

SERRA DO CURRAL: MEANINGS AND IMPORTANCE OF PROTECTION

Maraluce Maria Custódio¹

Escola Superior Dom Helder Câmara (ESDHC)

José Cláudio Junqueira Ribeiro²

Escola Superior Dom Helder Câmara (ESDHC)

ABSTRACT

Serra do Curral is a symbol, a natural, cultural and landscape heritage of Belo Horizonte since its foundation. Even previously, Serra do Curral was already a symbol of location on the roads of Minas Gerais. Furthermore, it has an enormous economic importance, as it is part of the iron quadrangle, and since the 1940s iron has been explored from its area. Thus, there is a pseudo contradiction between its environmental and landscape importance and its economic importance, which has generated innumerable problems concerning its protection. Serra do Curral is protected at the federal and municipal levels in Belo Horizonte, but its mineral exploration continues. In view of this, the present article seeks to demonstrate the importance of Serra do Curral beyond the economic issue of its mineral exploitation using the inductive and historical methods, with documentary and bibliographic techniques. It has as its theoretical framework Pinder, Antonino and Silva, who defend society's relationship with the landscape as a dialectical unit in which the roughness of the relationship persists. The conclusion is that Serra do Curral is currently a landscape that is losing its visibility and has been standing out as a viewing point – today of the city of Belo Horizonte itself – and because of its direct relationship with the natural environment protected by the city. It is thus necessary to measure such importance in the economic exploitation of this heritage.

¹ PhD in Geography from the Universidade Federal de Minas Gerais (UFMG), in a joint program with the Université d'Avignon. Master in Law from UFMG and in Environmental Law from Universidad Internacional de Andalucía (UNIA). Graduated in Law from UFMG. Professor of the Master's and Doctoral Program in Environmental Law and Sustainable Development at ESDHC. ORCID: <https://orcid.org/0000-0003-2048-7883> / email: maralucem@hotmail.com

² Doctor in Sanitation, Environment and Water Resources by UFMG. Master in Genie Sanitaire Et Urbanisme by the Ecole Nationale de La Santé Publique (ENSP). Specialist in Sanitary Engineering from the School of Engineering at UFMG. Graduated in Civil Engineering from UFMG. Undergraduate professor and permanent professor at the Graduate Program in Law at ESDHC (Master in Environmental Law and Sustainable Development). ORCID: <https://orcid.org/0000-0002-6626-4557> / email: jjunqueira@yahoo.com

Keywords: Belo Horizonte; landscape; mining; Serra do Curral; viewpoint.

SERRA DO CURRAL: SIGNIFICADOS E IMPORTÂNCIA DE PROTEÇÃO

RESUMO

A Serra do Curral é símbolo, patrimônio natural, cultural e paisagístico de Belo Horizonte desde sua fundação. E mesmo antes já era um símbolo de localização nos caminhos de Minas Gerais. Além disso, ela tem uma importância econômica enorme, já que é parte do quadrilátero ferrífero e desde a década de 1940 se explora ferro de sua área. Assim, tem-se uma pseudocontradição entre sua importância ambiental e paisagística e sua importância econômica, que vem gerando inúmeros problemas em relação a sua proteção. A Serra do Curral é tombada em âmbito federal e municipal de Belo Horizonte, mas sua exploração mineral continua. Em face disso o presente artigo busca demonstrar a importância da Serra do Curral para além da questão econômica de sua exploração mineral se utilizando dos métodos indutivo e histórico, com técnica documental e bibliográfica. Tem-se por marco teórico Pinder, Antonino e Silva que defendem a relação da sociedade com a paisagem como uma unidade dialética em que perdura a rugosidade da relação. Concluindo que a Serra do Curral é hoje uma paisagem que perde a visibilidade e vem se destacando como um ponto de visualização – hoje da própria cidade de Belo Horizonte – e por ter uma relação direta com o meio ambiente natural protegido por esta, sendo necessário mensurar tal importância na exploração econômica deste patrimônio.

Palavras-chave: Belo Horizonte; mineração; paisagem; ponto de visualização; Serra do Curral.

INTRODUCTION

The Serra do Curral, symbol of Belo Horizonte, has been protected since the 1960s as a historical and cultural heritage. Being representative for the city dwellers of Belo Horizonte as a whole, which qualifies it as a representative landscape of society and, therefore, it also needs protection as a landscape, or at least as a viewpoint of the landscape, which would currently be the City. Mineral exploration, however, has been threatening this protection, as it is an iron ore area that can be explored.

Serra do Curral is a mountainous complex that belongs to the geological system known as the Iron Quadrangle in Minas Gerais, which extends over 7,000 square kilometers in the south central region of Minas Gerais, being part of the Minas supergroup with a rocky variety that has dolomite outcrops, quartzite rocks, itabirite, magnetite and hematite.

Rich in iron ore present in these different types of rocks, this makes the soil reddish, somewhat yellowish, and a type of rugged rocky field, also called *canga*, appears in it. In addition to holding areas of the Atlantic forest, as it is located in a transitional area from it to the *cerrado*, another biome that also stands out in the region. Belo Horizonte has a large area of Atlantic forest and several parks in the foothills of the Serra, such as Mata da Baleia, Parque das Mangabeiras, among others that protect springs such as Córrego do Cercadinho. And because of its variety of biomes, it became home to several animal species, including some in danger of extinction, such as the ocelot and the maned wolf. Serra do Curral is also home to many bird species and the habitat of various mammals such as opossums, deer and pacas.

Serra do Curral is the source of several springs of streams – this being one of the reasons for choosing this area as the capital of Minas Gerais in the nineteenth century – that supply the metropolitan region of Belo Horizonte, such as tributaries of the Ribeirão Arrudas and the Córrego do Cercadinho, which have their springs in Serra do Curral.

These characteristics make Serra do Curral a valuable economic asset due to its ore, but also an important environmental asset due to its vegetation, animals and springs. This has generated a dispute over its uses. Parks were installed in the area seeking to protect environmental assets, but there is no full protection that is a barrier to economic exploitation. Thus, protection and exploitation have been carried out without due dialogue and coordination, which would be the path to the effective realization of sustainable development in the area.

And to make the discussion more complex, Serra do Curral has played an important cultural role since its discovery, either as a geographical point, as a symbol of Belo Horizonte, or as a representative landscape that contributed to the area being chosen as the state capital in the nineteenth century, as will be seen below.

This article seeks to analyze the importance of Serra do Curral beyond the economic issue of its mineral exploration using inductive and historical methods, with documentary and bibliographic techniques.

The theoretical framework is Pinder, Antonino and Silva, who defend the relationship between society and the landscape as a dialectical unit in which the roughness of the relationship lingers on. In order to demonstrate that Serra do Curral has currently lost visibility and has been standing out as a viewpoint of the landscape – today the city of Belo Horizonte itself – and the direct relationship with the natural environment protected by the city, an analysis was carried out to understand how to reconcile its uses and importance.

1 THE GENESIS OF MINING IN MINAS GERAIS AND SERRA DO CURRAL

The Province of Minas Gerais has its origins in the disputes over mineral wealth that took place in the eighteenth century, generating large migratory flows to the region and providing the creation of important colonial cities such as Mariana and Ouro Preto, which became the first capitals of the Province. Mineral exploration was done in a rudimentary way, extracting gold in superficial veins on the banks of streams and rivers, called alluviums, without major alterations to the Alterosas landscape.

With the decline of the gold cycle at the end of the eighteenth century, as well as the use of these rudimentary techniques, a new mineral cycle was unveiled for the region with the transfer of the Portuguese Crown to Brazil, which attracted the arrival of foreign specialists to the country, including for the manufacture of iron (TOLEDO; RIBEIRO; THOMÉ, 2019).

The production of iron to forge tools for the exploration of gold and diamonds was already a necessity in the Colony, which at that time were imported from Europe, and, therefore, there were studies for the creation of forges in the region.

The existence of iron ore in the gold region was known since the beginning of its colonization, in the beginning of the eighteenth century. At that time, production

was homemade and its casting process was quite precarious. In general, the best ovens were designed by Africans, who brought from their lands an extensive baggage of knowledge in the metallurgy area. This production was used mainly in the manufacture of tools for mining, such as shovels, hoes, horseshoes, yoke armor, harnesses, among others. This precarious situation would only change as factories with the capacity for production on an industrial scale were installed (PINHO; NEIVA, 2012, p. 52).

Among the specialists coming to the country, in the wake of the transfer of the Portuguese court to Brazil, the German mineralogist Wilhelm Ludwig von Eschwege, known as Baron Eschwege stands out, who stayed here between 1810 and 1821. He settled in Congonhas do Campo, Minas Gerais, the first steel company in the country under the name *Patriótica*, a pioneer in the production of cast iron on an industrial scale (TOLEDO; RIBEIRO; THOMÉ, 2019).

During the colonial and empire period, the exploration of iron ore was not expressive, being only to supply forges and small steel mills. However, interest in the exploration of this ore in Minas Gerais grew more and more, greatly encouraged with the creation of the *Ouro Preto School of Mines*, an important milestone for the development of mining and metallurgy in the country, started in 1876 by Dom Pedro II (PINHO; NEIVA; 2012).

With the Proclamation of the Republic, public administration was modernized with the creation, in 1907, of the Brazilian Geological and Mineralogical Service, now CPRM, the Brazilian Geological Service. This body disseminated the quality of iron ore in Europe, in a work called “Balance of Wealth in Iron Ore”, which caught the attention of the main steel producers in the world (CASTRO; NARLINI JÚNIOR; LIMA, 2011). As a result, Minas Gerais became the focus of interest for many foreign companies in iron mining. With emphasis on the *Itabira Iron Ore Co*, a company with English capital, created in 1911, whose mines nationalized in 1942 gave rise to the creation of *Cia Vale do Rio Doce* (CASTRO; NARLINI JÚNIOR; LIMA, 2011)

Studies and research in Minas Gerais have identified one of the richest iron mineral areas in the world, called *Iron Quadrangle*, which was named so because its shape resembles a square. It is located in the central southern portion of the state of Minas Gerais, with an extension of approximately 7 thousand km², extending between *Ouro Preto* in the southeast and *Belo Horizonte* in the northwest, covering several municipalities (ROESER; ROESER, 2010).

The Iron Quadrangle is structurally divided into 12 megadomains, considering the orientation of the main structures, with Serra do Curral being one of them, which, according to the authors Chemale Junior, Rosière, Endo (1991), in a geological analysis, can still be subdivided into two parts.

Its name, adopted in the late 1950s, is believed to be the authorship of the geologist Gonzaga de Campos, who relied on the vast iron ore deposits that occur in an area limited approximately by the lines connecting Itabira, Rio Piracicaba, Mariana, Congonhas do Campo, Casa Branca and Itaúna (SANTIAGO, 2012, p. 1).

Serra do Curral belongs to the Espinhaço massif, a mountain range that develops from the north of the Iron Quadrangle, crossing the state of Minas Gerais until reaching the state of Bahia. Forming a true mountain range, it is the great watershed between the eastern basins that flow directly into the Atlantic Ocean and the São Francisco River. Serra do Curral presents a geological formation composed of rocks of itabirite, quartzite, phyllites and dolomites, with great economic value for mineral exploration, covered by a transitional vegetation between two of the main Brazilian biomes: Atlantic Forest and Cerrado.

With the end of the Empire and the establishment of the Republic in Brazil, according to Rocha and Abjaud (2013), Vila Rica represented a past of Portuguese imperialist exploitation, and it also had as negative points, to be the capital of such an important state, being small and of difficult access, which made it difficult to be a large modern metropolis as it was aspired by the modern winds brought by the Republic. Thus, in 1891, the then governor João Pinheiro da Silva appointed Aarão Reis head of a commission that should look for a new location for the state capital, Cidade de Minas. Five cities competed to be the capital, of which Curral Del Rey was not the most viable nor the first option, according to Guimarães (2012) in the reports at the time. In 1893, the decision was made, choosing Curral Del Rey all the same, giving the Commission four years for the city to be inaugurated.

2 SERRA DO CURRAL AND BELO HORIZONTE

Belo Horizonte has not always been the capital of the State of Minas Gerais and has not always had that name. Initially known as Curral Del Rey, it was founded at the beginning of the eighteenth century, with two versions of its appearance. In the first, it was created in 1709 by Captain Francisco Homem Del Rey, hence its name. In the second and more accepted version,

the Arraial was created by pioneer João Leida Silva Ortiz, in 1701, after he founded the Fazenda do Cercado, which was dedicated to agriculture and livestock in the Serra do Curral, at the time known as Serra das Congonhas (LOPES, 2019).

Serra das Congonhas was known as a geographical reference point as far back as the eighteenth century and was named after the old name given to the city of Nova Lima: Congonhas de Sabará.

João Leite, impressed by the attractive aspects of Serra das Congonhas and its slopes, foreseeing, perhaps, finding good golden sparklers, coursed it all along and, at a certain point, discovered a beautiful place with excellent lands and magnificent breeding pastures, and took possession of them, definitively settling with numerous slaves in that place, which was called Cercado [...] (BARRETO, 1929, p. 30)

It was in this scenario, at the foot of the mountain, in the place called Curral Del Rey, that, in the late nineteenth century, the government of Minas Gerais decided to establish the new capital, initially called Cidade de Minas, and later Belo Horizonte, due to the beauty of the landscape of the mountain range that surrounded the locality. “The city, framed by Serra do Curral, which gives it a strong historical reference, was named after the vast flat lands that afforded the view of a beautiful horizon” (SERRA DO CURRAL, 2019).

The landscape of Belo Horizonte is characterized to the south by the profile of Serra do Curral, which belongs to the ridge massif. This mountainous alignment located north of the Iron Quadrangle, one of the main geological provinces in Brazil, is composed of rocks and Itabirite (iron ore), quartzite, phyllites and dolomites. Along the mountain range, areas covered by cerrado, high altitude fields, gallery forest and traces of Atlantic forest can be seen. The heterogeneity of this vegetation cover favors the appearance of a diversified fauna. The peak of Belo Horizonte with 1390 meters marks its highest altitude, being used as the main motif for the city’s coat of arms. Listed as a National Historic Landmark, the mountain has lookouts on different levels and offers a wide panoramic view of the city (SERRA DO CURRAL, 2019).

Thus, in 1897 Belo Horizonte emerges, from the dust of the total demolition of Curral Del Rey, as a planned city with Paris and Washington as inspirations and created for two hundred and fifty thousand inhabitants. The urban organization was planned with influence and technically designed to value the presence of Serra do Curral, with its springs to supply the City and being seen as a barrier to maintain a pleasant climate and which even inspires the name of the Capital that changes from Cidade de Minas to Belo Horizonte.

According to the then Governor of Minas Gerais, João Pinheiro da Silva, responsible for the choice: “the name Belo Horizonte would be the one that would best affirm the spectacle that the locality afforded to the eyes of passers-by due to the beautiful landscape promoted by Serra do Curral” (MPF *et al.*, 2018, p. 3).

Initially, the City was implemented mainly along the right bank of the Arrudas stream, in its middle course, following a positivist planning with a perpendicular urban fabric, composed of straight streets, cut by diagonal avenues, affording from all angles of the city a view of Serra do Curral, so called in reference to the old village of Curral Del Rey. Magalhães and Andrade (1989 *apud* ARRAIS, 2010, p. 591) when commenting on the names of the roads in Belo Horizonte “interpreted this explicit use of figures and historical dates and geographic denominations as a correspondence, conscious or not, to the positivist doctrine of which Aarão Reis was a representative”.

The main source of inspiration for the baptismal name of Belo Horizonte, Serra do Curral serves as a frame for the city, with an extension of 11 kilometers and an altitude of up to 1390 meters at its highest point. The curves of its mountains can be seen from most of the capital’s neighborhoods and have become one of the reasons for pride of its residents (MINAS GERAIS, undated).

Aarão Reis’ original project for the implantation of Belo Horizonte foresaw an area surrounded by a circular ring (Avenida do Contorno) torn in half by a main North/South axis (Avenida Afonso Pena) towards the Serra do Curral wall, thereby highlighting all its grandeur.

Since its creation, Belo Horizonte has grown incessantly, undergoing several transformations throughout its little more than a century of life. At the beginning of the 20th century, industries appeared and developed in the city. Industries, mainly textiles and metallurgy, are establishing themselves, and in the first decade of the 20th century, Belo Horizonte was already the textile hub of the province of Minas (ROCHA; ABJAUD, 2013).

Throughout the twentieth century, the city suffered waves of destruction of houses and buildings, and older areas were replaced by newer architecture and constructions all the time. This can be seen in an unpretentious walk through the original part of the city – inside the surroundings of Avenida Contorno – not to mention the expansion to the limits of the municipalities that surround the Capital. According to Cunha (1997), this is due to the preponderant intervention force of the state power in relation to the municipal one and the city’s enthusiasm in the face of the renovation that still prevails today. As Castriota (1992, p. 5) confirms “nothing is more

natural that, since the beginnings of its history, the city has incorporated the logic of modernity, its rapid obsolescence and constant transformation: what is old has to disappear”.

The city’s growth greatly extrapolated the Aarão Reis project, as it currently houses about 2.5 million people, in addition to growth, successive changes in land use and occupation, and the rapid verticalization of the city, including towards Serra do Curral.

3 SERRA DO CURRAL AND MINERAL EXPLORATION

Mining in Serra begins in the 1940s (BELO HORIZONTE, 1991), but the existence of iron ore in Serra do Curral was known from the beginning, but there was a lack of techniques for its exploration. Part of the mining was nationalized and the other part carried out by private companies, thus giving rise to the direct economic value of the Serra. According to Belo Horizonte (1991), in Brazil iron ore is mined in the open, which increases the environmental degradation of the Serra and visibly destroys it.

In the 1960s, Fazenda Capão, which was located at the foot of Serra do Curral, was transferred to Mineradora Ferro Belo Horizonte S/A (FERROBEL). However, with a view to protecting Serra do Curral, in 1961, the National Historical and Artistic Heritage Institute (IPHAN) proceeded with the listing of Pico de Belo Horizonte and its base composed by the mountainous massif, in a total extension of 1,800 meters, with 900 meters on each side, having as reference the axis formed by Avenida Afonso Pena (IPHAN, 1961).

Despite this federal registration being dated September 20, 1961, the municipality of Belo Horizonte, in the interest of exploring its mineral resources, created the Ferrobela mining company, through Law No. 898 of October 30, 1961, whose main assets were in Serra do Curral (BELO HORIZONTE, 1961).

In 1961, the Municipality of Belo Horizonte, owner of land in Serra do Curral, created Ferrobela – Ferro Belo Horizonte S/A –, a mixed capital company to explore ore in the Mangabeiras, Cercadinho and Barreiro deposits. The urbanization of neighborhoods and towns was carried out by the government with resources from this mineral exploration. The exploration of iron ore also took place on land in the Municipality of Nova Lima, promoting a significant loss of the mountain’s characteristics, despite the federal registration that occurred in the decade (NOVAIS; GUIMARÃES, 2014, p. 13).

One of the large mining companies present in the Iron Quadrangle at the time, CAEMI Mineração e Metalurgia SA, from an association with the North American mining group Bethlehem Steel, in 1965, created the company Minerações Brasileiras Reunidas SA (MBR), which owns several mines in the municipality of Nova Lima. Thus, Serra do Curral began to be plowed on the Belo Horizonte side by Ferrobela and on the Nova Lima side by the MBR, in the so-called Minas de Águas Claras, causing a great impact on the landscape.

In the early 1970s, the beginning plastic artist, now internationally renowned, Manfredo de Souza Neto, unhappy with the destruction of the Belo Horizonte landscape by the mineral exploration of Serra do Curral, addressed the theme in his first solo exhibition “Memories of Things, That Still Exist”, also launching at the time the sticker “Look well at the Mountains”, urging the population to observe the symbol of the city, which was being degraded (MAFREDO 40 ANOS..., 2016). This initiative inspired a chronicle by poet and writer Carlos Drummond de Andrade and, later, a poem with this slogan:

Look well at the mountains, look at the mountains, miners, like Serra do Curral, mutilated, you who do not defend them, look at them while you live, because with the blows of tractors they are being murdered, for the sole fault of their iron entrails. Miners, why don't you understand that that rust that dusts your eyes, that red earth, is your blood unjustly spilled in the struggle that brings you down (ANDRADE, 1976 *apud* PASSOS; COELHO; DIAS, 2017, p. 271).

Ferrobela's activities were discontinued in 1979, and its area was integrated into the project by landscaper Roberto Burle Marx for the creation of a new leisure area in Belo Horizonte at the foot of Serra do Curral. In 1983, the Parque das Mangabeiras was inaugurated with an area of 2.4 million square meters, sheltering dozens of springs such as the Serra creek, a tributary of the Arrudas stream, of Rio das Velhas, which make up the São Francisco river basin. Although the Parque das Mangabeiras was created by decree No. 1466 of October 14, 1966, its implementation was only authorized by law n. 2.403 of December 30, 1974, after a great mobilization of the population of Belo Horizonte, as a result of the campaign “Look Well at the Mountains”.

This was due to the need to protect Serra do Curral and its surroundings and the imperative to create a recreation area for the City. But the creation of the park did not stop the mining that continued to be carried out until the shutting down of Ferrobela in 1979 (ROCHA; ABJAUD, 2013).

The Mangabeiras Park is a

[...] landscaping project by Roberto Burle Marx, with a total of 2,815.00 square meters of preserved green area, from 1,000 to 1,300 meters high, with a peak – Pico Belo Horizonte – that reaches 1,389m. The area is home to 21 springs of the Serra stream and the soil is formed by itabirite (iron ore), dolomite, quartzite and phyllite (ROCHA; ABJAUD, 2013, p. 70)

However, the mine, in the Nova Lima side, explored by MBR remained in activity, being acquired by Vale SA, and it was exhausted in 2006, and the process related to the Mine Closure Plan (PAFEM) is currently regulated by the Normative Deliberation (ND) COPAM 220/2018, replacing ND 127/2008, and in progress with the Department of Environment and Sustainable Development of the state of Minas Gerais (SEMAD).

It is observed that the central massif of Serra do Curral, resulting from the mining of Ferrobel and MBR/Vale SA, is currently constituted by only one “shell” on the Belo Horizonte slope, as a theater setting that hides the degradation of mineral exploration in the Nova Lima slope.

4 PROTECTION AND REGISTRATION OF SERRA DO CURRAL

Serra do Curral, as noted throughout the text, is recognized for its value since the first sightings and its literary appearance. Therefore, building Belo Horizonte at the foot of the Serra was not just a choice because of nature, or the shape of the relief, it was society that gave it meaning and representation, removing it from invisibility. Thus, Serra do Curral assumes a symbolic dimension of and in the city. It is not just a physical relief, but it stands out in a social, cultural and historical context, which Bonnemaïson (2002 *apud* PINDER; ANTONINO; SILVA, 2015, p. 67) defines as a “geosymbol, that is, “[...] a form of language, an instrument of communication shared by all and, ultimately, the place where the cultural vision is inscribed as a whole”.

The preservation of the Brazilian historical and cultural heritage, despite legally having Decree Law 25/1937 as a landmark, has been a slow and prolonged process, which despite the awakening of the interest of public authorities and society, is still superimposed by other issues, mainly economic, where protection is seen as an obstacle. As CUNHA (1997) suggests, it is necessary to briefly analyze the evolution of the very notion of heritage, which begins as private goods with economic value and that, for this author,

[...] the use of this term undergoes an expansion and a displacement and, contrary to its original use, the term starts to have “a much more public than private connotation: it identifies itself as a subject, as the owner of this heritage, as a rule, a community, a nation or even humanity as a whole. [...] (CUNHA, 1997, p. 84).

As early as 1958, the government of the State of Minas Gerais, José Francisco Bias Fortes, concerned with the protection of the Pico de Belo Horizonte, required the DPHAN – currently IPHAN – to initiate processes for listing the area, based on a technical report that predicted the loss of the Peak if mining activities continued. This is because the Peak was a symbol for Belo Horizonte, which even appears in the symbol of the City’s weapons (Figure 1) and because the company Hanna Corporation started mining research in the area. The process was controversial as it slowed down important economic activity for the region. In 1960, however, DPHAN decreed the listing of Serra do Curral and Pico Belo Horizonte in Process 591 T. 58, Inscription 29-A on page 8 of the Book of Brazilian Archaeological, Ethnographic and Landscape Listing (ROCHA; ABJAUD, 2013).



Figure 1 – Symbol of weapons in Belo Horizonte.

Source: Belo Horizonte (2019, p. 9).

In order to ensure the protection of the landscape of the orographic unit, comprising the “Peak’s Landscape Complex and the steep part of the Serra”, the listed area was altered in 1973, now covering 1,257,115 square meters.

In addition to the federal listing, there was also the municipal listing in Belo Horizonte, considered at the time a victory for the population of Belo Horizonte, after all the city has demonstrated that the protection of its cultural heritage is more important than the economic exploitation of the area.

On March 21, 1990, the Organic Law of Belo Horizonte listed the area municipally, considering its importance for the city and reaffirming it as a cultural and landscape heritage, already recognized federally. And on Feb. 20, 1991, the then Municipal Secretary for the Environment – Maurício Andrés Ribeiro – forwarded to the President of the Deliberative Council for the Cultural Heritage of the Municipality (CDPCM/BH) the proposal for the description of the Serra's listing perimeter, in compliance with what was established by the Organic Law.

The definitive municipal listing of Serra do Curral was only approved by the CDPCM/BH on December 16, 2003, a period in which the guidelines for the protection of the Perimeter of Surroundings/Neighborhood of the referred Sub-Areas were also determined, resulting in Deliberation No. 147/2003, published in the *Diário Oficial do Município – Belo Horizonte* Year X – No.: 2030 – 07/01/2004. (MPF *et al.*, 2018), thus demonstrating the importance and unique meaning of the Serra and its landscape and, at the same time, the impossibility of carrying out mining activities in the area, without destroying such heritage.

According to Belo Horizonte (1991, p. 7),

It is a living document of biodiversity and geodiversity in the landscape, representing a cultural asset for its value as a collection for knowledge in general. [...] by listing Serra do Curral, we will be providing future generations with knowledge of the region's natural landmarks and the opportunity for a deeper and more lucid understanding of the historical phenomena of our evolution.

According to MPF *et al.* (2018, p. 4),

The studies to define the registration and the respective guidelines for the protection of the Mountain were developed by the former Management of Urban Historic Heritage (GEPH), today the Heritage Directorate linked to the Secretariat of Culture, and the Municipal Secretariat for Urban Regulation (SMRU), and were presented to CDPCM-BH in March 2002. The listed area ended up being resized to 30.06 km², but a region around the listed property of 20.71 km² was created, with 50.77 km² being protected. These surroundings already presented a consolidated and quite heterogeneous occupation, forming a varied urban scenario where there were ambiances and axes of sight formed by the interaction of the built landscape and the natural landscape.

In the lawsuit, MPF *et al.* (2018, p. 34) already warns

Considering that allowing mining in the area (and, consequently, the maintenance of mining titles) will result in the destruction and mutilation of a unique environmental and cultural heritage and; considering, also, that the damage caused to the landscape

heritage in question is unacceptable, the exploitation of mineral resources that compromise the cultural heritage must be prohibited (art. 251 of the State Constitution and art. 17 of Decree-Law 25/37).

In addition to mining, unplanned urban expansion and large-scale subdivisions have also been a factor in the Serra's loss of distinctive characteristics. However, despite the ongoing degradation process that continues to take place in the Serra, several parks were created on the Belo Horizonte side, encompassing the Serra and seeking to protect it for all its historical, scenic and cultural symbols and geological-environmental importance.

The Serra, as seen, was listed at federal and municipal levels and in 2010 by Law 9,959/2010, the municipality protects the entire listed and surrounding area, making the entire region a Special Directives Area (ADE). Seeking to further protect it, in 2018, Process No. PTE - 163/2018, at state level, for the listing of the Serra do Curral Historical and Landscape Complex, which encompasses the municipalities of Belo Horizonte, Nova Lima, Sabará, Raposos, Ibitaré and Brumadinho, thus seeking to ensure protection in the three federative spheres. By protecting it as State Historic-cultural Heritage, but focusing on the Metropolitan Region, it would ensure that mining respected the Serra's representativeness. But, as it involves so many economic interests from different municipalities, the process is not yet over and generates a lot of discussion. But according to MPF *et al.* (2018), the mining that has been taking place in Serra do Curral has changed the profile of the Serra crest, and in the Nova Lima area, real estate projects and other projects have degraded the area that is not covered by federal protection and that could degrade the area. protected by the Municipality of Belo Horizonte. According to MPF *et al.* (2018, p. 7),

The Term of Reference for contracting the Listing Dossier, formulated by IEPHA, as justification, states that Serra do Curral represents a landmark in the identity of some of the municipalities that make up the metropolitan region of Belo Horizonte due to its historical, scenic and symbolic importance. These various aspects of the mountain's importance coexist with the occurrence of negative impacts caused by mining projects that transformed the region and the landscape.

If state protection is formalized, this will greatly increase the chance of recognizing the Iron Quadrangle as a Geopark by UNESCO, a candidacy formalized in October 2011. According to UNESCO itself (*apud* MPF *et al.* 2018, p.7) "the geopark consists of in a territory representative of the Earth's geocological history or mining, with defined limits for the preservation of the geological heritage, inserted in a process of local sustainable development".

In addition to the need to protect the mountain for the environmental reasons that make it up, its geological uniqueness and its representation as a historical and cultural heritage, according to MPF *et al.* (2018) Serra still owns an important Archaeological Site identified by the Instituto Prístino in 2016. Through the technical inspection report of the archaeological structures, the Institute identified components of the stone wall and associated structures of Curral Del Rey in the Taquaril neighborhood in Belo Horizonte.

Despite this, MPF *et al.* (2018) informs that today there are 41 mining titles superimposed on the perimeter and around the municipal listing, 16 of which were registered prior to 1991 (first delimitation of the municipal listing) and 25 after this landmark. The requirements for mining projects have been growing in the region, justifying the need for urgent state protection and expansion of protection for the area as a whole, under penalty of degrading it to the point of no return.

The National Historical and Artistic Heritage Institute (IPHAN) on November 19, 2018, published Ordinance No. 437 with the objective of instituting measures for the preservation of the area surrounding the heritage site of the landscape complex formed by Pico de Belo Horizonte and the central massif of 1800 meters in length, having Avenue Afonso Pena as its axis, carried out in 1961, through process 0591-T-58.

These measures extend to the entire area surrounding the listed landscape complex, formed by an extensive territorial area located in the municipalities of Belo Horizonte and Nova Lima (MG), according to the polygonal established in Ordinance No. 444 of October 27, 2016 from IPHAN.

Ordinance No. 437/2018 established two macro sectors for the polygonal surrounding the listed properties: Landscape Preservation Area (APP) and Landscape Qualification Area (AQP). The listed properties, Pico de Belo Horizonte, the central massif, called steep part of Serra do Curral, and one defined as Special Occupation Area (AOE). Are included as APP.

The section that corresponds to the urban occupation of the Mangabeiras district, with subdivision approved by the Municipality in 1973, located at the foot of Serra do Curral, is defined as Special Occupation Area – AOE. It has a predominantly residential characteristic, especially the Palácio das Mangabeiras area, designed by Oscar Niemeyer with landscaping by Roberto Burle Marx and the area corresponding to lot 39, where the Hilton Rocha Hospital, mentioned in Process 0591-T-58, was installed. Due to its location and urban design, it represents, in historical terms, the

process of occupation of part of the slope of Serra do Curral and, currently, it is an integral part of the listed property, establishing, in a secondary way, a morphological relationship with the respective areas of Pico and the steepest part of Serra do Curral (IPHAN, 2018).

The Landscape Qualification area (AQP) corresponds to the areas surrounding the listed properties, formed by urbanized areas or urban expansion, free green areas, urban parks, environmental conservation units, mining areas, and those occupied by telecommunications support infrastructure (IPHAN, 2018).

The areas that comprise AQP can be classified into three classes: I) Landscape/Environmental Preservation Area (APPAM), which are areas adjacent to listed properties and intended to protect their morphological units; II) Landscape Recovery Area, composed of areas degraded by mineral activity that must be recovered for future uses compatible with the landscape restoration of the listed site; and III) Controlled Occupation Area (AOC), which corresponds to urbanized areas or urban expansion areas that must respect the visibility of listed properties (IPHAN, 2018).

It is noteworthy that these measures guide the use and occupation of land, but of a precarious nature, as it is an Ordinance in view of the land use and occupation laws of the municipalities of Belo Horizonte and Nova Lima. In this sense, the proposal to promote state registration, extending the registered area, could be a solution.

Today at the foot of the Serra, the creation of preservation areas seeks to guarantee the protection of the Serra's Belo Horizonte side, but the potential for mineral exploration hovers over this very important heritage, the Serra as a symbol and landscape.

5 THE LANDSCAPE

The Law interferes in interpersonal relationships whenever there is conflict, in order to regulate the relationships and use of legally protected assets, for example, the landscape use and protection issue. In Brazil, the landscape is protected in a scattered way in different norms and from different times, as it appears as a secondary element to the conflicts of different uses and protection of elements such as forests, tourism, organization of cities and metropolitan regions, among others.

Landscape protection is not recent, it has legally existed since the nineteenth century, but it has been a social interest since the sixteenth

century. Having changed its perspective over time, from an element to be protected for its beauty until reaching its current importance of social representativeness.

The landscape first appears with beauty as its main characteristic, in the paintings of Renaissance painters or portrayed in books of literature and poetry, with trips such as Petrarch's and others who describe what deserves to be known and starts to be dreamed of by many. With the nineteenth century's scientism, it became the scientific object of Geography:

[...] landscape is a geographical asset, it's what one sees, a selection of objects among those offered to the view, which are therefore seen as components of the landscape only if the set seen gives pleasure or satisfaction. This model deforms the study of its components, disintegrating it more and more, forgetting its sentimental and pictorial origins, reducing it to natural elements (MANUEL; DEVORA, 2001, p. 180).

Until the beginning of the twentieth century, the cultural perspective of the landscape was rejected despite recognizing the anthropic action on it, what was sought to protect and guarantee were geomorphological forms or nature present in it.

Only from the late twentieth century and with the European Landscape Convention does this perspective change, being treated from then on as "an element intimately linked to the protection of a society's culture, which often represents it. It arises, as such, when a group of individuals recognizes it, either sentimentally or as a representation of their culture or history" (CUSTÓDIO, 2014, p. 156) and the legal norm that protects it must meet these new interests of the society in which the landscape comes to be recognized.

The European Landscape Convention signed in Florence in 2000 initially had only regional scope, but since 2018 it has been opened for worldwide signature and changed its name to Landscape Convention and was a world innovation. In addition to being the first convention entirely dedicated to landscape protection, it was created by an initiative of local and regional authorities, through their congress of representatives at the Council of Europe. The Convention determines "For the purposes of this Convention: a) "Landscape" means a part of the territory, as perceived by the populations, whose character results from the action and interaction of natural and/or human factors" (PORTUGAL, 2005) and the scope in which the landscape is inserted, provided for in article 2, which complements its concept:

Without prejudice to the provisions contained in article 15, this Convention applies to the entire territory of the Parties and concerns natural, rural, urban and peri-urban areas. It covers land areas, inland waters and maritime waters. It applies both to landscapes that can be considered exceptional and to landscapes of everyday life and degraded landscapes (PORTUGAL, 2005).

From the interpretation of the Convention's text, it is possible to perceive the concern with the unity of European identity, for which the landscape, as the Convention demonstrates, is essential and that is why it recommends "that there is education to ensure that the reading of the landscape meets social concerns, to be developed in educational establishments" (PORTUGAL, 2005).

Besides the other functions that lead to the implementation of human rights, on the landscape it is stated:

Noting that the landscape performs important functions of public interest, in the cultural, ecological, environmental and social fields, and constitutes a favorable resource for economic activity, whose protection, management and adequate planning can contribute to job creation;

Aware that the landscape contributes to the formation of local cultures and represents a fundamental component of the European cultural and natural heritage, contributing to human well-being and to the consolidation of European identity (PORTUGAL, 2005).

When one thinks about the landscape today, it ends up being a mixture of its characteristics developed throughout its history of protection, but always remembering that it doesn't need to have everything at the same time. Interestingly, Serra do Curral has all the meanings that the landscape had over time, but today it is also a viewpoint of the landscape of Belo Horizonte, but before understanding this, one has to understand the landscape and its elements.

Brazilian norms still have a traditional notion of landscape that does not cover the landscape in its entirety as the European concept. Those are inspired by the 1972 UNESCO Convention, the so-called UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage, which will deal with the protection of the landscape as part of the protection of cultural and natural heritage, the physical component of the landscape. This is because it deals with the protection of the ensembles, but it does not bring a concept of landscape, and despite having 38 articles, only the 1st article deals with landscape, when it conceptualizes:

ARTICLE 1. For the purposes of this Convention, the following shall be considered as cultural heritage: [...] Groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science (UNESCO, 1972).

The second UNESCO convention is the Convention for the Safeguarding of the Intangible Cultural Heritage, ratified in 2003, which protects an important perspective of the landscape, which is to be an intangible heritage – as it is representative of a social perception, having 40 articles and none of them addressing the issue of landscape directly.

These are the inspiration for the only normative concept of landscape in Brazil, provided for in the so-called Landscape Seal of 2009. Established by Ordinance 127/2009 of IPHAN, which brings a concept of cultural landscape, with the purpose of fixing and spreading the logic of the landscape as something not just environmental. This Ordinance defines the Brazilian cultural landscape as “a peculiar portion of the national territory representing the process of human interaction with the natural environment to which life and human science have imprinted marks or attributed values” (IPHAN, 2009). This concept tries to cover the three elements of the landscape (object, observer and perception), but it follows the conceptual line of UNESCO, and proves to be somewhat vague. In addition to the legislative issue, since it is a standard that does not have the force of a law, the concept presented does not include all possible views of landscape as it ignores the ordinary landscape, for example, which is of great importance and recognized today. Ordinary landscape is

These connotations and the generally symbolic dimensions of the landscape, place its study in thematic cycles that exceed historical geography and are related to issues of ideas and symbols. They are also related to issues of cultural identities and relations of Power, as well as issues of political economy (DOUKELLIS; MENDONI, 2004, p. II).

Another important point that discredits the Ordinance is not giving the due importance to popular participation in the choice of landscapes to be protected. As in most countries, Brazil has landscape protection legislation, but still linked to historical heritage, culture, natural beauty, forgetting the link with the society that perceives and gives meaning to it, and differentiates it from the environment as a whole (natural, cultural, historical heritage etc.).

This reality is felt in terms of landscape protection, as, despite being guaranteed by the legal system and defended by various scientific and social segments, it is still not fully configured in Brazil due to some factors. Among these, it is worth mentioning the fact that, in the Brazilian legal context, there is still no legal concept of landscape that conceives it in a totalizing way, in its most modern aspect (CUSTÓDIO, 2014, p. 308).

Landscape protection in Brazil begins with the 1937 Constitution, granted by Getúlio Vargas. It is the first to deal with the landscape in the Brazilian legal order. In its article 134, it provides:

Historical, artistic and natural monuments, as well as landscapes or places particularly endowed by nature, enjoy the protection and special care of the Nation, States and Municipalities. Attacks committed against them will be equated with those committed against national heritage (BRAZIL, 1986).

The 1988 Constitution also reserved an article for landscape protection, article 216, which defines

Art. 216. The Brazilian cultural heritage consists of the assets of a material and immaterial nature, taken individually or as a whole, which bear reference to the identity, action and memory of the various groups that form the Brazilian society, therein included: [...]

V – urban complexes and sites of historical, natural, artistic, archaeological, paleontological, ecological and scientific value. [...]

§ 1 – The Government shall, with the cooperation of the community, promote and protect the Brazilian cultural heritage, by means of inventories, registers, vigilance, monument protection decrees, expropriation and other forms of precaution and preservation. [...]

§ 4 – Damages and threats to the cultural heritage shall be punished in accordance with the law (BRASIL, 1988).

Infraconstitutional protection appears in several laws, the first being Decree-Law 25 of 1937 still in force, passing through Decree-Law No. 3.365/41, which provides for expropriations for public utility, Law 4717/65, which provides for Popular Action; Law 4737/65, which provides for the Electoral Code; Law no. 4,771/65, which creates the Brazilian Forest Code; Law 6513/77, which provides for the creation of Special Areas and Places of Tourist Interest; Law 6.938/81, Law on the National Environmental System; Law 7347/85, which creates the Public Civil Action, Law 7797/89, Law 9008/95, and Decree 1306/94, which provides for the application of resources from the Diffuse Rights Fund to the protection and restoration of landscape elements; Law 8078/90 creating the Consumer Defense Code; Decree 98.914/90, which provides for the institution, in the national territory, of Private Natural Heritage Reserves,

by destination of the owner; Decree No. 1922/96, which provides for the institution of Private Natural Heritage Reserves; Law 9605/98, known as the Environmental Crimes Law; Law 9985/2000, which creates the national system of conservation units; Law 10257/2001, which establishes the urban organization of cities in Brazil, known as “Estatuto da Cidade”, law No. 13,089, of January 12, 2015, which instituted the Statute of the Metropolis, among others.

Thus, even with all these laws and norms, Brazilian legislation does not clearly and necessarily cover the protection of the three elements necessary for a landscape to exist, not even in the only norm that creates a concept. In order to have a landscape, according to Custódio and Ribeiro (2019), three elements must be in place:

1. **The spatial element:** environment or cultural heritage, as long as it is not a single object, but a group of elements that form an ensemble.
2. **The observer:** to be protected, the landscape must be visible to a human being.
3. **Perception:** which is the result of observing the space, being the feeling that it transmits to the observer, awakening in him the interest in protecting that set of elements.

From this, it is clear that the landscape goes beyond its spatiality – which is what much of the legislation on landscape protects; it is the reproduction of community values, transmuted into perception.

It represents its history, its actuality and, therefore, must be protected for future generations, that is, it is of intergenerational interest, advancing beyond a single generation in three perspectives: past, present and future. Therefore, societies that seek to protect the landscape establish norms for its guarantee, starting with raising awareness of its importance (CUSTODIO, 2014, p. 109).

The concept of landscape must foresee, even if generically, the protection of all types of landscape and that it represents society as a whole, so as not to generate exclusion or social segmentation. In this way, the landscape, beyond beauty or geomorphology, represents an identity, a society’s perception of the world. And for that, it has to be able to be seen, observed. An unseen landscape can be forgotten as representative, hence the need for a viewpoint/overlook.

Viewpoints, despite receiving less attention than the landscape itself, are very important to the landscape’s existence. A wonderful landscape that cannot be seen is economically useless and can lead to the loss of its cultural function, always remembering the saying “what is not seen, is not

remembered!”. Thus, when protecting a landscape, it is also necessary to analyze where it can be better observed and whether the architectural projects, buildings, do not hinder the panoramic view of the region.

According to Neuray (1982, p.85) “Le fait que la structure d’un paysage dépende de la position du spectateur et de la direction de son regard, donne la possibilité, pour un territoire déterminé, de percevoir une infinité de paysages ayant chacun sa structure propre.”³

In Brazil there is no protective legislation for the viewpoint, but there is one for the landscape, despite the lack of a clear legal concept that facilitates its protection, since a mere ordinance from a state agency is not legally accepted in all cases. Landscape protection has been growing, but even the large number of regulations does not guarantee the effectiveness of its protection, whether due to the preponderance of economic issues, or Brazilians’ lack of a sense of identity, or even a lack of landscape education that leads to its social visibility.

In most Brazilians’ imagination, the landscape is natural beauty or a place to visit, and not the place where they live or which represents their culture. According to Val (2004, p. 6), the residents “[...] no longer feel at ease wherever they are, whether in the workplace or where they live. They feel an urgent need to temporarily get rid of the burden of normal work, housing, and leisure conditions, in order to be able to take it up again when they return.”

There is no lack of laws for protection, but as stated, the lack of a concept that covers the entire landscape and a landscape education makes its recognition and protection difficult. And the lack of protection and maintenance of viewpoints can lead to forgetting what the landscape means to a society or changing its meaning. And that is what happened to Serra do Curral over time.

6 LANDSCAPE AND SERRA DO CURRAL

Serra do Curral was a geographical landmark of location as shown, in addition to having an exceptional geomorphology as seen, as well as being a water source and climate guarantor and an important part of the city that should be called Cidade de Minas, but thanks to it is called Belo Horizonte. The city’s planning inserts it as an important part, including it

³ eThe fact that the structure of a landscape depends on the observer’s position and the direction of his gaze, gives the possibility, for a given perceived territory, of an infinity of landscapes, each with its own structure. (our translation)

as an ADE (Special Directives Area). When an initial attempt at mining was made, it was blocked because the Serra had meaning for the citizens of Belo Horizonte.

It was admired by Olavo Bilac in 1916 and poetized by Carlos Drummond de Andrade in 1976. But with the unrestrained growth of the city, especially of large buildings, the city began to lose viewpoints of it. And despite being chosen as the symbol of Belo Horizonte and featuring the city's coat of arms, by not being seen it is slowly being ignored as a landscape that represents Belo Horizonte and its residents.

Despite having a listed part, it comes to be occupied and is again threatened by mining. The Serra, which has been covered up over time, loses its meaning for new generations as a landscape. But an interesting phenomenon has been taking place, even though it partially lost its importance as a landscape due to the loss of visibility throughout the city and over time, it has been strengthened as a viewing point of the city – in addition to the environmental importance, which is not the object of study in this article, demonstrated by the creation of several parks.

Serra do Curral, in addition to natural/environmental protection, until the twentieth century, was a perceived and representative landscape of Belo Horizonte, but due to the loss of viewing points, irregular dwellings in its space, due to the increase of buildings in the city or even the lack of landscape education, it has become invisible to citizens and has changed perspective, but has not lost its importance. It has become an observation point of the city from the various viewing points, creating its spaces and new memories, becoming a roughness. “Let’s call roughness what remains from the past as form, built space, landscape, what remains from the process of suppression, accumulation, superposition with which things replace and accumulate in all places” (SANTOS, 2002, p. 140). As for Pinder, Antonino and Silva (2015, p. 69):

Roughness represents the superposition and convergence of temporalities in the landscape and the historical metamorphosis of forms and social contents. These temporalities inscribed in the places participated and still participate in everyday life, at the same time that everyday actions raise and destroy the objects that make up the landscape. Roughness expresses preexisting social contexts, in an image of a palimpsest.

From the perspective of Merleau Ponty (2006), the meaning or what is important for the past dies with past generations, if they are not recognized by current generations, they become the past. This holds for places and

their perception and importance, they have to be experienced daily so that they are not lost and new meanings are brought. Rocha and Abjaud (2013) complete this idea by stating that metropolization alienates human beings from space and they become a product to be marketed and no longer as an attraction and symbol of belonging, therefore as a functional product. The vision of the Serra becomes a sold product, by the real estate market, ceasing to belong to everyone and becoming a product, and for the few who can afford to view it or live nearby, disconnecting from society as a whole. As a result, the Serra loses its sense of social representation as it is not perceived, but surprisingly it has not lost its value yet. Its protection is sought by guaranteeing the nature it protects and as a point of observation of the city, confirming the perception of Pinder, Antonino and Silva (2015, p. 70): “new meanings are attributed, daily, to the places, to their landscapes and to the subjects, in a dialectical unity” and confirming that this is what is happening in Serra do Curral.

In the parks located in the Serra area, viewing points were created in the city that are compatible with walking and relaxation areas, in addition to providing environmental education. According to Mafra (2010, p. 329),

The interpretive signage project aims to awaken in Users this awareness of the environmental and cultural importance of the mountain. But as Serra do Curral is an element closely integrated to the city of Belo Horizonte and its metropolitan region, it could not be approached in isolation, it is necessary to present its entire landscape, inverting the direction of the gaze, which normally goes from the city to the mountains, and stimulate it from the mountains towards the city. Thus, Belo Horizonte and tourists will have the opportunity to appreciate not only the main symbol of Belo Horizonte, but also the entire city and its surroundings.

But mining did not cease to exist or to be practiced, apart from the old mined areas that left their mark on Serra do Curral, as in several areas of Minas Gerais.

There is a need to normalize the future use of mined areas in the State of Minas Gerais, which led the State Foundation for the Environment – FEAM to participate in congresses of the international *Mine Closure* initiative. This resulted in the Normative Deliberation of the State Council for the Environment – COPAM No. 127 of November 29, 2008, which established guidelines and procedures for the environmental assessment of the mine closure phase.

In this sense, it was established the need to prepare a Mine Closure Plan – PAFEM with “presentation of a proposal for alternatives for the

future use of the mined area, considering the social, economic and environmental aspects of the area of direct influence of the enterprise” (MINAS GERAIS, 2008).

On March 28, 2018, the *Diário do Executivo Minas Gerais* published the revocation of DN 127/2008 of COPAM, replacing it with DN COPAM 220 of March 21, 2018. And in relation to PAFEM, the same obligations were maintained, but only for class 5 and 6 projects, as provided for in DN COPAM 217/2007, excluding from these obligations several mining companies, including in Serra do Curral.

The Serra do Curral mine, in the Águas Claras mine, explored on the Nova Lima side, initially by *Minerações Brasileiras Reunidas (MBR)* and later by Vale until its closure in 2001, left an area of around 2,000 hectares for future use. But, even before the mine ran out, MBR was already developing a real estate project for this area, when it closed. Vale even announced the implementation of a high-end real estate project on the site. The pit of the Águas Claras mine left the wall excavated in the central area of Serra do Curral on one side and on the other, always on the Nova Lima slope, a topography on which it was intended to establish a real estate project around the lake that was formed. as can be seen in Figure 2



Figure 2 – View of the Águas Claras mine pit.

Source: *Usó futuro ...* (2021).

The project was heavily criticized for not meeting recovery proposals as provided for in Law No. 9,985 of July 18, 2000, known as the SNUC Law – National System of Protected Areas, which in its article 2, item XIII defines “recovery: restitution of a degraded ecosystem or wild population to a non-degraded condition, which may be different from its original condition” (BRASIL, 2000).

The matter has been the subject of much controversy, mainly due to the use and occupation of the surrounding areas by spikes, making them quite vertical, with the Mata do Jambreiro being the only preserved area, at the initiative of COPAM in 1977.

In 2020, the companies GITEC Brasil, Gérance Gerenciamento e Consultoria, BHZ Arquitetura e Gerenciamento, BVP Engenharia e Raízes Turismo e Desenvolvimento Social formed the Gaia Consortium, which was hired to prepare studies for the future use of the Águas Claras Mine. According to the Gaia Consortium, despite the work having taken place during the pandemic, the discussions and participation of the communities involved were carried out via the Zoom Platform, making it possible to present various products and ideas.

Over 11 months of the project, we achieved extremely significant results: 13 products were delivered, with 772 people involved in the process, including consulting professionals, Vale employees and stakeholders in the region – the mine is located in Nova Lima, in the Metropolitan Region of Belo Horizonte (USO FUTURO..., 2021).

The proposals prepared by the Gaia Consortium must still be the object of public hearings held by Vale and COPAM.

The construction of future use by Vale still continues and there will be new consultations with stakeholders to debate the proposals that were designed. The experience of this participatory construction was extremely rich for the Gaia Consortium (USO FUTURO..., 2021).

Another important issue to be raised is the provision of ecosystem and environmental services in the region, in addition to landscape issues and why not talk about landscape services from an environmental perspective. For many authors, there is a distinction between the provision of ecosystem and environmental services, the former being those provided by nature by itself and the other, with human participation, but there is still no mention of landscape services, which, for example, can be applied to tourism.

Tangible (natural resource flows such as wood and food, for example) and intangible (amenities such as scenic beauty and climate regulation) benefits from natural capital can be classified within a broad definition of ecosystem services (DAILY; POSTEL; KAMALJIT, 2012).

Ribeiro and Magrineli (2019), when analyzing the topic, conceptualize ecosystem services as those resulting from natural ecosystems and their resilience in maintaining the conditions necessary for life. On the other hand, environmental services are those when there are anthropic actions for the recovery or preservation of ecosystems, so that they can continue to provide ecosystem services.

In the case of Serra do Curral, the vegetation and fauna characteristic of the transition from Atlantic Forest to Cerrado and the existing geological system, present great potential for providing ecosystem services in terms of biodiversity and water production. According to Andrea Mechi and Djalma Luís Sanches (2010), the impacts of mining are significant in terms of vegetation suppression and soil exposure to erosive processes, changing the quantity and quality of surface and underground water resources, in addition to loss of characteristics of the landscape, causing a visual impact.

In addition, there is the scenic beauty, provided to residents and visitors to the region, which can be classified as landscape environmental service. In the case of Serra do Curral, the scenic beauty, in addition to giving rise to the name of the capital, became a visual heritage for its residents, at least initially. Over time, the constant changes in land use and occupation in the city, with excessive verticalization, removed the toponymy reference of the capital from the visual field of the residents of Belo Horizonte.

A more recent example of this loss of importance in Serra do Curral's vision is the closing of the field of vision in the TV Bandeirantes headquarters building on Avenida Raja Gabaglia. The project designed by renowned architect Gustavo Pena was awarded the urban kindness award for its hollow structure, supported by the terrain, which allowed to see Serra do Curral by passersby on Raja Gabaglia Avenue. As can be seen in Figure 3, the field of view is currently closed.

The URBAN KINDNESS AWARD IAB-MG was conceived, developed and launched by the Minas Gerais Department of the Brazilian Institute of Architects 24 years ago, in 1993. The objective since then has been to encourage different initiatives, both by individuals and companies, that contribute to improving the quality of urban life. The idea is to reward and value the small actions, the small

attitudes of citizens who collaborate to make life in cities better every day. Urban Kindness are attitudes, gestures, interventions that provide a new look at the city, promoting the preservation of its cultural and natural heritage and expanding the concept of citizenship (IAB, 2018).



Figure 3 – TV Bandeirantes headquarters, with sealed opening, which prevents viewing.
Source: authors.

Thus, society, companies and public authorities must have a joint formation and analysis of the importance of the Serra to build a real project for the use and protection of Serra do Curral. It will thereby be valued for its ecosystem and environmental services – including landscape – in order to make better use and destination that meets social interests as a whole and not just economic or environmental/natural ones. Thus, avoiding facts like the one about the Bandeirantes headquarters, which make the area of representativeness of the Belo Horizonte society, Serra do Curral, even more invisible.

CONCLUSION

Serra do Curral is part of a large mountainous complex that belongs to the geological system known as the Iron Quadrangle in Minas Gerais, one of the richest iron ore provinces in the world, in addition to having areas of Atlantic forest, one of the country's most biodiverse biomes.

Serra do Curral, since its departure from invisibility, when it became a geographical reference point in the eighteenth century, started to present, over time, great cultural value, in addition to economic, social and

environmental value. It was one of the main factors in choosing Belo Horizonte as the state capital, as demonstrated and inspired by the city's name. Therefore, its geomorphological, biotic and anthropic importance is confirmed.

The Serra is the source of several springs of streams – this being one of the reasons for choosing this area for the capital of Minas Gerais in the nineteenth century – that supply the metropolitan region of Belo Horizonte and hold an important Archaeological Site identified by Instituto Prístino in 2016 as part of the stone wall of Curral Del Rey.

These characteristics make Serra do Curral a valuable economic asset due to its ore, an important environmental asset due to its biodiversity and springs, as well as an essential historical, cultural and landscape heritage, which has generated a dispute over its uses.

Over time, it has been a symbol and landscape recognized by Belo Horizonte society that fought and fights for its protection in the face of economic exploitation carried out in order not to lose this city's heritage.

Since the beginning of the threat of unreasonable mining exploration, several actions to protect the Serra have been implemented, initially with the federal registration of Pico de Belo Horizonte and its base comprising the mountainous massif, with a total extension of 1,800 meters, 900 meters to each side, having as reference the axis formed by Avenida Afonso Pena.

However, this registration was not enough to prevent mining around the registered area, disfiguring the mountainous massif, including by a municipal public company, Mineradora Ferro Belo Horizonte S/A (FERROBEL) on the Belo Horizonte slope and the company Minerações Brasileiras Reunidas SA (MBR), owner of several mines in the municipality of Nova Lima.

The defacement of Serra do Curral by mining mobilized civil society through the initiative of the “Look well at the Mountains” movement, an initiative of the plastic artist Manfredo de Souza Neto, with amplified resonance by a chronicle and poem by the great writer Carlos Drummond de Andrade, in the early 1970s, urging the population to observe the symbol of the city, which was being degraded.

The popular mobilization resulted in the deactivation of Ferrobel's activities in 1979, and its area was integrated with the project by landscaper Roberto Burle Marx for the creation of a new leisure area in Belo Horizonte at the foot of Serra do Curral. In 1983, Parque das Mangabeiras was inaugurated with an area of 2.4 million square meters, sheltering dozens

of springs from the Serra creek, a tributary of the Arrudas stream, Rio das Velhas, which make up the São Francisco river basin.

However, the mine, part of Nova Lima explored by MBR, remained in activity, being acquired by Vale SA, when it was exhausted in 2006, and the process related to the Mine Closure Plan (PAFEM) is currently regulated by the provisions of the Normative Deliberation (DN) COPAM 220/2018, replacing DN 127/2008, in progress with the Department of Environment and Sustainable Development of the state of Minas Gerais (SEMAD).

It is observed that the result of the mining of the central massif of Serra do Curral, by the mining of Ferrobela and MBR/Vale SA, made it just a shell on the Belo Horizonte slope, as a scenario that hides the degradation of mineral exploration on the slope of New Lima.

On March 21, 1990, the Organic Law of Belo Horizonte, municipally registered the area in view of its importance for the city and reaffirming it as a cultural and landscape heritage already recognized federally, which was only approved by the Deliberative Council for Cultural Heritage of the Municipality – CDPCM/BH, on December 16, 2003, period in which the guidelines for the protection of the Perimeter of Surroundings/ Neighborhood of the referred Sub-Areas were also determined, resulting in Deliberation No. 147/2003, thus demonstrating the importance and unique meaning of the Serra and its landscape and at the same time the need to protect such heritage.

Even considering the federal and municipal registrations, Serra do Curral is still the target of mining activities, justifying the need for urgent state protection and expansion of the protection of the area as a whole, under penalty of degrading it to the point of no return. Despite IPHAN's initiatives with the objective of instituting measures for the preservation of the area, it is concluded that only the listing of Serra do Curral at state level, whose coverage would extend to all the surrounding municipalities, could promote the effective protection of this important environmental asset.

In addition, if state protection were formalized, this would greatly increase the chance of recognition of the Iron Quadrangle as a Geopark by UNESCO, a candidacy formalized in October 2011.

Still, all this does not prevent the threat of loss of existence, especially given its invisibility built over time with the city's verticalization and the loss of the viewing points that led to it. But as pointed out, the landscape is not static, in fact it is constantly changing its nature and meaning, due to its

roughness. And so it is with Serra do Curral, which has increasingly lost its meaning as a landscape and started to be important as a viewing point, in addition to maintaining its importance as a natural and geological heritage confirmed by the various parks created in its surroundings.

Despite the pressure of mining exploration, the Serra is still standing and fighting for its existence and the proposed state registration in 2018 is of great importance to guarantee its protection. This listing will make it a heritage of the Metropolitan Region where it is located – as it is not just in Belo Horizonte – and of the entire State, and economic use is more difficult if it is not consistent with other uses, so as to achieve sustainable development in the region.

Another important protective factor is landscape education, which must be carried out through formal education, that is, in schools by teaching the city's history and creating links between citizens and the space they live in, teaching them to look at their surroundings and feel belonging. As well as informal education through educational campaigns, incentive to research, films, contests that focus on the relationship of citizens with the lived space, awakening the social gaze to the meaning of belonging.

Serra do Curral is more than a pile of rocks that contain iron, or forest species and animal homes, it is, as a whole, part of the Belo Horizonte identity, which is why the teaching “Look Well at the Mountains” must be followed.

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Article received on: 09/24/2021.

Article accepted on: 12/14/2021.

How to cite this article (ABNT):

CUSTODY, M. M.; RIBEIRO, J. C. J. Serra do Curral: meanings and importance of protection. *Veredas do Direito*, Belo Horizonte, v. 18, n.º. 42, p. 93-130, sep./dec. 2021. Available from: <http://www.domhelder.edu.br/revista/index.php/veredas/article/view/2241>. Access on: Month. day, year.