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Article

Between Green and Steel: Conflicts in the Territory of the Rio Doce State Park

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RESUMO

O Parque Estadual do Rio Doce (PERD) é a primeira unidade de conservação de proteção integral criada em Minas Gerais e está localizado entre os municípios de Timóteo, Marliéria e Dionísio, no Vale do Rio Doce, região marcada pela intensa atividade econômica e pelo histórico de exploração de recursos naturais. Nesse contexto, este estudo tem como objetivo principal analisar os conflitos ambientais envolvendo o PERD e sua ZA, considerando, para tanto, as tensões entre conservação ambiental, os interesses econômicos e a participação social. A pesquisa baseia-se na análise documental das atas do Conselho Consultivo do Parque, abrangendo o período de 2013 a 2021, e em fontes bibliográficas sobre a governança ambiental. Os resultados indicam que os principais conflitos estão relacionados à ocupação irregular, impactos provocados por grandes empreendimentos, como a Rodovia LMG 760 e o desastre da Samarco, além de desafios estruturais na participação social e na transparência da gestão do parque. A análise revela que a governança do PERD é influenciada por distintos grupos de interesse, cujas ações e disputas moldam a dinâmica de tomada de decisões no território, apontando, portanto, para a necessidade de fortalecer os mecanismos de governança participativa e de promover políticas públicas que conciliem a conservação ambiental com o desenvolvimento sustentável.
Palavras-chave: conflitos ambientais; unidades de conservação; governança ambiental.

ABSTRACT

The Rio Doce State Park (PERD) is the first full protection conservation unit created in Minas Gerais and is located between the municipalities of Timóteo, Marliéria and Dionísio, in the Rio Doce Valley, a region marked by intense economic activity and a history of exploitation of natural resources. In this context, the main objective of this study is to analyze the environmental conflicts involving the PERD and its ZA, considering, for this purpose, the tensions between environmental conservation, economic interests and social participation. The research is based on the documentary analysis of the minutes of the Park's Advisory Council, covering the period from 2013 to 2021, and on bibliographic sources on environmental governance. The results indicate that the main conflicts are related to irregular occupation, impacts caused by large projects, such as the LMG 760 Highway and the Samarco disaster, as well as structural challenges in social participation and transparency in park management. The analysis reveals that the governance of the PERD is influenced by different interest groups, whose actions and disputes shape the dynamics of decision-making in the territory, thus

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pointing to the need to strengthen participatory governance mechanisms and promote public policies that reconcile environmental conservation with sustainable development.
Keywords: socio-environmental conflicts; conservation units; environmental governance.

Introduction

Law No. 11,428/2006, known as the Atlantic Forest Law and regulated by Decree No. 6,660/2008, includes in its Article 2 the original configuration of the Atlantic Forest Biome, with the following native forest formations and associated ecosystems:

> Dense Ombrophilous Forest; Mixed Ombrophilous Forest (Araucaria Forest); Open Ombrophilous Forest; Semideciduous Seasonal Forest; Deciduous Seasonal Forest; high-altitude fields; pioneer formation areas (mangroves, restingas, saline fields and alluvial areas); vegetational refuges; areas of ecological tension; inland swamps and forest enclaves; steppe, savanna and steppe-savanna areas; and native vegetation of coastal and oceanic islands.

This forest densification is historically portrayed in works from the 1990s by authors such as Dean (1996, pp. 24–25), who states that:

> On the eastern coast of South America, there once extended an immense forest or, more precisely, a complex of forest types, generally broadleaf, rainforest, and ranging from tropical to subtropical. Between 8 and 28º south latitude, it extended inland approximately one hundred kilometers from the coast in the North and widened to more than five hundred kilometers in the South. In total, the forest covered about 1 million square kilometers. This complex has been called the Brazilian Atlantic Forest, associated with another much larger one, the Amazon Forest, but distinct from it. [...] The Atlantic Forest itself displayed extraordinary diversity, considering its relatively modest size. It still contains an impressive number of endemic species—that is, unique forms of life.

The Rio Doce River Basin occupies 98% of its area within the Atlantic Forest biome and only 2% within the Cerrado biome (CBH-Doce, 2021). According to the Brazilian Institute of Geography and Statistics (2012), in the Rio Doce Basin the Atlantic Forest biome was largely composed of semideciduous seasonal forest, with the presence of dense ombrophilous forest in the lower course of the river (in the state of Espírito Santo), in addition to a small portion of pioneer formations along the coastal zone, between the mouth of the Rio Doce and the Rio São Mateus.

Vegetational refuges also occurred in small areas, dependent on precipitation, altitude, and temperature. In the extreme central-western portion of the basin, on the slopes of the Espinhaço Range, the Cerrado biome presented grassland formations (notably *campo limpo* and *campo sujo*) and forest formations (in areas of Cerrado/forest transition). Within the domain of the semideciduous seasonal forest, patches of dense ombrophilous forest were also present in certain areas (CBH-Doce, 2021).

In 1963 and 1969, the Companhia Vale do Rio Doce (CVRD), currently Vale S.A., conducted studies on the diagnosis of the Rio Doce Basin and its economic potential. According to this study, as cited by Espindola et al. (2022, p. 159), "the original coverage of the Basin consisted of Atlantic Forest (91% of the area), plateaus (7.5%), and coastal vegetation (1.5%)."

The study conducted in 1969 indicated that forest cover had decreased between 2.5% and 10% of the area, with an overall average reduction of 5%. In the so-called steelmaking region (current Vale do Aço) and in Espírito Santo (lower Rio Doce), forest cover still presented the highest percentages.

However, in the middle Rio Doce (region of Governador Valadares), the remaining forest cover did not exceed 2.5%. The study by Companhia Vale do Rio Doce identified the main causes of vegetation loss as firewood consumption, charcoal production for the steel industry, deforestation for agricultural and livestock use, and forest fires, among other uses. The authors Costa et al. (2024, p. 21) illustrate that forest reduction in the biome "was driven by profit for the benefit of its colonial masters, who used burning and clearing for development […] in a passive, imprudent, and unsustainable manner."

The Vale do Aço, which composes the Intermediate Geographic Region (RGInt) of Ipatinga, is so named because it represents one of the main processes of metropolization in the interior of Brazil, located in the Southeast region (Souza et al., 2022). According to the cited author:

> Metropolization is associated with the installation of a steel industrial complex beginning in 1944, with the establishment of Companhia Aços Especiais Itabira (Acesita, now Aperam South America), and completed from 1962 onward with the inauguration of Usinas Siderúrgicas de Minas Gerais S.A. (Usiminas). This configuration ultimately produced, in the author's interpretation, a form of mononucleated urban metropolization, that is, with the presence of a single conurbated core formed by the outward expansion of urbanization from the central municipalities toward neighboring municipalities. From this conurbated agglomeration, a geometric radius of spatial-regional influence was established, which conferred upon the Ipatinga–Coronel Fabriciano–Timóteo conurbation (with Santana do Paraíso in the process of incorporation from Ipatinga) the character of a metropolized core with a metropolitan appearance. (Souza et al., 2022, p. 02)

In this locality, the Rio Doce State Park (PERD) was created, at the time by the Governor of the State of Minas Gerais, through Decree-Law 1.119/1944, as a means of preserving an area of 36,970 hectares, in a location of great scenic beauty, with more than 40 lagoons surrounded by forests in an excellent state of conservation. In the publication organized by Ney Strauch (1955), the author presented the results of studies carried out by the Brazilian Institute of Geography and Statistics (IBGE) under his supervision in the first half of the 1950s, stating that the following geographical description of the so-called steelmaking region is found:

> It comprises the eastern part of the municipalities of São Domingos do Prata and Dionísio, as well as the northern portion of Bom Jesus do Galho and Raul Soares; areas that therefore share the Rio Doce as a common factor. This is a zone of forests not yet devastated. For this very reason, a large part of this forested area has been converted into a state park with the objective of preventing its destruction. (emphasis added) Even so, the northern part of the municipality of Raul Soares, for example, is being devastated to supply sawmills located in nearby cities, as well as for firewood extraction for Leopoldina [Leopoldina Railway] and charcoal production for Acesita [current steel company Aperam South America]. On deforested lands, coffee cultivation is established, currently undergoing significant expansion.

In this context, from 2017 onward, with the new regionalization established by the Brazilian Institute of Geography and Statistics (IBGE), the Intermediate Geographic Region (RGInt) of Ipatinga was formed, composed of 44 municipalities, within which the Rio Doce State Park (PERD) occupies portions of these

territories. This region represents approximately 5% of the State's GDP, with Ipatinga contributing 36.2% of this total. In this region, the main economic activities are services and industry, with an industrial predominance in the sectors of metallurgy, pulp production, mineral extraction, and construction (Fundação João Pinheiro Oficial, 2021).

The relationship between the steel companies and local political power was supported by the discourse of economic development, income generation, and employment. The actions of the steel companies, particularly Acesita, conflicted with preservation objectives, and the discourses mobilized negatively influenced environmental conservation.

This brief historical context of PERD is essential for understanding the conflicts surrounding it. Santos (2015), an author who studied the conflicts of the Park since its creation, notes that different actors are present in this scenario, particularly the steel complex installed in the region. These conflicts began with the creation of the Park and intensified over the following three decades, alongside the acceleration of Brazilian industrialization.

The conflicts mainly place on opposing sides the defenders of nature preservation and the advocates of economic progress and industrial growth. An example of this is cited by Santos (2015), when mentioning an environmentalist movement that managed to prevent the construction of the Revés do Belém road in 1953, whose mark remains in the emblematic "Lost Bridge," located within PERD, which, despite not serving any road, is used for installations for researchers, placed upon its reinforced concrete structure.

The main object of Santos's (2015) study is the "Ponte Queimada road," which cuts through the park, connecting the western and eastern sides. The road that passes over this bridge "symbolizes and catalyzes most of the conflicts that have involved the different forms of appropriation of the PERD territory throughout its history" (Santos, 2015, p. 29).

This became evident in the 1970s, with the intensification of conflicts, mainly due to a social movement against the Ponte Queimada road, as large numbers of cars, buses, and trucks (most of which belonged to the steel company Acesita, based in Timóteo) traveled along it, causing animal run-overs and serving as an entry point for illegal hunters and fishers, timber thieves, and arson-related fires.

The construction of roads is one of the causes of habitat fragmentation. This environmental problem/conflict is not new, since Dean, as early as 1996, addressed the issue, which remains current and relevant to this day.

> The extreme fragmentation of most of what are considered relatively intact portions of the Atlantic Forest is one of the causes of this reduced diversity. The "edge effect"—the exposure of the interior areas of this forest to wind, sunlight, and the invasion of pasture species due to access roads, power transmission lines, pipelines, motocross trails, and others—was beginning to be studied as an important cause of degradation. (Dean, 1996, p. 368).

All of these were recurrent causes of fires. Notably, in 1963 a fire burned three thousand hectares; another, of arson origin in 1967, consumed six thousand hectares, among others. Santos (2015, p. 270) highlights the actions of Lieutenant Pimenta in the 1970s, who was allegedly deliberately chosen with the intention of making policing more effective in order to ensure preservation and keep the population away, especially hunters, fishers, and timber thieves.

Santos's (2015) study serves as a starting point by identifying different conflicts which, beyond those already mentioned, include: (a) the preservation and use of the Ponte Queimada Road, which was used for charcoal transport and other industrial activities, generating disputes between economic and environmental interests; (b) land tenure conflicts involving squatters and landowners within the Rio Doce State Park (PERD), as well as attempts by companies such as Acesita to purchase the area; (c) conflicts caused by the expansion of urbanization, especially in the eastern region of Timóteo, leading to fires, illegal hunting, and fishing; (d) those caused by illegal activities such as hunting, fishing, and timber extraction within the park, often with the complicity of employees and police officers (hence the choice of Lieutenant Pimenta); (e) ideological and institutional conflicts involving IEF, the Forest Police, and local municipalities, notably disagreements over how to manage and protect the park, including contradictions and lobbying within the Secretariat of Agriculture; and (f) the most complex conflicts, involving large steel companies and local elites.

In the local context, other conflicts were also present, resulting from illegal actions by individuals causing impacts, namely, the many residents in the surroundings of PERD, through hunting, fishing, timber extraction, deforestation, and recreational activities such as camping with bonfires (all of which are fire-generating activities). All these situations were aggravated by the lack of adequate oversight, shortage of personnel, complicity of agents, and, above all, by the ease provided by the presence of roads. "In 1985, the IEF, which had been studying this option for some time, decided to close PERD, and it remained closed until 1993" (Santos, 2015, pp. 258–259 and 267).

Similarly, Espíndola et al. (2017) cite conflicts such as: (a) small rural subdivisions (*chacreamento*); (b) opening of irregular roads; (c) establishment of eucalyptus plantations; (d) irregular occupations in the buffer zone (ZA) of PERD; and (e) the rupture of the Samarco dam in 2015, which resulted in a disaster that directly impacted the integrity of the park and the environmental quality of the region.

These conflicts reflect tensions between economic development, local interests, and the need to preserve biodiversity and natural resources in PERD. It should not be overlooked that environmental conflicts are intrinsic to the management of Conservation Units (UCs). Urban expansion, especially in the regions of Timóteo and Cava Grande, rural subdivisions, roads, eucalyptus plantations, irregular occupations in the buffer zone, and illegal hunting and fishing are nearby threats; however, there are others that may originate from farther away, such as the Samarco dam collapse in 2015, which caused severe damage, compromising the preservation of the park and the environmental conditions of that region (Espíndola; Ferreira; Mifarreg, 2017).

On November 1, 2024, the Associação Mineira de Defesa do Ambiente (AMDA) published on its website: "Rio Doce State Park Faces the Same Threats for Decades," in which it presented a newspaper facsimile with the headline "Population Densification Threatens the Integrity of the Park." According to AMDA, "the problem not only persists but has worsened in several aspects," especially after the steel company Aperam South America, formerly Acesita, sold large areas of forest-covered land that are now subject to real estate speculation.

In the same report, AMDA stated that the PERD Advisory Council had taken a position "against opening the Salão Dourado road to traffic, which crosses the Mata do Campolina, the only area of virgin forest in the park." This complex scenario highlights the tensions between environmental conservation and economic interests, demonstrating the need for an integrated approach that considers the multiple interests involved.

Methodology

Considering the background presented in the introduction, the study sample for this research was defined as the Rio Doce State Park and its buffer zone, which encompasses the municipalities of Marliéria, Timóteo, and Dionísio. In addition to these, the surroundings of the Park also include thirteen other municipalities (Ipatinga, Coronel Fabriciano, Antônio Dias, Jaguaraçu, São José do Goiabal, São Pedro dos Ferros, Raul Soares, Córrego Novo, Pingo D'Água, Bom Jesus do Galho, Vargem Alegre, Caratinga, and Santana do Paraíso) that have Conservation Units (UCs) located near, adjacent to, or overlapping with the PERD buffer zone.The total area covered by these localities is 13,241.06 km², of which 359.76 km² belong to PERD (Figure 1).

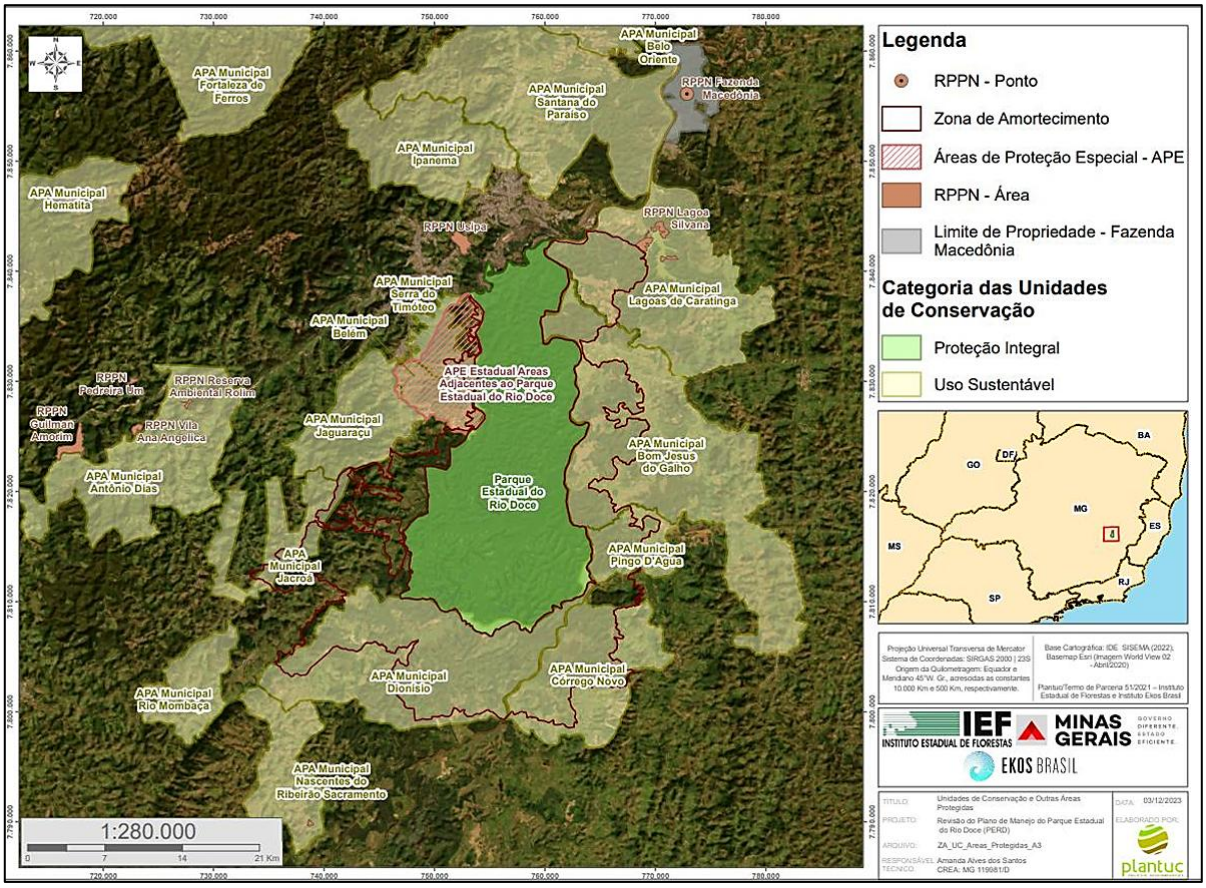

Figure 1 – Location of the Rio Doce State Park and the Conservation Units in its surroundings. Source: Map obtained from the PERD Management Plan – 2023 Revision.

The main objective is to analyze the environmental conflicts involving PERD and its buffer zone (ZA), considering the tensions between environmental conservation, economic interests, and social participation. To this end, the theoretical frameworks of Santos (2015) and Souza (2019) on environmental conflicts were used.

From a non-critical perspective, the use of the category "environmental conflicts" may be limited to issues of natural resource scarcity and struggles in defense of environmental preservation. Hence, some authors adopt

the category "socio-environmental conflicts" to encompass disputes among different social groups and to highlight those groups that depend directly on nature for their subsistence.

This approach seeks to be critical of the discourse of the "environmental crisis," which envisions technical and managerial (public and private) solutions, thereby emptying the political nature and power relations that shape environmental disputes. However, for Souza (2019), the category "socio-environmental conflicts" would contain an implicit redundancy, since it is not possible to separate the complex interactions between environment and society present in "environmental conflicts." Therefore, in this study, we use the term "environmental conflicts."

Regarding the methodology, we adopted a qualitative approach for the documentary analysis of publicly available records, supported by Bardin's (2016, p. 26) definition of what constitutes documentary analysis:

> PoIt can be defined as an operation or a set of operations aimed at representing the content of a document in a form different from the original, in order to facilitate, at a later stage, its consultation and referencing. [...] The purpose is to achieve storage in a variable form and to facilitate access for the observer, in such a way that they obtain the maximum amount of information (quantitative aspect) with the highest degree of relevance (qualitative aspect).

Initially, the research proposal aimed to analyze the minutes of the PERD Advisory Council since its creation; however, during the document survey, it was found that only the minutes from meetings starting in 2013 were available. Thus, the period of analysis covered the years from 2013 to 2021. Furthermore, although identifying the actors involved in the conflicts was an important stage of the analysis, the minutes did not provide sufficient information for this purpose.

The research hypothesis was therefore defined based on the provisional assumption that, through an interdisciplinary study of the Council minutes and the selected bibliography, it would be possible to identify the main environmental conflicts present in the PERD territory. To test this hypothesis, the research was structured in stages: in the first stage, a systematic reading of the minutes was carried out, identifying situations that indicated conflicts related to the park. In the second stage, the identified conflicts were cataloged in a database using Excel, allowing for efficient organization of the information.

The final stage consisted of classifying the conflicts by type, with categories defined according to the needs observed during the systematic reading. In this way, following Bardin (2004), the categories were established based on the data constructed from the reading of the minutes, in accordance with the research objectives.

Therefore, this study is justified, as systematizing the information contained in the minutes may support the formulation of conflict management strategies and, consequently, promote greater security for the protected area and its buffer zone.

Interdisciplinarity of the Object of Study

It is not possible to conceive an integrated strategic management of Conservation Units (UCs) without considering their surroundings, the populations in these areas, and environmental conflicts. Therefore, the research was situated within an interdisciplinary context encompassing law, political ecology, environmental history, and territorial studies, reflecting the complexity of the object of investigation. In the present study, the allocation of forest resources, as well as land use and occupation, were drivers of environmental conflicts that involved different actors in the historical formation process of the territory in the Rio Doce River Basin.

The prevailing matrix in the configuration of the territorial system in the first half of the 20th century was composed of the triad mining/steel industry, timber industry, and agriculture and livestock. For the second half of the century, it is necessary to include the pulp industry and eucalyptus reforestation, in addition to coffee plantations.

> The burning of forests to plant coffee plantations was the main cause, but not the only one, of deforestation in the 19th century. The coffee trade induced demographic growth, urbanization, industrialization, and the establishment of railways. Indirect consequences of the feverish prosperity based on a single export commodity exerted pressure on a broader area of the Atlantic Forest, initiating what can now be considered irreversible damage to anthropomorphized landscapes. (Dean, 1996, p. 206)

This territory, as conceptualized by Raffestin (1993), is formed from space (which precedes territory), being the result of an action by a social actor who appropriates this space and territorializes it through the development of social ties, material creations, and power relations. Therefore, it is correct to state that territory is a product of power relations, insofar as it not only expresses the social and political relations among actors with different capacities to realize their interests vis-à-vis others, but also bears the mark of the relationships established with nature and the disputes over the control of materials that can be converted into resources.

In the Rio Doce Basin, these resources included and still include mines (iron ore, gold, manganese, mica, etc.), forests (charcoal, firewood, timber, etc.), and land (use and occupation through extensive livestock farming, eucalyptus reforestation, agriculture, industrial facilities, road construction, railways, urbanization, real estate markets, etc.). Thus, in the 20th century, the territorial system that emerged encompasses the interactions between human beings and nature, marked by power relations within a Brazilian context of industrialization, accelerated urban growth, and expansion of the market economy.

The "Rio Doce Valley Region," so named during the government of Getúlio Vargas (1930–1945), was intended to fulfill a strategic subsidiary function for Brazil, generating foreign exchange through the export of mineral commodities, the production of iron and steel (basic industry), and the supply of agricultural products to industrial centers (Espindola, 2015). This territorial configuration is evident in the field excursion guide for the "Metallurgical Zone of Minas Gerais and the Rio Doce Valley" (Strauch, 1958), organized by IBGE as part of the XVIII International Geographical Congress, held in Rio de Janeiro in 1958.

Strauch (1958) highlights the link between the steel industry, mining, forests (charcoal and firewood), and railways (Vitória–Minas Railway), emphasizing the two largest companies, Belgo-Mineira of João Monlevade and Acesita of Coronel Fabriciano (the municipality of Timóteo had not yet been emancipated), forming an area of influence extending from the Piracicaba Valley, in the municipalities of Rio Piracicaba and Nova Era, to the vicinity of Governador Valadares.

In this "steelmaking region," the growth of the municipality of Coronel Fabriciano, which encompassed what is now the Vale do Aço, showed a demographic increase of 304% between 1940 and 1950, while in the district of Timóteo it reached 680%, due to the establishment of the region's main urban center, the "steel city of Acesita," planned and built "in the midst of the forest" (Strauch, 1958, p. 117).

Thus, a territorial system was formed that produced and exported steel and pig iron, extractive products such as iron ore, processed timber, firewood, and charcoal, as well as agricultural products, especially meat and coffee, which were of real importance to the basin's economy (Strauch, 1955). For the steel companies and

dozens of pig iron plants, which depended on charcoal production, control of forest areas was strategic, extending throughout the middle Rio Doce region to the Suaçuí River valley, beyond the city of Governador Valadares.

This entire region experienced a considerable increase in urban, suburban, and rural populations, and between the urban centers of the municipalities of Coronel Fabriciano and Governador Valadares, in the early 1950s, there still extended an area covered by Atlantic Forest, which became the object of appropriation by steel companies and large cattle ranchers (Strauch, 1955).

Raffestin (1993) classifies human–environment relations into three categories: (i) exploitative; (ii) preservationist; and (iii) conservationist. It is therefore proposed that the logic guiding the historical formation of the territory of the RGInt of Ipatinga was the exploitative relation, characterized by being based on functional information: maximum gain in the shortest time, at the lowest cost, without concern for the future. Concurrently, within this context, a preservationist vision emerged, guided by regulatory information, seeking to ensure that the forest would be conserved. This resulted in the creation of the Rio Doce State Park in 1944.

Since then, territorial relations among exploitative, preservationist, and, more recently, conservationist approaches have marked the history of PERD, its surrounding territory, and the conflict dynamics present since its creation. The conflicts that are present and frequent within the territories of Conservation Units are inherent to human relations and often arise from different behaviors regarding access to and control of natural resources. Therefore, those responsible for managing the Conservation Unit must confront interests and objectives that differ from those of protected areas.

This territorial behavior, as noted by Acselrad (2004), generates environmental conflicts as a consequence of interactions among different social groups, business interests, public entities, as well as differing conceptions and modes of appropriation and use of the territory and its resources. These interactions are mediated by the territory and by the social, political, and economic conditions of the different actors, reflecting the complexity of contemporary territorial dynamics.

In this sense, more recent studies grounded in Political Ecology (Souza, 2019) and Territorial Ecology (Herbelin, 2018) seek to understand the territorial system from the perspective of the flows of materials and energy that traverse and shape it, making use of the concept of territorial metabolism. For Souza (2019), drawing on political ecology, the relations of appropriation and transformation of matter into resources, as well as discourses about nature and its use, are relations marked by power.

In both perspectives, the interdisciplinary character is crucial, as historical and spatial aspects are interconnected, in which flows must be considered in their material dimension and, equally and inseparably, in the relationality of actors across socioeconomic, sociocultural, legal-political, and subjective dimensions, thus highlighting the complexity of the processes that influence the differentiated modes of appropriation, use, and meaning of territory, as well as discussions on environmental justice and environmental racism.

Thus, it becomes possible to bring to the fore non-human beings of nature (rivers, forests, animals, etc.) as subjects of rights, as well as situations involving low-income populations, discriminated groups, and traditional peoples, who are more intensely vulnerable to exclusion and violence caused by disputes over resources and by environmental crises and disasters.

The concept of territory, therefore, transcends a merely physical definition, incorporating social, economic, cultural, political, technological, and environmental dimensions. From this perspective, one can situate the growing concern of PERD management in involving and enabling populations in the buffer zone (ZA) to become potential partners who benefit from protection in support of the Conservation Unit and assist in conservationist practices.

PERD thus presents itself as a microcosm for understanding the complex interactions between economic development, environmental conservation, and the conflicts that emerge from these dynamics. This understanding of territory is crucial for addressing contemporary issues of environmental management and territorial planning, recognizing the interdependence among the natural, technological, and social aspects of reality.

The Consultative Council of PERD

Law No. 9,985 of July 18, 2000, regulated by Decree No. 4,340 of August 22, 2002, created the National System of Conservation Units (SNUC) and established rules for the creation, maintenance, and management of Conservation Units (CUs). Articles 17 to 20 of this legal framework address the establishment of consultative or deliberative councils, depending on the management category (strict protection or sustainable use).

It also determines a balanced composition that includes representatives from public agencies, civil society, and Civil Society Organizations of Public Interest (OSCIPs). Council members serve two-year terms, which may be renewed for an equal period, and their activities are considered of public interest, without remuneration. The council's responsibilities include drafting internal regulations, overseeing the Management Plan, and evaluating the unit's budget (Brazil, 2002).

According to Gohn (2011), management councils function as channels of participation, integrating representatives from civil society and government in the administration of public goods. This participation aims to facilitate acceptance of decisions and promote citizen engagement within their communities. The author also highlights the limitations of consultative councils, whose role is restricted to opinion and advisory functions, without decision-making power.

The creation of PERD predates the SNUC legislation. The park was later incorporated into the system through State Decree No. 417 of October 9, 2015, which classified it as a strict protection Conservation Unit. Following this decree, PERD became a pioneer in Brazil by establishing a consultative council, in accordance with Ordinance 146/2002 of the State Forestry Institute (IEF). The first council members took office in March 2003.

Between 2013 and 2021, the PERD council went through four terms. Its composition includes representatives from different levels of public administration and civil society. The companies participating in the council are mainly from the steel, pulp, and public utility sectors, such as water and energy. Public authorities are predominantly represented by the IEF and the Municipality of Marliéria, while civil society participation is largely dominated by representatives from the education sector, with limited presence of grassroots movements.

Despite some changes over time, the council's composition remained relatively stable. During the analyzed period, both the public sector and civil society had 12 representatives each, while companies had eight. This distribution suggests that corporate presence—often national or transnational—may inflate the perception of social participation within the council. In terms of positions, there is a clear divide: while many emphasize economic growth, income, employment, and profit, others prioritize environmental conservation.

Corporate statements often reflect a preservation-oriented marketing discourse, but also reveal a strong commitment to profit and competitiveness, as illustrated by the positions of Cenibra and ArcelorMittal. This economic influence also concerns public agents working in PERD, as evidenced by state park concession programs and environmental compensation proposals, which frequently favor companies at the expense of conservation (Rocha et al., 2021).

In this sense, as highlighted by Campos et al. (2025), the consultative council of the Park is part of its management structure; however, it does not have the authority to act when conflicts involving PERD arise.

The Council is composed of representatives from various institutions and serves as a support body for the management of the Conservation Unit. According to the authors:

> Support for management, with the participation of representatives from society, is essential because, in many situations, the State, which holds the effective power to act, remains inactive in the face of clear environmental violations, prioritizing economic development over environmental preservation. (Campos et al., 2025, p. 220)

Meetings of the PERD Consultative Council must be public, with pre-established agendas and minutes available for consultation, in accordance with current legislation (Brazil, 2002). This transparency is essential for understanding decision-making dynamics and the conflicts of interest that permeate the Park's management, reflecting the complexity of interactions between economic development and environmental conservation in the region.

Analysis of the Minutes of the PERD Consultative Council

The first set of minutes analyzed corresponds to meeting number 65, held on July 30, 2013, while the last refers to meeting number 102, dated November 3, 2021. It should be noted that the minutes for meetings number 94 and 100 were not made available.

In total, 36 sets of minutes were analyzed, of which only two did not mention conflicts. The meetings without recorded conflicts were numbers 86 and 87, held on March 2 and April 13, 2018, respectively.

The minutes do not follow a standardized structure; however, they share some common elements, such as meeting number, date, and time. Meetings begin with the approval of the previous minutes, followed by the inclusion of agenda items.

At meeting 84, held on September 29, 2017, the creation of a standard template for the minutes was proposed, including an annex with the actions decided at each meeting, but this suggestion was not implemented. Although the IEF website provides a template for minutes of Conservation Unit council meetings, it is also not followed.

It was observed that there is no designated council member responsible for drafting the minutes; often, this task is assigned to a volunteer or appointed by the chair during the meeting. Additionally, the minutes do not allow for the identification of attending council members. When asked about the existence of an attendance record, PERD management reported that there is no documentation confirming council members' presence, resulting only in a list of absentees. However, in the minutes from 2020 and 2021, it was possible to identify attendees, as meetings were held remotely due to the COVID-19 pandemic.

After systematic analysis, 16 types of conflicts were identified, with the most frequent being related to irregular occupation, the Samarco disaster, the construction of highway LMG 760, and internal roads within PERD. Most conflicts were mentioned only once, without further detail; however, a single conflict may be connected to the development of others. For example, hunting and fishing, although mentioned only once, may be linked to issues such as roads, theft, and fires, especially in the context of irregular occupations driven by real estate speculation following the paving of LMG 760.

Thus, the conflicts form an interconnected network, indicating that the analysis of major conflicts must consider their relationships with less frequently mentioned ones. The adopted approach allowed for a deeper understanding of the challenges faced by PERD, highlighting the complexity of interactions among the various actors and interests involved in the Park's management (Figure 2).

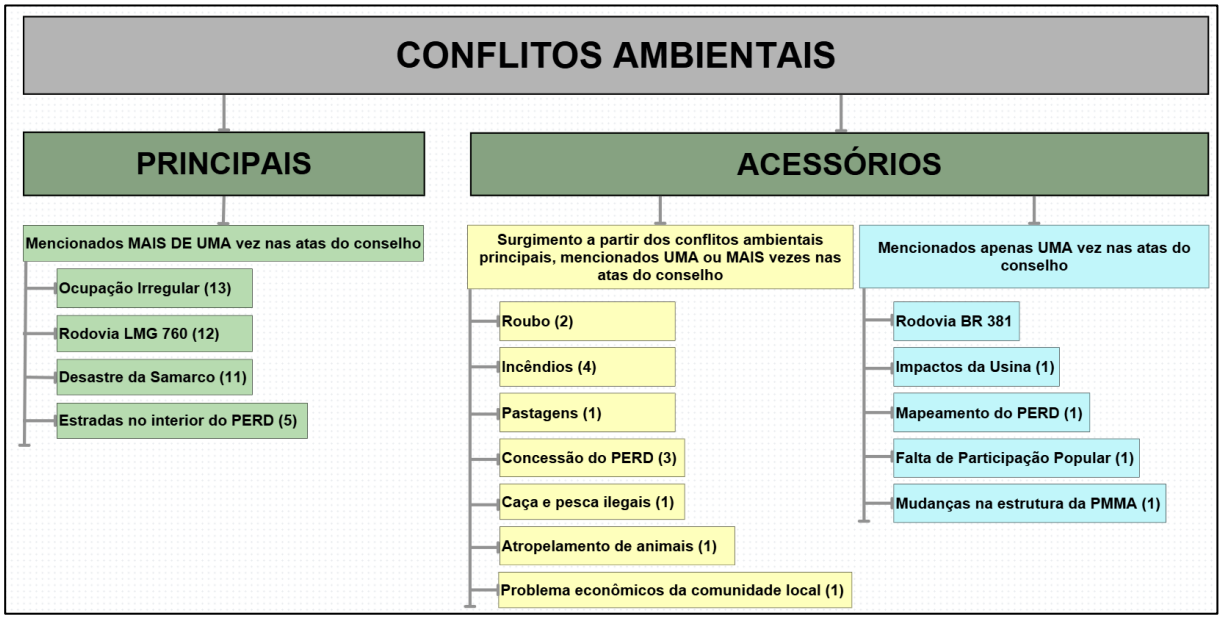

Figure 2 – Environmental conflicts mentioned in the minutes of the PERD Consultative Council.

Legend: Green color: main conflicts mentioned more than once in the council minutes; Yellow color: secondary conflicts arising from the main conflicts; Blue color: secondary conflicts mentioned only once in the council minutes; Numbering in parentheses: number of times each conflict is mentioned in the minutes. Source: The authors.

Regarding the secondary conflicts arising from the main conflicts (yellow color), it is important to note that irregular occupation contributes to the occurrence of theft, fires, and the creation of pastures; highway LMG 760 contributes to an increase in wildlife roadkill; the Samarco disaster influences the debate over granting PERD to private management; and roads within PERD contribute to illegal hunting and fishing, as well as to economic problems in the local community. These environmental conflicts will be addressed in the following sections.

It was also observed that most of the identified conflicts are historical within the Atlantic Forest, as reflected in the descriptions provided by Dean (1996) and Costa et al. (2024), who portray the destruction of the biome between the 18th and 19th centuries, influenced by governmental neglect, which enabled capitalists to obtain easy profits—from passive, imprudent, and unsustainable agriculture to the industrialization of substitutes for hundreds of products freely extracted from forests.

Irregular Occupation

Irregular occupation is characterized by activities that do not meet the legal requirements established by Law No. 9,985 of July 18, 2000, resulting in direct conflicts with the environmental preservation of the area. Any occupation that fails to comply with legal requirements is considered irregular, including properties with land parcels below the minimum legal size for the region.

This type of conflict in PERD and its buffer zone (ZA) has intensified over the years, as reflected in the council minutes. The consultative council (2022) stated that urban pressure, resulting from unplanned growth and lack of territorial planning, has caused irreparable damage to the park's buffer zone.

In this context, it is important to highlight that the buffer zone plays a significant role in the "reduction of pressure and negative impacts of human activity on protected areas and the protection of biodiversity, acting as a barrier to minimize the entry of harmful activities such as […] uncontrolled urban occupation" (Martins et

al., 2025, p. 3). However, for the management of this area to be more effective, active citizen participation is required, along with tools and actions implemented by the Park.

The geographic spread of irregular occupation extends across several areas, including territories such as Tomazinho and the district of Revés do Belém, as well as locations in the municipalities of Timóteo and Marliéria. This situation compromises not only the environmental integrity of PERD but also increases the risk of fires, theft, and the creation of pastures (Santos, 2015).

Rodovia LMG 760

Os conflitos relacionados à Rodovia LMG 760 abrangem questões de licenciamento, construção e asfaltamento da estrada, além de suas implicações ambientais. Historicamente, esse conflito se iniciou na década de 1980 e se prolonga até os dias atuais, gerando um intenso debate sobre as medidas compensatórias e os impactos sobre o ecossistema local (Lamounier, 2017).

Sobre a temática, verificamos que as construções teóricas de Dias (2018) e Dias et. al (2024) se encontram quando tratam que a elevação do fluxo de veículos e pessoas por conta da rodovia contribui para riscos de atropelamento de fauna, desmatamento e poluição, compreendendo, portanto, efeitos sociais e ambientais adversos.

A construção da rodovia também provocou tensões entre a administração do Parque e as comunidades locais, pois estas acreditavam que a paralisação era responsabilidade do Parque (Lamounier, 2017), tendo em vista que a obra da rodovia foi iniciada e paralisada diversas vezes por falta de recursos financeiros do Estado. O processo foi retomado em 2020 e concluída em 2023 (Dias, et. al., 2024)

Samarco Disaster

The collapse of the Fundão dam, owned by Samarco/Vale/BHP Billiton, occurred on November 5, 2015, resulting in significant impacts not only on the Doce River but also on PERD and its biodiversity (Espíndola et al., 2017). The disaster triggered a series of conflicts related to damage reparation, particularly with the creation of the Renova Foundation as the entity responsible for mitigating the consequences.

Reparation efforts have proven to be unsatisfactory, with ongoing questions regarding the actual effectiveness of the measures, since the water quality of the Doce River remains uncertain to this day. Furthermore, the Foundation's investments in infrastructure and tourism within the park, although praised, do not address the significant environmental damages (Renova Foundation, 2021). The conflict is also shaped by proposals to grant the Park to private management, which may negatively impact local populations and biodiversity (Mifarreg et al., 2021).

Roads within PERD

The issue of roads within the Rio Doce State Park has been debated since its creation, closely linked to the controversial case of the Ponte Queimada, located on the eastern side of the Park, encompassing internal protection zones and the buffer zone (ZA) of the Conservation Unit. According to Santos (2015, p. 28), "[...] the Park has coexisted since the 1950s with the presence of a road within its boundaries; this route materializes the conflicts present in its creation and maintenance."

The main focus of discussions within the Park's council revolves around the proposal to build a park road, intended to connect the city of Marliéria to the Conservation Unit. According to Dourojeanni (2021), park roads are defined as:

> [...] a form of landscape preservation involving roads that pass through natural or human-modified areas that are particularly scenic. They are typically characterized by the presence of tree or shrub vegetation within the direct and visual area of influence of the roadway, as well as wide توقف areas from which landscapes can be safely appreciated. Park roads are not intended to preserve biological diversity, although they may contribute to this objective. They may cross both public and private lands. They exist in many countries, but are especially utilized in the United States at both the federal and state levels" (Dourojeanni, 2021).

Although the benefits of a park road—such as functioning as a natural museum and a territorial planning instrument—have been highlighted, its construction would imply significant removal of Atlantic Forest vegetation (even restricted use could lead to problems such as illegal hunting and fishing, fires, among others), requiring a rigorous bureaucratic process for authorization, including legal actions. Santos (2015) warns about the multiple environmental impacts associated with such developments, including:

> "[...] alteration of animal behavior, changes in the food chain, ecological imbalance, territorial fragmentation, population isolation, noise, air, and water pollution, invasions, illegal logging and palm extraction, fires, the increase of opportunistic plants along the road margins, and the spread of exotic species."

In March 2021, a working group was established to assess the feasibility of constructing and implementing the park road. According to the council minutes, the first mention of the topic occurred in 2018 and the last in 2021. Additionally, a previously established agreement stipulated that all internal roads within the park would be closed after the construction of Highway LMG 760.

However, the renovation of the Ponte Queimada, which connects the municipalities of Pingo-d'Água and Marliéria, was incorporated into the Renova Foundation's work plan as a compensatory measure for the damages caused to the Park by the collapse of the Fundão dam. In this context, the council president emphasized the social pressure for the restoration of the bridge and the maintenance of access, proposing the regulation of road use for tourism purposes.

Nevertheless, part of the local population seeks to use the road to connect Cava Grande to the Vale do Aço, which contrasts with the guidelines of the park's management plan. Despite the risks, the council unanimously reiterated its support for the park road and the restoration of the bridge, regulating its use for tourism activities.

Santos (2015) warns about the multiple environmental impacts associated with such developments, including:

> "[...] alteration of animal behavior, changes in the food chain, ecological imbalance, territorial fragmentation, population isolation, noise, air, and water pollution, invasions, illegal logging and palm extraction, fires, the increase of opportunistic plants along road margins, and the spread of exotic species."

Thus, it is observed that roads within PERD are not only sources of conflict but also reinforce a series of other problems within the conservation unit. Economic interests also play a central role in the debate over roads in PERD.

Acesita, for example, is one of the companies that advocates for the opening of roads to facilitate the transportation of raw materials, emphasizing the positive impact on the local economy. The composition of

the council, often dominated by representatives from metallurgical companies, helps explain the favorable stance toward projects that prioritize economic development over environmental concerns.

Other Conflicts

The impacts of power plants, the lack of public participation, and the reduction in the number of Environmental Military Police officers to assist with enforcement are conflicts frequently mentioned in the discussions. For example, although only sporadically referenced in the minutes, the Risoleta Neves power plant, located near the Park, presents potential environmental risks.

Furthermore, park management faces challenges due to the restructuring of the Environmental Military Police, which resulted in a significant reduction in personnel and enforcement capacity, increasing the vulnerability of PERD's fauna and flora.

Additionally, the economic difficulties faced by communities surrounding the park lead residents to resort to illegal hunting and fishing as a means of subsistence. This conflict, mentioned in 2017, continues to impact the park's wildlife, especially in the western region, where irregular occupation and human pressure are more concentrated. The interaction between economic interests, social needs, and environmental preservation outlines a complex and challenging scenario for PERD's management.

Final Considerations

Historically, even before intensive exploitation, interactions already existed among native peoples in areas of the Atlantic Forest—true power dynamics that constituted a territory. With urban growth and the relentless pursuit of economic development, nature has been increasingly devastated, reflecting a pattern of excessive exploitation linked to the concept of private property.

The transformation in the relationship between humans and nature has led to the intensification of environmental conflicts, which arise from the diversity of actors and territorial projects, each assigning different meanings to space. Thus, conservation units, such as the Rio Doce State Park, are susceptible to environmental conflicts that reflect these tensions.

Environmental conflicts are therefore an intrinsic part of the management of conservation units. The administration of PERD, which is crucial for the preservation of the Atlantic Forest, has faced a series of conflicts since its creation, especially given its location in Vale do Aço, a region with a strong vocation for steel production.

In analyzing the minutes of the Advisory Council, it was initially observed that there is no standardized format for drafting meeting minutes. This shortcoming results in informational gaps, particularly regarding the presence of council members and the actors involved in the conflicts. These limitations highlight the need to improve transparency and efficiency in decision-making processes, promoting more inclusive management that is aware of the multiple interests at stake.

The analysis of the minutes also revealed the existence of several conflicts within the studied territory. Understanding these conflicts enables more targeted action, fostering more effective integrated management of the conservation unit. In this context, as evidenced by this survey, the park's advisory council plays a crucial role in addressing the main conflicts currently affecting PERD.

On the other hand, the State, which is responsible for taking effective action, remains inert in the face of serious environmental violations, prioritizing economic development over environmental preservation. The management of the State Park must recognize and articulate the different territorial projects, seeking a balance

between environmental preservation and economic development in order to mitigate the conflicts that permeate this important conservation unit.

Thus, the absence of effective State action and the limited deliberative capacity of the advisory council contribute to the perpetuation of conflicts, highlighting the need for greater coordination among environmental agencies, public authorities, and local communities to ensure participatory and integrated management in the surroundings of PERD.

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