# GreenPaths

EUROPEAN KNOWLEDGE HUB ON
JUST TRANSITION PATHWAYS

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# Introduction

## Abstract

The ‘Mina do Barroso’ case has become emblematic of the struggle between the push for decarbonisation and ‘green mining’—driven by international and national policies on critical mineral extraction—and the need for social, cultural, and environmental protections. This case study mobilises the concept of Green Sacrifice Zones (GSZs) to unpack the sacrificial logics present in key enabling policies, pro-lithium discourses, and processes of loss, damage and injustices experienced or anticipated by local communities impacted by the granting, public consultation and prospecting processes of Mina do Barroso. Through Critical Discourse Analysis (CDA) and content/keyword analysis of primary and secondary data, the case study reveals gaps in the socioeconomic benefits promised by advocates of 'green mining’. It also exposes a minimisation of environmental protection policies and an exacerbation of processes of rural marginalisation and peripheralisation. This poses a risk of erasing a unique and sustainable historical, agricultural, cultural, and social system.

## Keywords

Lithium; Decarbonization; Social Contestations; Green Extractivism; Agricultural; Cultural Heritage.

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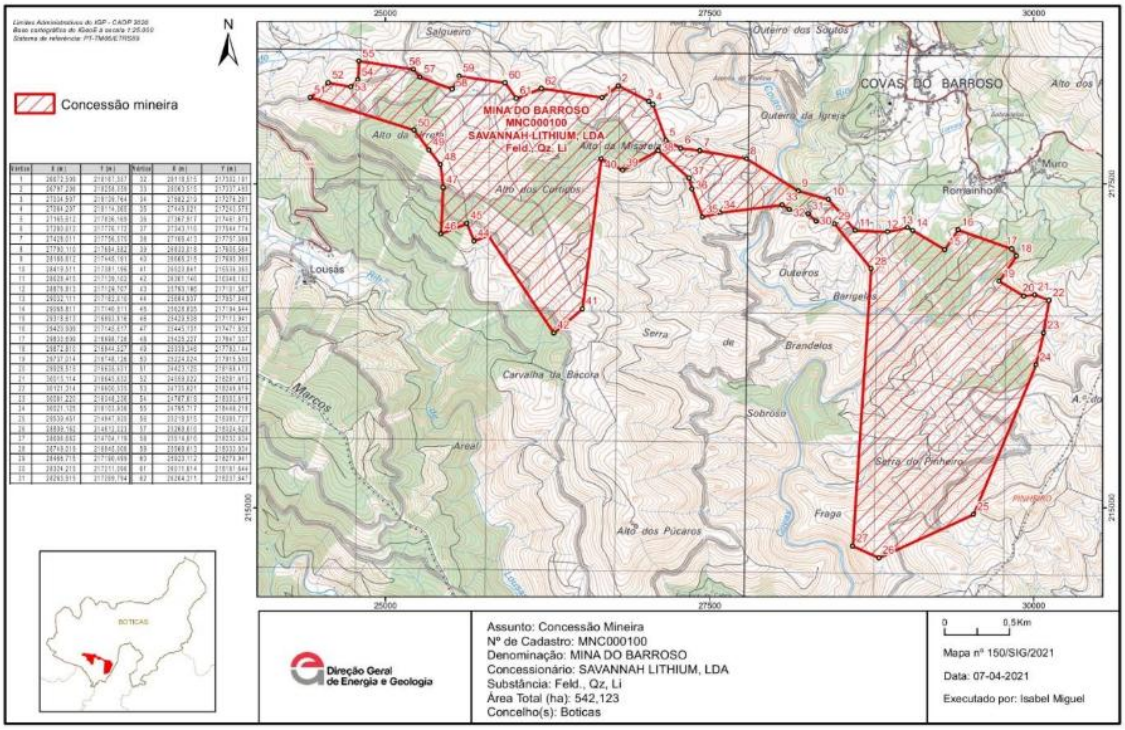
# 1 Overview

"It is not fair to sacrifice our community in the name of this false transition"
(Nuno, local farmer, fieldnotes, 19th March 2023).

This case study focuses on the proposed Mina do Barroso lithium project in Northern Portugal, specifically on the socio-environmental impacts of the policies that facilitate it. The case has become emblematic of the struggle between decarbonisation, driven by international and national policy on critical mineral extraction and lithium battery production, and social, cultural, environmental and heritage protections, drawing international attention as a potential sacrifice zone in Europe. The EU's acceleration of 'green extractivism', particularly through the Critical Raw Materials Act (CRMA), and Portugal's concomitant National Energy and Climate Plan (PNEC) bring this struggle into sharp relief.

**Figure 1. Map of the Mina do Barroso concession mining area submitted by Savannah for prospecting [Source: Mapa, 2021]**




The Barroso region is a mountainous agricultural area designated a Globally Important Agricultural Heritage System (GIAHS) by the UN. It sits on what are considered Europe's largest lithium reserves, placing Portugal among the top 10 global producers (Dunlap and Riquito, 2023, p.6). Tying into European Green Deal (EGD) targets to move production of electric vehicles to the EU—with batteries requiring 40% of local materials (EU Regulation 2023/1542)—Portugal's Secretariat of State for Energy (DGEG) created a Working Group on Lithium in 2016, encouraging applications for exploration and prospection licencing. By 2025, 22 lithium mining concession and prospection contracts

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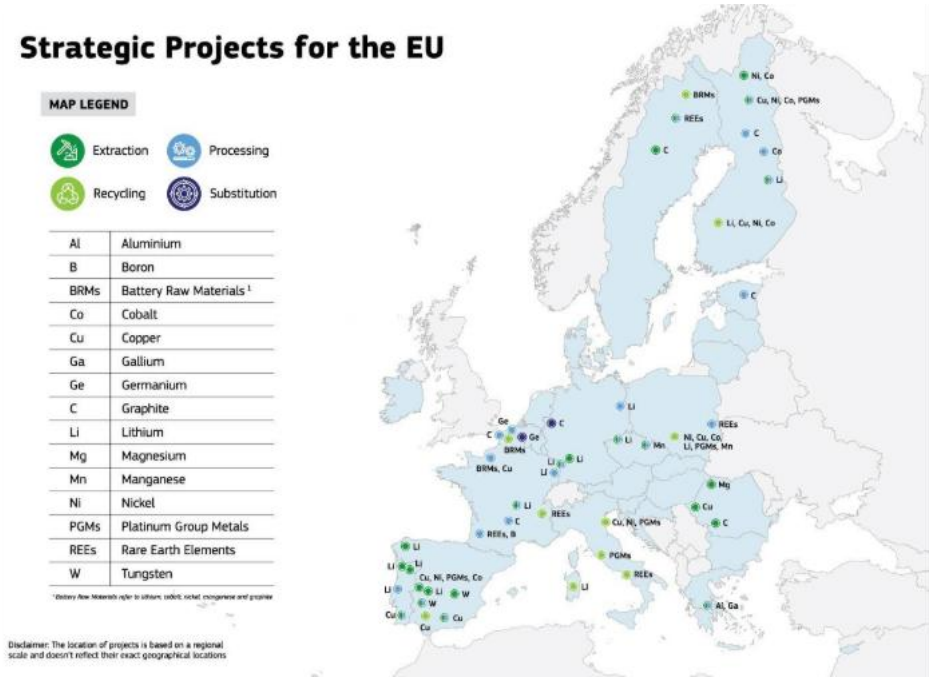
have been approved (12 since 2016), 10 of which are in the Barroso region, including the 'Mina do Barroso' project in Covas do Barroso (Figure 1), owned by Savannah Lithium Lda. In 2024, the Portuguese state granted an administrative easement to Savannah to access land, and in 2025 the CRMA designated Minas do Barroso as one of 47 Strategic Projects (Figure 2).

**Figure 2. EU Map of Strategic Projects marked under the CRMA. 2023 [Source: Renewables Now, 2025]**




The process through which Savannah obtained a mining contract has been marked by legal and community disputes, as documented by several sources (Dunlap and Riquito, 2023; Iberian Mining Observatory, 2023; Silva and Sareen, 2023; Riquito, 2025). The company's first Environmental Impact Assessment (EIA) in 2020 was declared "non-compliant". Then, in 2022, the Portuguese Environment Agency (APA) again rejected the project over environmental concerns. Despite this, Portugal's DGEG enabled the company to resubmit its EIA, citing lithium's importance to the energy transition. The subsequent public consultation on Savannah's EIA did not follow the 30-day criteria (EU Directive 2011/92/EU). This procedural failure resulted in a 2021 complaint to the UN's Economic Commission for Europe (UNECE) accusing Portugal of violating the Aarhus Convention on public consultation in environmental projects—an accusation that was later confirmed by a ruling against Portugal in 2025. Despite 98% of the 916 received submissions opposing the project, the APA issued a conditionally favourable Environmental Impact Statement (DIA) in May 2023. That same year, a UN Special Rapporteur complained to the Human Rights Council about potential environmental and livelihood damage caused by Savannah's project, and the local Parish Council of Covas do Barroso filed for annulment of the DIA. In February 2024, the Portuguese Public Prosecutor argued that the DIA should be annulled due to legal infringements, yet the case remains undecided (Riquito, 2025). Finally, in 2025, APA granted the company one year of access to private and communal lands to conduct prospecting, in the name of

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national interest and against a precautionary injunction issued by local owners and supported by local opposition.

While Minas do Barroso is among the most documented lithium projects in Europe, few studies offer qualitative data and analysis of different perspectives, drivers, social and economic impacts of the proposed mining project. Moreover, notwithstanding scholarly attention to green policies and their impacts in Barroso (Dunlap and Riquito; 2023; Saleth and Varov, 2023; Pusceddu, 2024; Riquito 2025), a significant gap remains in the analysis of the most recent EU and Portuguese national green transition policies. The present study contributes to fulfilling these gaps.

## 2 Research questions

This case asks:

*Who are the key actors involved in the granting, public consultation and implementation processes of the proposed lithium mining projects in Barroso? How are they responding to the proposed lithium mining projects? How are specific State and EU policies enabling or preventing lithium mining in Barroso? What are the anticipated costs and benefits of lithium mining in Barroso? What are the alternative proposals?*

In order to answer these questions the study employs the concept of "**green sacrifice zones**" (GSZs) (Brandajs, 2025; Zografos, 2022; Zografos and Robbins, 2020; Scott and Smith, 2017) to analyse the socio-ecological impacts of green transition policy as experienced and portrayed by different actors and community members in the region. The concept's relevance is grounded in both scholarly literature and empirical evidence, as local residents themselves repeatedly invoked the idea of sacrifice. Drawing on Environmental Justice and Political Ecology literature, the concept of GSZs emerged in the wake of recent (US and EU) Green Deal proposals and transition agendas, to expand the idea of conventional "sacrifice zones" (Juskus, 2023), proposing "that the logic of sacrificing a certain space or ecology can be expanded to include places and populations that will be affected by the sourcing, transportation, installation, and operation of solutions for powering low-carbon transitions, as well as end-of-life treatment of related material waste" (Zografos and Robbins, 2020, p.543). Furthermore, as the Green Deal policy drive is being supplanted by calls for EU defence and remilitarisation, we anticipate a creeping trend of "lithium for defence" arguments infusing the policy debate. Following Reinert's analysis on "projected sacrifice zones" (2018), this study treats GSZs not as a singular event but as an anticipatory, diagnostic tool that reveals the sacrificial logics embedded in policies and discourses that justify "green extractivism" (Dunlap et al., 2024), disproportionately affecting the Global South but also evident in prospective EU green mining projects, such as the 'Mina do Barroso' (Saleth and Varov, 2023).

This research therefore contributes to the literature about *the making of* GSZs in Europe not only by uncovering the multiple pre-extraction processes (**losses and damages, injustices, and inequalities**) experienced or anticipated by different actors and

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community members in Covas do Barroso, but also by highlighting the implicit/explicit, controversial and even conflictual **"green" sacrificial logics** that inform such processes, as detectable in planning and policy documents, official discourses, resistance, and decision-making processes. By highlighting how green extraction promoters justify or erase multiple harms, and by uncovering the anticipated losses, damages, and injustices experienced by the people of Barroso, the study answers GreenPaths' aim to illuminate the socio-ecological impacts (costs and benefits) of EU and Portuguese green transition agenda.

# 3 Methods

This study employs a mixed-method approach using multiple data sources: academic and grey literature on Mina do Barroso and associated examples of green extractivism and green sacrifice zones in Portugal and the EU in general; key EU and national policies, focusing on the EU's Critical Raw Materials Act (CRMA) (2024) and Portugal's updated National Energy and Climate Plan (PNEC) (2024); fieldnotes from participant observation of daily life in Covas do Barroso, between April 2023 and April 2024, taken from the ethnographic doctoral research of Mariana Riquito, which included, participating in daily agricultural, social, or domestic tasks, as well as inhabitants' encounters and reactions to the growing transformations brought by the expansion of prospective lithium mining in the village; as well as excerpts from 18 semi-structured interviews with inhabitants from Covas, aged between 27 and 100 years old, mostly farmers, retired or working in care and social work; Savannah's promotional material; and two public CES events that engaged discussion of the case between social movements, local residents, NGOs and researchers: a March 2025 webinar *How the Lithium Rush is Producing Sacrifices Zones in Europe and Beyond* and an April 22 seminar *What are the challenges and paths for the energy transition in Portugal?*

The CRMA (2024) and PNEC (2024) were analysed using Critical Discourse Analysis (CDA) (Van Dyke, 1993; Cummings et al., 2020), while the remaining primary and secondary data were analysed using MAXQDA software, using thematic coding, keyword and content analysis of both the "manifest content" (i.e. that pertaining to de facto surface analysis around the occurrence of key words and the broad identification of central themes) and the "latent content" (i.e. hidden or insinuated meaning) (Sarantakos, 2005, p.300). CDA served to identify dominant discourses and language used to justify green (lithium) extraction. Keywords and content analysis enabled researchers to highlight the main (socio-economic-environmental) costs and benefits perceived by different stakeholders, including Savannah, Barroso residents, local authorities, activists and researchers.

The commissioning of Strategic Projects under the CRMA to meet the EU's call for lithium, decarbonisation and battery production for 'green technologies' are contextualised by Portugal's policy commitment to decarbonisation grounded in critical raw material extraction, namely of lithium, as highlighted in the updated version of the PNEC (2024) and in the 'Action Plan' of the CRMA Working Group.

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We foreground the Barroso case with the following indicators: Portugal's share of renewable energy in total final energy consumption, 34.7% in 2022 (World Bank, 2022); the country has the largest reserve of lithium in Europe with an estimated 60,000 metric tons (Direct Industry, 2022); 22.0% of people are at risk of poverty or social exclusion in Northern Portugal (EAPN, 2024). However, these data points are merely benchmarks, any socioeconomic impacts are longitudinal - with the Barroso mine set to commence operations in 2027 and the next census in Portugal not due until 2031. Information gaps include a lack of detailed regional household surveys, disaggregated sociodemographic data, and indicators of intangible loss and damage, which are essential for intersectional analysis of the transition's true costs and benefits.

Applying the GreenPaths analytical framework and conceptual and methodological matrix (See GreenPaths D2.4 and D3.1), the case uses concepts of **decarbonisation**, **renewables, new extractivism**, and **green-grabbing** as filters, adopting the theoretical lens of Green Sacrifice Zones (GSZs) (Zografos and Robbins, 2020; Scott and Smith, 2017) and dimensions of Environmental Justice (EJ) to identify and analyse examples of key processes of social impact (**injustice/inequality** and **Loss and Damage**) related to lithium mining in the Barroso region—both ongoing (pre-extraction) and anticipated socio-environmental impacts- and the green-grabbing of private and communal (*baldios*) lands. The methodological tools applied in this study (CDA, the CRMA, the PNEC and the EJ framework) facilitate qualitative analysis and enable this case study to build on the existing literature. Applying this framework and lenses helps identify contingent themes of sacrificial logic in the preparation and formation of green sacrifice, linked to critical mineral policy at the EU and national level.

# 4 Findings and results

The key academic literature identifies the case for lithium extraction in Barroso and outlines the links between the Portuguese "lithium rush" and green energy policy at the international, EU and national level (Carvalho et al., 2021; Carvalho et al., 2022; Delicado et al., 2016; Chaves et al., 2021; Dunlap and Riquito; 2023; Pusceddu, 2024; Riquito, 2023; Riquito, 2025; Saleth and Varov, 2023; Silva and Sareen, 2023). For instance, Carvalho et al. (2022) analyses sociotechnical imaginaries of energy transition emerging from the RNC2050 and in context of EGD. Dunlap and Riquito (2023) critically engage in the topic of green extractivism by the "insidious social technologies of pacification" and counter-insurgency tactics deployed to further public acceptance of critical raw material extraction. Pusceddu (2024) analyses efforts to reframe mining and mineral extraction of the energy transition at the complex and contradictory intersection of environmental and economic anticipations. Riquito (2023) critically reflects on the dominant narrative of green transitions, rooted in a rhetoric of inevitability, which is legitimising extractivism and enclosing possibilities for alternatives. Riquito (2025) also explores the affective and embodied dimensions of resistance, rooted in re-existence for a place-based way of life in Barroso. Saleth and Varov (2023) explore the concept of "sacrifice zones" through a political ecology lens that analyses concepts of place and anticipation; focusing on

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identity of place and the mobilisation of anticipatory capabilities to prevent or secure imagined futures. Silva and Sareen (2023) engage with the term 'extractivism' to explore sociotechnical imaginaries around social movements and lithium mining.

The literature indicates a wide range of competing and contradictory motives, incentives, fears and concerns about lithium mining in the Portuguese context. It documents the perspectives of a wide range of stakeholders, including local residents, politicians, social movements, energy and mining companies; highlighting short, medium, long-term and intergenerational social impacts of green transition policy. CDA of key policies and excerpts from primary data containing the testimonies of local resistance actors involved in opposing the mine enriches this field with further context and texture.

## Urgent Sacrifices for a "Green" Save: Logics of Sacrifice in EU and National Policies

The CRMA and Portugal's PNEC function as complementary instruments that deploy a convergent set of discursive strategies to fast-track mineral extraction for the green transition. CDA reveals how both policies construct a narrative of inevitability and manufactured urgency that systematically sidelines democratic integrity and environmental protection. The 'saving the planet' rhetoric that is foundational in both documents and drives the fast tracking of lithium extraction, appears to be just one rationale among others which, include military defence, geopolitical competitiveness and nationalistic pride. This theme is also explored in a new study by Vivoda et al. (2025) who map and unpack a typology of information manipulation in critical minerals governance, suggesting that the global green extraction projects is "as much about informational control as it is about material extraction". This urgency is explicit in the CRMA's expedited approval processes for Strategic Projects and emphasised by the Draghi Report, "*The Future of European Competitiveness*" (2024), which provides the broader strategic context and implementation path needed to make the CRMA successful. This push for urgency and fast-tracking is also echoed in the PNEC, particularly grounded in a missionary call for Portugal to be a "frontrunner" in achieving carbon neutrality five years ahead of the EU schedule. This accelerated timeline systematically sidelines substantive public consultation, dismissing profound ecological and social costs as mere short-term inconveniences on the path to a greater good (or against a possible military threat or economic competitor), constituting a clear procedural injustice. The "fast tracking" also forecloses deeper discussions about energy demand reduction. focusing instead on the need to switch energy sources.

Both documents employ deliberately ambiguous, positivist language to greenwash extraction and evade accountability. The CRMA operates as an investor-friendly blueprint, filled with hollow references to 'respect for' human rights based on toothless principles (e.g. EU principles for sustainable raw materials, 2021; UN Guiding Principles on Business and Human Rights, 2011; World Bank's International Finance Group (IFG) Performance Standard 5 on Land Acquisition and Involuntary Resettlement (2012)). Conversely, the CRMA could have cross-referenced international covenants and

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declarations (e.g. UN International Covenant on Civil and Political Rights (ICCPR), 1966; the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966; UN Declaration on the Rights of Indigenous Peoples (UNDRIP), 2007; UN Declaration on the Rights of Peasants and Other People Working in Rural Areas, 2018)) that link to existing UN mechanisms like the Universal Periodic Review (UPR) process and the Human Rights Council (HRC) complaints procedure that track access to, and violations of, fundamental rights under international human rights law. There is an overwhelming preponderance of 'slightly positive' and 'neutral' language concerning environmental and social impacts, reducing potential harms to vacuities to be avoided by 'applicants', with no formal recourse for opposing communities.

This strategic ambiguity is mirrored in the PNEC, which frames green economic growth as the undisputed panacea for social and environmental good. The Plan ties capitalist growth to renewable energy and mineral extraction, promising socioeconomic prosperity, job creation, and a Just Transition (JT). While a substantive integration of a JT framework is new for the Portuguese policy, its vision is narrowly defined. The PNEC reduces injustice to energy poverty and industrial workers' rights, ignoring intersecting axes of inequality (gender, race, class, rurality, etc.) and other affected groups like care/domestic workers (Barca et al., forthcoming), or (mostly rural) communities hosting renewable infrastructures and green mining projects (Delicado et al., 2016). Despite claiming projects should be "sustainable and beneficial for all stakeholders" (p. 23), the Plan fails to recognise rural communities as frontline subjects of the energy transition and omits their participatory rights. The opinions of local municipalities, for instance, are deemed "non-binding" (Decree-Law 30/2021, Article 16(3)).

Furthermore, the PNEC's environmental discourse is characterised by contradiction. On one hand, it emphasises the importance of ensuring that "mineral exploration and exploitation adhere to strict environmental sustainability principles" (p. 210)—though these are not specified—and explicitly mentions safeguarding areas protected under national and international law, such as UNESCO World Heritage sites, FAO Globally Important Agricultural Heritage Systems (GIAHS), and Natura 2000 zones. However, in practice, these commitments are nullified by the cross-referencing of the very CRMA framework that allows projects deemed of "overriding public interest" to bypass these protections (see also Marin et al., 2023, p.60). The EC's recent designation of the Barroso lithium mine, located within a protected GIAHS site, as a Strategic Project exemplifies this, sending a clear message that ecological and cultural values are subordinate to extractive goals. Ultimately, both policies insinuate collective EU and national support, homogenising 'win-all' benefits and leveraging promissory language to legitimise the very injustices they claim to avoid, all whilst offering no binding mechanisms for community recourse or environmental mitigation.

## Where there is no life, there can be no sacrifice – or the sacrifice of rural life.

Proponents of the Barroso lithium mine present it as a unique opportunity for green economic growth. Savannah Resources' CEO, Emanuel Proença, frames it as a

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geopolitical and strategic issue, stating: "Where there is a great need, there are opportunities of great value" (Rodrigues, 2024). The promised local benefits include new jobs and financial incentives - €485,000 to be distributed among members of the affected baldios, with an additional €125,000 per year; a payment of €0.65 per ton of spodumene concentrate sold for Covas do Barroso residents; and a flat donation of €290,000 to local volunteer firefighters (Savannah, 2024) - as well as infrastructure like new roads. The Mina do Barroso project, as claimed by Savannah, will create c.350 'direct' jobs and c.2000 'induced' jobs. Actual jobs created as of March 2025 (prior to mining operations commencing in 2027) are 40, 82% being Portuguese nationals, (70% male, 30% female) with 51% (20) purportedly hired from the region (ibid). These benefits, according to Proença, represent an opportunity to "revitalise" the Boticas area (Rodrigues, 2024). This conclusion is rooted in a pro-lithium narrative of rural decline, which describes the region as being "among the municipalities with the worst performance in economic and human development" (Ibid). Similarly, research on the Barroso mine funded by Savannah (Carballo-Cruz and Cerejeira, 2020) paints a picture of a region mainly characterised by depopulation, illiteracy, underdevelopment and enduring poverty - in other words: dying.

The "rural decline" is a powerful metaphor often used to pave the way for renewed processes of dispossession in Europe, justifying green extraction as a win-all project with no socio-economic costs (Del Mármol and Vaccaro, 2020). Rural Portugal, including Barroso, is indeed in crisis due to long-term processes of peripheralisation and "renewable energy colonialism" (Batel and Küpers, 2022; Batel et al., 2024; Poeta Fernandes, 2019). Where some locals have held out hope that the lithium mine could create employment and uplift the area (Pusceddu, 2024; Silva and Sareen, 2023; Conde and Le Billon, 2017), the majority of the local community fundamentally rejects the idea of a dying rurality in need of being saved and resurrected by the mine. Opponents criticise the sacrificial logic and intentions behind this discourse, arguing instead that the rural world is being sacrificed for the benefit of outside investors, companies, and the urban world.

The feeling of being sacrificed builds on perceived and experienced State neglect towards the region, as well as familiarity with prior renewable energy projects implemented in the area, which contribute to a growing fear of being sacrificed again for decarbonisation, which was frequently expressed during conversations or interviews. Residents argue that lithium mining destroys their environment and way of life to provide benefits, like green mobility, for urban populations (Wappelhorst, 2021) - a clear distributional injustice. This sentiment is rooted in a history of broken promises. Farmer Mafalda pointed to past projects, like the dams that seized homes and lands, which were justified as a public good but ultimately served private profit (Interview, 10 April 2024). Seeing the same pattern repeat, she condemned the lithium project as another case of "sacrificing us so they can line their own pockets." This echoes farmer Nuno's assertion that it is "not fair to sacrifice our community for this false" promise (Fieldnotes, 19 March 2023).

Residents oppose Savannah's extractive vision that equates life with metrics of economic growth and value creation with their defence of a "rural way of life" (see also Riquito, webinar, 2025), a "modo de vida" which "refers to a set of social, property,

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labour, family, and ecological relations, enacted and reproduced through specific, place-based practices, over generations, which sustain life in this place [Barroso]" (Riquito, 2025, p. 12). This *modo de vida* is understood as "truly sustainable" (Saleth and Varov, 2023, p.302) and opposes the mining project, as reflected in the "Yes to Life, No to Mining!" and "Mining is not Green, Green is Barroso" slogans used in Covas do Barroso protests. Opponents of the mine describe Barroso as a rich ecosystem characterised by unique historical-agricultural-cultural practices and intangible, life-making and place-based values where lithium mining would cause "irreversible damage" (Associação Unidos em Defesa de Covas do Barroso, MiningWatch Portugal, 2024, p.3).

This is corroborated by APA, which initially found the project a jeopardy to the region's GIAHS status (AIA 3353, 2022) yet still issued a conditionally favourable DIA. The municipality of Boticas warned the mine would cause the "irrecoverable destruction of the entire surrounding ecosystem and respective community" (2023 public consultation, p. 8). The threat encompasses multiple forms of environmental harms (see Section 3), as well as the expropriation of private and common lands or "green grabbing" (Dunlap and Riquito, 2023), which has been greatly enabled through administrative easements (UDCB 2024, p.5-6). Inhabitants anticipate displacement, often commenting "where will we go?" and fears over the disappearance of small-scale agriculture and traditional husbandry, which depend on communal lands and labour.

Locals refute Savannah's promised economic benefits, job creation promises and development ideology. First, they anticipate that demand for highly skilled labour will see jobs go to outsiders rather than locals, since the local population is ageing, lacks particular skills and qualifications, and does not want to work in the mine. As fieldwork observed, most subcontracted workers from Savannah are not from Covas, but from neighbouring villages. Second, residents fear the project will disrupt or even extinguish existing jobs in farming and other agricultural-related activities. As João, a local beekeeper stated: "Because of 3 jobs, more than 20 jobs are going to be destroyed? There are more than 20 farmers in Covas! For the locals, the mine isn't going to bring any profit at all" (Interview, 15th January 2024). or, in the words of a farmer during the first Camp in Defence of Barroso, in 2021, "for each job created by the mine, several [jobs], which are sustainable, are destroyed" (Fieldnotes, 15th August 2021). These sentiments echoed a commonly spread worry expressed by locals during fieldwork. Furthermore, there are fears that environmental harm created by the mine will greatly impact the quality of the products sold. For example, João talked about the honey produced in Barroso, which has won international awards, "[with the mine] the quality of the honey will be lost, the quality of every product which is produced here will be (Interview, 15th January 2024). This concern relates also to the risk of losing its unique GIAHS status, as APA's Evaluation Commission itself reports, and the Public Prosecutor's Opinion warns.

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## "There will have been no environmental harm": the sacrificial use of restoration

Socioeconomic costs articulated by residents are inextricably related to environmental harms - households' subsistence and social reproduction being dependent not just on land and labour, but also on "ecological assets" (Bruna, 2023, p.143). The Savannah lithium project includes four open-pit mines, a 24/7 processing plant, several waste facilities, as well as extensive transport infrastructure. The scale of mining paints a picture of profound and extensive alteration to the landscape, foreshadowing significant ecological consequences for the wider region (Riquito, webinar, March 2025). Different from socio-economic-cultural costs, denied and ignored by pro-lithium advocates, environmental costs are naturalised and even neutralised by the promise of mitigation of impacts and biodiversity restoration, two crucial ingredients of "green mining" (Dunlap and Brock, 2021 [2017], p.99). Portuguese Minister of the Environment and Energy in Portugal Graça Carvalho, who happens to be a mining engineer, argued that "there are always environmental impacts … the principle is to minimise them and … environmental science and technologies enable us to develop such kinds of projects" (Carvalho, 2024). This prominent counter-argument from lithium proponents suggests that ecological restoration can neutralise any damages, creating a 'no net harm' discourse. In this 'no loss, no damage' logic, there is no lasting sacrifice to mourn, only a temporary imbalance to be technically managed. Savannah embeds such techno-solutionism in its discourse. To support its image of a quintessentially "green" mine, the project entails mitigation and restoration measures as a prerequisite of CRMA Strategic Projects and APA EIAs. This includes a proposed closed-loop water system to avoid using the local river and plans to translocate protected species and create new conservation areas, "to restore the landscape and leave it in a better state than when we found it" (Savannah Resources former CEO Dale Ferguson in Mackay, 2022).

Residents, activists and experts reveal and reject the sacrificial logic behind the evidence-free promises by corporations and states of mitigation and restoration strategies of "accumulation by restoration" (Brock, 2023). The open-pit mine, waste dams and infrastructure threaten widespread pollution, soil degradation and catastrophic water contamination, jeopardising local springs and river basins. According to experts and the APA's Evaluation Committee, biodiversity faces irreversible harm, with critical risks of habitat fragmentation of endangered species (e.g. Iberian wolf, Freshwater Pearl Mussel and Shining Macromia dragonfly).

Savannah's mitigation measures are considered entirely insufficient. Its Environmental and Landscape Restoration Project (PARP) is criticised for lacking "positive impacts" and offering inadequate mitigation for the inevitable damage to landscape, soil, water and biodiversity. The sentiment that the plan treats the region as inherently expendable was widespread in the 2023 public consultation. One citizen argued, for instance, that "the mitigation plan… cannot be technically founded on the presumption of a sacrifice zone" (public consultation, 2023 p. 415). The water management strategy is a primary concern. Hydrologist Steven Emerman's report concludes that Savannah's plans are "highly experimental" and fail to comply with safety standards, particularly for waste

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infrastructure. This is alarming given the company's own contingency to capture water "directly from the Covas River" in case of shortage (which questions the companies' 'closed loop' claims). Furthermore, the project's climate impact is severe, with estimates showing it would cause a sixfold increase in the municipality's carbon emissions, a factor glaringly omitted from the EIA (UDCB, 2024 p.7).

The anticipation of irreversible environmental harm is reinforced by lived experience of the abandoned Minas da Borralha, which mined Wolframite from 1903 until 1986, and left "empty houses... and visible environmental degradation" (Dunlap and Riquito, 2023, p.11). Inhabitants contest Savannah's claims because they are already witnessing immediate impacts and fundamentally do not trust the mining company's promises. The first exploratory drillings in 2017, for example, triggered local resistance, as residents directly perceived the severe environmental consequences of those interventions, which the company never "restored", despite assurances to the contrary. Since May 2023, after the project DIA was approved, residents have continued to report significant environmental damage. Noise pollution has become a daily burden. As one farmer expressed: "Today there's only one, some days there are more machines, and it's truly unbearable... for those of us who are used to hearing the birds only" (Fieldnotes, 19th March 2023). Equally disruptive is the creation of spoil heaps (*escombreiras*), created during exploratory drillings, which have left scars on the landscape. Another farmer commented: "It used to be such a good place, we would go there to the woods and look at it now! This is a spoil heap, nothing more! They say that in the end they will restore it all, but that's a farce!" (Fieldnotes, 7th March 2024).

Water precarity remains one of inhabitants' greatest fears, as water is a vital element in organising life in Covas (Riquito 2025). One farmer spoke at a location where the company was conducting prospecting works: "they are not complying with what they claim: they do not have authorisation to draw from the streams. All the water that is collected and used should be done in a closed loop" (Fieldnotes, 5th March 2024). The water used in the prospecting was observed to be subsequently discharged into a brook, a tributary of the Covas River. "And do we not have reason to be concerned?! There are meadows further downstream that are irrigated with this water!" (Ibid). Prior to mining explorations, the farmer would drink water from any stream and from the river, but now he has to be more careful. The fear caused by the prospect of an open-pit mining operation, which foresees a use of water far exceeding local consumption, alongside the use of chemical products and reagents, is amplified by the exploratory activities of the mining company, which are already disturbing the socio-ecological realities of the local way of life.

Overall, opponents believe no mitigation or restoration can compensate for the project's fundamental destructiveness. The local Parish Council concludes that livelihoods will be "completely altered and affected", a point powerfully underscored by Aida Fernandes, president of the Baldios, who contends: "the mine will destroy everything that we possess... It will destroy our identity... our land... our rivers, our waters. And that is not reversible!" (cited in EEB, 2023 p.62).

The sacrificial logic presented here is based on techno-restoration presented as a *real* neutralisation of impacts. The harm is pre-emptively declared null and void by the future

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promise of repair as if, in Reinert's (2018 p.609) words, "there will have been no [environmental] violence". This is stated in the EU Regulation 2024/1991, underpinning Portugal's restoration plan: "[w]here, [...] an area is transformed from one habitat type falling within the scope of this Regulation to another habitat type falling within the scope of this Regulation, the area *should not be considered to have deteriorated*" (7, italics added).

Similarly, when the CRMA references environmental protection and mitigation requirements (EU Directives 2000/60/EC, 92/43/EEC, 2009/147/EC), they are essentially phrased in ways that insinuate barriers are navigable: "It should be possible to authorise Strategic Projects which have an adverse impact on the environment", and when the technical and legal promises are ticked off, the public interest served by the project can override those impacts (CRMA, p.6, Art.27). Through this logic, Strategic Projects are approved in protected Natura 2000 and GIAHS sites such as Barroso. Consequently, where these international environmental protection frameworks offer communities tools of resistance, they are also circumvented through the strategic promise of technocratic restoration. In recognising Mina do Barroso as a Strategic Project, the EC essentially said: globally recognised biodiversity, ecological, cultural and agro-historical practices are less important than lithium.

## If there are no costs, any opposition is irrational

The sacrifice of community participation in decision-making processes and the missing "right to say no" highlighted by the Special Rapporteur (Boyd, 2023) is a consequence of both the fast-tracking logic imposed by policy frameworks and the denial of any socio-environmental costs by pro-lithium advocates. As addressed by the existing literature, the Mina do Barroso case reveals serious concerns about public information, participation, consultation procedures and the approval of mining licenses (Dunlap and Riquito; 2023; Saleth and Varov, 2023). This was recently confirmed by the UNECE Aarhus Convention Committee, which in August 2025 ruled that Portuguese agencies violated the treaty with regards to public consultation. Specifically, APA did not respond to requests for information within the legal timeframe and, when refusing, neglected to inform citizens of their appeal options. The mining authority (DGEG) also breached the Convention by improperly redirecting a request. The Committee also determined that the 2023 public consultation was flawed, highlighting systemic legal issues in Portugal, such as excessively brief comment periods and limited document disclosure.

Since the very beginning of the project, the local population has not participated meaningfully in decisions regarding the future of their territory, and when concerns and opposition emerged, they have been systematically dismissed. After the first meeting organised by Savannah in the Romainho Chapel in Boticas, a local said: "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" (cited in Dunlap and Riquito, 2023, p.11). Since 2018, when Unidos em Defesa de Covas do Barroso formed at the forefront of the local anti-mining movement, the reaction of Savannah, instead of promoting substantial community engagement, has

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been to neutralise dissent (ibid). In a comprehensive public relations campaign, it addressed contestation of the project as a result of "misunderstandings", "lack of information", or a lack of reasonableness on the part of residents, isolating the organised "opposition" as a few radicals, untrustworthy and a hindrance to green progress. In reality, it is also important to emphasise how the Barroso's local resistance movement was able to coalesce and form alternative support networks that include national and transnational non-governmental actors with experience of navigating the contested legal space between extraction companies, civil society and the state. These include Portuguese NGOs with UN consultancy status (ZERO and QUERCUS); local and national environmental and community resistance movements (Associação Unidos em Defesa de Covas do Barroso; Mining Watch Portugal; Observatório dos Recursos Naturais) and international NGOs (Iberian Mining Observatory; Montescola Foundation).

"Soft technologies of social pacification" have also been deployed, such as "making social development promises, organising local support, employing public relations campaigns, utilising scientific research to legitimise their claims, employing environmentally friendly rhetoric, and developing infrastructures to support its operation" (Dunlap and Riquito, 2023, p.16). These have increased since the approval of the DIA, in May 2023.

Cooperation between the mining company and state authorities in preventing public participation, weakening dissent and allowing the mine project to proceed in the face of widespread public outcry, has resulted in multiple injustices and psychological and emotional impacts on the local community (Riquito, 2025). This applies especially to women, who are often on the frontlines of the struggle and, due to their historical role in social reproduction, often assume a lot of the emotional labour needed for resistance (Riquito, webinar, 2025). One resident stated: "We're in a very painful, difficult, unfair, exhausting process, but we keep fighting"; and continued: "People are not just tired but outraged [...] We always thought the state was here to defend us, not to stab us in the back and defend private interests" (GreenPaths CES seminar, 2025). Another referred to the National Republican Guard's policing practices as forms of "intimidation" against local protesters. As Riquito notes, "extractivism's most profound impact [...] is the emotional, the affective, created by the presence of mining companies and their instigations of divisions and manipulations, and the halt that it puts on the possibility of a future" (Riquito, webinar, 2025).

# 5 Main results

The EU's green transition creates severe socio-environmental costs for rural communities like the one of Covas do Barroso. Policies justify "green extractivism" by sidelining democratic and environmental safeguards, creating sacrificial logics that disproportionately burden peripheral regions. The primary enabling mechanism is a policy framework - spearheaded by the EU's CRMA and Portugal's PNEC - that construct a narrative of manufactured urgency based on geopolitics, economic

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competitiveness and nationalistic pride, couched alongside climate goals. This narrative fast-tracks extraction by designating projects like Mina do Barroso as “strategic”, allowing them to bypass environmental protections and substantive public consultation. These policies employ deliberately ambiguous language, offering hollow commitments to environmental sustainability and a narrowly defined Just Transition (PNEC) that exclusively focuses on urban energy poverty whilst omitting rural communities affected by extraction.

Proponents frame the project through a discourse of “rural decline,” presenting the mine as the only solution to depopulation and underdevelopment. Instead, locals affirm the mine will threaten their way of life, rooted in small-scale agriculture, traditional husbandry - practices that depend on and care for a healthy ecosystem. Existing practices are defined as "truly sustainable," opposing an extractive vision that equates life’s value with metrics of economic growth. Locals denounce the legally contested land grabbing and anticipate the irreversible destruction of intangible values, from health and wellbeing to their cultural identity and GIAHS status, as well as the disruption of livelihoods, leading to further emigration.

These social costs are inextricably linked to profound environmental costs. Treating them as separate reinstates the Western modern-colonial dualism of "human vs. nature", which is largely contested by environmental justice, ecofeminist and political ecology scholars (see Swyngedouw, 2007; Martínez-Alier, 2002; Latour, 1993; Merchant, 1980). The open-pit mine threatens widespread pollution, soil degradation, and catastrophic contamination of water resources vital for local subsistence and socio-ecological reproduction. It poses an irreversible threat to biodiversity, including endangered species. These harms are naturalised by a techno-solutionist discourse promising mitigation and restoration. The company and state authorities pre-emptively declare future environmental harm null and void through promises of technological repair, a logic enabled by EU regulation. However, expert analysis and local knowledge confirm that mitigation plans are inadequate, highly experimental for water management, and cannot compensate for the project's fundamental destructiveness.

Ultimately, fast tracking and the denial of these costs lead directly to the sacrifice of community participation. The study reports multiple violations of the Aarhus Convention, including inadequate public consultation and restricted access to information (ACCC/C/2021/186, 22 August 2025). The erasure of dissent has been a priority for Savannah Resources. This has generated significant psychological and emotional impacts, particularly for women on the frontlines, fostering feelings of exhaustion, outrage, and betrayal by a state perceived to be defending private interests over those of its citizens. The Barroso case stands as a stark emblem of how green transition policies, in practice, perpetuate sacrificial logics of dispossession and marginalisation. These logics concretise into procedural, recognitional, distributional, and prospective injustices, resulting in the creation of green sacrifice zones within Europe itself - particularly in rural areas - all in the name of promised national or supranational (economic) benefits.

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# 6 Discussion and conclusions

The costs and benefits of 'green' transition policies, when analysed through the lens of GSZs, reveal some key sacrificial logics and narrative devices that fail to correspond with the lived realities of local communities. Furthermore, the aims seem contradictory: mining lithium to reduce carbon emissions requires damaging the environment to save the environment – this paradox needs to be challenged as the policy drive cascades from the global to the local, where representation and power dynamics in decision-making processes, self-determination in, access to, and use of resources, and who benefits financially need to be intensely scrutinised.

Over the past decade, the concept of GSZs has been extensively studied in the Global South, particularly in the Lithium Triangle, highlighting the resistance of local, often Indigenous, communities to the extractivist and colonial dynamics of the green transition (Balcázar Morales, Webinar, 2025; Voskoboynik and Andreucci, 2021). These dynamics are linked not only to the pervasive socio-ecological impacts of such projects but also to their perpetuation of "patterns of dispossession, marginalisation, and selective exposure to harm—dynamics that resonate with the original formulation of necropolitics" (Brandajs, 2025, p.4; Debert and Le Billon, 2024). While "green" mining is already a reality in Europe, it frequently exists in the form of contested projects processes, not fully realised plans. Indeed, literature on the making of green sacrifice zones within the EU has grown in recent years, highlighting the particular risk of their emergence in European peripheries (Djukanovic, webinar, 2025).

The lithium rush in Portugal, exemplified by the proposed Mina do Barroso project, is a key case in point. This study has contributed to this literature as well as to GreenPaths' overarching aims by elucidating the sacrificial logics characterising the projected lithium mine in the Barroso region. Preceding and paving the way for the material act of extraction, these logics—embedded in policy documents and mining advocates' discourses, and unmasked by residents and anti-mining stakeholders—reveal ongoing and anticipatory processes of (procedural, recognitional, and prospective) injustice, alongside entrenched inequalities (especially rural/urban and gendered), and multifaceted socio-environmental-economic-psychological losses and damages.

While closely resonating with the 'conventional' (i.e., fossil fuel) sacrifice logics described by Reinert (2018), the sacrificial dynamics in Barroso exhibit key differences specific to both its 'green' rhetoric (cf. Voskoboynik and Andreucci, 2021) and the current geopolitical moment. Whereas, until recently, 'green' extractive projects underwent lengthy evaluation processes (Pusceddu, 2024, p.391), often due to continual EIA referrals and strict EU environmental policies, our CDA reveals a new language of "urgency" and "fast-tracking" in the CRMA. This rhetoric, often driven more by geopolitical competitiveness and military defence than climate action, suggests a future acceleration of Strategic Project approvals, which effectively prioritises mineral extraction at the expense of environmental protections, local community interests and the principles of a JT.

As evidenced by CDA of the PNEC (2024), the concept of a JT risks becoming an increasingly empty signifier, used to justify green capitalism rather than to combat or

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prevent the multiple, intersectional forms of injustice experienced by vulnerable groups, industrial and non-industrial (care) workers, and communities affected by decarbonisation policies—the latter being notably absent from the plan. While the PNEC mentions JT multiple times, it simultaneously presents the green economy and green extractivism as unequivocal opportunities for national standing and economic growth, promoting a win-all green development narrative. Moreover, the 2023 PNEC is the first Portuguese Plan to dedicate a specific section to critical raw materials extraction, clearly influenced by the EU's CRM strategy. As in the CRMA, a clear inconsistency exists between the deployment of a vague notion of "sustainability" and a lack of any tangible improvements in environmental protection. Furthermore, opaque references to "respect for human rights and labour rights, including the community life of indigenous peoples" (CRMA, Annex 1V, 2024) fail to cross-reference any specific, substantive and binding legal instruments under international human rights law (IHRL). For example, given the importance of water in the Barroso case, linked to the aforementioned foundational treaties of IHRL, the 2010 recognition of a distinct human right to water (UN Res. 64/292), further clarified by a 2015 de-coupling of water and sanitation as linked, but independent rights (UN GA Res. 70/169), could have been cross-referenced with regard to rights to protection and recourse for possible contamination of drinking water. Alternatively, UNDROP Articles 5.1 and 28 relate to peasants' and rural workers' rights to access, sustainably use and co-manage their communities' natural resources. As Boyd (A/HRC/52/33/Add.1, 2023) argues, "large resource extraction projects that may violate human rights in the name of the green transition are antithetical to sustainable development", highlighting that the "growing global problem of sacrifice zones" is "incompatible with the human right to a healthy and ecologically balanced environment" (ibid). Efforts to reconcile green mining with meaningful conservation thus appear increasingly unrealistic.

Extractivist projects frequently employ a "rural decline" discourse to justify mining in the name of development and its attendant socio-environmental harms (Carballo-Cruz and Cerejeira 2020; Del Mármol and Vaccaro, 2020; Velicu, 2019; Saleth and Varov, 2023). As De Mármol and Vaccaro (2020) have shown, this remains true for green extractivism in the EU, which is predicated on a renewed colonisation of rural areas strategically framed as "empty". The lithium projects in Barroso confirm this trend (Dunlop and Riquito, 2023; Pusceddu, 2022), enacted through a specific sacrificial logic: lithium advocates' strategy of addressing the area as underdeveloped, depopulated, almost dying – thereby overlooking Barroso's existing socio-economic-ecological fabric – has the effect of pre-emptively erasing the very possibility of sacrifice, which in turn may enable it. This analysis demonstrates that the company is not asking the community to endure a socioeconomic loss for a greater good; rather, it denies any socioeconomic costs, presenting only benefits that scale from the local (jobs, financial incentives) to the national (prestige, growth), the EU (geopolitical competitiveness), and the planetary (combating climate change). This monolithic discourse precludes a public debate on whether and what kind of sacrifice the community is willing to endure, or what trade-offs they are prepared to make, thereby framing community dissent as an exceptional, extraneous and residual act to be neutralised.

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Conversely, the community's response, shows that green extractivism reproduces and intensifies existing inequalities - especially between urban and rural areas and those based on gender - and enacts distributional, procedural, and recognitional forms of socio-environmental injustice. Particularly relevant to the Barroso case is what Velicu (2020; Velicu and Kaika, 2017) terms "prospective injustice", a concept describing how extractivist projects can create socio-environmental harm even in the proposal phase, long before they become a material reality. As seen in Covas do Barroso, this pre-emptive harm manifests in ongoing processes such as land grabbing, intimidation, psychological distress, community marginalisation and the systemic discrediting of local residents as "irrational" political subjects (Velicu and Kaika, 2017), which denies their oppositional agency and right to decide on their own territory. It also manifests in the local community's anticipation of future losses linked to the erosion of their material livelihoods. As Rodriguez-Fernandez (2020, p.34) explains, extractivism is generally not labour-intensive but resource-intensive: it creates, and depends on, "the absence of [local communities'] social reproduction". This dynamic emerges also in the Barroso case: promises of future jobs are generally discredited by residents who point to the Mina do Barroso's need for hyper-qualified workers and expectation of short-term contracts that Savannah will eventually offer. Instead, what they underline is that the lithium mining infrastructure will depend, in order to function, on extracting, consuming and polluting natural resources and damaging ecosystems, which will directly affect people's - especially farmers' - long-term subsistence and survival. It is not by chance that women - historically assigned to reproductive labour - are on the frontlines of the Barroso anti-mining struggle. And yet, more research is needed to expand on the gendered impact of the Mina do Barroso project (Venes et al, 2023) and of green extractivism more generally.

Another specificity of GSZs highlighted by this case is the strategical use of "restoration". This discursive strategy represents a significant evolution from traditional sacrificial logics. Where fossil extractivism often acknowledged environmental harm as a visible and permanent cost (compensated by the promise of jobs and economic prosperity), green extractivism relies on techno-solutionist promises of future restoration and 'no net loss' to render the sacrifice invisible and temporary. The violence of extraction is framed not as a lasting trade-off but as a short-term disruption to be expertly repaired, thus protecting the industry's sustainable and ethical credentials. This logic is more insidious as it demands faith in a future solution rather than acceptance of a permanent loss, disarming present opposition. It is essential for protecting the "green" brand of such projects, shifting the debate from the ethical and political question of "Should we allow this permanent harm?" to the technical negotiation of "Are these restoration plans adequate?"—a terrain far more favourable to corporate interests. Moreover, as Fabiana Li (2015) argues, mining corporations and government agencies often create "equivalences" by converting varied environmental and social issues into uniform technical measurements. This act of commensuration tends to depoliticize disputes, making complex social and ecological realities appear manageable within technical and bureaucratic systems.

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In summary, the "restoration discourse" is a defining feature of “green” sacrifice—a novel mechanism that enables destruction to proceed under the guise of sustainability by promising to make the sacrifice disappear. This aligns with Brock’s (2020) concept of “accumulation by restoration,” which refers not only to profit but to the productive and legitimising power of restoration work. As she argues in the case of RWE’s coal mining, such activities manufacture legitimacy, create new “ecologies of repair,” capture imaginations through narratives of sustainable extraction, and effectively pre-empt dissent, all while producing and obscuring associated harms (Brock, 2020, p. 2134). Yet, the present study does not argue against restoration or mitigation strategies as necessary remedies for environmental injustice and as communities’ tools of resistance; rather, it critiques how its discourse is instrumentalised by corporations and governments to neutralise dissent, facilitate approval, and pre-emptively annul the concept of sacrifice itself.

Overall, the Barroso case reveals a profound dissonance between the multi-scalar benefits promised by green transition advocates and the localised realities experienced by communities. Despite being denied the “right to say no” and subjected to psychological violence or emotional extractivism that attempt to weaken their resistance (Riquito, webinar, 2025), local residents, activists, and NGOs play a crucial role in identifying ‘green mining’ as another frontier of capitalist extraction where the primary beneficiaries are the State, mining corporations, and private investors—not vulnerable communities. Current green transition policies are central to the making of Barroso’s green sacrifice zone. Their impacts—both costs and benefits—are channelled to local populations through the downstream integration of ‘green’ targets, incentivised by promises of economic empowerment, (geo)political relevance, and planetary salvation. However, the collective support, Just Transition strategies, and socio-ecological benefits implied by the CRMA and PNEC are neither clearly articulated nor readily quantifiable.

Through this case study, we applied the GreenPaths analytical framework to ground the social impacts of green transition policy through lenses of (green) sacrifice and (environmental) injustice to document how the multifaceted ripple effects of a proposed lithium mining accelerate through administrative hurdles based on positivist affirmations and short-term promises of ‘jam tomorrow,’ whilst community concerns, alternative visions and questions about the long-term sustainability of the region are framed as uninformed or dissenting.

Data remains critically limited. We contextualise the Barroso case with indicators on jobs in renewable energy, regional socioeconomic inequality (risk of poverty and social exclusion), and lithium production. However, these are merely benchmarks; any robust assessment of socioeconomic impacts must be longitudinal. With Savannah’s project set to commence operations in 2027 and the next Portuguese census not due until 2031, significant information gaps persist. At the same time, Goodhart’s Law (1975) cautions against the tendency for measures to become targets; within such logic, indicators can

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inhabit an "'accounting culture' in which tests of measurability often prevail over accurate and contextually sensitive assessments of substance or actions" (Rosga and Satterthwaite, 2009, p.256). In the Barroso case, this relates to a lack of detailed regional household surveys, disaggregated sociodemographic data, and—crucially—indicators of intangible loss and damage, which are essential for an intersectional analysis of the transition's true costs and benefits. The methodological tools applied in this study (CDA, the CRMA, the PNEC and the EJ framework) provide a way of peeling back the layers of certainty that permeate the drive and discourse for green mining, whilst the further conceptualisation of GSZs in this context unveils a deeply embedded layering of sacrificial logics that serve to separate a community from their (socio-enviro-economic) resources.

Moreover, "lithium for renewables" is being replaced with "lithium for war" rhetoric, as the Green Deal policy drive is being supplanted by calls for EU defence and remilitarisation. Within this context, imagining policies for a truly Just and Green Transition becomes crucial. This requires centring community participation and self-determination in decisions regarding socioeconomic development and land use. It must prioritise the protection of incommensurable, often non-economic and irreplaceable, place-based values, and formally acknowledge all forms of loss and damage. Furthermore, a policy vision as ambitious in scope as the EGD should not, by proxy, facilitate violations of due process, downgrade public participation and risk irreparable environmental harms in the name of short-term projects with planned obsolescence, such as Mina do Barroso. The Barroso case underscores the urgent need for open, transparent, and community-led discursive spaces to debate alternatives to the monolithic narrative of green extractivism, particularly in the face of top-down, *fait accompli* policy implementation.

# 7 Recommendations

The findings demonstrate that a policy framework built on narratives of urgency, geopolitical competition and techno-solutionism systematically sidelines democracy, dismisses socio-ecological costs and naturalises future harms. To align the green transition with principles of justice and sustainability, the following recommendations are proposed:

1. Radically expand the scope of Just Transition' frameworks. Current policies, such as Portugal's PNEC, narrowly define a Just Transition around urban energy poverty and retraining for fossil fuel workers. This must be expanded to explicitly include and address the intersectional inequalities aggravated by green extractive projects and to guarantee socio-environmental justice (SEJ). This means:
    - Formally recognising the earth-care labour and value of existing rural livelihoods (small-scale agriculture, traditional pastoralism, eco-tourism), cultural heritage (GIAHS status), and the ecological place-based knowledge of

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local communities, not merely to be compensated for loss, but as sustainable models to be protected and integrated into transition planning.

- Developing legal and policy tools to recognise, anticipate and mitigate the socio-environmental injustices that begin the moment a project is proposed, including the intangible Loss and Damage as well as Environmental Distress, social fragmentation, land-use changes, and uncertainty experienced by affected communities.

2. Guarantee substantive democratic participation and the "right to say no". The violations of the Aarhus Convention in Barroso reveal a democratic deficit. Policies must move beyond superficial consultations to ensure meaningful procedural justice:
    - Guarantee free, prior, and informed consent (FPIC) processes that are inclusive and representative. This requires going beyond consulting a few community leaders to explicitly ensure the participation of women, youth, Indigenous Peoples, and other marginalised groups. The process must guarantee that the community's right to refuse a project is legally recognised and feasible, reflecting the collective will of all its parts, building on existing legal and policy frameworks, like UNDROP (2018), the Voluntary Guidelines on the Tenure of Land Fisheries and Forests in the Context of National Food Security (2012) and The Warsaw International Mechanism for Loss and Damage associated with climate change impacts (2015).
    - Legally empower municipal authorities and community representatives in decision-making, making their opinions binding not just advisory.
    - Ensure in advance full transparency and accessible dissemination of all the project's information (EIAs, feasibility studies) in non-technical languages.

3. Dismantle sacrificial logics by changing policy and expanding indicators:
    - Remove the "overriding public interest" clause: change the CRMA and related regulations to prevent projects from automatically bypassing protected area status.
    - Establish criteria of "no-go zones" for mining, such as Natura 2000 areas and GIAHS.
    - Develop a comprehensive set of indicators: include longitudinal indicators for Intangible Loss and Damage, community well-being, public (mental) health, and human/ecosystem health. This requires independent – detailed and disaggregated – regional surveys and participatory processes to capture the intersectional and prospective costs of transition project.

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4. Reject techno-solutionist neutralisation of harm. The promise of future mitigation and restoration must not be used to pre-emptively justify destruction. Policies must:

- Prioritise the avoidance of harm over its future repair.
- Legally acknowledge that certain losses - such as cultural identity, ancestral land, and unique ecosystems - are irreversible and cannot be compensated by technological fixes or financial payments.
- Involve a significant financial and legal penalty for failures to adhere to environmental law.
- Grounded in degrowth principles, enact policies based on sufficiency and circularity, such as mandatory recycling targets and product design standards that extend lifespans, to lessen dependency on new mining.

In conclusion, the Mina do Barroso case is not an anomaly but a sign of further conflicts to come under the current green transition paradigm. The path forward needs a fundamental shift from a logic of growth, extraction and sacrifice to one of degrowth, care, democracy, and justice. This entails centring the voices and needs of front-line communities, redefining “green” policy not by its speed, but by its fairness, and guaranteeing that the transition to a low-carbon future does not replicate the very patterns of dispossession, marginalisation and inequality it says to solve in the name of sustainability.

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