



Original research article

# Social warfare for lithium extraction? Open-pit lithium mining, counterinsurgency tactics and enforcing green extractivism in northern Portugal

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## ABSTRACT

The European Union (EU) is highly dependent on importing raw materials for low-carbon infrastructures from around the globe. This material dependence has, since 2019, initiated legislation and efforts to intensify mining within the EU. The Iberian Peninsula remains a principle target area for the EU's critical raw material (CRM) mining initiatives. This article explores the making of the "Mina do Barroso" (Barroso Mine) in northern Portugal, which threatens a "Globally Important Agricultural Heritage System" and will potentially become the largest open-pit lithium mine of Western Europe. This prospective mining project represents an investment and public funding opportunity for mining companies. The European Commission and the Portuguese government are applying increasing political pressures to establish this mine to make international decarbonization benchmarks through rapidly expanding electric vehicles (EVs) and energy storage system (ESS). The Barroso agrarian communities are threatened with extensive socio-ecological impacts, leading locals, (some) climate activists and environmental organizations to reject this mining project. Company personnel and the Portuguese government are confronting growing opposition, blockades and a resolute "Minas Não!" (No to Mines!). We explore the subtle efforts attempting to engineer the social acceptance of the Mina do Barroso, revealing the 'slow' social warfare tactics employed by the company to infiltrate rural social bonds, exploit psycho-social vulnerabilities and attempt to disable anti-mining organizing and unity within the region. This article demonstrates the insidious social technologies of pacification employed to engineer extraction and assemble an open-pit lithium mine with severe socio-ecological impacts in northern Portugal.

## 1. Introduction

"We are facing the biggest environmental challenge in history as a civilization, at the same time we are reaching unprecedented energy consumption levels," exclaims the March 2018 promotional video<sup>1</sup> by the Portuguese Mining Development Company [1].<sup>2</sup> "It is therefore urgent," the video continues, "to find a way to achieve a clean economy! Drastically reducing the impact of transportation and achieving better renewable energy storage." Behind these words, a digital model of an electric sports car rolls onto the screen—revealing its internal workings—before announcing:

This priority, which is becoming clearer and clearer, is changing a specific market: lithium exploration. The lithium market is growing and its prices have been increasing on a daily basis. This is the time when it is imperative to find the best locations to explore for lithium, and Portugal is the best place for it. First of all, it is because Portugal has a favorable geological setting for mining this commodity. Lithium is also a critical metal for the European Union, and Portugal is lined up with the European strategy of batteries [1].

The video continues for three more minutes discussing how "the European Union (EU) will sponsor specific investors to help the EU become the world leader in the production of the next generation of batteries,"

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stressing how batteries “play a strategic role in the ongoing transition to clean mobility and clean energy systems.” Turning to the director, at the time, of the National Laboratory of Energy and Geology (LNEG<sup>3</sup>), he assures viewers of the lithium mining opportunity that exists in Portugal.

Meanwhile, at nearly the exact same time, in March 2018, promotional efforts continue across the Atlantic, in one of the largest mining conventions in the world: the annual Prospectors & Developers Association of Canada (PDAC) Convention, in Toronto, Canada.<sup>4</sup> At PADAC 2018, three Portuguese representatives sit in front of giant banners titled: “Lithium Opportunities in Portugal” and with large brochures with covers that say: “Why Portugal?”<sup>5</sup> These banners and brochures—elaborated by the Ministry of Economics, the Secretariat of State for Energy (SEE<sup>6</sup>), the Directorate-General of Energy and Geology (DSEG<sup>7</sup>) and the LNEG—promote eight potential lithium-mining areas all over the country. These documents, moreover, demonstrate technical feasibility of production and announce a lithium mining tender deadline on September 1, 2018 (see Fig. 1)—which has yet to be realized. The former Secretary of State for Energy attends the event and gives an interview promoting foreign investment into Portugal’s emerging lithium battery sector.<sup>8</sup> In other words, the Portuguese government is actively trying to sell their mineral deposits and land to the highest bidder.

These promotional efforts, or “governmental strategy to bring in foreign investment,” made people in Portugal “go crazy because it was plainly advertising mining in central and northern Portugal in English!”<sup>9</sup> explains Nik, from Mining Watch Portugal (MWP).<sup>10</sup> This, Nik observes, exaggerated existing “credibility issues” with “the government not acting in the interest of people.” Numerous civic initiatives began to appear, which included the emergence of 15 national groups coordinating with the existing civil society groups and environmental NGOs to bring mining issues to the forefront of public debate in Portugal.<sup>11</sup> Since 2018, several anti-mining protests were held in major cities (Lisbon, Porto and Coimbra), as well as numerous information events. This, moreover, included, truck demonstrations<sup>12</sup> in towns targeted for mining projects; the blocking and boycotting of state authorities attempting to visit these towns; and, in some villages, successive—and

successful—electoral boycotts happened as a means of protesting the mining projects [2]. In 2020, the different anti-mining movements and associations signed a common national manifesto demanding the end of any mining concession.<sup>13</sup> Thus far, mining exploitation for lithium has not yet begun. The forming lithium-mining frontier in Portugal is a new, pressing and contested topic.

Delving into the issues of critical raw material mining, and specifically lithium, in northern Portugal, this article explores the making of the potentially largest open-pit spodumene lithium mine in Western Europe. Research until now has disproportionately focused on lithium brines [3,4], especially in the ‘Lithium Triangle’ (Argentina, Bolivia & Chile) in South America [5,6,14,109,116,124]. Lithium brines are different extractive operations, which entail differential water and energy uses; mineral processing features; lower operating costs; produce different by-products (e.g. wastes); and extract lower-concentrations of lithium [4]. Research on open-pit lithium mines in Portugal has slowly emerged, focusing on environmental [7] and, to a lesser degree, the socio-ecological impacts [8]. There remains, however, uncertainty on the intensity of the site-specific ecological degradation, social disruption and psychological harm open-pit lithium mining will cause. Lithium mining is driven not only by traditional market and innovative forces, but also by climate change mitigation and energy transition policies seeking to decarbonize the transportation sector, increase low-carbon infrastructure (e.g. wind, solar) energy generation storage and their corresponding supply-webs [3,9]. Taking a political ecology approach, this article contributes to existing research by examining the socio-ecological realities emerging on the ground with the making of open-pit lithium mine in the Barroso region.

Drawing on the political ecology of the global north [10–12,117], this article intersects with research in geography, anthropology, (critical) agrarian and development studies. Political ecology has championed critical research into investigating mining [10,13–15], but also the “green economy” and “sustainable development” initiatives [16,17,115]. This includes work critically examining conservation schemes [18,19,106], hydropower [20,21], solar power projects [22,23], wind energy development [24,25,44,120] and the collaborative intersections between mining and conservation [11,26–28]. These works, overlapping with critical agrarian studies, developed research into land and/or “green grabbing,” which describes “the appropriation of land and resources for environmental ends” ([17]: 238).

Contributing to extractive and energy research in political ecology, this article further develops the concept of “green extractivism” by examining how mining, green economy and climate change mitigation initiatives in Europe collide to justify open-pit lithium mining in Portugal. This frontier making [133], meanwhile, relates to the creation of “sacrifice areas” [29,30], or, specifically within the context of the green economy: “green sacrifice zones” [31]. Under the label of “green,” “renewable” or “climate-friendly,” corporate and state actors are legitimizing the further commodification of nature and consequent rural dispossession and agrarian land grabbing, suggesting these territories and populations – deemed as “inferior” – can be managed and sacrificed in the name of climate change mitigation or green economic ‘progress’. This has been documented in the Global South [5,32,33,115] and the Global North (see [34–36,117]). The sacrifice of some people and lands, however, depends on their infrastructural colonization [117], relying on (violent) dynamics of counterinsurgency and the social engineering of extraction [37,118]. The latter describes how green grabbing and extractivism are accomplished by socially engineering environments through various forms of public relations, social development schemes, experts, infrastructures, threat and coercive use of force to allow ecologically destructive extractive activities to persist, if not multiply.

<sup>3</sup> Laboratório Nacional de Energia e Geologia.

<sup>4</sup> Photos of authorities promoting lithium exploration at PDAC 2018 can be found here: <https://edm.pt/en/lithium/promotion-in-pdac-2018/>.

<sup>5</sup> The brochures can be found here: [https://edm.pt/wp-content/uploads/2018/03/pdac2018\\_rollup.pdf](https://edm.pt/wp-content/uploads/2018/03/pdac2018_rollup.pdf) and here: [https://edm.pt/wp-content/uploads/2018/03/pdac2018\\_flyer.pdf](https://edm.pt/wp-content/uploads/2018/03/pdac2018_flyer.pdf).

<sup>6</sup> Secretaria de Estado da Energia.

<sup>7</sup> Direção-Geral de Energia e Geologia.

<sup>8</sup> This interview (in Portuguese) can be found here: <https://www.omnitv.ca/on/en/videos/portugals-strategy-for-lithium/>.

<sup>9</sup> This comment from our interviewee – which finds echo in other conversations we have had with other people – points to the fact that citizens were shocked by the government bluntly advertising mining behind their back, since governmental officials were doing it in English, in foreign mediascapes and conferences. Some locals have even reported that they first heard about the projected Mina do Barroso from an immigrant living in London, who read it on British news. This has intensified people’s perception that the government was acting with no transparency or accountability vis-à-vis the affected populations. One could think the populations would be more receptive if the government was collaborating with national companies, but, from our interviews, informal conversations and time spent in the field, we can say that people are resisting mining, independently of the origin of capital.

<sup>10</sup> Interview 25, 17-05-2022.

<sup>11</sup> Ibid.

<sup>12</sup> By “truck demonstrations,” we refer to a form of protest during which locals slowly drive their trucks from town to town, waving protest flags, banners, or other symbols. This way of protesting is both disruptive, as it interrupts traffic for a long time, and informative, as it spreads the political message throughout different areas. Truck demonstrations, moreover, are inherently tied to these villagers’ agricultural and rural identities.

<sup>13</sup> The manifesto (in Portuguese) can be found here: <https://guardioesse.wixsite.com/guardioesestrela/single-post/2020/01/21/manifesto-nacional-contra-o-plano-de-minera%C3%A7%C3%A3o-em-portugal>.



### Nacional Lithium Strategy

#### Potentialities

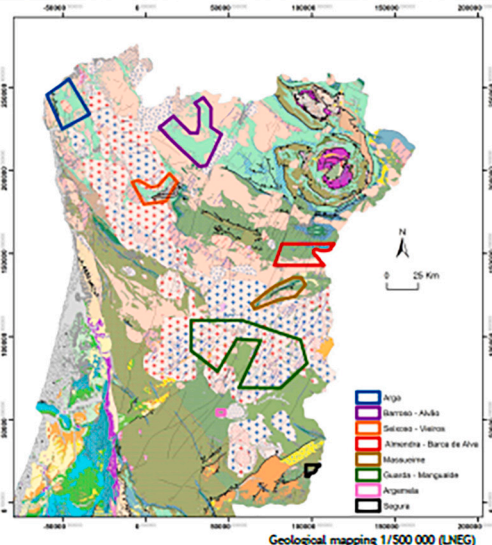
- Portugal has strong mineral potential to host extensive lithiferous thick aplite-pegmatite dikes and veins swarms or greisen systems;
- The resources have been exploited together with the feldspars for the ceramic and paints industries;
- The acceleration of electrical mobility and communications technologies and the search for more efficient energy storage mechanisms can enhance their use for other applications.

#### Integrated strategy involving the entire range

- The existence of user industries in Portugal enhances the opportunity to create a new industrial sector from extractive activity to the production of batteries, due to the proximity economies it may provide;
- There is a consolidated research on the technological processing in the beneficiation of lithium minerals in their main types of occurrences: lepidolite, spodumene and amblygonite;
- It is essential to stimulate the "cooperation" of companies in order to evaluate and install technological units to increase the added value of these products;
- Promote the integration of environmental concerns and efficient use of mineral resources, aiming at "zero waste" in the lithium recovery process;
- Promote the principles of circular economy by encouraging the recycling of lithium from used batteries .

#### More competitive and more transparent access to the activity

- Portugal has a stable legal framework, adequate institutional support, excellent infrastructures and high scientific and technological know-how that confers advantages on investment in the lithium sector;
- Granting of exploration areas through open public tenders that promote the interest of multinational players with demonstrated technical and financial capacities.



## Li Potential Areas









<p><b><u>Serra de Arqa Aplitic-Pegmatitic Field</u></b></p> <ul style="list-style-type: none"> <li>- Area: 409 km<sup>2</sup></li> <li>- Exo-granitic apatite-pegmatites</li> <li>- LCT type</li> <li>- Pegmatites with petalite and/or spodumene and aplites with disseminated amblygonite-montebrazite</li> <li>- Petalite (ceramics) &gt; 22 000 ton @ max. 1.3% Li<sub>2</sub>O (Formigoso)</li> <li>- Spodumene (Probable resources) &gt; 2 500 ton @ max. 1.9% Li<sub>2</sub>O (Afiße)</li> </ul> 	<p><b><u>Barroso-Alvão Aplitic-Pegmatitic Field</u></b></p> <ul style="list-style-type: none"> <li>- Area: 647 km<sup>2</sup></li> <li>- Rare elements pegmatites; LCT complex- type, spodumene, petalite and lepidolite sub-types</li> <li>- Spodumene apatite-pegmatites: 0.78% Li<sub>2</sub>O</li> <li>- Petalite apatite-pegmatites: 1.30% Li<sub>2</sub>O</li> <li>- Lepidolite apatite-pegmatites: 0.77% Li<sub>2</sub>O</li> <li>- Inferred Resources: 14 millions tons @ 1% Li<sub>2</sub>O (average grade)</li> </ul> 
<p><b><u>Seixoso—Vieiros region</u></b></p> <ul style="list-style-type: none"> <li>- Area: 256 km<sup>2</sup></li> <li>- Rare elements pegmatites, LCT complex-type, petalite sub-type</li> <li>- Seixoso apatite-pegmatites: amblygonite-montebrazite, petalite</li> <li>- Vieiros apatite-pegmatites: spodumene, petalite (amblygonite-montebrazite)</li> <li>- Resources estimation: not available</li> </ul> 	<p><b><u>Alameda—Barca de Alva region</u></b></p> <ul style="list-style-type: none"> <li>- Area: 343 km<sup>2</sup></li> <li>- Rare elements pegmatites; LCT complex- type, lepidolite sub-type</li> <li>- Lithiferous pegmatites: 0.42—0.52% Li and 0.05%Sn (Barca de Alva mine); 0.5% Li and 0.07% Sn (Feli mine)</li> <li>- Aplitic-pegmatitic veins: 0.16% Li and 0.05% Sn (Pombal)</li> </ul> 
<p><b><u>Massueime region</u></b></p> <ul style="list-style-type: none"> <li>- Area: 258 km<sup>2</sup></li> <li>- Pegmatitic dykes: amblygonite and lepidolite</li> <li>- Granulitic or pegmatitic veins: amblygonite rare</li> <li>- Massueime deposit: &lt;150 tons Li<sub>2</sub>O; &lt;1500 tons Sn and amblygonite &gt; 500kg</li> </ul> 	<p><b><u>Guarda—Marquade Aplitic-Pegmatitic Fields</u></b></p> <ul style="list-style-type: none"> <li>- Area: 1725 km<sup>2</sup></li> <li>- LCT complex-type pegmatite, lepidolite and petalite sub-type</li> <li>- Measured Mineral Resources : 1 400 000 tons @ 0.42% Li<sub>2</sub>O (Seixo Amarello—Gonçalo)</li> </ul> 
<p><b><u>Argemela region</u></b></p> <ul style="list-style-type: none"> <li>- Area: 15 km<sup>2</sup></li> <li>- Amblygonite-montebrazite: hydrothermal deposits related with granites (Mina da Argemela)</li> <li>- Lepidolite and Amblygonite-montebrazite: microgranite modified by pegmatoids fluids (Cabeço da Argemela)</li> <li>- Inferred Mineral Resource: 20.1 million tons @ 0.4% Li<sub>2</sub>O</li> </ul> 	<p><b><u>Segura region</u></b></p> <ul style="list-style-type: none"> <li>- Area: 34 km<sup>2</sup></li> <li>- LCT complex-type with rare metals, lepidolite sub-type</li> <li>- Exo-granitic apatite-pegmatite veins</li> </ul> 

Fig. 1. Half of the two-page banner and brochure promoted at PDAC (2018) Mining Convention. Source: EDM [https://edm.pt/wp-content/uploads/2018/03/pdf-ac2018\\_rollup.pdf](https://edm.pt/wp-content/uploads/2018/03/pdf-ac2018_rollup.pdf).

Revealing the socio-ecological violence enacted by lithium mining, this article argues that the present vision of environmentalism enforced by the European Commission (EC) and celebrated by the public and private sectors are exacerbating socio-ecological catastrophe. The current extractive trajectory—green or otherwise—is not remediating ecological and climate crises. European environmental policy, we contend, suffers from “climate reductionism” that reduces the ecological crisis “to a simple (and technocratic) question of atmospheric carbon” ([38]: 38), allowing the subordination of “everyday practices of ecological degradation—specific factories, mines, production processes, or products—to the ‘big,’ ‘planetary,’ and ‘earth system’ problem” ([122]: 154). Resonating with feminist energy research criticism of “white technomascular perspectives” dominating research and policy agendas ([39]: 10), climate reductionism becomes an enabling factor of green capitalism, which relies on highly abstract, bounded and incomplete quantitative data that employ models that tend towards subordinating socio-ecological concerns to market and statist imperatives [40]. The celebration of green capitalism (or ‘green growth’) by the EC policies disables not only profound socio-ecological remediation strategies, but also marginalizes post-developmental and degrowth trajectories suitable to rural populations and their ecosystems already stabilizing ecosystems and climates.

This article is the result of our ongoing engagement with the Portuguese anti-mining struggle. In December 2020, the first author was invited to conduct research on lithium mining in northern Portugal. This initiated long-term contact, which fostered dialogue and trust with research participants, leading to some anti-mining movements interviewing the author and repeatedly inviting them to give talks in Portugal. The second author has sustained engagement with this struggle since May 2021. After this first contact, a continued relationship was established with villagers from the Barroso region as well as other anti-mining groups across the country. This has included attending and co-organizing several events and publishing popular articles on the matter. This long-lasting relationship has created confidence and mutual respect with our research participants.

Semi-structured and informal interviews were conducted between December 2021 and June 2022, with the majority of interviews collected within the Barroso region between January and February 2022. Research participants were contacted through our existing network, which also included employing a snowball interview approach, as well as approaching people for interviews in public spaces and by going door-to-door. We have also organized strategic interviews with mayors, company representatives and non-profits. The research is based on 26 recorded semi-structured interviews and over 20 informal interviews. There are 28 different people interviewed within the recorded interviews (as couples and/or friends preferred to do interviews together). Research participants were farmers, mayors, civil servants, company representatives, non-profits and various people opposing the proposed mines in the Barroso region. Secondary and primary resources were collected, such as newspaper articles, company brochures, City and Village Council documents as well as other documents research participants shared with us, to triangulate information in the interviews. While conducting interviews, we have also attended public events and anti-mining demonstrations in the region. The names are anonymized to protect the identity of people within this ongoing environmental conflict by referring to them by profession, fabricated names or gender.

The following section discusses green grabbing in relation to green extractivism and infrastructural colonization. This relates to appropriating—or penetrating—existing political institutions, authorities and engaging in social warfare to construct a favorable social terrain to organize a “Social License to Operate” (SLO) lithium and other minerals in the region. The next section provides a background to lithium mining in Portugal, in relation to the EC’s imperative to domestically source critical raw materials, namely lithium, and the mining history in Portugal that continues with the lithium ‘rush’ today. The third section

delves into the making of lithium mining in the villages of Covas do Barroso, Romainho, Muro and Dornelas, where Savannah Resources – owner of the Mina do Barroso exploitation contract – aims to establish what would be the biggest open-pit spodumene lithium mine in Western Europe. This entails discussing how the company approached the region; the concerns and reactions the project generated; and how the company has reacted to lithium mining opposition. The article concludes by discussing green extractivism and infrastructural colonization, highlighting the need for radical transformations in Portuguese and the EU’s environmental policy to better support actors protecting the environment and stabilizing the climate. This entails devising adequate ecological and, by extension, climate change mitigation strategies that allow space for post-development and degrowth development pathways, including the preservation of agrarian lifestyles.

## 2. The political ecology of green extractivism & social warfare

Recent European environmental legislations, such as the European Green Deal [41,42], are promoting the rapid expansion of lower-carbon technologies (e.g. wind, solar, and hydrogen product diversification), grid reinforcement, digitalization (e.g. ‘smart’ sensors & applications), new battery storage technologies and electric mobility [120]. The availability of critical raw materials, such as lithium, cobalt, graphite, copper and nickel among others, is now portrayed as an urgent (supra) national issue to supply the military, technological, electric vehicle (EV), and low-carbon energy industries [43]. This policy approach, however, transforms mining ecosystems—and the acquisition, processing and smelting of raw materials—into environmentalism and, consequently, constructs mining, industrial production and economic growth as the pathway towards climate change mitigation. This policy approach has Orwellian connotations. Where Orwell’s ([112]: 7) fictional totalitarian regime in 1984 proclaimed: “WAR IS PEACE.” Governments, companies and international political bodies now proclaim “MINING IS LIFE” or “MINING IS ENVIRONMENTALISM.”<sup>14</sup>

The term “green grabbing,” developed by James Fairhead and colleagues [17], reveals its relevance in current environmental politics, referring to processes of land acquisition—‘grabbing’—or control by coercive and/or deceptive means “to serve ‘green’ ends,” using “environmental agendas” as “the core drivers” to justify capital accumulation (see also [23,44]). Indeed, mining conflicts within Europe, or elsewhere, connects profoundly with ideas of green grabbing. Typically discussed in matters of conservation, agricultural/forestry fuels and low-carbon infrastructures (e.g. wind, solar) [16,44–46], green grabbing intersects with the mining sector through green economic instruments, such as “offsets,” and conservation groups collaborating with mining companies [26,47]. Conservation areas in Namibia, Sian Sullivan [28] shows, have proposed to offset uranium mining for nuclear power plants in England and elsewhere, but these same conservation areas are potential mining sites themselves if deemed an “extraordinary mineral deposit of national importance.” Andrea Brock [11] demonstrates the comprehensive efforts of RWE to ‘green’ coal mining through environmental offsets, biodiversity mitigation schemes and low-carbon infrastructures. Seagle [47], Huff and Orengo ([48]: 2) also demonstrate how ilmenite mining in southeast Madagascar is justified with conservation offsets, which are then integrated into natural capital markets “executing a ‘double land grab.’” Providing a comprehensive review, Philippe Le Billon [27] lays out a conservation-mining typology: (1) extraction happens within conservation areas; (2) conservation sites surround mining areas (visually hiding impacts); (3) conservation zones are transposed on former extractive zones; and (4) conservation offsets are employed to enable mining operations (see [11,48]). About “86% of industrial mines for key

<sup>14</sup> This relates to Stuart Kirsh’s [55,104] sustainable mining as corporate oxymoron, but now this is a matter of EU policy, extending past corporate marketing and green washing.

metals around the world are located in areas of high or intermediate plant diversity,” Le Billon [27] reminds us, “and about a third are either inside or within 10 km of a protected area.” The proposed Barroso mine, as will be shown, remains a candidate to become a mine near the Peneda-Gerês National Park and in a region classified by the UN Food and Agriculture Organization [49] as World Agricultural Heritage and a Globally Important Agricultural Heritage System.

The proposed lithium mine, however, is doing more than grabbing land in the name of climate change mitigation and energy transition. The extractivism implied with large-scale and open-pit mines is notoriously extensive [10,50–53,119], extending beyond ‘grabbing’ controlling, and making land investable [54]. Green extractivism, then, represents an apparatus or structure of systematic extraction with clear objectives, ideologies, schedules, habits and, overall, repetitive patterns towards extracting and *taking* mineral, water, energetic and biological goods [11,33,44,107,124]. Green extractivism infers traditional, but also expanded features of the extractivism literature. This entails, following Eduardo Gudynas [14], acquiring large volumes of raw material for export, profiting national or international business classes (or governments, in the case of neoextractivism), while breaking down existing sectors and social and ecological relationships (see also [52]). Indeed, in addition to a high intensity of environmental degradation, extractivism results in numerous socioeconomic consequences. Extractivism entails uprooting of local communities; creating rifts within interpersonal relationships; destruction of indigenous, rural or agrarian worldviews; a rise in crime, increases in violence, prostitution; corruption networks, smuggling; the disruption of local commerce and production; and a rise in wage income asymmetries [55,50,52,56], which, in turn, deteriorates labor opportunities and conditions ([14]; see also [57,58]). The volume of extracted material, the intensity of that extraction, the destination and concentration of ownership by foreign or national industries remains important features to characterize extractivism, yet extends beyond these indicators.

Extractivism(s) definitions, which apply to green extractivism, take place at different intensities. Adding precision to this discussion, Markus Kröger [59] outlines a seven-point scale from hyper-extractivist to anti-extractivist processes. Traditional extractivism definitions ignore the conditions and/or extractive webs that make extractivism possible in the first place, whether the supply-webs of pesticides, fertilizers and digital applications [60,123] or the mining, refining and factories related to police cars and equipment that, then in turn, facilitate (traditional) forms of exploitation and extractivisms around mines and megaprojects [113,122]. This, moreover, extends to low-carbon infrastructures [40,120]. The multi-scalar and faceted webs of extractivisms are compounded, as Anja Nygren, Markus Kröger and Barry Gills [58] show, by global governance arrangements, national politics, transnational corporate struggles, finance and digital mining/markets (see also [51]). The interconnection and intensity of extractive operations remains profound and a global concern.

Green extractivism acknowledges a structure of socio-ecological conquest and exploitation, which is not to say there are no benefits (as human actors do retain variegated and selective interests), but these benefits—real, imagined or always arriving—are instrumental to accumulating the psychosocial power of popular imaginations through marketing desire, modernity, hope and maintaining complacency [61,118].<sup>15</sup> Verweijen and Dunlap [37] make a distinction between direct and indirect green extractivism. *Direct green extractivism* indicates the extraction of kinetic or vital energetic flows of winds, waters, sun and geothermal energies (e.g. solar, wind, hydrological, tidal wave,

bioenergy systems). *Indirect green extractivism*, more relevant for the Barroso case, are the extractivist processes driven by environmental policy to secure minerals for capital accumulation and climate change mitigation schemes, such as lithium mines to increase battery storage and decarbonize (industrial) transportation. Green extractivism creates an apparatus, or a structure, of systematic extraction using environmental and climate claims, economic development and the national, if not global, “common good” to further justify global statist-capitalist extractivisms. Similar to “climate change politics,” as Jennifer Franco and Saturnino Borrás ([62]: 193) point out, green extractivism “may or can displace or dispossess more people from their land than actual climate change.”

Mining, in reality, is not ecologically sustainable or “green.” Open-pit spodumene mines are ecologically destructive, necessitating “drilling and blasting of hard-rock, excavation and transport, a process of removing ore, in order for it to be processed” ([8]: 5), which implies severe socio-ecological consequences. Mining is dependent on the fabrication of people (and territories) as marginal, peripheral, rural or the “Other,” creating second-class or an inferior status acceptable for disposability and sacrifice. “[T]he destruction of one brings about the gain of another,” explains Hugo Reinert [30],<sup>16</sup> imputing “an element of calculated, agentive will to the situation: a sacrifice does not happen by accident.” The organization of sacrifice, as Reinert indicates, is more than negligence with tailing dams [63], careless extraction and ecosystem killing. It requires an apparatus, an ideology, an infrastructure to colonize and reinforce inequality and devaluation—or center-periphery dynamics in general [31]—that exist in Portugal between rural and geographically interior populations and its urban and coastal counterparts [61].<sup>17</sup> Green extractivism, we contend, is more than socio-ecological sacrifice, because it requires an apparatus and an infrastructure to facilitate the literal colonization of, and extraction from, a region and consequently its human and non-human populations.

Sacrifice, thereby, requires an altar—an infrastructure—to enable daily ritual, (religious) grace, and affirmation of political and economic objectives. The construction of political, economic, infrastructural and mining operations requires the colonization of “hearts,” “minds” and landscapes [118]. Colonization explains the literal process of manipulative and coercive control, which employs a politico-economic occupation to organize extractive processes that degrade and poison ecosystems, or habitats, which sustain and, in fact, are the *peoples* who live within them. This colonization, as opposed to *colonialism*, looks at the microcosm of territorial control, landscape and socio-cultural change, exploring the literal colonization of habitats, people, social fabrics and more-than-human networks. Infrastructural colonization, we might say, represents a microcosm of classical, but—more so—(neo) colonial control that vary depending on its specific historical, geographical and politico-cultural contexts. There is, indeed, a significant difference between landscape colonization and the colonial history and occupations of entire nations and countries. The situation in Barroso, for example, in no way compares to the violent subjugation of Palestine. This speaks to the different intensities of struggle, racial oppression, marginalization and political violence employed in different countries and contexts, from conventional war and ‘scorched earth’ (‘hard’) counterinsurgency measures, to more subtle technologies of pacification and control, typically more reliant on psychological operations, legal systems and ‘positive’ developmental investments into rural areas. Colonization, and especially colonialism in the classical sense, employs military conquest and governance, or ‘hold’ techniques, to establish the political pacification of people and control a territory or

<sup>15</sup> The post-development school (e.g. Ilich, Esteve, Rahnama, Escobar, Sachs, Prakash, Shiva) deserves special mention for revealing how the discursive and material apparatus of “Development” enacted a psychological warfare on people, creating inferiority complexes, epistemicide, modernist desires and separation from the land.

<sup>16</sup> This echoes Eduardo [65]: 2), “our wealth has always generated our poverty by nourishing the prosperity of others....”

<sup>17</sup> We must acknowledge, at the same time, that geo-social, economic and political dynamics within Portugal should not be limited to this rural/coastal dichotomy.

region [37,64]. There are different governmentalities, methods of Othering, intensities of violence, historical continuities and geographies, yet infrastructural domination remains a common and enduring feature across political regimes.

Habitat colonization, especially in terms of modernist infrastructure, tends towards expanding and permitting extractivist projects, green or otherwise. This implies psychosocial and physical changes to habitats that, in line with European state formation and colonialism [65,66,125], alter relationships with nonhuman natures, social fabrics, mental structures and, eventually, landscapes. This relates to how people perceive state and company invasion [121]: do people view them as a colonizing and occupying forces or do people self-identify with these projects, development trajectories and view them as a product of their own desires and political participation? Objectives to remain in harmony with bioregions, more-than-human natures (e.g. spirits, trees, rivers) and social fabrics dissipate in favor of extractive relationships, material status, political and material profiteering deeply tied to mineral extraction, technological innovation and accumulating technologies (e.g. pharmaceuticals, digital applications, foods designed with addictive qualities). While infrastructural colonization remains instrumental to state formation and (neo)colonialism, simply conflating them would be erroneous.

Mining, as Russell Means [29] reminds us, has remained instrumental to colonizing people and landscapes propelling statist economic and geopolitical aspirations. People need to become integrated into colonial systems—or, now after over a century of conflict and refinement, state systems—that continue human and nonhuman conquest and control [67,68]. In other words, people need to become colonized—socially, politically, emotionally—before their territories can be grabbed, relinquished or sold. States and companies colonize people and territories by employing techniques of social war to alter social fabrics to make ecologically irrepressible activities not only possible but also *accepted* and *acceptable* [118]. Social warfare, in essence, “dissects the ‘hard’ coercion and ‘soft’ social technologies of pacification, emblematic of counterinsurgency, while highlighting the social and/or psycho-geographical aspects as essential to colonial-statist intervention” ([69]: 462; [38,68]). Countering practices of social war means fighting “against the [generational] structures of power that colonize us,” explains Joseph Gardenyes [70], and “train us to view the world from the perspective of the needs of power itself” (see also [71]). Social war illuminates the struggle of socio-political pacification and general population control, which is incrementally progressive, continuous and accumulates for larger politico-economic systems of conquest and colonization [69]. This, moreover, extends to misleading science reinforcing global extractivist networks [51,55]. The struggle after military conquest to maintain and normalize occupation means enforcing the objective of the state, corporations or ruling elite over land and people. Infrastructural colonization, then, indicates the wider process of socio-ecological acquisition, control and extraction, which necessitates ‘hard’ and ‘soft’ civil-military, developmental and police interventions to ‘hold’ space and create a structures of extractivism(s), in all of their varieties. Portugal, while still a European periphery [61], can reveal, even in the lowest conflict intensities, the process of social warfare in the service of lithium mining.

### 3. Background: the rise of lithium in Portugal

Since the Paris Agreement (2015), the European Commission (EC) has intensified its efforts to mitigate climate change and ecological catastrophe. Central to this strategy, as mentioned above, has been the rapid expansion of low-carbon infrastructures and decarbonizing the transportation sector by developing electric vehicles (EVs). Lithium, cobalt, graphite, copper and nickel remain instrumental to the lithium-ion batteries used in EVs and utility-scale energy storage systems (ESS), the latter of which enables grids stability by storing (intermittent) solar and wind energy. This socio-technical energy transition has placed

lithium in high demand globally and within the EU. The EC wants to place 30 million EVs on the roads by 2030, ensuring that nearly all cars will be zero-emission by 2050. The EC (2020: 20) currently maintains 100 % import reliance for lithium on Chile (78 %), United States (8 %), Russia (4 %) and presumably China and Argentina (10 %). Seeking to break import dependency, the EC wants to produce 89 % of the batteries for EVs in Europe by 2030 [72], and has thus initiated legislative and administrative efforts to intensify lithium extraction within its borders. Specifying local material content requirements, for example, are increasingly common within trade agreements, which entails measuring the final percentage of locally sourced materials with the final product.

The EU currently allows 70 % outsourcing of the total car value outside of Europe. In January 2024, this will be reduced to 50 % of the car value, while batteries will need to retain 40 % of local materials, according to [3]: 13), which “will effectively require automakers to source batteries from within the EU.” As such, the EU now estimates the need for 18 times more lithium by 2030 and 60 times more by 2050 compared to 2020 supply levels [43,72]. Batteries for EVs and renewables, the European Environmental Bureau (EEB) shows, “are predicted to drive up demand for lithium by almost 6000% by 2050” by 2018 standards ([73]: 3). Moreover, EV market shares are rising faster than expected in Norway [74]. This demand is transforming lithium into the new “white gold”. In addition to the European Battery Alliance, established in 2017, the EC presented the Action Plan on Critical Raw Materials, implemented the European Raw Materials Alliance, and added lithium to the list of Critical Raw Materials in September 2020 [43,72]. Recently, in September 2022, the EU announced the launch of a Critical Raw Material Act that permits the creation of common strategic projects of European interest, allowing these common projects to receive European funding and expedited permitting approval processes. This policy and consumer trajectory places the Barroso region, or Portugal in general, in the mining crosshairs of the European Commission.

The Portuguese government views the current “green” energy transition as an opportunity to place the country in a position of leadership within the EU [75]. Lithium deposits in Portugal were first located in 1992 by two geologists from the French National Geological Services and Fernando Noronha, a Portuguese geology professor and researcher [76]. Since the early 1990s, the Portuguese National Geological Services institutions<sup>18</sup> have given priority to lithium inventory and research, with an increased intensity since the early 2000s [127]. Now Portugal is known for having Europe’s largest estimated lithium (metal) reserves [130]<sup>19</sup>, and is one of the world’s top ten producers of lithium ([77]: 40), ranking 7th according to the United States Geological Survey [78]. In 2019, it had a 1.6 % share of the global production [79]. Lithium production in Portugal, however, is exclusively for ceramics and glassware, and not for electric vehicles batteries. There are currently no lithium mines in Portugal – rather, there are quartz and feldspar mining operations that collect some lithium.

In 2016, the Secretariat of State for Energy created the “Working Group on Lithium.” This group’s aim is to make lithium *financially viable* by (1) identifying and characterizing the economic activities of exploitation associated with lithium; (2) establishing a hierarchy of priorities of industrial use to maximize economic benefit; (3) defining a programme for the production of lithium compounds; and (4) proposing measures to substantiate the creation of a specific processing unit for these minerals (República Portuguesa, 2017). Between 2016 and 2019, the government has authorized requests for prospecting and research of

<sup>18</sup> These institutions have changed their names over the course of the years: Instituto Geológico e Mineiro (1993–2003); Instituto Nacional de Engenharia e Tecnologia e Industrial (2003–2006); Laboratório Nacional de Energia e Geologia (LNEG) (2006-present).

<sup>19</sup> This recurring statistic comes from a study commissioned by Savannah Resources, done by researchers from the Minho University on the economic impacts and development of the “Mina do Barroso” project.

minerals across 19.3 % of its territory [128]. In 2016 alone, 30 applications for exploration and prospection rights for lithium, totaling an area of 2500 km<sup>2</sup>, were filed with the Directorate-General for Energy and Geology (DGEG), the main institution responsible for authorizing mining contracts [127]. Fig. 2 shows the areas of Northern and Central Portugal targeted for lithium exploration between 2016 and 2021. In February 2022, the Strategic Environmental Assessment of the *Lithium Research and Prospection Plan*<sup>20</sup> was released, authorizing the research and prospection of lithium in six additional regions, comprising a total area of almost 1500km<sup>2</sup> [129]. The lithium ‘rush’ has and continues to stir political and economic ambitions in Portugal. As we write this article, data shows that almost 25 % of the country’s continental landmass might be reserved for mining projects [111]. European environmental policy ambitions, along with the objective of extractive enterprises, are spreading mining across Portugal and, likely, elsewhere.

### 3.1. The epicenter of the lithium rush in Portugal: the Barroso region

The northern region of Barroso is composed of two municipalities, represented by two City Halls (*Câmaras Municipais*): Montalegre and Boticas. This region is particularly rich in geological deposits and minerals, such as wolframite (e.g. a tungsten ore mineral), niobium, tantalum and lithium [77,80]. In Montalegre, a significant wolframite mining exploitation existed in the small town of Borralha, from 1902 until 1986, which left environmental concerns and people jobless without remediation or compensation [81]. Today, it is possible to visit the Interpretive Center of the Borralha Mines, part of the Barroso Ecomuseum, which holds an important collection of documents about the mines. The studies conducted on the environmental impacts of the Borralha mines have concluded that all the areas (soil and water) are severely contaminated [82–84]. Despite – or partly because of – the visible socioecological degradation left behind, DGEG has signed a contract with Minerália in 2021 to reopen this mining site and exploit tungsten (wolframite), tin, molybdenum and related metals in a total concession area of 382 ha. Governmental officials, and pro-mining actors, are mobilizing this mining heritage, by recalling the “economic boom” the mining operations brought to this historically vulnerable and poor region. This case demonstrates how territories depleted by extractivisms can easily become (re)colonized for new extractivist purposes [85]. The cumulative consequences of mining result in ecological, social and economic *drain*, rendering these territories and its populations – human and non-human alike – more vulnerable to extractivist-infrastructure reappropriation.

This mining heritage in the region is now being revived, as the mountains of Barroso become the epicenter of the Portuguese lithium mining rush. The comparably high concentration of lithium reserves present in this region makes it particularly “promising” for production and exploitation [8]. In this region alone, there are 8 mining exploration contracts signed, and 7 mining applications being analysed by DGEG. In the last 5 years, 39 % of Barroso’s land has been slated for mining prospecting or licensing. In addition to the 15 existing licences, the government has recently identified an area of 550 km<sup>2</sup> in Barroso, intended for a state auction. The two most significant and most developed lithium mining projects in this region are the proposed “Mina do Romano,” located in Montalegre, whose concession contract is owned by LusoRecursos Portugal Lithium; and the proposed “Mina do Barroso,” located in Boticas and owned by Savannah Resources Plc. through its wholly owned subsidiary Savannah Lithium Lda. This article will focus mainly on Savannah Resources’ project, which would potentially be, alongside Serbia and Finland, the largest open-pit lithium mine in Western Europe.

The “Mina do Barroso” project is only recently in the hands of Savannah Resources Plc. In 2006, a license for the exploration of

feldspar and quartz mineral deposits in a total concession area of 120 ha was issued. The contract — under the name “Mina do Barroso” — was signed between the Portuguese State and Saibraís—Areias e Caulinos, S. A. In 2010, the concession rights were transferred to Imerys Ceramics Portugal, S.A. [130]. In 2011, without any public consultation or notice to local authorities,<sup>21</sup> Imerys updated the Mining Plan to include the enlargement of the concession area to 542 ha and the inclusion of lithium [86]. In 2016, the revised Mining Plan was approved by DGEG, with an addendum to the concession agreement, expanding the concession area to 542 ha and including lithium as a concession substance. In the following year, the concession was transferred to Savannah Lithium, Lda [130]. Savannah now anticipates the expansion of the mine to 594 ha.

The “Grandão Deposit” would be 500 meters long, 450 m wide, and 50 m deep; the “Reservatório Deposit” would be 400 m long and 100 m deep; and the “NOA Deposit” would be 200 m long and 50 m deep; and the “Pinheiro Deposit” with unknown dimensions. The Environmental Impact Assessment (EIA) anticipates the expansion of the total concession area to 594 ha [87]. Yet, the document produced by Minho University commissioned by Savannah predicts a total area of 680 ha ([130]: 16). The average lithium extraction from the mine is expected to approach 1,450,000 tons of lethiferous pegmatite per annum, during the anticipated 11 to 12-year life of the mine, corresponding to a production of 175 kt/y of spodumene concentrate (6 % Li<sub>2</sub>O) [130]. The project anticipates that 86 % of the production will be exported, corresponding to an average annual value of 110.2 million euros [130]. Savannah [88] claims the potential mine would follow the “world’s best environmental practices for the minerals production industry,” and argues this project has “the potential to contribute over €1.2 billion to Portuguese gross national product over the life of the operation.” Savannah [89] was subject to public consultation between April and July 2021, after having filed two EIA, which were declared “non-compliant” by the Portuguese Environment Agency (APA) in 2020. As we write this article, the APA is reviewing the outcomes of the public consultation phase and, it recently declared [90], it will announce its decision in March 2023.

The potential mining site would cross the Village Councils (*Juntas de Freguesia*) of Covas do Barroso and Couto de Dornelas, impacting the small villages of Dornelas, Covas do Barroso, Romainho and Muro. If the concession area extension is permitted, some houses in Romainho would be located only 50 m away from the mining site.<sup>22</sup> The proximity to these small villages would greatly impact the landscape, and, consequently its inhabitants’ (see Fig. 3). These are agricultural villages, dominated by livestock production and crops typical of mountainous regions. Animal production is the basis of these towns’ agrarian economies, dominated predominantly by extensive breeding of cattle for beef, namely for the indigenous breed of “vaca barrosã.” These towns maintain a rural subsistence economy with very few surpluses and relatively low consumption levels compared to other regions in the country [49]. The Barroso region is recognized for being an important biodiversity hotspot in Portugal, and has a high potential of becoming an important biodiversity conservation unit, as it hosts important populations of Iberian endemic plant and animal species [91], including endangered species [131]. Moreover, the high rainfall levels of this mountainous region make Barroso one of the areas in Portugal with the best water resources [91]. The locals preserve ancestral ways of working the land and treating animals. For these reasons, in 2017, the Barroso region was the first in Portugal classified as a “World Agricultural Heritage” site and added to the “Globally Important Agricultural Heritage Systems” by the Food and Agriculture Organization of the United Nations [49]. The FAO has recognized the “authenticity of the territory, the traditional way of working the land, treating livestock, and the communitarianism of its inhabitants” [49]. Indeed, the vast majority of

<sup>21</sup> Field notes.

<sup>22</sup> Field notes.

<sup>20</sup> Plano de Pesquisa e Prospecção (PPP) de Lítio

# LITHIUM IN PORTUGAL

Lithium mining in the municipalities of the Northern and Central regions of Portugal: Areas requested, attributed, and foreseen for exploration or extraction between 2016 and 2021.

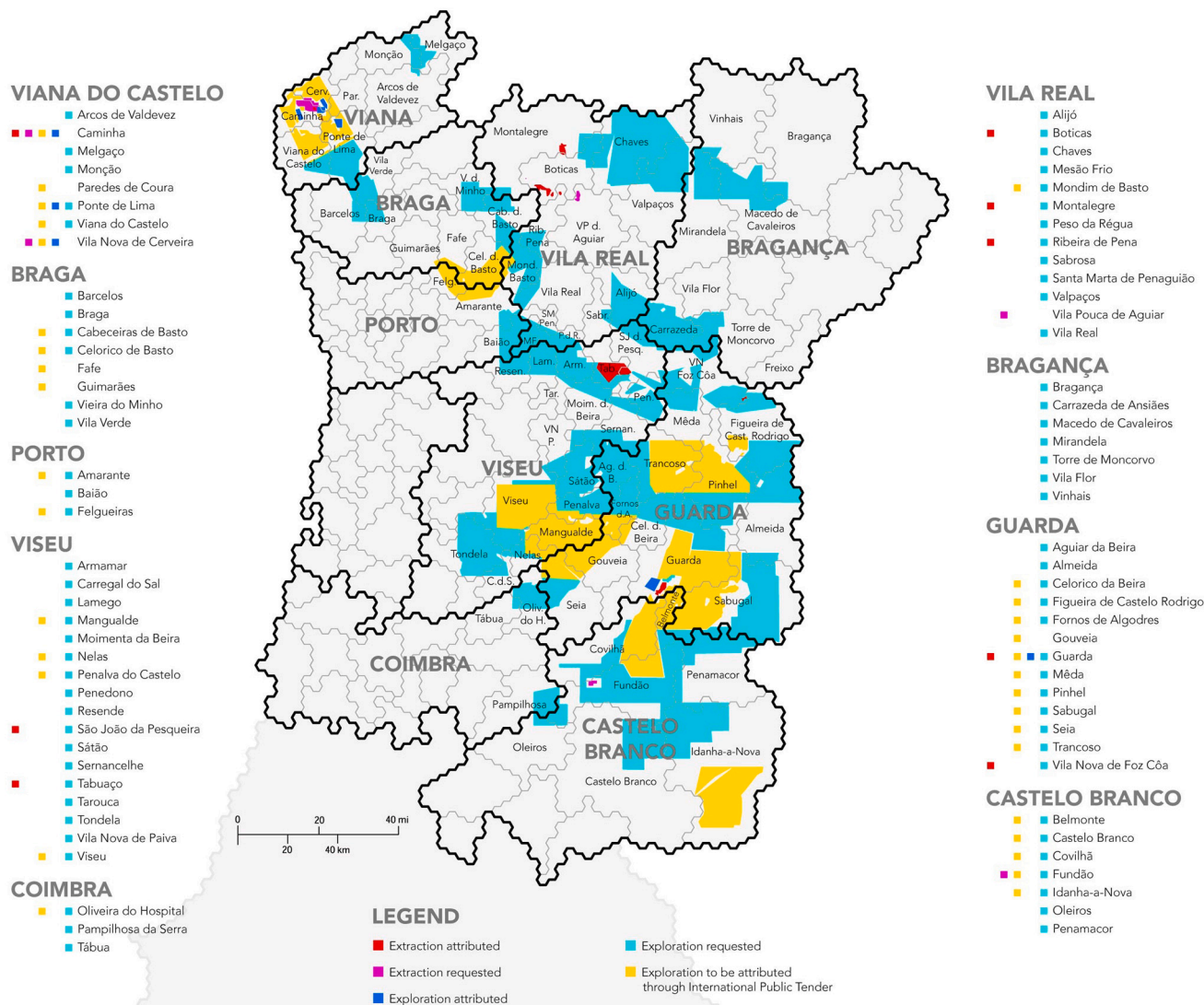


Fig. 2. Lithium mining applications requested, attributed and foreseen between 2016 and 2021. Source: Mining Watch Portugal.

the land in Barroso is common, known as “baldios” or “terras baldias” [131]. In Covas alone, according to the estimates of the Directive Board of the Baldios of Covas do Barroso, there are approximately 2000 ha of “baldios.”<sup>23</sup>

Despite also covering private land, Savannah’s mining project would mostly be located on common property or the baldios [87]. The baldios are a type of property of a specifically communal nature, whose

administration and ownership is the sole responsibility of the “compartes,” the owners of the common land<sup>24</sup> (Law n° 75/2017 of 17 August). To make use of the baldios, the company would have to sign a lease agreement with the Assembly of Compartes for a period of 20

<sup>24</sup> All the citizens who reside in the area where the “baldios” are located are automatically “compartes,” in correspondence with the habits and customs recognized by the Local Communities. Non-resident citizens can also be granted the status of “compartes” by the Assembly of the Compartes.

<sup>23</sup> Field notes & Interview 16, 21-01-2022.





**Fig. 3.** Photo from Covas do Barroso looking west and demonstrating the proximity of the mining projects by Savannah Resources. Credits: Images: Godofredo Pereira, Jacob Bolton, Antonio del Giudice, Mingxin Li; Design: Dayana Lucas. Used with permission from the authors.

years, renewable for a maximum of 80 years (Law No. 75/2017 of 17 August; Article 36). If no agreement is reached between the company and the *compartes*, it is possible for the State to expropriate the *baldios* (Law No. 75/2017, 17 August; Article 41). The company, however, would need to apply for expropriation for “public utility” (Law No. 75/2017, 17 August; Article 41). If the State grants the “declaration of public utility,” the “*compartes*” would thus lose their rights to manage and administer the *baldios* for a given time period (Law No. 75/2017 of 17 August). In recent years, changes have been made to the legal framework shaping mining projects, specifically the amendment of Law No. 54/2015 of 22 June (commonly known as the “mining law”) through the Decree-Law No. 30/2021 of 7 May. Albeit existing since 2015, this Law was never active. The new mining law amendment adds the concept of “green mining” and further reinforces the fact that the land needed for mining projects can be expropriated for reasons of “public utility.” European “public utility declarations,” as pointed out previously ([117]: 116; [120]: 13), emerge as a prominent method of “bureaucratic land grabbing.”

#### 4. “They came camouflaged:” the extractive approach

Preparation leading to mining projects in Barroso began with geological exploration in the 1990s.<sup>25</sup> As Nancy recalls, a local teacher from Covas who has migrated to London<sup>26</sup>:

I was 18 or 19, and a geologist came knocking at our door on a summer holiday. Mom and dad were home. (...) He wanted to look at a particular rock, someone had directed him to us, so my mother and I went with him. (...) He took a bit of rock that stood out. And I said: “So, what is it exactly?” He said: “it’s white granite, and it’s very rare and it’s very good for ceramics”.... I’m not a scientist, but, you know, I wasn’t completely satisfied with that [answer]. But I left it there because I had no way of figuring out what exactly he was interested

in or what he was looking for. This was in the late 90s. It was July or August 1996.

Nancy goes on explaining how she has started following reports about “her little small town” from London, understanding, as years went by, that a vested interest was growing in her region’s geological resources. People in Barroso had been familiar with rock quarries, and, to a lesser extent, with wolframite mining (from the Borralha Mines), but not with open-pit lithium mines. “We never had much information, transparency,” explains a local villager, “We had never heard about this [lithium]” and company representatives would tell people: “it was far from dishes for ceramics.”<sup>27</sup> Company representatives, research participants contend, told them the mining project was for ceramics and glassware, something they were relatively familiar with. Others did not hear about the mine until the “controversy over the boreholes,” as Robert claims, explaining how the mining company arrived “really without anyone knowing.”<sup>28</sup> Savannah [89] drilled “more than 45 drill holes” because of “the need for [an] increase in the concession area.” The depth and size of the holes left by Savannah’s lithium prospecting alerted residents; the impacts left by the prospecting are still visible on the ground and on Google Maps (see Fig. 4). “There was [an] exploration [contract] since 2006 and practically no exploitation,” explains a Simpson, a local farmer, “[so] people were like: they just want to do more prospecting, ‘okay.’” Simpson, who is a member of the Village Council, narrates the arrival of the British company in 2017:

The company first talked to the President of the Directive Board [of the *Baldios*], and the President let them [do prospecting]; then, they talked to the President of the Village Council, and they let them. Meanwhile, they talked to some private landowners... not so many... seven or eight people... [because] not everyone has land in the places where they did the prospecting. The company said they were just doing some prospecting. When asked what it was for, they didn’t even know what it was for. They said it was prospecting for lithium...

<sup>25</sup> Interview 7, 20-01-2022.

<sup>26</sup> Interview 26, 30-05-2022.

<sup>27</sup> Interview 6, 19-01-2022.

<sup>28</sup> Interview 1, 16-01-2022.

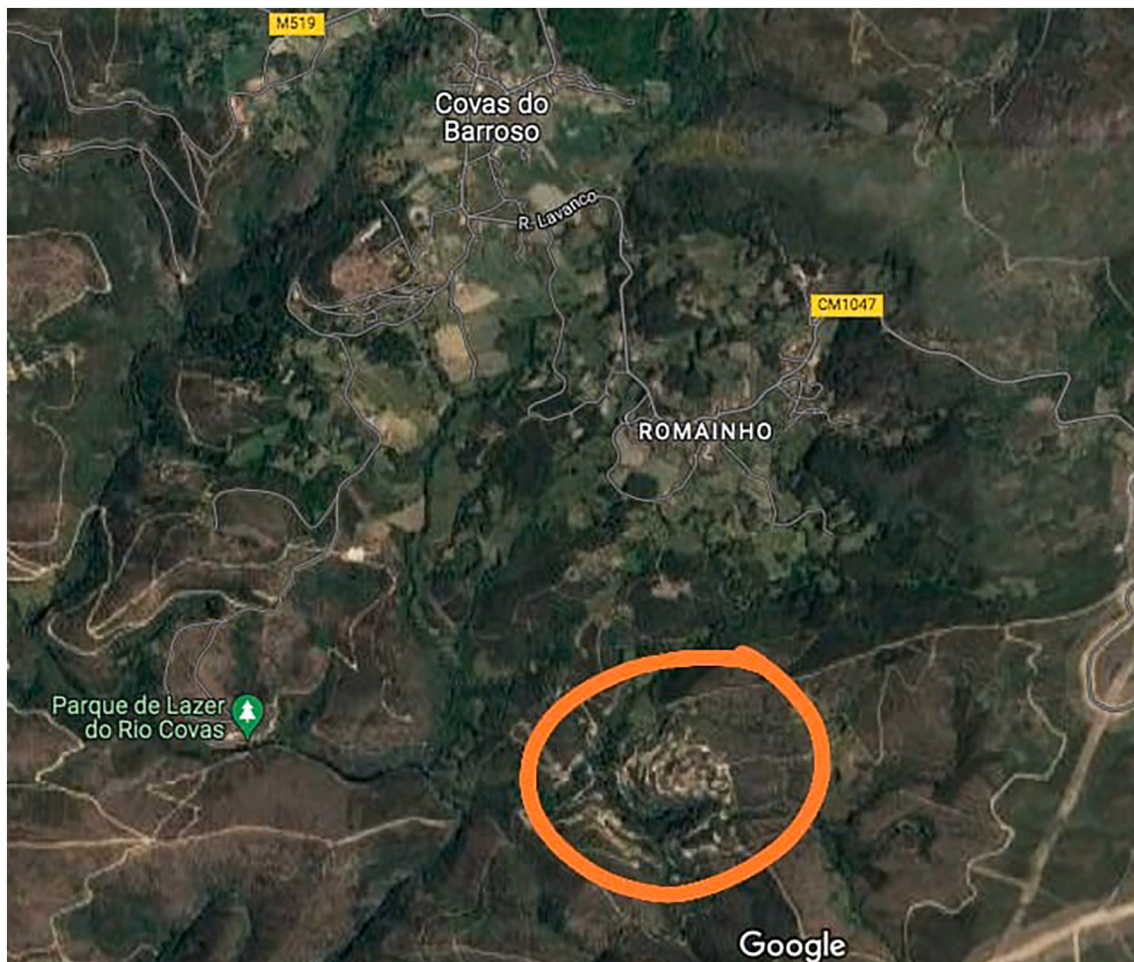


Fig. 4. Satellite view of the results of prospecting for the “Grandão” Deposit. Source: Google Maps. Accessed 22–11–2022.

Lithium, we had never even heard of lithium [laughs]. And, of course, they were saying they already had a license, a permit from the government. Of course, hearing about the government permit, people are like: ‘the government is above it all,’ right?! And then the company also implied that if people didn’t accept it good willing, they would be forced to accept it... So people let them [do the prospecting surveys]....<sup>29</sup>

Prospecting was initially permitted free of charge, but this policy eventually changed. After internal discussion within the Village Council, it was agreed to charge the company 500€ fee for each prospection. The company attempted to extend the terms to allow prospecting for another year, but, in the end, people managed to get their payment without signing this contract.<sup>30</sup> The company’s attempt at free prospecting raised concerns: “[T]he company arrived here, knowing perfectly well that people have difficult living conditions,” explains Simpson. “So, if the company had such good intentions, why did they ask to prospect the lands for free?!” The company for the last three years, has been forbidden from entering the fields.<sup>31</sup>

There were, already at the time, people working for the company within Covas. These local intermediaries were instrumental to the mines arrival and to securing the long-term presence of the company. There were at least two individuals who embraced the project. Jennifer was the first person in Covas to work for the mining companies. Having

studied environmental engineering and accounting, when the companies took an interest in her hometown, she viewed it as an opportunity. This allowed her to remain close to home—where “I wanted to work”—because, being “in a small place and receiving the same salary [as I would in a city], I could have better [living] conditions,”<sup>32</sup> explains Jennifer. Applying with Sabrais in 2006, Jennifer was eventually hired in 2007 as a “community relations officer” and stayed working with the project—through various companies—until 2020. Describing her community relations’ work, she explains:

I would say: ‘I’m coming here on behalf of the company, the company wants to come to your land to do this [prospecting] work. Do you authorize it? Under which terms do you authorize it?’ And that was it. I never tried to influence people to stop doing this or that, I would only say what we were proposing and they would accept it or not. I would say it in a very clear way.

Jennifer, along with John, tried to run for election for the Directive Board of the Baldios while working for the company.<sup>33</sup> When this happened, anti-mining organizing was already growing stronger. A group of locals found a competing electoral candidate, eventually winning the elections and preventing ‘mining candidates’ from entering public office.<sup>34</sup> Jennifer, eventually leaving the company “over a year ago,” does not regret working for them, and remembers—later self-

<sup>29</sup> Interview 15, 21-01-2022.

<sup>30</sup> Ibid.

<sup>31</sup> Field notes.

<sup>32</sup> Interview 14, 21-01-2022.

<sup>33</sup> Interview 15, 21-01-2022.

<sup>34</sup> Field notes & Interview 15, 21-01-2022.

censoring any critical words—that “when I joined [the company], the dimensions of the project were not like these,” referring to the expanded scale of the mine. Part of the community relations’ duties passed to John, another person from an influential family in Covas, who began organizing land contracting for Savannah.

While some yielded uncritically to prospecting by the company, most residents in the region had little-to-no idea regarding the company’s prospecting and intentions, or the size, type and depth of the mine. Nancy delivered the news of the large-scale open-pit mine in 2017, who—aware of the geologists’ interests in her village—noticed the project resurface publically online in English.<sup>35</sup> This initiated efforts to organize for more information about the mining project. Eventually, four consultations were carried out<sup>36</sup>—organized either by the City Hall of Boticas (*Câmara Municipal*) or by the locals.

Very early on, people recall, Savannah organized a meeting in the Romainho Chapel with “this guy who only spoke English.”<sup>37</sup> In this meeting, Susan recounts, people were asking the Savannah representative: “If people are against the project, if the population doesn’t accept it, will you [Savannah] stop?” The representative said: “No.” Another woman recounts: “[H]e said (...) it [would be] okay to send us out of here!”<sup>38</sup> This shocked the majority of the residents as the company was not only completely disregarding local’s concerns but also bluntly acknowledging they would make sure the project would continue forward even if that meant expropriating the local population. “I didn’t understand very well how you could do a project against the will of the population,” explains Simpson. “And one thing I realized very early on was that our opinion would never count, our opinion would only count if we accepted [the project] with compensation... If we opposed or were against it, they were going to completely ignore us because we were of no interest to them. And that’s what happened!”<sup>39</sup> It was at this point people realized what was encroaching into the region. This started the formal organizing against the project and the formation of the United in Defense of Covas do Barroso (*Unidos em Defesa de Covas do Barroso* (UCDB)) Association in December 2018.

## 5. Concerns, reactions & land contracting

The villagers’ reactions to the proposed lithium mine are negative. Savannah [89] promises to “[i]nvest the best technologies available to the industry, aiming to achieve the best quality standards and the best environmental performance, as well as making mining activity more attractive to young people of active age.” These company pronouncements, however, do not change that Covas’ residents are against the mine. “Here we are all against [the project],” explains a woman, “People live honestly, from agriculture, and have a healthy environment... why would they want a lot of money? I find it sad.”<sup>40</sup> John, working on “land acquisition” for Savannah “since the beginning of 2021,” admits that “even if [Savannah] wants to explain [the project], it can’t. Unless it’s door-to-door, person to person.”<sup>41</sup> People are “afraid” of the project, but “most people are not aware of what the project is going to be,” contends John. “This is the thing,” he continues, “you can be the best speaker... but if you’ve got two or three [people] to destabilize the situation, they’ll only hear what they want to hear.”<sup>42</sup> While a logical concern for John, the counter-accusations against the mine were systematic and worthy of comprehensive answers.

Despite the company’s persistent efforts, the great majority of villagers in Covas and its neighboring towns remain vocal about the negative impacts of the project. “They are going to destroy everything, everything’s going to be destroyed, we’re going to be left with nothing. Everything... will end,” explains a farmer.<sup>43</sup> The mine will “destroy everything” theme saturates the interviews: “it’s going to be a burial here, our region and the whole of Barroso,”<sup>44</sup> it’s “coming here to ruin our little corner [of the world]”<sup>45</sup> and “we don’t want it [Barroso] to be transformed for the worse.”<sup>46</sup> Elaborating these concerns, Susan states:

“[I]t’s going to destroy everything that we have... the environment, the water quality... it’s going to destroy everything. Then, as it starts to destroy, we’re also going to have to end up leaving here, we are going to have to separate ourselves from our family... from our friends... and I don’t want that.”<sup>47</sup>

The mine, another resident asserts, is “going to be a lot of noise, pollution and the transformation of the water into... spoilage.” As this resident reminds us, the mine will “work day and night, twenty-four hours a day, for eleven years or more.”<sup>48</sup> Savannah ([88,89]: 33–34) attempts to counter these concerns by promoting a Landscape Recovery Plan (LRP) that will implement “visual barriers” with “earthen bund walls and tree-shrubs,” preserve “vegetation in the surroundings areas not affected by mining,” and implementing recovery work when “phasing-out” the mine. Overall, Savannah ([88,89]: 33), seeks to employ “a strategy of sustainable development, making the mining of geological resources compatible with the territory, with the promotion of a quality of the environment and the quality of life of local populations.” Savannah’s numerous attempts to offer reassurances within documents and advertising campaigns, discussed below, have failed to convince residents.

The opposition to Savannah’s mining project comes from four principle sources. First, witnessing mining in the region growing up, specifically the Borralha wolframite mine (1902–1986), which locals describe as “a ghost town” and a “widow village.”<sup>49</sup> The village of Minas da Borralha was created purposely for the mining activity in 1902, and was left abandoned after 1986, when the mining operations ended. As one drives through Borralha today, all is left are empty houses, shattered buildings, ruins of mining equipment, and visible environmental degradation. That is why locals from this region refer to it as a “ghost town.” During its peak, the Borralha mines employed almost 2,000 (mostly male) workers, many of whom have died, directly or indirectly from impacts related to the mining [132], hence the collective image of a “widow village.” This experience shapes locals’ expectations and concerns regarding mining. Albeit recognizing that the mining activity of Borralha generated employment opportunities at the time, residents largely tend to stress their past, present and future socio-ecological costs, as well as the fact that contemporary mining operations are highly automated and demand highly qualified skilled labor, which would likely mean the locals would not be employed in the proposed mine.<sup>50</sup>

Secondly, people did their own research on the impacts of mining, comparing the claims and outcomes of companies operating open-pit mines. “Nobody believes it [the company’s claims] because people go on the internet, they see mining in other countries,” explains a farmer.<sup>51</sup> Environmental social impacts research, moreover, suggest the validity of these concerns [8,10,50,53,118]. Thirdly, villagers express how they

<sup>35</sup> Interview 26, 30-05-2022.

<sup>36</sup> Interview 4, 19-01-2022. Interview 7, 20-01-2022. Interview 15, 21-01-2022.

<sup>37</sup> Interview 4, 19-01-2022.

<sup>38</sup> Ibid.

<sup>39</sup> Interview 15, 21-01-2022.

<sup>40</sup> Interview 9, 20-01-2022.

<sup>41</sup> Interview 19, 23-01-2022.

<sup>42</sup> Ibid.

<sup>43</sup> Interview 11, 20-01-2022.

<sup>44</sup> Interview 5, 19-01-2022.

<sup>45</sup> Interview 6, 19-01-2022.

<sup>46</sup> Interview 10, 20-01-2022.

<sup>47</sup> Interview 4, 10-01-2022.

<sup>48</sup> Interview 10, 20-02-2022.

<sup>49</sup> Interview 17, 22-01-2022.

<sup>50</sup> Field Notes.

<sup>51</sup> Ibid.

believe the “green mining” labelling or the “energy transition” rhetoric is a fallacy, repeatedly proclaiming that “Barroso is green!” (“verde é o Barroso!”). Locals contend that climate mitigation policies should not rely on advancing the devastation of entire ecosystems, with some claiming that “lithium is just being used as a Trojan horse” to advance capitalist resource extractivism.<sup>52</sup> Finally, the company’s failure to provide clear and transparent information and communicating with the local inhabitants further undermines their credibility. “They had never talked to the population!” explains the Boticas Mayor, Fernando Queiroga. When the company finally made a public consultation, on Queiroga’s request, the experience was unsatisfactory. “That meeting made people even more confused”, explains the Mayor, “I myself, who had some information, left [the meeting] more confused because they put a technician to explain... with very complicated, very technical terms!”<sup>53</sup>

Water remains a notable concern. “It all gets contaminated, because there is a river and the water—for now—is clear and pure, [but] tomorrow it’s going to get contaminated,” explain two neighbors in agreement.<sup>54</sup> Savannah ([88,89]: 15) presents three options for “[s]urface water division and control structures,” but contemplates the possibility that “in case of water shortage, [the] water [will be] captured directly from the Covas river.” Given the reality of open-pit mines, its intensive water use [3,8], and tailing dam failures [63], among others consequences [50,54,55,134], residents are worried and concerned. Renowned Portuguese naturalist, Ernestino Maravalhas, reminds us of the birds, but more so of the Shining Macromia Dragonfly (*Macromia splendens*) which remains a high-priority species for the EU and its sensitivity to river and water table conditions. “The European Union is investing thousands of euros into protecting the Shining Macromia, in several places,” explains Ernestino, “and, at the same time, they are allowing the destruction of the habitat of such a rare species” in Barroso.<sup>55</sup> The mine, Maravalhas explains, will destroy, but also fragment environments, eliminating environmental conditions that would allow insects to travel and reproduce. This directly threatens the dragonflies’, and other species’, genetic pool. The “pollinators or other insects that live close to the mine will be destroyed, they will not have a genetic influx”—reducing the breeding grounds of insects—explains Ernestino, stressing: “If you place the mine in this [Shining Macromia & Alcon Blue] habitat, it will be worse than a bomb.”

Lithium mines notoriously absorb and pollute water tables. Savannah ([88,89]: 15) “foresees a water need of 0.570hm<sup>3</sup> of water for its first year of operation and 0.510 hm<sup>3</sup> for the remaining years of the mining operation.” Presenting these figures in cubic hectometers (hm<sup>3</sup>), Savannah attempts to conceal the mines intensive water demand to the public, which converts into 570,000,000 liters the first year and 510,000,000 liters the remaining eleven years. This translates into 47, 500,000 liters a month and 1583, 333 liters a day, which is likely a conservative water-use estimate by the company. Renowned hydrologist Steven H. Emerman [135] has issued a report—commissioned by the UCDB—explaining that Savannah’s project is “highly experimental” and does not comply with safety standards, especially when it comes to water management infrastructure for the waste mound and filtered tailings. Fig. 5 visually analyses how the proposed mine will likely impact waterways and rivers, potentially spreading negative consequences all the way to the Beça, Tãmega and Douro rivers that stretch across the Northern half of the country. Recognizing the high-levels of biodiversity and rich ecosystems in Barroso, Ernestino ends by pleading: “Please, do not kill people and nature in Barroso. They are healthy as they can be and they do not deserve to be killed by the mining process.”

The mine, Savannah [88,89] contends, is offering social

development, employment, the latest mining technologies and reclamation schemes to minimize ecological impacts. Benefits and mitigation actions, according to Savannah and their local representatives, will lead to rural prosperity and the repopulation of the region, which has witnessed a demographic decline since the 1980s. Offering to buy land above fair market value, Savannah seeks to convince residents to sell their land. As is similar in other sites [54], land regularization, measurement and, overall, territorial legibility to make the mining possible remain an issue for Savannah. Land titles need updating within families, topography is difficult to identify and it does not always correspond to state tax records. This is because, according to John, the “land used to be divided by landmarks, or walls.” Savannah employs landscape crews to create visibility over the vegetation, reveal landmarks and “then be able to survey” the land. Savannah, accordingly, presents this work as a public service, which a farmer claims is a “strategy they use” to make people believe that “the company is here to help.” Moreover, Savannah has reportedly marked fields wrongly.<sup>56</sup> According to a farmer, Savannah claims to have “cleared the land, we measured it, just to know and then they try to make promise of purchase of sale contracts.”<sup>57</sup> Spatial legibility for resource control resonates with state territorialization strategies [92,136], which is complemented by long-term land rental strategies typical of land control strategies to acquire a large portion of the communal land [44]. Savannah is offering 2€ per square meter of uncultivated land, 2.5€ for cultivated lands and an additional 2500€ bonus for water springs and buildings on the land, yet the latter depends on the “surveyor, and he gives a price.” Land contracting currently includes a survey team: two people working in land acquisition and a landscape company—Landfound—comprised of three men. The company’s tactics, so far, have resulted in few gains: after significant efforts, only less than half a dozen of people have sold their land.<sup>58</sup>

Rural prosperity is linked to land rents, jobs, social development funds and, since the new mining Law No. 30/2021 (May 2021), increased rents for municipalities. “Decree-Law No. 30/2021 now establishes that a part of the royalties (between one-third and one-half) is to be paid to the municipalities in which the exploitation takes place,” explain Aroso and Magalhães [93], the rest goes to the Portuguese state.<sup>59</sup> Savannah [88], meanwhile, claims the mine will “create approximately 215 direct jobs and between 500 and 600 indirect jobs to support the Project.” Queiroga reported that in “June last year [2021], they started distributing some pamphlets asking for 200 employees for the mine without having the Environmental Impact Assessment approved yet!”<sup>60</sup> Savannah representatives, however, do not try to support these employment numbers, instead remaining ambiguous on the matter.<sup>61</sup> The greatest motivation for Jennifer and John to work for Savannah, beside the high-paying salary, was rural development. They wanted to prevent Covas from “becoming deserted,” which relates to dependence on EU agricultural subsidies and stagnating meat and

<sup>56</sup> Fieldnotes & Interview 24, 25-01-2022.

<sup>57</sup> Interview 16, 21-01-2022.

<sup>58</sup> Interview 24, 25-01-2022 & Field Notes.

<sup>59</sup> “IRC is levied at a 21 % rate, to which may be added a municipal surtax of up to 1.5 % levied on taxable profits (depending on the municipality), as well as a state surtax of 3 % on taxable profits exceeding €1.5 million and up to €7.5 million, 5 % on taxable profits exceeding €7.5 million and up to €35 million, and 9 % on taxable profits exceeding €35 million. This means that the effective tax rate can reach 22.5 %, to which will be added the state surtax, to which the above rates are applied in a staggered way. A special reduced IRC rate (of 17 % on taxable profits up to €25,000) is available for small and medium companies (with a turnover below €50 million among other criteria established by law)” ([93]: 4).

<sup>60</sup> Interview 7, 20-01-2022.

<sup>61</sup> Interview 19, 23-01-2022. The interviewee avoids giving specifics on the number of jobs by talking about the “lack of licensed staff” (e.g. skilled workers) and “lack of unlicensed staff” (unskilled workers). The answer to this question is interpreted as trying to say something “intelligent” without giving specifics.

<sup>52</sup> Interview 20, 24-01-2022.

<sup>53</sup> Interview 7, 20-01-2022.

<sup>54</sup> Interview 17, 22-01-2022.

<sup>55</sup> Interview 21, 24-01-2022.

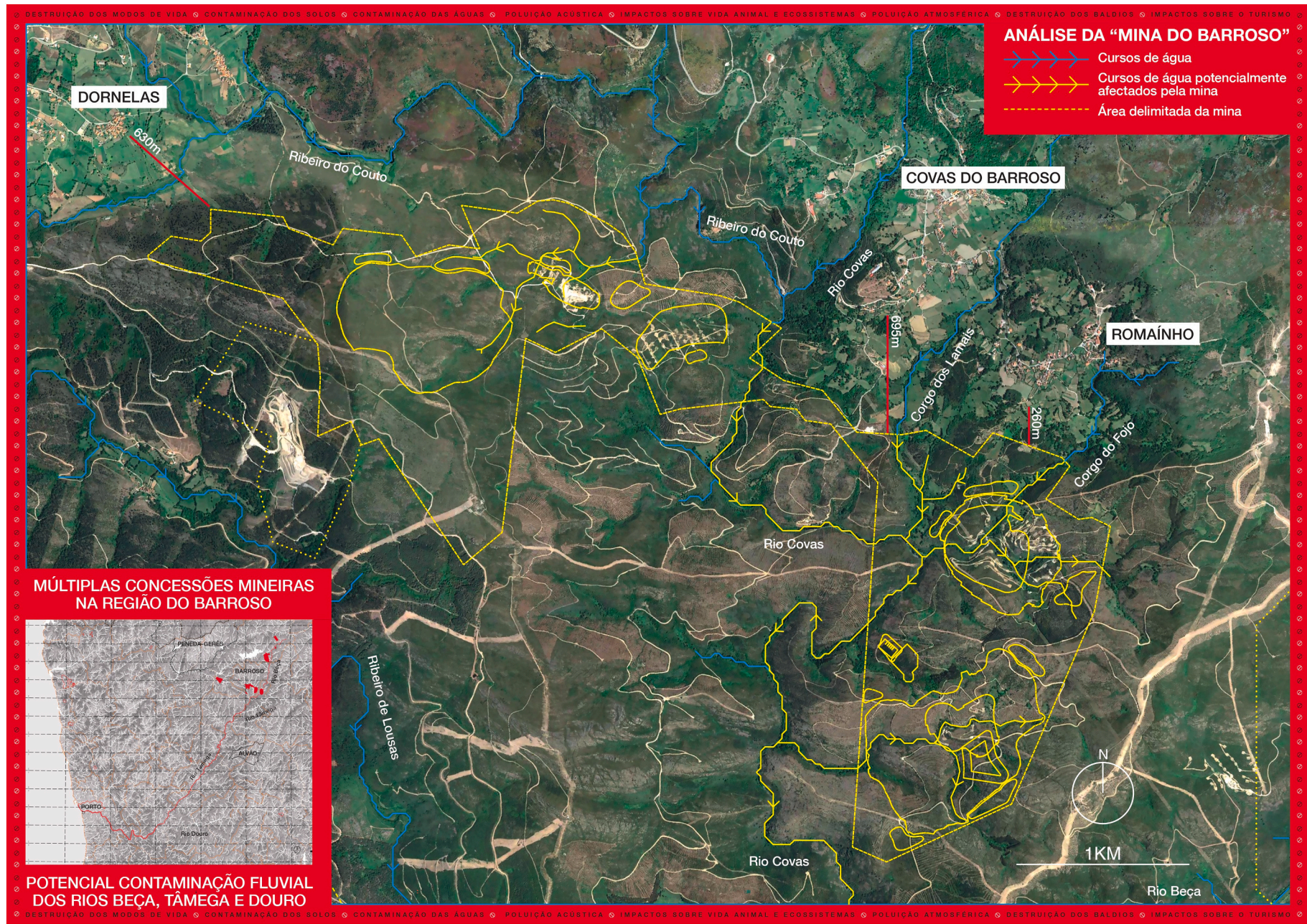


Fig. 5. Legend: The blue lines are the waterways. The yellow lines are the waterways potentially impacted by the mine. The yellow dotted line is the mining concession area. In red, the distance between the mining area and the neighboring towns is marked. In the bottom left corner, a zoom-out map shows the potential contaminations of the rivers Beça, Tâmega and Douro. Credits: Images: Godofredo Pereira, Jacob Bolton, Antonio del Giudice, Mingxin Li; Design: Dayana Lucas. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

agricultural prices.<sup>62</sup> Covas residents, however, remain unconvinced by the company's social and environmental claims, which are rather extensive (see also: [89]). People are refusing the project, viewing the mine as destroying their environment, social fabrics and way of life or, at the least, being a bad exchange. "Everyone likes to earn money and have a good salary, but to have that good salary, you're paying a high price. You have a good salary, but you are going to be living next door to an open-pit mine," Simpson reminds us.<sup>63</sup>

## 6. Social war for green extractivism: company entrenchment, green propaganda, and the coercive influence of state power

When awareness spread about the company's intentions, in 2017, local populations from Barroso organized and established opposition to mining. From 2019 onwards, mobilizations have extended to the urban centers, with urban populations mobilizing themselves in solidarity. For the past five years, there have been several anti-mining mobilizations in major cities (Coimbra, Lisbon and Porto,) and in affected towns, including anti-mining protest camps, demonstrations, creating blockades against 'pro-mining' governmental authorities, and numerous acts of direct action, claimed and unclaimed, such as barricades, graffiti and vandalism against governmental ministries, company and supporting contractors (e.g. University of Porto; see Fig. 6). This includes one of the APA's offices being vandalized with "Minas Não" (*No to Mines*) in Porto (see Fig. 7), and a recent blockade to Savannah's information point in Boticas (see Fig. 8). Farmers, concerned citizens, climate movements, autonomists and anarchists are organizing to defend ecosystems from mining. Some leftwing political parties have slowly started integrating this issue into their discourse during the most recent electoral campaign. This has generated a response and adaptation from Savannah, and other mining companies in the region. Within this response, we can identify numerous "social technologies of pacification" ([118]: 672), related to the professionalization of company activities. This section will discuss social warfare techniques designed to promote, legitimize and enforce green extractivism in this region.

### 6.1. Governmental & municipal power's coercive influence

Governmental authorities on the national, regional and local level—with the exception of the village Council (*Junta de Freguesia*) of Covas and the City Council (*Câmara Municipal*) of Boticas—are understood by our research participants as colluding with mining companies. On the national level, as discussed in the introduction, this relates to the locals' perception of the government selling off this region to mining companies without prior consultation of regional authorities and populations. The premature approval of several mining projects by the national government gives little hope to people, who repeatedly voice they cannot count on or trust the government to act in their interest.<sup>64</sup> Remembering how the initial mining project was permitted as a 120 ha mine for quartz and phosphate in the early 2000s, the Boticas Mayor explains:

This was authorized. From then on, the area was extended to 590 hectares without authorization from the Boticas City Hall (*Câmara Municipal*), or the APA, or the Ministry of Agriculture, or the CCDR [Commission for the Coordination of Regional Development], or the ICNF [Institute for Conservation of Nature and Forestry]. There was no authorization from anyone! There is an entity here called DGEG that authorized it without giving anyone a heads up! So, what is going on?!

This represents the coercive and deceptive reality of bureaucratic land



Fig. 6. Left: Banner Drop over the freeway in Coimbra: "Mining Is Not Green! No to Mines, Yes to Life!". Right: "Capital Lithium" painted at the entrance of the Science and Engineering Department, University of Porto. The Building was covered in "Capitalítio" (Capitalithium) and "Minas Não" (No to Mines) across the building. Below: Banner in Coimbra Portugal: "Against the progress of destruction/ Solidarity between mountains/ In defense of Barroso and Beiras/ Autonomy and Direct Action!" Source: Twitter MinasNao2. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

grabbing [118], which regional authorities experience. This dismay at the approval process echoes through the Barroso region. "[T]he government comes along and says it has nothing to do with [approving mines]," explains a local activist, "when the Directorate General of Energy and Geology [DGEG] is directly dependent on them!"<sup>65</sup> The international promotion of mining tenders in Portugal through promotional videos and booths at the 2018 PDAC Convention, mentioned in the introduction, is rather damaging in this regard. This manifests as resentment towards the Portuguese government: "[t]he biggest culprit in all this is our government, who doesn't stand up for us," explains a local beekeeper.<sup>66</sup> The recent delay of the Savannah project related to the Environmental Impact Assessment might represent stalling, or regrouping, efforts by the Portuguese government, which nevertheless remains an obstacle for Savannah.<sup>67</sup> This extends to the denial of access to documents and information about the mining projects to residents and authorities. For example, the Portuguese Environmental Agency (APA) is currently under investigation by the Aarhus Convention Compliance Committee. At issue is the Agency's refusal to disclose information and denying access to documents related to the

<sup>62</sup> Interview 19, 23-01-2022 & Field Notes.

<sup>63</sup> Interview 15, 21-01-2022.

<sup>64</sup> Field notes-

<sup>65</sup> Interview 20, 24-01-2022.

<sup>66</sup> Interview 5,

<sup>67</sup> Interview 2, 19-01-2022.



Fig. 7. APA's delegation in Porto graffitied with "Minas Não!" (No to Mines) Source: Twitter MinasNao2.



Fig. 8. Savannah's info point in Boticas after the blockade, August 16th 2022. Source: Authors.

Environmental Impact Assessment of the Savannah Mine. Although still under investigation, this process is symptomatic of the way in which citizen's participation has been highly conditioned.

This national compliance and approval of mining exists at the municipal level in the Barroso region. Indeed, our research participants think some municipal authorities in the Barroso region are colluding with mining companies. This is especially the case in Village Councils within the jurisdiction of the Montalegre City Hall—whose Mayor, Orlando Alves, is understood to be in favor of the mines. The organization of municipal power in Montalegre “makes people afraid to fight, even though they don't want the mines. They want to protect their lives

and they have fears,” explains a local activist.<sup>68</sup> This concern was repeatedly voiced throughout our interviews and informal conversations. “There are many people who depend directly or indirectly on the City Hall,” explains a local ecologist.<sup>69</sup> “Therefore, many people, even if they are against the mines, will not say [it] for fear of consequences and retaliations [from elected officials].”

According to our research participants, some people living and working in Village Councils or City Halls with pro-mine candidates “don't say anything because they are afraid of losing their jobs,”<sup>70</sup> explains Simpson. He goes on saying: “a lot of the jobs that people have are dependent on the City Hall... For example, people who work on construction sites need permits from City Hall.” Research participants relate this to the political heritage of having lived under a “dictatorship until 40 years ago,”<sup>71</sup> which, an activist explains, has cultivated a “spirit of subservience, dependence, silence, of not talking about things, being vassals. It is the result of fascism and it is still inside people's heads today.”<sup>72</sup> In matters of megaprojects, this translates into defeatism: “people always end up losing, they [feel like they] can never win.”<sup>73</sup>

Pro-mining authorities have the challenge of staying in power with high-levels of open and silent opposition. This has resulted in suspicion of irregular political decision-making processes. According to a local anti-mining organizer from Montalegre, “[i]t is mandatory that the [mining] subject goes to the assemblies of the City Hall” but the Mayor “never took the issue to the City Hall meetings, and he always signed alone. So, we never knew—even though we read the [transcript] minutes of these meetings—what was happening because he always signed everything in his office, hidden, nobody knew anything.”<sup>74</sup> Village Councils (*Juntas de Freguesia*) in favor of mining are withholding information, marginalizing critics and creating administrative difficulties for mining opponents, such as not handing out certified proof family care or other work and state related notaries, according to our research participants.<sup>75</sup> Furthermore, a Village Council under the jurisdiction of the Montalegre City Hall is reported to lend municipal office space to a mining company, according to our interviewees.<sup>76</sup> Currently, the Montalegre City Hall is under numerous corruption investigations by the Portuguese state.<sup>77</sup> Twenty-five defendants are being investigated for suspicions of corruption, prevarication and abuse of power. At stake are direct adjustments and payment orders made to companies owned by Orlando Alves' relatives [94]. Recently, in October 2022, Orlando Alves was arrested and indicted for suspicions of criminal association, prevarication, undue receipt of payments, document forgery, and abuse of power [95].

Moreover, suspicions have been raised on the ties between the executive power (at the Montalegre Municipality) and mining companies' representatives.<sup>78</sup> Indeed, in addition to clientelism, procedural violation and allegations of collusion with mining companies also include the use of votes from working migrant residents, that is, people from Barroso who have migrated abroad, especially to France. The migrants “are outside, don't have much connection to the land and don't understand the fight we are making here [in Portugal],”<sup>79</sup> explains the beekeeper. Some of these migrants, research participants' claim, are used to affirm political power in different Village Councils in the Barroso region.

<sup>68</sup> Interview 18, 22-01-2022.

<sup>69</sup> Interview 12, 21-01-2022.

<sup>70</sup> Interview 15, 21-01-2022.

<sup>71</sup> Interview 8, 20-01-2022.

<sup>72</sup> Interview 20, 24-01-2022.

<sup>73</sup> Interview 16, 21-01-2022.

<sup>74</sup> Interview 20, 24-01-2022.

<sup>75</sup> Interview 8, 20-01-2022. Interview 17, 22-01-2022.

<sup>76</sup> Interview 17, 22-01-2022.

<sup>77</sup> Interview 20, 24-01-2022.

<sup>78</sup> Field Notes. Interview 20, 24-01-2022. More about this on the Portuguese investigative media program “Sexta às 9”:

<sup>79</sup> Interview 5, 19-01-2022.

“When it’s voting time, they come here [Portugal] to vote, but they don’t know what is going on here. They come in buses [from France] to vote”, explains Julie. Some research participants claim migrants are not only used to maintain municipal power, but that they are strategically brought back with buses paid by their Village Council and potentially, as we are told, co-financed by mining companies. This allegation was discussed with a lawyer who, supposedly told them they have a case, but it would cost them a lot of money, which prevented research participants from perusing the case. Suspicions of electoral fraud, moreover, are already being investigated by the Public Ministry (*Ministério Público*), which has opened an enquiry into the case of suspected electoral fraud in Montalegre. Just as research participants explained, during elections in Montalegre, hundreds of migrants were received by a Mayor at the Porto Airport and transported to their municipality to vote [96]. The maintenance of municipal power in the Barroso region (especially in the Municipality of Montalegre) demonstrates the social engineering and relationship of force employed to stabilize political terrain to permit open-pit lithium mining extractivism.

## 6.2. Soft technologies of social pacification for green extractivism

The ecological or “green” claims promoting and justifying the mines in the region remains another inflammatory issue. Savannah employs series of “soft” technologies of social pacification” ([118]: 672–726), namely making social development promises, organizing local support, employing public relations campaigns, utilizing scientific research to legitimize their claims, employing environmentally friendly rhetoric, and developing infrastructures to support its operation. While stressing deleterious local conditions (e.g. policy driven rural depopulation, agricultural stagnation), land rents/sale, employment, social development funds and mining revenue fees remain key selling points for lithium mining in Barroso. Building on the rhetorical device of green mining, state authorities relate—if not equate—lithium mining with quarries in the region.<sup>80</sup> This seeks to minimize the damage and water-use of lithium mines and make lithium mining relatable to the public.

Political technologies of pacification have progressively escalated since Savannah’s arrival. The company developed public infrastructures to promote the mine—namely information centers, or kiosks: one located in the center of Covas since 2017, and, in 2022, a new one has opened in Boticas (see Fig. 8). The information point at Covas is a small room (see Fig. 9), with a large-scale model of the proposed mine, tailing dam and processing facilities, a shelf displaying samples of products lithium can produce, and posters with the history of the mining project and the company’s Landscape Recovery Plan. The center promotes the mine, serving as a point of contact for information, work and land contracting. This infrastructure, likewise, includes Savannah billboards in the region and sponsoring a “rally runner” racecar in Boticas. The new info-point in Boticas, on the other hand, is located on the main city square, in front of the City Hall, in a modern and renovated building. Its contents are similar to the ones in Covas, presenting a representative model of the mining project; several images; geological material; and several documents, including the EIA and the monthly newsletters sent to the community.

This infrastructural influence links with symbols of wealth. People working for the company own notoriously expensive trucks (and display them, by driving them around) and overly modern houses when compared to the typical rural architecture of most houses in Barroso. Referring to a Savannah land contractor, Julie explains how “he comes



Fig. 9. Savannah’s Covas Information Point. “Savannah: Enabling Europe’s Energy Transition.” Source: Authors, 2022.

around with people with high-cylinder cars, so you can see they are people with possibilities.” This, she contends, “is part of the company’s tactics to make locals associate the fact of working for the company with the possibility (at last!) of being able to buy luxurious material goods: ‘Oh, with the money I’ll buy that car!’”<sup>81</sup> This speaks to cultivating the modernist dreams of development, which the post-development school (see [97,98,99]) has deconstructed at length.

Twenty-five kilometers away from Covas do Barroso, in the municipality of Montalegre, LusoRecursos (the mining company aiming to open the “Romano Mine”) “has five electric Jaguars: the owner [of the company], some friends, including some of the local authorities in Montalegre have all five white jaguars,” explains a local activist.<sup>82</sup> The purpose, he continues, is to “create the idea that people are going to get rich, that there will be no shortage of jobs and that everyone is going to drive around in an electric Jaguar,” meanwhile ignoring the consequences and realities of critical raw material extractivism. Complementing the modernist or developmental messages of consumer society, the mining companies (and their collaborators) seek to penetrate the ‘hearts,’ ‘minds’ and desires by various direct and indirect means to accept critical raw material mining regardless of the socio-ecological consequences.

Public relations’ efforts extent even to offering the traditional Christmas Cake (*Bolo Rei*) to residents of Covas, Romainho and Muro. Savannah hired a baker from the region to distribute the cakes, but—as a local beekeeper recounts—“nobody accepted it” and people who “accepted it at the time, later went to give them back.”<sup>83</sup> Savannah also would sponsor sports teams<sup>84</sup> and performed token infrastructural works. For example, a villager—who is reported to be unemployed and dependent on social subsidies<sup>85</sup>—needed help to repair the roof, and John, on behalf of Savannah, offered to complete the works, which the person agreed to. A family member of the roof recipient explains this type of strategy intends “to win people over. This is manipulation. It’s to buy time and buy people.”<sup>86</sup> Likewise, Savannah was reported harassing a local villager, dependent on welfare subsidies and alcohol, promising him a new house, including a housekeeping service who would also cook his meals. The villager has received the support of local anti-mining villagers and refused this offer, but this example shows how Savannah

<sup>80</sup> “There is no difference between an open-pit quarry and an open-pit lithium mine”, said João Galamba, the Secretary of State for Energy, in November 14th 2019, on national television, while being interviewed for the program “Negócios da Semana” (SIC Notícias). Teresa Ponce de Leão, the President of LNEG, repeated the same sentence on February 16th 2022, on national television, during the program “Fronteiras XXI” (RTP 1).

<sup>81</sup> Interview 17, 22-01-2022.

<sup>82</sup> Interview 20, 21-01-2022

<sup>83</sup> Interview 5, 19-01-2022.

<sup>84</sup> Interview 20 & 25.

<sup>85</sup> Interview 9, 20-01-2022.

<sup>86</sup> Interview 1, 19-01-2022.



targets the most vulnerable people to progressively win the ‘hearts’ and ‘minds’ of a disagreeable population.<sup>87</sup>

In addition to going door-to-door in Covas and neighboring villages, Savannah also produces a monthly newsletter that promotes the mine and the company’s civil performance. The newsletter, however, complements a wider media strategy, which sponsors numerous regional magazines or newspapers, as well as regional radio advertisements. Savannah “has been on the radio for a long time with advertisements,” explains Susan:

[Savannah would say that the mine] was going to be ‘clean mining,’ it wasn’t going to affect the waters, it wasn’t going to circulate through the villages. That is what they said in the radio ads. And then, to counter it, I called the radio to dedicate a song to all the people who were fighting against the mines: *Pelos caminhos de Portugal*.<sup>88</sup>

Radio advertisements, however, were not targeting Covas directly, but nearby towns. The radio and newspapers “were always outside,” explains Aida Fernandes, the President of the Directive Board of the Baldios, “always outside, never local, and they always talked about us as a ‘community’.”<sup>89</sup> Nik, from Mining Watch Portugal, recognizes this approach as “implementing a divide and conquer strategy on a regional level.” Recognizing mining pacification efforts, Nik explains:

A few weeks ago, they opened up an information center, like the one they have in Covas, in Boticas, in the regional municipality itself. The majority of the population does not live in Covas, the voting population is in Boticas and only people of Covas are the most noticeably against the mine. So, for the company, it is easier to get support from people living in the same municipality but living further away from the mining impacts. So, they engage in this strategy of financing sports teams, racing events, festivals and what not. And, now, they have their second information center in the city of Boticas itself just to steer public opinion about the mine.

In the media, people “don’t hear that the mines will destroy, will destroy jobs, and will pollute waters.... I am talking about the national level, but I am almost sure that more than 50% [of people at the national level] are in favor [of the mines] because the media has performed a lobotomy on people,” a local ecologist claims.<sup>90</sup>

Overall, Savannah has attempted to enact a professionalization strategy to meet EU standards, engage stakeholders, employing university researchers and is laying the foundation for the social engineering of extraction in the politically feasible avenues available. Academic institutions are a visible form of how this lithium extractive frontier is legitimized by a vast political and scientific complex. The Portuguese Mineral Resources Cluster Association, whose objective is “the promotion of knowledge and the sustainable economic enhancement of mineral resources,” has as partners several Universities and Polytechnic Institutes alongside a number of mining companies, including Savannah and LusoRecurso. For example, the University of Aveiro, part of this Cluster, has signed a cooperation agreement with Savannah on lithium batteries. At the same time, researchers affiliated with this University (part of the Cluster) are often vocal on the media about the positive impacts—and the necessity—of lithium mining in Portugal, thus aiming to construct a favorable rhetoric—under the veil of science and assumed objectivity — to extractivism.

The “lobotomy” mentioned above is the social construction of mining as “green,” “clean,” and an expression of climate change mitigation. The government and companies “sell us that mines are to protect the environment and fight climate change,” the local ecologist explains, “when

in reality this is just another pretext to create profits and benefit big companies”—a “Trojan Horse” of extractivism. For him, lithium and electric vehicles are strongly understood as counterproductive to mitigating ecological crisis. Governments “are completely blind, obsessed with climate change, and forget other things, like biodiversity, which is the basis of everything,” says this land defender. To think, he continues, you can “solve this problem of climate change with lithium, by destroying nature and biodiversity, makes no sense at all.” This directly speaks to how carbon, as the dominant measure of ecological catastrophe, enables a climate reductionism [38], which allows the rebranding of mining as “green” and “clean.” These environmental claims, Aida asserts, “don’t make sense to us, because it’s not true.” “This is green washing,” she contends, that allows people in cities to “convince themselves that they are being good people by buying an electric car.” People living and working near or around proposed mining sites experience this as absurd because their energy use and impacts are minimal, they maintain a Globally Important Agricultural Heritage system and, in the words of Aida, “have already been sacrificed, like the whole rural Portugal, to dams and wind farms.”<sup>91</sup> The Boticas Mayor reminds us that Barroso is

the region in the whole country where the most clean energy is produced: hydroelectric and wind energy. In fact, 3 dams are located in this region.... [and] [e]very year, the municipality of Boticas emits 9 tons of CO<sub>2</sub>. If the mine is opened, it will produce 92,000 tons of Co<sub>2</sub> per year, for 12 years.<sup>92</sup>

The green credentials of the mine generate resentment and dismay by the majority of residents, or unquestioning hope for those seeking economic opportunities. Given the dams, wind turbines, forests and rural living, Aida asks: “who contributes more to decarbonization than we do?” Green economic, or remediation, claims emerge as another governmental tool to silence, divide and render socio-ecologically destructive activities acceptable. Companies and governments have transformed environmental concerns into a tool of social warfare to expand the operations of resource control and capital accumulation.

The final mechanism employed by Savannah is the threat of land expropriation. Multi-pronged pacification efforts combine offering money with the threat of land expropriation. To secure land, the company pays 10 % up front and says it will pay the other 90 % once the government approves the Environmental Impact Assessment. This strategy is further combined with cleaning (and measuring) the land to gain positive perceptions and the social conditions to persuade inhabitants. John encourages people to gamble: sell their land now, because, if the government does not approve, they have already made some money; if the government approves, people will get much better land payouts than under the terms of expulsion. Put this way, John presents the deal as a “win-win” situation.

Opponents of the mine, however, interpret this as “deceit” and “ruining” the village.<sup>93</sup> “It’s threatening people,” explains Fernando Queiroga. “It’s threatening that either they will sell or else they will go for expropriation and then they won’t get anything.”<sup>94</sup> The threat of government expulsion greatly benefits Savannah’s land contracting efforts. The door-to-door approach John discussed earlier means speaking to everyone about this dilemma, seeking to push people to sign or, at the least, sow fear, hesitation and doubt in the people opposing mining. People contend that Savannah is targeting “those people that are more malleable,”<sup>95</sup> notably the poorer demographics or the aging ones, who often express indifference about their future or the region’s: “If they

<sup>91</sup> Interview 16, 21-01-2022.

<sup>92</sup> Interview 7, 20-01-2022.

<sup>93</sup> Interview 1, 20-01-2022.

<sup>94</sup> Interview 7, 20-01-2022.

<sup>95</sup> Interview 10, 20-01-2022.

<sup>87</sup> Field notes.

<sup>88</sup> Interview 4, 19-01-2022.

<sup>89</sup> Interview 16, 21-01-2022.

<sup>90</sup> Interview 20, 21-01-2022.

come [the company]... at my age...."<sup>96</sup> or "at my age, it doesn't make any difference."<sup>97</sup> As the beekeeper explains, "He's [John] trying to get into people's heads, (...) scaring them, saying: 'You have to sell the land, if you don't sell it, then they're going to expropriate it.'" This is consistent with the first public meeting, when the company was explicit that it will take the land with or without the consent of people. The prospects of an open-pit lithium mine, and the land contracting process, is producing fear, uncertainty and social division. This is why, during an interview with her husband, Lisa blurts out in the background when discussing this situation: "This is just war, just war!"<sup>98</sup>

## 7. Conclusion

With green extractivism, social war and infrastructural colonization in mind, this article examines the making of an open-pit lithium mine in the Barroso region. Portuguese and Barroso mining history is reviewed, connecting it to the new "lithium rush" incited by recent European climate change and energy transition policies. This lithium rush is being engineered at an international level with European policy proclamations, targets and funds, which leads to intervention efforts by companies to organize infrastructure and the social conditions to extract lithium and other critical raw materials, as is the example of current efforts taking place in Northern Portugal.

Barroso residents have, at first, underestimated the reality of prospecting and surveying work that makes subsoil and surfaces resources legible for exploitation [54]. This geo-political oversight, along with municipal authorities and individuals collaborating with companies, encourages mining projects in the area in the wake of dams and wind turbines [61]. Mines, like other megaproject interventions in the region, are branding themselves as "green," "clean," and exemplars of "sustainable development" and climate change mitigation, which residents reject as "fake green mine propaganda" and an "argument that is already not true."<sup>99</sup> The mine seeks to significantly degrade, if not destroy, an area with rich biodiversity, cultural heritage and world-renowned agricultural practices, which includes important forest and water resources. These consequences, we argue, are far from being unintended—rather, mining companies, in (more or less direct) cooperation with state authorities, are promoting a hyper modernist worldview based on climate reductionism and techno-fixes, thus seeking to dismantle what is left of low-impact agrarian and traditional lifeways. In this era of socio-ecological catastrophe, it seems more important than ever to preserve and expand the renowned socio-agro-ecological traditions of Barroso that its populations have been conserving and protecting for centuries.

The company foothold, symbolized by supportive municipal agents and local collaborators, permitted precise interventions into the social fabrics of these rural communities. The company employs 'divide and conquer' strategies, engaging in social warfare to stretch and tear the remaining communal social fabrics with the objective to weaken them, prevent opposition and, consequently, allow the mining of raw materials. The seemingly mundane and normalized efforts of the media, public relation campaigns, event sponsorships, information centers and modernized symbols of wealth, notably vehicles, are having severe psycho-social and, with prospecting, ecological consequences even before the mine has had the official stamp of approval. Company efforts at organizing a Social License to Operate and employing social engineering techniques are profoundly subtle, but retain harmful consequences. Recognizing the efforts to organize land defense activities and the corresponding hardships, Nik reminds us:

There have been hundreds of hours spent in knowing what happened with the mine... There are phone calls. 'Oh, the company is now entering there, this other village; they are walking on the mountain, they are now driving out with their jeep.' Sometimes it is the company or someone else, but this constantly being on alert has a psychological, but also a physical toll in the end. There is a lot of suffering, even when there is no physical violence involved, when normally people think of police violence or state violence in classical cases.

Severe psychosocial harms emerging before mines or dams construction echoes findings from Reinert [30], Velicu [100], Batel and Küpers [61]. The company, moreover, employs counterinsurgency strategies designed to exhaust, demoralize and defeat mining opponents in order to pacify the resistance and, consequently, access lithium (as well as other critical raw material resources). These counterinsurgency strategies are already causing emotional exhaustion and drain, especially among the most concerned residents. Company strategies, government complicity and policy incentives driving this socio-ecological mining trajectory must be urgently reconsidered, given not only their environmental consequences but also their psychosocial impacts.

European environmental policy organizes climate reductionism, narrowly focusing on CO<sub>2</sub> emissions, to promote neoliberal environmentalism or green capitalist approaches to socio-ecological catastrophe. The Barroso case, among others [10,26,28,48,120], demonstrates that this approach is ultimately false. Green rhetoric, reductive modeling and social warfare approaches to achieve a Social License to Operate is expanding mining into ecologically important areas that sustain ecosystems and, by default, contribute to climate stabilization. This trajectory of green extractivism promoted by the European Commission avoids identifying the source of socio-ecological catastrophe and taking responsibility for contributing to this trajectory. Industrialism, capitalism, consumerism and irresponsible extraction, infrastructural expansion, material and energy use are the undeniable sources driving socio-ecological and climate catastrophe. European Commission policies celebrating green capitalism, moreover, disable not only existing socio-ecological remediation strategies, such as is the Barroso region, but also marginalizes degrowth or post-developmental trajectories (see [98,101–103]). The development and appropriation of post-development and degrowth approaches by rural populations remains an urgent priority.

While Barroso also suffers from mechanization of food and economic liberalization as a result of European agricultural policies, it remains a region to learn and build from—an area ripe for scaling-up and improving agro-ecological activities and initiatives. Barroso, like other rural and Indigenous territories confronting mining and infrastructure companies, is not the problem, even if regional collaborators seem quick to "sellout" their ecosystems, culture and climate stabilizing natures. While this is understandable considering the dominant socio-ecological pressures and European standards, this (hyper)modernist trajectory of material and energy intensive infrastructure necessitating extractivism are a local, national and global socio-ecological and climatic threat. The shift towards post-developmental strategies and degrowth—revaluing and appreciating convivial lifeways—need to spread by every means necessary, instead of being marginalized by mainstream environmentalism and eco-modernism. European environmental policy encouraging mass extractivism of critical raw material remains a fundamental obstruction to genuine socio-ecological sustainability. Green extractivism, such as the prospective lithium mining in Barroso, is not a viable solution, let alone a climate change mitigation strategy.

## Declaration of competing interest

There is no conflict of interest.

<sup>96</sup> Interview 10, 20-01-2022.

<sup>97</sup> Interview 10, 20-01-2022.

<sup>98</sup> Interview 10, 20-01-2022.

<sup>99</sup> Interview 16, 21-01-2022.

## Data availability

The data that has been used is confidential.

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## Further Reading

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