ground, through everyday practices). A mappable páramo is one that is produced through images, discussions, criteria and other maps which are then incorporated into a probabilistic model which yields a set of demarcated areas that then become the páramo (funny how before 2010 it seemed like we all knew where and what a páramo was!). This exercise has serious implications for what we call the páramo as made from below. One might think that it is a problem of scale, and it is, in part, but the scale is never in question, nor are the criteria, nor the science, only the practices of campesinos, miners and citizens. We round off the article by questioning whether what we call “rational politics” should be the basis for negotiating socio-environmental conflicts in relation to the conservation of the Andean high mountains and suggest the kind of policies that should be considered to develop a practice of conservation that is reflexive regarding its own ontology. Thus, we appeal to ontological opening, not [only] as a form of analysis, but as a conceptual tool for territorial governance.

A Conceptual Approach to the Ontology of Socio-environmental Conflicts

Ontology has been a recurring theme in contemporary social science, with various fields contributing a variety of approaches (from philosophy to engineering). In this article we highlight two of them: anthropology and science and technology studies (STS). In doing so, we emphasize the heterogeneity of ontology, since the nuances through which each discipline approaches it are crucial to the study of socio-environmental conflicts. Anthropology has long insisted that we should not assume our way of understanding the world, which distinguishes between the natural and the cultural, as the basis for understanding other cultures (STRATHERN, 1980). One of the developments along this line of thought is put forward by Viveiros de Castro (1998), who, in his analysis of Amerindian perspectivism, establishes that for these communities, perspectives are not simply different ways of seeing the world, but on the contrary, each one implies seeing a different world.

By not taking for granted the distinction between nature and culture, this tradition seeks to recognize the existence of different worlds partially connected to each other, not all of which are modern (MARTINEZ, 2016; DE LA CADENA, 2015). Hence, the project of a political ontology, i.e., one that analyses how these worlds are constituted and how they sometimes come into conflict, enables an approach to socio-environmental conflicts in relation to the terms of what is in dispute (BLASER, 2009, 2018; DE LA CADENA, 2010; ESCOBAR, 2015). This methodological proposal is oriented towards considering one’s own thoughts and concepts through an ‘experimental’ transformation

that takes place in the encounter with those being studied (HOLBRAAD & PEDERSEN, 2017). Thus, ontology would be the opportunity to 1) potentially expand concepts and possible worlds through the analysis of a given material (PEDERSEN, 2012); and 2) a descriptive technology to make visible that which is, could have been, or might be otherwise (HOLBRAAD, PEDERSEN & VIVEIROS DE CASTRO, 2014). This point is relevant to the study of high mountain socio-environmental conflicts, since it implies an analysis of disagreement and tensions between different parties (worlds) and allows for ontological openings; in the case of the páramo, it would not be understood from abstract conceptualizations but rather through the practices that materially configure it. Such openness would present us with the opportunity to recalibrate the assumptions underlying our understanding of environment-society relations by taking seriously what the subjects, their relations and their interaction with our research might be suggesting to us.

Along a different trajectory, STS has also incorporated ontological analysis. The field has been interested in building an empirical understanding of how sciences and technologies are made in practice (BIJKER; HUGHES; PINCH, 2012; KNORR-CETINA, 1995; LATOUR; WOOLGAR, 1986), so their contributions have complicated any simple division between the ontological and epistemological. According to Mol and Pickering, in the history of science and technology one can find examples of how different worlds are produced and with them multiple ontologies (PICKERING, 1995). This happens once the focus of analysis turns to the practices that perform the socio-technical objects. For example, in practice, a disease such as atherosclerosis is associated with a multiplicity of practices involving radiologists, doctors and patients (MOL, 2002). The issue of ontology would then have to do with the transition towards a “performative language” when it comes to empirically studying the practices through which sciences and technologies are produced (PICKERING, 2019).

A central feature of STS ontological analysis is not to insist, as a “language of representation” would, on a more refined and “correct” reading of reality. On the contrary, the animating spirit of this ontological sensibility is to interfere with the assumption of a singular and ordered world or a world where only one world fits (LAW, 2015). This is done by reworking metaphysical questions in mundane situations and in relation to apparently stabilized objects. This opens up a broader interpretation of politics: the ontological status of the analyzed entities is not taken for granted, they become the temporal and fluid result of practices, interactions and interventions.

Although the conceptual approaches to ontology in anthropology and STS may partially overlap, their intersections are more nuanced than is often acknowledged (JENSEN, 2021). However, taking this as a starting point, we can suggest an understanding of ontology that will be key to the rest of the article. First, ontology is about the composition of the world, its objects and entities from material practices. Second, that world is itself marked by ontological divergences, where conflicts are not about a predefined reality, but about ways of world-making. Following other recent studies, animated by similar questions in the study of biodiversity and how sciences produce their specific objects and forms of reality (ALMEIDA, 2013; CABRAL; SÜSSEKIND; SÁ, 2020; MARTINEZ

MEDINA, 2020), we ask ourselves questions such as: what counts as páramo? what are its attributes? from which practices are they produced? according to what criteria? what other ontologies of the páramo are possible?

The Articulation of Science and Policy in Delimiting Páramos

According to Colombian environmental institutions, the páramos are ecosystems found in the Andean high mountains, which, due to their characteristics, are of great ecological importance because of the different functions they fulfil. Although there is no single definition, páramos have been characterized by variables such as soil type, altitudinal boundaries, climate, and variety of vegetation (CONTRALORIA, 2012). In Latin America, only Costa Rica, Colombia, Ecuador, Peru and Venezuela have páramos, covering an area of about 34,000 km² (HOFSTEDE ET AL., 2003).

Over 50% of this area is in Colombia, distributed across 36 páramo complexes. Colombian páramos possess a rich biodiversity (3,379 plant species, 70 mammal species, 154 bird species, 90 amphibian species), and play a vital role in the retention and regulation of water, being the source of a large percentage of Colombia's rivers. These ecosystems retain 10 times more carbon per square meter than the tropical forest and possess an invaluable scenic beauty (HOFSTEDE ET AL., 2003; MORALES-RIVAS ET AL., 2007). They are inhabited by campesinos and indigenous people engaged in agriculture and small-scale mining activities. Nearly 20 million people - 40% of the Colombian population - live in municipalities that contain some portion of páramo within their surface area. For these reasons, such ecosystems in Colombia have been considered as places to be protected. In 2002, the Ministry of Environment ordered the regional environmental authorities to study and characterize the páramos and their respective environmental management plans; however, very few authorities complied, according to an assessment carried out by the Comptroller's Office (CONTRALORÍA, 2012).

Subsequently, in Law 1382 of 2010 (mining code) it was regulated that the páramos would be off-limits to mining and hydrocarbon activities. Faced with one of the biggest controversies against large-scale gold mining, the social movement for the protection of water and the Santurbán páramo mobilized public opinion and the legal sphere in favor of the regulation. In the end, although the large-scale mining project was rejected, the mining unions demanded that another part of the law requiring the páramo to be cartographically delimited using technical, social, environmental and economic criteria be complied with for the exclusion of extractive activities from these ecosystems to take effect (PARRA-ROMERO; GITAHY, 2017). As a result, the delimitation of páramos was legally regulated by the Colombian state through the government plans of President Juan Manuel Santos for the periods between 2010-2014 and 2014-2018.

In 2007, the Humboldt Institute published the first atlas of Colombian páramos. At the time, 1,900,000 hectares corresponding to 34 páramo complexes were identified at a scale of 1:250,000 (MORALES-RIVAS ET AL., 2007). In 2013, the Institute updated the atlas to a scale of 1:100,000 (a result of the requirement to delimit the páramos) and

in this version the number of hectares was increased by more than one million and 2 new complexes were added, i.e., new páramos emerged! It is at this point that the articulation between science and páramo conservation policy begins to require a mappable ontology of the páramo, i.e., one in which the páramo are lines that can be drawn on maps.

For the people whose work was linked to the Colombian national system of protected areas during the 2000s, maps, especially of the páramos, were rather elusive objects. They had to be collated from sparse satellite images, from maps made for other purposes, and by triangulating concepts from biology. Julio was one of the geographers who at the time faced the challenge of finding páramos on maps. He worked in Colombia's National Parks Agency at a time when concern for the country's páramos was gaining momentum. When the head of Julio's office received a request from the Comptroller's Office in 2006 for a report on the state of the páramos, the maps at the time only allowed them to be referenced through the intersection of lines and colours that were only marginally concerned with the páramos, to the point that they did not even use that term to refer to them.

The páramo maps, which today animate a variety of discussions, have some particular characteristics defined by the aforementioned regulation. First, drawn at a scale of 1:25,000, for the specific purpose of establishing the boundaries of what the Colombian state considers a "strategic ecosystem", the páramos became part of the State's approach of mapping, classifying and inventorying with a view to establishing new forms of control in matters of national interest (ANDERSON, 2007; SCOTT, 1998). Second, the fact that this effort concerned the páramos and not another ecosystem must be understood in light of the way in which science and legislation have co-produced páramo conservation and a particular vision of them over the course of the twentieth century and especially from the 1980s onwards (SARMIENTO; ZAPATA, 2016). Third, this conservationist vision of the páramos, according to which strict prohibitions must be placed on human activity, is part of an ongoing trend in which a cohort of scientists, some of them internationally recognized such as Thomas Van der Hammen – who believed that the páramos should not be inhabited by humans – actively participated in the creation of norms pertaining to the páramos (UNGAR, 2021).

As Julio recalls, the "Atlas of Colombian Páramos" elaborated by the Humboldt Institute in 2007 was the first one focused on páramos in the country. It included proposals to classify the páramos into "districts" and "complexes", which allowed them to be grouped administratively (a classification comprising 5 sectors, 15 districts and 36 páramo complexes). This was updated in 2012 to introduce potential distribution modelling, a tool that foreshadowed the kind of delimitation that would follow (MORALES-RIVAS et al., 2007; SARMIENTO PINZÓN et al., 2013). Julio was also involved in the two latter projects, where he and his scientific colleagues were again tasked with addressing the socio-technical question of "what the páramos are" by providing an answer comprised of maps and lines.

This answer would be pieced together through a model of potential vegetation distribution, which Julio and his colleagues developed by drawing on other studies that had been previously designed to model the presence of species, only this time it would

be used to model an ecosystem. Although there were extensive discussions about the criteria for delimiting the páramos (CORTÉS-DUQUE; SARMIENTO, 2013), only those that could be read by the probabilistic model would be included to model the transition zone between the páramo and the high Andean forest, a band that served as a reference for drawing the boundaries of the páramos (SARMIENTO; LEÓN MOYA, 2015). The variables included in the model were classified into two broad themes: topographic and climatic. The topographic variables were made up of inputs derived from satellite remote sensors that use wave signals to sample the planet in surface forms. The climatic variables were used to establish average temperature characteristics based on readings from different weather stations strewn across the high mountains.

The construction of the potential distribution model made it possible to take these variables and approximate the vegetation present in the high mountains, since according to this ontology, the possibility of modelling the páramo depends on the probability of distribution of the plants. This way of páramo-making proved quite controversial, as Julio acknowledges, since to be included as a variable, a criterion needed to provide maps at the required scale to be included in the model. Failure to meet this requirement became the main reason for discarding criteria as variables for delimiting the páramo, as indeed happened with social and economic criteria.

Despite the controversies, time constraints, budget limitations and facing pressures of all kinds, Julio and his colleagues managed to delimit the páramos. Beyond assessing whether this delimitation was successful or not, the important thing to note here is that a mappable ontology of the páramos was perhaps the greatest milestone in this articulation between science and policy. Such a mappable ontology meant that the páramos were configured in a way that made it possible to manage them through maps and other forms of spatial representation typical of cartography. This arrangement involved the association of plants, satellites, weather stations, regulations, geographic information systems and, of course, the people in charge of making the páramos mappable. The point is that this ontology is just one of many that open up the possibility of bringing the páramo into action.

Water and Gold: Beyond a Dichotomy

The dispute over the mountain in Santurbán, which began in 2010, was sparked by the threat posed by the proposal of the multinational Greystar Resources to build an open-pit gold mine in an area considered to have a fragile ecosystem. The protection of water emerged as the main banner of social mobilization, especially in urban areas, which succeeded in generating a broad debate on the protection of the páramos against large-scale mining and which became one of the main precedents for the national government's decision to delimit the páramos. Water shapes our social worlds through diverse assemblages of materiality and meaning (BAKKER, 2012) and, along these lines, the social mobilization over Santurbán managed to establish new relationships between water, páramo and citizenship, resulting in a broad social appropriation of the páramo and its

protection. The main focus of this mobilization was the city of Bucaramanga, located at an altitude of 900 m above sea level, which draws its water from rivers that originate in the páramo. The main concern of the social movement was that the impact of the mine, as planned by Greystar, would jeopardize the water supply of at least two million people living further down the mountain. At the conflict's outset, the Ministry of the Environment had determined that, in this region of the country, the páramo started an altitude of 3,000 m above sea level (MINISTERIO DEL MEDIO AMBIENTE, 2002), whereas later, following the delimitation, this value would oscillate between 3,100 and 3,400 m above sea level.

The social movement's main accomplishment was to link the city's water to the defense of the páramo. This was achieved by making the city's drinking water infrastructure visible and configuring the páramo as a water factory, establishing it as the first stage of the infrastructure. Infrastructures are not just things, but also relations between objects and social groups with the potential to reconfigure agencies, subjects and objects (JENSEN; MORITA, 2015). While water speaks through the potability relation mediated by artefacts and infrastructures, gold must remain silent, buried in the deep mysterious mountains. Gold must remain in the mountain and the large-scale technologies used to exploit it must be kept away from the páramo. Hence the slogan of the social movement: Water Yes; Gold No!

But the páramo also holds other kinds of water: water for cultivation, water for small-scale mining and the water of the lagoons that are so characteristic of the mountains. And there is gold as well, which small-scale miners have lived off for generations. This is the case of the municipality of Vetás, located 3350 m above sea level, whose main economic activity for several centuries has been underground gold mining. Nearby, the Greystar company planned to build the open-pit mine that was the cause of the conflict. Greystar arrived in the area in 1997 by purchasing mining titles from local inhabitants. Between 1997 and 2009, it carried out exploration work to determine the size and potential of the mineral deposit and accumulated even more mining titles; this accumulation was facilitated by changes in legislation and institutional reforms to the country's mining sector. Additionally, in the words of a traditional miner in the area, the speed of extraction that Greystar proposed was incomparable to the traditional way. The amount of gold that Greystar wanted to extract in 15 years would take 100 years with traditional mining methods and several generations of miners.

For the inhabitants of the municipality of Vetás, water is part of their identity as ancestral miners and a way of keeping alive the memory of what it means to be a dweller of the páramo. In Vetás, water and gold have a symbiotic relationship, and are part of the socio-environmental relationships that have been woven throughout more than 460 years of mining history in the municipality. For them, there is no dilemma between gold and water as the city's social mobilization had claimed. Both can coexist as they produce each other. They even have rituals to sow water. There is gold because there is water. Water allows gold to be extracted from the mine. At the same time, they have built their own infrastructures for the water they consume and have a sacred relationship with the

lagoons, with over 52 in the páramo. This type of sacred relationship between mountain, water and inhabitants is not exclusive to Santurbán and can be traced in other Andean páramos.

But water, as framed by the social movement, is not the only entity that becomes an actor with the capacity for agency; the multiplicity of water in Vetas highlights the complexity of governance in the páramo. The multinational's gold also has a voice and says many things to investors. With the promise of gold, and the use of geology to profile and calculate the size of the deposit, the company can raise funds through the stock market. For the multinational, through its EIA (environmental impact assessment), the water must be dammed and contained, enacted (or at least thought of) as inexhaustible. The EIA proposed the construction of two reservoirs, one of them in the Pajarito lagoon (Figure 1), one of the fiercest and most traditional lagoons in Vetas. The lagoon disappears to make way for the accumulation of water. Water held captive, dammed, and exploited so large-scale gold mining can emerge.

Like large scale-mining, the delimitation process and the reinvention of the páramo as a water factory disrupt the relationships of the inhabitants of the páramo, especially in the municipality of Vetas. In 2014, Santurbán became the first páramo to be cartographically delimited. The consequences for Vetas were devastating: unemployment increased, suicides increased, illegal mining increased and the value of the municipality's land diminished as more than 80% of the land fell within the area defined as páramo. In 2017, the Constitutional Court ordered a new delimitation, one that would take into account and include the participation of all the actors potentially affected by it. The consensus-building process that has been underway since 2018 has allowed the municipalities to express their proposals and their knowledge of the territory. In the case of Vetas, they have proposed an alternative map and have gained political strength by emphasizing the role of ancestral mining and the way they have cared for the páramo long before anyone else wanted to conserve it.

One of the effects of the delimitation in Vetas is that, although the right to property is maintained, the right to use it is infringed, given that it restricts the capacity to benefit from resources (gold, production, etc.) to a single type of good: payment for environmental services. In contrast, the mining activity in Vetas illustrates a páramo built from the grassroots based on a practice of care that is far removed from what is institutionally known as conservation. This practice "is based on a different temporality regarding the rhythms and methods of extraction, and on a subjectivity that reproduces and maintains an economic activity that is not separated from identity while establishing non-fragmented socio-ecological relations with gold, water and the páramo" (PARRA-ROMERO, 2022: 172).

Figure 1 Laguna Pajarito, Santurbán Páramo



Source: the authors, 2018

“The Páramo must be protected, but with me inside”

Located south-west of Bogotá, Sumapaz páramo, considered to be the largest in the world, has also been a key site of the Colombian armed conflict. From its beginnings, during the era known as “La Violencia” in the 1950s, through to its exacerbation over the last decade of the twentieth century, communities of campesinos have sought refuge in the páramo to escape violence of which they have been one of the main victims (LONDOÑO, 2011; MORALES-ACOSTA, 2017; VARELA; ROMERO, 2007). “Our bedtime stories were not Snow White or Little Red Riding Hood”, says Rosa, a peasant woman who has lived all her life in Sumapaz, “instead of those stories my mother used to tell us how she had to hide in the bushes to escape the bombings”. Like Rosa, there are thousands of peasant men and women who have lived in this páramo over the last century trying to build their collective life projects who share similar stories. Not only having to find ways to survive the violence, but also to construct and reconstruct their world, that is to say, reworking an ontology where diverse entities and particular relationships between them

are established (TOLA, 2020).

Like other rural campesino communities in the country and elsewhere in Latin America, the peasantry of Sumapaz relies for its livelihood on family-based production systems, or what rural studies have called the “peasant economy” (CHAYANOV, 1985; CHONCHOL, 1996; FAJARDO, 2009; PLOEG, 2010). However, it is also important to consider the practices of peasant farmers beyond the productive aspect of their economy, which often takes for granted the distinction between the realms of nature and culture (DEVINE; OJEDA; YIE GARZÓN, 2020; VÉLEZ, 2020). We suggest understanding the peasant economy from an ontological opening (DE LA CADENA, 2010; HOLBRAAD; PEDERSEN, 2017) that guides us towards other ways of making the páramo.

Joaquín and Marta’s workday on the páramo starts very early in the morning. On most farms, the first thing to tend to are the cows and calves, the latter separated from the cows by a wire fence, Joaquín leads the calves one by one to the other side of the pasture. With the precision that the cold of the páramo and the mist which blankets the mountain at that time of day permits him, he throws a carefully prepared noose with a knot which, once around the calf’s neck, allows him to lead it. Since it was born on the day Maradona died, Joaquín named the calf after him, and now on the other side of the rope he lets it run half jumping until it reaches its mother, a broad, shaggy cow called Negra. They both bellow as they meet, and the mother takes a deep breath as the calf drinks milk from her udder. At times Maradona bites Negra’s nipple, and then Marta moves his snout with her hand so that he sucks on another nipple. After a while, Marta separates Maradona from Negra, leads him by the same loop that Joaquín used to bring him, and ties a knot around a stake planted in the grass to leave him tied there. She then ties a knot around Negra’s hind legs and grabs a log shaped like a bench to sit next to her while she finishes milking her into a bucket (Figure 2). Before she is done, Joaquín has readied another calf and Marta hurries to pour the milk from the bucket into a larger jug. This continues until all thirteen cows and calves on the farm have been fed and milked (DIARIO DE CAMPO, FEBRUARY 2021).

This milk will later be transformed in the kitchen into several blocks of cheese, which are collected twice a week by a local trader. He will weigh it and pay by the pound, and then take it to the main city in the region where it will be distributed for retail. But beyond cheesemaking, Joaquín and Marta make it clear when they talk about their life in the páramo that what they enjoy is living with the animals, getting up early to work, without any great economic aspirations, having the peace of mind to go wherever they want in their rural communities without worrying about how much they have in their pockets. As has been the case for generations in these mountains, on Joaquín and Marta’s farm humans and non-humans alike compose an ontology where peasant farming practices are part of the páramo, and which, following Anna Tsing (2016), clearly stretches the supposed incompatibility between human beings and nature advocated by conservationist biology. But then, how do we reformulate environment-society relations around the conservation of the páramo and the high mountain ecosystems beyond an ontology of delimitation that establishes a clear distinction between the domains of nature and culture?

Figure 2. Cheesemaking – Sumapaz páramo



Source: the authors, 2021

Rosa offers us a clue when she says: “the páramo must be protected, but with me inside”. This phrase is provocative when juxtaposed with the different practices through which campesinos configure their ontology of the páramo. “With me inside” implies starting to recognize the worlds that high-mountain campesino communities build alongside non-humans, the way in which they perform ontological partitions to differentiate between other entities such as cows and calves and establish relations in conjunction with them. In other words, a páramo that does not necessarily conform to the ontology proposed in the cartographies that have been developed to promote its conservation. As a result, the delimitation of páramo has given rise to a scenario of uncontrolled equivocations (VIVEIROS DE CASTRO, 2004), i.e., one which fails to recognize that when we talk about something we are not necessarily talking about the same thing and where the differences regarding the páramo are not merely differences of perspective on the same thing, but rather differences between the worlds through which different collectives compose their reality (BLASER, 2013). Could these ontologies be the crevice through which we can access a renewed conservation of high mountain ecosystems?

Conclusion: Towards ontological openness in conservation

According to Marisol de la Cadena, a political phenomenon has made its way into rational politics (BLASER, 2018, DE LA CADENA, 2010): the incursion of non-human beings into the political acts of governments, institutions and social movements. In her text, Marisol de la Cadena, recounts some of these moments in Andean history:

the inclusion of *La Pachamama* in the political constitution of Ecuador, the *pagamentos* made by Bolivians during the water wars, and the public demonstrations in Peru against a mining project that would damage Ausangate (an earth being for indigenous peoples, a high mountain for others). Similar examples can be found in Colombia, where places considered by local (rational) politics as sites of potential economic development are, for indigenous, Afro-descendant and campesino communities, sacred, ancestral places with the potential to sustain the lives of their inhabitants. The term “rational politics” encompasses modern policy-making practices, which explain away the differences arising in conflicts as cultural differences, and therefore tend to dismiss the demands of social groups as ideological, irrational or radical while advocating for more objective and scientific ways of addressing them.

In this article, we have analysed the way in which páramo conservation in Colombia over the last decade got its start by elaborating a mappable ontology of the Andean high mountains. In the spirit of using our empirical material recursively while being open to other possibilities of páramo-making (HOLBRAAD; PEDERSEN, 2017), we find that in Santurbán and Sumapaz other ontologies of the páramo are configured that depend on relationships with non-human entities, mainly water, gold and grazing animals. While for the institutions, the páramo is brought into action exclusively from the standpoint of what is legible in the eyes of the law and science (LATOURET, 2004), the communities make the páramo through care and relationality. Limiting páramo conservation to a single ontology runs the risk of reproducing single-world conceptions of the world (ESCOBAR, 2015; LAW, 2015) which reduce difference and attempt to capture it in hegemonic visions of modernity, the expression of which in conservation policies has reproduced exclusions of a patriarchal, racial, cultural and class nature (BOCAREJO; OJEDA, 2016; BÜSCHER; FLETCHER, 2020; MATUSSE, 2019).

Based on the cases presented in this article, we believe that moving towards an ontological opening (DE LA CADENA, 2015) around conservation and socio-environmental conflicts in the Andean highlands would allow us to establish a different starting point. The contrast between the different versions of the páramo enables us to appreciate the importance of ontological openings. Such openings entails, in the first place, a continued exploration of those páramo-making practices, since, as we discussed in the article, the páramo is made through images, computers, books, desks and colourful printed or digital maps. But also, through the gait of the campesino, in his relationship with the cow, the cycles of the climate, the veins in the mine, the sowing of the water. In other words, it is a matter of continuing to explore how conservation is configured and reconfigured along with its objects through the practices that create worlds and their political forms (JENSEN, 2021). Second, such an opening implies taking seriously and acknowledging the existence of multiple worlds that cannot be reduced to one another (BLASER, 2013; ESCOBAR, 2015). It is a way of assembling elements that have always been there, but which are brought into sharper focus (“illuminating the subaltern, the asymmetry, the materiality”) as constitutive processes of conflict.

Ontological openings do not deny science and politics, it includes them reflexively

in addressing the power of a map to allow a mountain to be a páramo or not. As Escobar (2012) argues, this movement activates relationality in politics and aims for a conservation (which rational politics turned into a deterritorialization of care) that includes and is in dialogue with the knowledge and practices that emerge from socio-environmental relations in the territories. As our cases show, care is a practice that includes humans and their work in particular ontological times and relations, whereas conservation, as expressed on maps, restrictions, payment for environmental services, etc., excludes the human, and their relations with the territory.

Acknowledgements

The authors would like to thank the community of Vetas for sharing with us their struggle in defense of their territory. We thank SINTRAPAPAZ for their collaboration in conducting this research alongside the peasant farming communities of Sumapaz. And the writing workshop that read a first version of the text. We are also grateful to the anonymous evaluators who helped us to improve this version.

A doctoral grant from the Colombian Ministry of Science, Technology and Innovation and a grant from the Swedish Research Council (VR990780) funded part of this research.

References

- ALMEIDA, M. W. B. DE. Caipora e outros conflitos ontológicos. **Revista de Antropologia da UFSCar**, v. 5, n. 1, p. 7–28, 1 jun. 2013.
- ANDERSON, B. Comunidades imaginadas: reflexiones sobre el origen y la difusión del nacionalismo. Ciudad de México: Fondo de Cultura Económica, 2007.
- BAKKER, K. Water: Political, biopolitical, material. **Social Studies of Science**, v. 42, n. 4, p. 616–623, 2 ago. 2012.
- BIJKER, W. E.; HUGHES, T. P.; PINCH, T. **The Social Construction of Technological Systems**. Cambridge: MIT Press, 2012.
- BOCAREJO, D.; OJEDA, D. Violence and conservation: Beyond unintended consequences and unfortunate coincidences. **Geoforum**, v. 69, p. 176–183, 2016.
- BLASER, M. The Threat of the Yrmo : The Political Ontology of a Sustainable Hunting Program. **American Anthropologist**, v. 111, n. 1, p. 10–20, 2009.
- BLASER, M. Ontological conflicts and the stories of peoples in spite of Europe: Toward a conversation on political ontology. **Current Anthropology**, v. 54, n. 5, p. 547–568, 2013.

BLASER, M. Doing and undoing Caribou / Atiku : diffractive and divergent multiplicities and their cosmopolitical orientations. **Tapuya: Latin American Science , Technology and Society**, v. 1, n. 1, p. 65–82, 2018.

BÜSCHER, B.; FLETCHER, R. *The Conservation Revolution: Radical Ideas for Saving Nature beyond the Anthropocene*. London/ New York: Verso, 2020.

CABRAL, J.; SÜSSEKIND, F.; SÁ, G. Apresentação do Dossiê “Conexões Transversais entre a Antropologia da Ciência e a Etnologia”. **Anuário Antropológico**, n. v.45 n.3, 7 ago. 2020.

COLOMBIA, MINISTERIO DEL MEDIO AMBIENTE. Resolución 0769 de 2002. Por la cual se dictan disposiciones para contribuir a la protección, conservación y sostenibilidad de los páramos. Bogotá, 2002.

CONTRALORÍA GENERAL DE LA REPÚBLICA. **Informe del estado de los Recursos Naturales y del Ambiente 2012-2013**. Bogotá, Colombia: [s.n.]. Disponible en: <https://www.ambitojuridico.com/BancoMedios/Imagenes/informe_medio_ambiente_2012_2013_def_web.pdf>.

CHAYANOV, A. V. *La organización de la unidad económica campesina*. Buenos Aires: Nueva Visión, 1985.

CHONCHOL, J. *Sistemas agrarios en América Latina: de la etapa prehispánica a la modernización conservadora*. Santiago de Chile: Fondo de Cultura Económica, 1996.

CORTÉS-DUQUE, J.; SARMIENTO PINZÓN, C. E. (EDS.). *Visión socio ecosistémica de los páramos y la alta montaña colombiana: memorias del proceso de definición de criterios para la delimitación de páramos*. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2013.

DE LA CADENA, M. Indigenous cosmopolitics in the andes: Conceptual reflections beyond “politics”. **Cultural Anthropology**, v. 25, n. 2, p. 334–370, 2010.

DE LA CADENA, M. **Earth Beings**. *Ecologies of Practice Across Andean Worlds*. Durham, US: Duke University Press, 2015.

DEVINE, J. A.; OJEDA, D.; YIE GARZÓN, S. Formaciones actuales de lo campesino en América Latina. **Antípoda. Revista de Antropología y Arqueología**, v. 2, n. 2016, p. 1958–1962, 2020.

ESCOBAR, A. Cultura y diferencia: la ontología política del campo de cultura y desarrollo. **Wale’keru, Revista de Cultura y Desarrollo**, 2, 7-16, 2012

ESCOBAR, A. Territorios de diferencia: la ontología política de los “derechos al territorio”. **Cuadernos de Antropología Social**, v. 41, p. 25–38, 2015.

FAJARDO, D. **Territorios de la agricultura colombiana**. Bogotá: Editorial Univ. Externado de Colombia, 2009.

- HOLBRAAD, M.; PEDERSEN, M. A. **The Ontological Turn: An Anthropological Exposition**. Cambridge: Cambridge University Press, 2017.
- HOLBRAAD, M.; PEDERSEN, M. A.; VIVEIROS DE CASTRO, E. The Politics of Ontology: Anthropological Positions. **Cultural Anthropology Online**, v. January 13, 2014.
- HOFSTEDE, R.; SEGARRA, P.; ...; MENA, P. **Los páramos del Mundo**. Quito, Ecuador: Global Peatland Initiative/ NC-IUCN/EcoCiencia., 2003.
- JENSEN, C. B. Practical Ontologies Redux. **Berliner Blätter**, v. 84, p. 93–104, 2021
- JENSEN, C.; MORITA, A. Infrastructures as Ontological Experiments. **Engaging Science, Technology, and Society**, v. 1, p. 81–87, 2015.
- KNORR-CETINA, K. Laboratory Studies: The Cultural Approach to the Study of Science. In: JASANOFF, S. et al. (Eds.). . **Handbook of Science and Technology Studies**. London: Sage, 1995. LATOUR, B. **Politics of nature**. Cambridge: Harvard University Press, 2004.
- LATOUR, B.; WOOLGAR, S. **Laboratory Life**. 2. ed. New Jersey: Princeton University Press, 1986.
- LAW, J. What's wrong with a one-world world? **Distinktion: Scandinavian Journal of Social Theory**, v. 16, n. 1, p. 126–139, 2015.
- LONDOÑO, R. Juan de la Cruz Varela: sociedad y política en la región de Sumapaz (1902-1984). Bogotá: Universidad Nacional de Colombia, 2011.
- MARTINEZ MEDINA, S. Lo que pliega la colecta: conocimientos, científicos y especímenes para otras ciencias posibles. **Antípoda Revista de Antropología y Arqueología**, v. 41, p. 31–56, 2020.
- MARTÍNEZ, W. A. Flujos y redes multinaturales: un recorrido por mundos no [solo] modernos en Puracé, Colombia. Popayán, Colombia: Sello Editorial Universidad del Cauca, 2016.
- MATUSSE, A. Laws, Parks, Reserves, and Local Peoples: A Brief Historical Analysis of Conservation Legislation in Mozambique. **Conservation and Society**, v. 17, n. 1, p. 15–25, 2019.
- MOL, A. **The body multiple: ontology in medical practice**. Durham & London: Duke University Press, 2002.
- MORALES ACOSTA, C. Arando el pasado para sembrar la paz. Cuadernos de la memoria: relatos de las víctimas del conflicto armado en Sumapaz (1990-2017). Bogotá: Universidad Nacional de Colombia, 2017.
- MORALES-RIVAS, M. et al. **Atlas de páramos de Colombia**. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2007.
- PARRA-ROMERO, A. ¿De quién es el páramo de Santurbán? Ancestralidad Minera como nar-

rativa de defensa del territorio en el municipio de Vetás (Santander). *Revista CS*, n.º 36 (marzo), 147-77, 2022. <https://doi.org/10.18046/recs.i36.4742>

PARRA-ROMERO, A.; GITAHY, L. Movimiento social como actor - red: Ensamblando el comité por la defensa del Agua y del Páramo de Santurbán. *Universitas Humanística*, v. 84, p. 113-139, 14 dez. 2017.

PEDERSEN, M. A. Common Nonsense: A Review of Certain Recent Reviews of the 'Ontological Turn'. *Anthropology of This Century*, v. 5, 2012.

PICKERING, A. *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press, 1995.

PICKERING, A. The Ontological Turn: Taking Different Worlds Seriously. In: JENSEN, C. B.; MORITA, A. (Eds.). . *Multiple Nature-Cultures, Diverse Anthropologies*. New York and Oxford: Berghahn Books, 2019.

PLOEG, J. D. VAN DER. *Nuevos campesinos: campesinos e imperios alimentarios*. Barcelona: Icaria, 2010.

RUIZ SERNA, D.; DEL CAIRO, C. Los debates del giro ontológico en torno al naturalismo moderno. *Revista Estudios Sociales*, n. 55, p. 193-204, 2016.

SARMIENTO, C. E.; LEÓN MOYA, O. A. (Eds.). *Transición bosque-páramo: bases conceptuales y métodos para su identificación en los Andes colombianos*. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2015.

SARMIENTO, C.; ZAPATA, J. Instrumentos jurídicos para la protección de los páramos: normativa y producción de conocimiento. In: GOMEZ, M. F. et al. (Eds.). *Biodiversidad 2015. Estado y tendencias de la biodiversidad continental de Colombia*. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2016.

SARMIENTO PINZÓN, C. E. et al. *Aportes a la conservación estratégica de los páramos de Colombia actualización de la cartografía de los complejos de páramo a escala 1:100.000*. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2013.

SCOTT, J. C. *Seeing Like a State: How Certain Schemes to Improve Human Condition Have Failed*. New Haven & London: Yale University, 1998

STRATHERN, M. No nature, no culture: the Hagen case. In: MACCORMACK, C.; STRATHERN, M. (Eds.). . *Nature, Culture, and Gender*. Cambridge: Cambridge University Press, 1980. p. 174-222.

TSING, A. L. Alegoría agraria y futuros globales. *Revista Colombiana de Antropología*, v. 52, n. 1, p. 289-346, 2016.

TOLA, F. Introducción al dossier: heterogeneidad ontológica y ontologías en conflicto en Sudamérica. *Etnografica*, v. 24, n. 2, p. 455-464, 2020.

ULLOA, A. Transformaciones en las investigaciones antropológicas: sobre naturaleza, ecología y medio ambiente. **Revista Colombiana de Antropología**, v. 37, p. 188–232, 2001.

UNGAR, P. Assembling an Ecosystem: The Making of State Páramos in Colombia. **Conservation and Society**, v. En prensa, 2021.

VARELA, L.; ROMERO, Y. **Surcando amaneceres. Historia de los agrarios de Sumapaz y oriente del Tolima**. Bogotá: Alcaldía Local de Sumapaz / Editorial Universidad Antonio Nariño, 2007.

VÉLEZ, J. S. Las intimidades de La Selva: comunidades campesinas, políticas ambientales y ontologías en la frontera agraria amazónica [Manuscrito no publicado]. 2020.

VIVEIROS DE CASTRO, E. Cosmological Deixis and Amerindian Perspectivism. **The Journal of the Royal Anthropological Institute**, v. 4, n. 3, p. 469, 1998.

VIVEIROS DE CASTRO, E. Perspectival anthropology and the method of controlled equivocation. **Tipiti: Journal of the Society for the Anthropology of Lowland South America**, v. 2, n. 1, p. 2–22, 2004.

Adela Parra-Romero

✉ adelaparraromero@gmail.com

ORCID: <https://orcid.org/0000-0002-2939-9399>

Submitted on: 01/08/2021

Accepted on: 03/10/2022

2023;26:e01331

César Camilo Castillo Estupiñán

✉ camilo.castilloe@liu.se

ORCID: <https://orcid.org/0000-0002-4745-9252>

Estamos na mesma montanha? Por uma abertura ontológica da conservação dos páramos nos Andes

Adela Parra-Romero
Cesar Camilo Castillo Estupiñan

Resumo: A biodiversidade das altas montanhas andinas tornou urgente a conservação dos Páramos, reconhecidos como ecossistemas essenciais para o ciclo hidrológico e para a mitigação da mudança climática. A Colômbia, que possui 50% desses ecossistemas no mundo, vem delimitando cartograficamente os Páramos desde 2012 para promover sua conservação. Para as comunidades, os mapas não refletem o trabalho de cuidado e as práticas com as quais elas habitam o páramo diariamente. Através da etnografia e revisão documental, realizamos uma análise ontológica do processo de delimitação e dos conflitos que ele tem causado nas regiões de Santurbán e Sumapaz. Argumentamos que os desafios ambientais enfrentados pela alta montanha exigem a necessidade de uma conservação reflexiva de sua própria ontologia e de exercer uma política ambiental a partir de uma abertura ontológica que conceba o páramo como uma composição material permanente de práticas situadas onde intervêm diferentes maneiras de fazer-mundo.

São Paulo. Vol. 26, 2023

Artigo Original

Palavras-chave: Páramos, conservação, conflitos socioambientais, Ontologia Política, Colômbia.

¿Estamos sobre la misma montaña? Por una apertura ontológica de la conservación de los páramos

Adela Parra-Romero
Cesar Camilo Castillo Estupiñan

Resumen: La biodiversidad de la alta montaña Andina ha hecho urgente la conservación de los páramos, reconocidos como ecosistemas esenciales para el ciclo hidrológico y la mitigación del cambio climático. Colombia, que cuenta con el 50% de estos ecosistemas en el mundo, viene delimitando cartográficamente los páramos desde 2012 para impulsar su conservación. Para las comunidades, los mapas no reflejan el trabajo de cuidado y las prácticas con que diariamente habitan el páramo. Por medio de etnografía y revisión documental hacemos un análisis ontológico del proceso de delimitación y los conflictos que originó en las regiones de Santurbán y Sumapaz. Argumentamos que los desafíos ambientales que enfrenta la alta montaña exigen la necesidad de una conservación reflexiva de su propia ontología y ejercer la política ambiental a partir de una apertura ontológica que conciba al páramo como una permanente composición material de prácticas situadas donde intervienen diferentes formas de hacer-mundo.

São Paulo. Vol. 26, 2023

Artículo Original

Palabras-clave: Páramos; conservación; conflictos socioambientales; Ontología Política; Colombia.