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Practices and Processes of Land Use in the Spheres of
Production and Social Reproduction.
The Case of the Barroso Region, Portugal

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Die dringende Notwendigkeit, den Klimawandel einzudämmen und die globale Erderwärmung auf 1,5 Grad Celsius zu begrenzen, hat Europas Verpflichtung bekräftigt, der erste CO₂-neutrale Kontinent der Welt zu werden. Im Zentrum dieser Ambition steht der Green Deal der EU, der eine moderne, ressourceneffiziente und wettbewerbsfähige Wirtschaft anstrebt, die bis 2050 keine Netto-Treibhausgasemissionen mehr verursacht und Europa damit zum ersten klimaneutralen Kontinent der Welt zu machen. Die Strategie der EU basiert dabei hauptsächlich auf der verstärkten Nutzung von „grünen“ Technologien und den daraus resultierenden Emissionseinsparungen, wie die Nutzung von Windkraftanlagen, Photovoltaik oder Elektromobilität. Durch den starken Fokus auf technologische Lösungen – sogenannte „Techno fixes“ – für die Dekarbonisierung der Wirtschaft, fällt Rohstoffen eine Schlüsselrolle zu: Die Verfügbarkeit der Rohstoffe ist eine Notwendigkeit für die meisten „grünen“ Technologien und somit sind Rohstoffe auch unabdingbar für das Erreichen der Klimaziele, wenn der Fokus auf „Techno fixes“ liegt. Ein erheblicher Anstieg der Nachfrage nach Rohstoffen wie Lithium, Kobalt und Graphit wird demnach prognostiziert. Besonders Lithium spielt eine entscheidende Rolle in der Batterietechnologie für Elektrofahrzeuge und erneuerbare Energiespeichersysteme. Derzeit dominiert China den Markt für diese Metalle, was die EU in ein Abhängigkeitsverhältnis drängt und angreifbar macht. Um diese Abhängigkeit zu verringern, hat die EU die Verordnung zu kritischen Rohstoffen, den *Critical Raw Materials Act* (CRMA) vorgelegt, der eine langfristige Versorgungssicherheit und Wettbewerbsfähigkeit der EU gewährleisten soll.

Vor diesem Hintergrund sind die Prozesse in einer Region in Portugal besonders relevant: Das Dorf Covas do Barroso im Norden Portugals ist zum einen bekannt für seine traditionelle Lebensweise und nachhaltigen landwirtschaftlichen Praktiken, zum anderen ist das Dorf jedoch aufgrund seines hohen Lithiumvorkommens in den Fokus anhaltender Diskussionen gerückt. Die Doppelerkennung der Region sowohl für ihr kulturelles und landwirtschaftliches Erbe als auch für das Potenzial eine Schlüsselrolle für die „grüne Transformation“ Europas zu spielen, verdeutlicht die komplexe Debatte um nachhaltige Landnutzung und konkurrierende Prioritäten auf dem Weg zu Klimaneutralität und nachhaltiger Entwicklung.

Diese Arbeit untersucht die unterschiedlichen Auswirkungen des geplanten Lithiumabbaus und der traditionellen landwirtschaftlichen Praktiken auf die Region Barroso und analysiert die

gegensätzlichen Ziele und Auswirkungen dieser Landnutzungspraktiken. Dabei wird die Notwendigkeit eines ganzheitlichen Ansatzes betont, der die Rolle von Haushalten, Gemeinschaften und Unternehmen in der Landnutzung einbezieht. Zur Beantwortung der Fragestellung wird der Ansatz des *Global Reproduction Network* (GrPN) als konzeptionell-analytischer Rahmen genutzt, um die gegenseitigen Abhängigkeiten, inhärenten Widersprüche und umfassenderen sozioökonomischen und ökologischen Auswirkungen zwischen Produktions- und Reproduktionssystemen zu untersuchen. Die Ergebnisse zeigen, dass Landnutzung in Barroso durch konflikthafte Aushandlungen zwischen produktionsorientierten und reproduktionsorientierten Wertlogiken geprägt ist, wobei kommerzielle Produktionsinteressen politisch priorisiert werden und reproduktive Praktiken entwertet und verdrängt werden.

Abstract (English)

The urgent need to fight climate change and limit global warming to 1.5 degrees Celsius has reaffirmed Europe's commitment to becoming the world's first carbon-neutral continent. At the heart of this ambition is the EU's Green Deal, which aims to achieve a modern, resource-efficient and competitive economy with zero net greenhouse gas emissions by 2050, making Europe the world's first climate-neutral continent.

The EU's strategy is mainly based on the increased use of “green” technologies and the resulting emission savings, such as the use of wind turbines, photovoltaics or electromobility. Due to the strong focus on technological solutions – the so-called “techno fixes” - for the decarbonization of the economy, raw materials play a key role: the availability of raw materials is a necessity for most “green” technologies and therefore raw materials are also indispensable for achieving the climate targets if the focus is on “techno fixes”. A significant increase in demand for raw materials such as lithium, cobalt and graphite is therefore forecast. Lithium in particular plays a crucial role in battery technology for electric vehicles and renewable energy storage systems. China currently dominates the market for these metals, making the EU dependent and vulnerable. In order to reduce this dependency, the EU has presented a regulation on critical raw materials, the Critical Raw Materials Act (CRMA), which is intended to ensure the EU's long-term security of supply and competitiveness.

Against this backdrop, the processes in one region in Portugal are particularly relevant: The village of Covas do Barroso in northern Portugal is known for its traditional way of life and sustainable agricultural practices on the one hand, but on the other, the village has become the focus of ongoing discussions due to its apparently high lithium reserves. The dual recognition of the region for both its cultural and agricultural heritage and its potential to play a key role in Europe's “green transformation” highlights the complex debate around sustainable land use and competing priorities on the road to climate neutrality and sustainable development.

This thesis examines the different impacts of planned lithium mining and traditional agricultural practices on the Barroso region and analyzes the conflicting objectives and impacts of these land use practices. It emphasizes the need for a holistic approach that includes the role of households, communities and businesses in land use. To answer the research question, the Global Reproduction Network (GrPN) approach is used as a conceptual-analytical framework to examine the interdependencies, inherent contradictions and broader socio-economic and

environmental impacts between production and reproduction systems. The results show that land use in Barroso is characterized by conflictual negotiations between commercial production-oriented and reproduction-oriented value logics, with commercial production interests being given political priority and reproductive practices being devalued and displaced.

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List of abbreviations

ANT	Actor-network theory
BDCC	Buyer-driven commodity chain
CRMA	Critical Raw Materials Act
EU	European Union
GCC	Global commodity chain
GPN	Global production network
GrPN	Global reproduction network
GVC	Global value chain
NGO	Non-governmental organization
PDCC	Producer-driven commodity chain
UN	United Nations

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1. Introduction

The urgency to combat climate change and limit global warming to 1.5°C has forced Europe's commitment to become the world's first carbon-neutral continent (European Commission 2019). At the center of this ambition is the European Green Deal, which “[...] *is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use*” (European Commission 2019: 2).

Due to the focus on so-called “techno-fixes”, a critical aspect in the realization of the “green transition” is the availability of rare metals, which are indispensable for the technologies. According to the World Bank, to have a 50% chance of limiting global temperature increase to a maximum of 2°C by 2100, approximately 3.1 billion tons of core minerals need to be extracted (International Bank for Reconstruction and Development/ The World BankWorld Bank 2020: 11). Thus by 2050, the demand for minerals such as lithium, cobalt and graphite could increase by around 500% (Hund et al. 2023). Among these metals, lithium holds particular significance due to its crucial role in battery technology for electric vehicles and renewable energy storage systems. Consequently, the demand for lithium and other critical minerals is expected to continue to increase significantly (European Commission 2023a: 1; Voskoboynik & Andreucci 2022).

Currently, the market for these metals is largely dominated by China (International Energy Agency 2024), which presents a fundamental challenge as production and processing of rare elements are predominantly centralized in that country, making the EU vulnerable against any disturbances (Nem Singh 2022). Ursula von der Leyen argues in her State of the Union Address in September 2022 that raw materials “[...] *replacing gas and oil at the heart of our economy*” and the EU should avoid “[...] *falling into the same dependency as with oil and gas*” (von der Leyen 2022). Compounding this challenge is the EU's heavy reliance on imports from a small number of countries for both digital and green technologies. This reliance on a limited range of suppliers has created one-sided dependencies, with materials such as lithium and cobalt predominantly imported from a few countries. Recent events, such as the disruptions caused by the Covid-19 pandemic, chip shortages, and the energy crisis resulting from Russia's invasion of Ukraine, have underscored the risks associated with excessive dependence on external

sources for strategic inputs. These risks not only threaten economic and social well-being but also compromise security (European Commission 2023a). To address these concerns and secure the supply of critical raw materials, the EU has introduced a first draft of the Critical Raw Materials Act (CRMA) in March 2023, which came into force in May 2024 (European Commission 2023b; European Commission 2025). Critical raw materials “*are of high economic importance for Europe while being also highly vulnerable to supply disruptions*” (European Commission 2023b). The primary objective of this strategy is to ensure long-term security of supply of critical materials and to facilitate the green transformation of Europe (European Commission 2023b).

The goals of the CRMA encompass that no country outside the EU should produce more than 65% of the EU’s annual consumption of each strategic material. Regarding the domestic capacities of the EU’s domestic capacity, three aspects in particular are to be promoted: The aim is for at least 10% of annual consumption of critical raw materials to come from the extraction of the EU’s own geological resources. In addition, the expansion of the value chain should be promoted so that further processing takes place in the EU and accounts for at least 40% of the EU’s annual consumption. It is also intended that at least 25% of the EU’s annual consumption of critical raw materials should be recycled (European Union 2024).

In order to achieve the extraction target, further mining projects must be identified. One possible project for extracting lithium could be implemented in the Barroso region in Portugal. The Barroso region, located in Northern Portugal, is known for its traditional way of life and sustainable agricultural practices and recently, for its comparable high concentration of lithium (Dunlap & Riquito 2023). Therefore, the Barroso region is considered promising for lithium extraction within the EU (Chaves et al. 2021; Narins 2017) and could potentially play a decisive role in securing the domestic sourcing of lithium within the EU, aligning with Europe’s ambition for carbon neutrality (Saleth & Varoy 2023). The concession for the Covas do Barroso project was secured by the British mining company Savannah Resources PLC in June 2019, with negotiations ongoing since 2017 (Savannah Resources PLC 2019: 9). Around the same time, in April 2018 precisely, the Barroso region was officially classified by the Food and Agriculture Organization of the United Nations (FAO) as a “Globally Important Agriculture Heritage System” (GIAHS) for its agricultural and sustainable practices (FAO 2025). The classification was the result of a local initiative by the Associação de Desenvolvimento da Região do Alto Tâmega (ADRAT), a local development association, consisting of municipalities, agricultural associations and cooperatives, forestry and environmental associations and cultural associations

(ADRAT 2018). This recognition underscores the region's significance for agriculture and cultural heritage, which is in direct conflict with the mining interests.

The dual recognition of the region for both its potential in lithium mining and its cultural and agricultural heritage underscores the complex debate surrounding sustainable land use and the competing priorities in the path to carbon neutrality. The aim of this thesis is to examine the various impacts of the planned lithium mining and traditional agricultural practices on the Barroso region, and to analyze how these land use practices have different, often contrasting goals and impacts. In doing so, it examines the arguments that the two sides – the commercial production sphere and the social reproduction sphere in the Barroso region – make for their respective and competing land uses and highlights the inherent contradictions between industrial and community-oriented sustainability intentions. Through this analysis, the thesis emphasizes the necessity of a holistic approach that incorporates the role of households, communities and companies in land use for production and social reproduction. This leads to the research question: How is the Barroso region and its land use shaped by practices and processes in the spheres of production and social reproduction? The main research question is supported by two secondary questions:

- Which key actors are involved in the Barroso region and how do they position within or between the spheres of commercial production & social reproduction?
- What are the key processes and practices within the spheres of commercial production and social reproduction regarding land use?

To address these questions, the Global Reproduction Network (GrPN) approach is used as the conceptual-analytical framework for this thesis. Philipp F. Kelly's (2009) framework serves as the foundational structure, expanded upon by Stephanie Barrientos' work (2019). The GrPN approach is particularly suitable in this context as it incorporates the "Social reproduction" sphere – in this context the community and its agricultural practices that make the region an official GIAHS – and does not focus solely on commercial production. With the extension of the Global Production Network (GPN) to include households and communities, the analysis provides a more comprehensive exploration of mutual dependencies, inherent contradictions and broader socio-economic and environmental implications between productive and reproductive systems. The five advantages that Barrientos derived from Kelly's framework (see section 2.5), which emphasize the interconnectedness between production and social reproduction spheres, are used for the structure of the analysis.

The methodology consists of different methods: First, a literature research is conducted on various platforms. For this purpose, publicly accessible data on land use practices from various actors, such as companies, supranational organizations, ministries, the EU and regional initiatives as well as scientific papers, are incorporated. Based on the literature research and the identified relevant documents, a qualitative content analysis is conducted. This leads to a mapping of the involved actors, based on Barrientos' work (2019: 91): The actors are assigned to either the "commercial production" or "social reproduction" spheres, or to the intersection of the two spheres. This mapping will identify the involved actors in the spheres and illustrate the geographical scale of their activities and influences and their organizational arrangements. Subsequently, the narratives of the individual actors will be analyzed in relation to Barrientos' five points (2019: 90). By mapping the involved actors and analyzing the narratives through publicly accessible data, this thesis seeks to explore the contrasting dynamics of the commercial production sphere and the social reproduction sphere across different geographical scales relevant to the Barroso region.

The thesis aims to show that global production networks and global reproduction networks intersect and extend into local places and that the local livelihoods are being transformed. Unlike what is often portrayed, these 'impacts' are not received passively, and it is not a simplistic, one-way relationship. Thus, this thesis objective is to show the complex interaction between global economic processes and regional as well as local social and environmental structures and thus provide a further example of why the social sphere of reproduction should be considered as part of the GPN.

This thesis follows recent calls within feminist political economy to critically revisit the conceptual tools used to understand contemporary crises (Werner et al. 2017). By analyzing the contradictions between extractive capitalism and socio-ecological reproduction in the Barroso region through the lens of the Global reproduction networks (GrPN) framework, this study contributes to a broader effort to center care, place-based livelihoods, and ecological relations in economic geography. The Barroso case illustrates how so-called green transformations risk deepening rather than resolving structural inequalities and socio-ecological displacements.

2. Conceptual-analytical framework: Global production networks

Various chain and network approaches have emerged to analyze the changes in the global economy and in the international division of labor. These approaches build on each other, but there is no uniform theory as a basis for the different frameworks; rather, the approaches combine different perspectives to capture the complexities of global economic interactions (Fischer et al. 2021: 33). This chapter provides an overview of these theoretical developments, outlines the state-of-the-art research and explains the choice of combining the GPN with the GrPN approach as the conceptual-analytical framework for this thesis.

2.1 Commodity Chains (CC)

The term commodity chain (CC) was first used by Hopkins and Wallerstein based on the world-system theory. They define a commodity chain as “*a network of labor and production processes whose end result is a finished commodity*” (Hopkins & Wallerstein 1986: 159). The concept shows a spatially unequal distribution of competition along a commodity chain, which results in an unequal distribution of opportunities to appropriate the value created. Due to the superior resources and power of states and companies, actors in the Global South primarily take on subordinate tasks in the chain. Wallerstein and Hopkins argue that through these processes and structural inequalities, commodity chains do not only structure unequal development and a hierarchical world system of center, semi-periphery and periphery, but also continue to reproduce it (Fischer et al. 2021: 34; Wallerstein 1974).

2.2 Global Commodity Chains (GCC)

In the 1990s, influenced by organizational and economic sociology, Gary Gereffi and a team of social scientists developed the concept of Global Commodity Chains (GCC) to study the changing dynamics of commodity chains (Gereffi et al. 1994). In GCCs the nation-state is not in the center of the analysis of the global economy (Coe & Yeung 2015: 9). According to Gereffi et al. “*a GCC consist of sets of interorganizational networks clustered around one commodity or product, linking households, enterprises, and states to one another within world-*

economy. These networks are situationally specific, socially constructed, and locally integrated, underscoring the social embeddedness of economic organization.“ (Gereffi et al. 1994: 2).

According to Gereffi (1994), three dimensions can be identified in each global commodity chain:

1. The input-output structure shows the different services and products that are combined in a value-generating process to produce a particular product.
2. Territoriality or the geographical scope describes the geographical configuration of the network, whether it is more spatially scattered or concentrated.
3. The governance structure examines the power relations within the commodity chain.

Gereffi et al. (1994) emphasize the growing influence of retailers and brands, as many of these firms relocate their production to developing economies due to cost differences. These offshoring and global sourcing processes had significant influence not only for developed but also for developing countries. The moving of production sites to countries in the global south lead to industrialization in these countries (Barrientos 2019). Therefore, the global lead firms are seen as the “*organizing agents*” (Gereffi 1994: 97) of global capitalism in this concept (Fischer et al. 2021).

Gereffi et al. differentiate between two governance types, the producer-driven commodity (PDCC) chain and the buyer-driven commodity chain (BDCC). The PDCC is prevalent in capital- and technology-intensive industries, such as the automotive sector. The lead firms in PDCCs generate their power through control over technology and knowledge. The most profitable production steps take place in-house, while the labor-intensive steps are outsourced to suppliers (Gereffi & Korzeniewicz 1994). The BDCC are prevalent mostly in labor-intensive sectors and the global buyers control spatially broad networks of suppliers. The lead firms in BDCCs are often “*manufacturers without factories*” (Fischer et al. 2021: 35) and they focus on immaterial activities such as design, marketing, branding and sale under their names (Fischer et al. 2021; Gereffi & Korzeniewicz 1994).

The concept emphasizes the different positions within the chain and arranges the different levels of the division of labor hierarchically. Due to their position, the lead firms benefit from greater commercial power relative to the suppliers (Barrientos 2019: 84). Upgrading describes the development from low-value to higher-value activities within the chain. It is assumed that

upgrading is a successful development path for export-oriented companies and local, regional and national economies (Fischer et al. 2021: 35).

Starting from the late 1990s, several limitations of the concept became clear. Even if interrelated three dimensions were identified, most research on GCC was focused on governance structures and thus the other dimensions lack attention. Moreover, the differentiation of two chains, producer-driven and buyer-driven lead to the concern of an oversimplification of commodity chains. Another point of criticism regards the underdeveloped geographical conceptualization. In GCC research the national state is still in the focus, as a result, far less consideration is paid to the processes of local and regional economic development within the countries and the macro-regional production structures. Additionally, the limitations of the approach become apparent when analyzing overlapping multi-product and multi-service worlds. By focusing on the commodity and not on the main actors, the competitive dynamics in these chains cannot be sufficiently analyzed. A final criticism is that the transfer from studies of individual global commodity chains to more general statements about macro-level development processes may be difficult, and the approach is thus not suitable to shed light on broader development patterns and outcomes of the global economy. One reason for this is that most research on global commodity chains treat the GCC framework more as a methodology rather than a theory, resulting in a huge amount of empirical work on particular chains and the experiences of particular firms and regions in those chains. However, there is comparatively little theoretical work that attempts to explain these findings in a systematic and integrated way (Coe & Yeung 2015:11).

2.3 Global Value Chains (GVC)

Addressing some of the above-mentioned limitations and influenced by international business literature, the concept of Global Value Chains (GVC) emerged, focusing more on the relations between retailers, agents and suppliers that cross national borders (Barrientos 2019: 80; Fischer et al. 2021: 35). The concept aims to deepen the understanding of inter-firm governance and shows the complex dynamics of governance relations within GVCs. By interlinking three variables of the supply chain, namely complexity of transactions, the ability to codify transactions and the capabilities within the supply base, Gereffi et al. (2005: 87) identified five global value chain types (see figure 1).

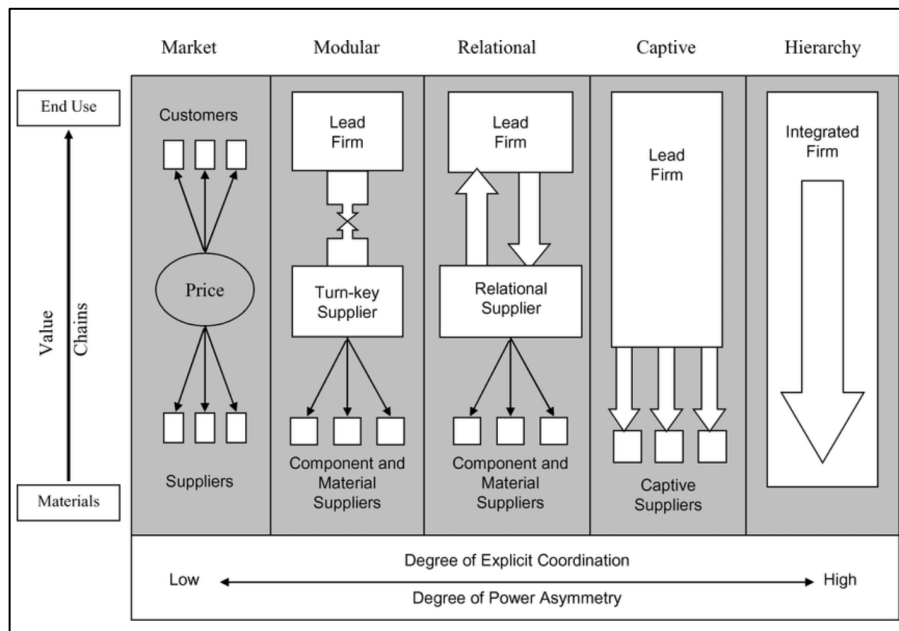


Figure 1: Governance model (Gereffi et al. 2005: 89)

These governance structures are central to understanding how power and control are exercised within GVCs and how they influence opportunities for upgrading significantly. Building on the understanding of upgrading introduced in the previous section, upgrading within GVCs was further conceptualized into several categories: process-upgrading, product-upgrading, functional-upgrading and inter-chain-upgrading. Each of these forms of upgrading highlights different pathways through which firms and regions can enhance their positions within global value chains (Fischer et al. 2021: 37). Thus, the focus of GVC research lies on the strategies for particular actors, such as lead firms, and the way in which they are able to capture value from other actors, such as key suppliers (Coe & Yeung 2015: 23).

However, the GVC approach is criticized for its limited consideration of spatial dimensions and giving the impression of linear processes. This critique underscores the need for a more nuanced understanding of how local contexts and spatial dynamics interact with global value chains, a gap that the following approach, Global Production Networks, addresses (Fischer et al. 2021: 39).

2.4 Global Production Networks (GPN)

The Global Production Networks (GPN) approach emerged from the discipline of economic geography and is closely associated with the Manchester School. It was further developed via a significant research investment in Singapore. While the earlier frameworks laid the groundwork for understanding global economic activities by focusing primarily on the linear flows of goods and services, the GPN approach seeks to unpack the more complex, non-linear and interconnected nature of global production (Coe & Yeung 2015). These network structures are horizontal, diagonal and vertical connected and create multi-dimensional and multi-layered structures of economic activity (Henderson et al. 2002). Influenced by the study of the sociology of scientific knowledge, parts of the actor-network theory (ANT) were used for GPN. Based on Law (1999) and in the words of Henderson et al. (2002), ANT is an approach “[...] *which emphasizes the relationality of both objects and agency in heterogeneous networks, pointing out that entities in networks are shaped by, and can only be understood through their relations and connectivity to other entities*” (Henderson et al. 2002: 442). Coe and Yeung argue that in this theory, social systems are seen as complex networks of power relations and, from a methodological and theoretical point of view, open up important insights into the study of global production networks (Coe & Yeung 2015).

The very name of the framework - Global Production Network - addresses shortcomings of the preceded approaches. First, Henderson et al. (2002) argue that ‘commodity’ “*connotes standardized products and with that, the fixity of their production in time and space*” (Henderson et al. 2002: 44). Furthermore, commodities can be perceived as dehumanized building blocks and thus, the social circumstances of the production and consumption of commodities are overlooked. In contrast, ‘production’ focuses more on the social processes which are associated with the manufacture of goods and services, but also with the reproduction of knowledge, capital and labour power (Henderson et al. 2002: 444). As already explained, the network metaphor is able to illustrate the complex interconnections of economic activities in a more accurate way than the chain, which gives the impression of a linear process of activities (Henderson et al. 2002). And lastly, the term ‘global’ was chosen because of analytical precision. In contrast, ‘international’ or ‘transnational’ originate from a state-centric discourse and do not adequately capture how non place-specific processes affect and change place-specific processes and conversely (Henderson et al. 2002).

What is new about the GPN approach is that “*institutional-cum-territorial logics*” (Coe & Yeung 2015: 14) play an important role and, in contrast to GCC and GVC approaches, are not treated as a background context. Instead, *institutional-cum-territorial logics* are used to explain why actors act in certain ways in certain places. Further, as Coe and Yeung summarize “ [...] *GPN 1.0 emphasizes the complex intra-, inter-, and extra-firm networks involved in any economic activity, and how these are structured both organizationally and geographically.*” (Coe & Yeung 2015: 14). Compared to the previous approaches, the GPN 1.0 introduces four modifications: First, it includes a broader set of actors, such as supranational organizations, government agencies or NGOs to shift focus away from inter-firm networks. This highlights the role of extra-firm actors and their potential to influence the activities of the companies at the respective locations that are integrated into the GPNs. Second, GPN analysis is multi-scalar and takes into account the interactions and mutual influence of different spatial scales, from local to global. Third, as mentioned above, the GPN uses the metaphor of a network and thus addresses the limits of the notion of a chain. The concept of a network not only includes linear connections, but also shows the vertical and horizontal connections of a socio-economic system. Fourth, it has become clear that *governance* characteristics are far more complex, contingent and variable over time than described in the previous approaches (Coe & Yeung 2015: 15). The multi-actor and multi-level characteristics allow a more nuanced understanding of the complexity and non-linearity of global economic processes (Fischer et al. 2021).

To incorporate the social context, Henderson et al. (2002) present a framework for GPN analysis which contains three categories (value, power and embeddedness) and four dimensions divided into agents and structures. This framework is described in more detail in the following.

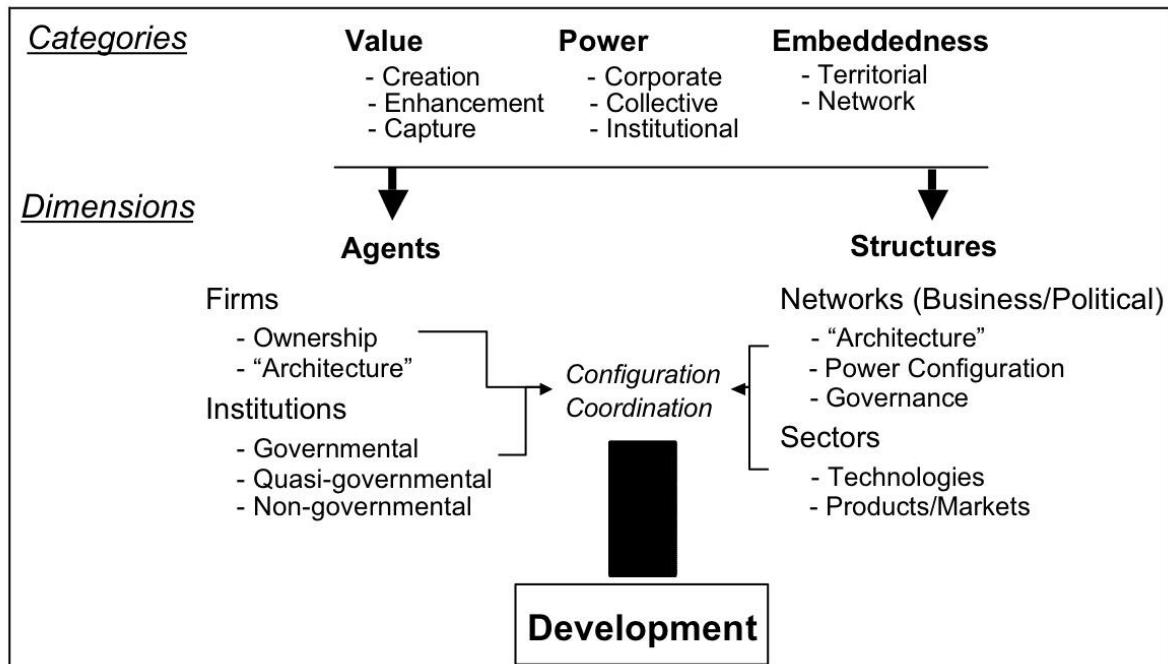


Figure 2: A Framework for GPN Analysis (Henderson et al. 2002: 13)

Value refers to how economic worth is created, enhanced and captured within the network.

Value creation is understood by Henderson et al. (2002) as the generation of surplus value and economic rent. *Value creation* is shaped by the condition under which labour is converted into productive activity and the broader institutional and spatial context in which this occurs (Henderson et al. 2002: 13).

Coe et al. (2004) refer to *value enhancement* as the upgrading of production activities, for example through knowledge transfer, technological innovation or institutional support. *Value enhancement* involves regional institutions fostering specific regional assets such as skilled labor, stable infrastructure or cooperative industrial relations that enable firms to carry out high value-added activities (Coe et al. 2004).

Value capture refers to the processes through which the benefits generated by *value creation* and *enhancement* are appropriated by specific actors. Value capture is not seen as automatic or evenly distributed. It depends on the ability of actors to mobilize various forms of power and control to secure a share of the created value. It raises critical questions about who ultimately benefits from development processes and how value flows are distributed across local, national, and global scales (Coe et al. 2004). Henderson et al. (2002) emphasize that the ability to capture

value does not necessarily follow from its creation or enhancement. Instead, it is shaped by broader political and institutional arrangements, including state policies, patterns of firm ownership, and the nature of corporate governance in specific national and regional contexts (Henderson 2002).

The concept of *value* is crucial for understanding the economic inequalities and uneven development that often result from global production processes, as value can be created and enhanced in one place but captured in a completely different location (Henderson et al. 2002: 449).

Power in the GPN framework is analyzed in terms of the influence and control exerted by different actors within the network, highlighting the asymmetrical relationships that shape global production. The term *power* does not only include *corporate power*, but is extended: according to this, state institutions and international organizations have *institutional power* and civil society actors such as interest groups and NGOs have *collective power* (Fischer et al. 2021; Henderson et al. 2002).

According to Henderson et al. (2002), *corporate power* refers to the capacity of lead firms in GPNs to decisively and consistently influence decisions and resource allocations in ways that serve their own strategic interests. This influence is rarely absolute but is often asymmetrically distributed, allowing lead firms to exert significant control over less powerful actors across the network (Henderson et al. 2002: 450).

Institutional power encompasses the capacity of national and local state, inter-state agencies and non-state institutions such as UN agencies to influence the decisions and strategies of firms and other actors embedded in the GPN (Henderson et al. 2002).

According to Henderson et al. (2002: 451), *collective power* refers to the capacity of stakeholder to exert influence over firms operating within specific nodes of global production networks, as well as over national governments and, in some cases, international institutions.

With the term *embeddedness*, the GPN approach emphasizes that institutional, social and cultural contexts influence corporate strategies and actions and examines how GPNs are anchored in specific territorial and social network contexts (Fischer et al. 2021; Henderson et al. 2002). Embeddedness in the GPN framework draws on the definition by Mark Granovetter (1985), who further developed the concept building on the work of Karl Polanyi (1944). In this

work, Polanyi argues that the economic system is of vital importance to society: “*it means no less than the running of society as an adjunct to the market. Instead of economy being embedded in social relations, social relations are embedded in the economic system.*” (Polanyi 1944: 60). Granovetter (1985) explores the question of how behavior and institutions are affected by social relations. He argues that economic behavior cannot be understood in isolation, because it is shaped by the social context in which it occurs (Granovetter 1985). Embeddedness thus goes beyond the institutional context as described in the previous GCC and GCV approaches. The concept emphasizes the importance of understanding factors such as the geographical and institutional conditions that influence GPNs and how these networks affect local and regional development (Fischer et al. 2021: 39).

Embeddedness illustrates how economic activities are shaped by and anchored within specific contexts. As Fischer et al. (2021: 39) notes, embeddedness emphasizes how corporate strategies are influenced by ‘*geographical and institutional conditions*’ and how these, in turn, affect local development. *Territorial embeddedness* refers to the anchoring of firms in particular locations, while *network embeddedness* focuses on the relational structure of the network such as the connections between firms, government and civil society actors (Henderson 2002: 18).

The GPN 1.0 framework elaborates the complex business networks and territorial institutions which are involved in all economic activities and how these are structured both in organizational and geographical terms. GPN 1.0 thus provide a flexible, geographical concept to illustrate the changing structures of global production networks (Coe & Yeung 2015: 21). However, GPN has been criticized as an “inadequately developed conceptualization of global production networks” (Coe & Yeung 2015: 21). It is criticized that although the three interrelated categories – value, power and embeddedness – were identified, this is not sufficient to show causal relationships and thus enable a comprehensive understanding of global production networks (Coe & Yeung 2015: 21). Coe and Yeung (2015) built on these conceptualizations and developed the GPN 2.0 approach. With the GPN 2.0 approach they aim to examine the “*causal mechanisms*” (Coe & Yeung 2015: 21) between the three interconnected conceptual categories - value, power and embeddedness - and the dynamic configuration of GPN. The aim is to use GPN 2.0 to enhance explanations for patterns of unequal territorial development in the global economy (Coe & Yeung 2015).

2.5 Global Reproduction Networks (GrPN)

The concept of Global Reproduction Networks (GrPN) emerges from an extension of Global Production Networks and is influenced by feminist political economy (Werner 2016). It is based on the idea to incorporate spaces of reproduction, such as households and communities, as actors in analysis and to acknowledge the different dynamics at play between the intersecting spheres of production and social reproduction (Kelly 2009; Barrientos 2019: 89). The concept is based on the argument that the previous approaches did not pay enough attention to gender relations and the relation between commercial production and social reproduction (Barrientos 2019: 80). Even if the GPN metaphor represents the inclusion of various actors and the absence of cores and peripheries, Kelly argues *“In practice, however, it is usually the case that global production network studies, and examinations of industrial clusters, adopt the firm as the core actor and the central locus of analysis.”* (Kelly 2009: 451). He further argues that the focus on firms is justified in some context, as companies are important drivers of economic growth and job creation. Thus, analyses of investment, profitability, competitiveness, job creation and innovation focus on companies. However, the focus on firms is not sufficient when it comes to understanding regional development more holistically. There is a lot of research on the role of the state in GPNs (Coe & Yeoung 2016; Horner 2017), but less attention has been paid to the role of households and the community (Kelly 2009). This requires looking closely not only at commercial production, but also at the spaces of social reproduction (Kelly 2009: 451).

Based on the work of Picchio (1992), Kelly defines social reproduction as *“[...] those activities that enable the maintenance of both workers’ daily lives and the intergenerational re-creation of labour force. It encompasses the ways in which food, clothing, and shelter are provided, how child and elder care are organized, and how social and cultural life are produced.”* (Kelly 2009: 451). He makes clear that this kind of work is not just another kind of labour; rather in Luxton’s words *“both labours are part of the same socio-economic process”* (Luxton 2006: 37). Accordingly, reproductive labor is an integral part of global production networks, yet it continues to be widely overlooked (Kelly 2009: 451). Winder and Smith (2018) define social reproduction as *“the activities necessary to maintain and reproduce life daily and intergenerationally at both the individual and social scale.”* (2). In the understanding of MacLeavy et al. (2016) social reproduction encompasses *“the family, the community and the welfare state”* (2067).

Kelly further explains how the systems of production and reproduction intersect, and he identifies five key points: First, “*the production systems and reproduction systems are each dependent on and shaped by each other*” (Kelly 2009: 451). In other words, systems of production and reproduction are not separate but rather interdependent. Certain modes of production rely on specific forms of reproductive systems, and reproductive systems are shaped by and dependent on productive systems. The connection is particularly apparent in the case of labor: Kelly describes in his work that certain forms of production are only possible through certain types of reproductive labor and at the same time reproductive labor is made possible by productive labor processes (Kelly 2009: 451). Second, even if the productive and reproductive system intersect, the systems are opposing in the sense that they are motivated by opposing imperatives. Third, with the focus on households, yet another intersection of production and reproduction systems becomes apparent. Various activities are necessary to maintain the reproduction function, including both paid and unpaid activities. Fourth, the local ecology and environment is an essential basis for social reproduction processes. This dependency should be considered when extending the production network to reproductive spaces. Fifth, the unequal distribution of reproductive labour is closely linked to “*gendered, [...] racialized and regionalized identities*” (Kelly 2009: 452). These intersections must be considered when analyzing production networks (Kelly 2009; Barrientos 2019). Rather than being merely a foundation, reproductive labor is an integral and interdependent part of global production networks, with both spheres mutually shaping and sustaining each other.

Based on the work of Kelly and Barrientos, for this thesis, the sphere of social reproduction is defined as the set of activities and processes essential to the maintenance and preservation of life, including daily care, well-being and intergenerational renewal of the labor force. It is driven by a dynamic of care and well-being that contrasts with the profit-oriented focus of the commercial sphere of production. This sphere encompasses households, communities as well as labor, which is concerned with tasks such as care, education and the provision of food, shelter and cultural life. The sphere of social reproduction, which is often undervalued or invisible in traditional economic measures, is an integral part of and intertwined with commercial production, as it ensures, among other things, the availability and persistence of the labor force and society in general.

To address the research question, the Global Reproduction Network (GrPN) approach is used as the conceptual-analytical framework for this thesis. Philipp F. Kelly’s (2009) framework

serves as the foundational structure, expanded upon by Stephanie Barrientos' work (2019). The G(r)PN approach is particularly suitable in this context as it incorporates the “social reproduction” sphere – in this context the community and its agricultural practices that make the region an official GIAHS – and does not focus solely on commercial production. This is particularly relevant for the Barroso region, as it highlights the tensions and interdependencies between economic interests (through lithium mining) and the preservation of social and cultural structures. With the extension of the Global Production Network to include households and communities, the analysis provides a more comprehensive exploration of mutual dependencies, inherent contradictions and broader socio-economic and environmental implications between productive and reproductive systems. The five advantages Kelly identified (2009), which emphasize the interconnectedness between production and social reproduction spheres, are used for the structure of the analysis.

3. Methodology

This chapter lines out the methodological approach of the thesis, detailing the research design, case selection, data collection, and data analysis employed to answer the research question. A case study is the chosen research design and to analyze the collected data, a qualitative content analysis based on Mayring's work (2014) is used.

3.1 Research design

In line with Yin (2018), the research design is tailored to the research question to facilitate the best answers possible. For a better understanding of the topic, the main research question and the two secondary questions are presented below:

Main question: How is the Barroso region and its land use shaped by practices and processes in the spheres of production and social reproduction?

Secondary questions:

- Which key actors are involved in the Barroso region and how do they position within or between the spheres of commercial production and social reproduction?

- What are the key processes and practices within the spheres of commercial production and social reproduction regarding land use?

According to Yin (2018), a case study is an “*empirical method that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context*” (45). In contrast to survey methods, case studies are able to provide more nuanced, in-depth understandings of a phenomenon (Yin 2018). In this thesis, especially nuanced perceptions of processes and practices which shape the Barroso region and its land use, are of interest. Further, the research question itself indicates that the case study is suitable for the research design. As Yin (2018) explains, a case study suits well if a “*‘how’ or ‘why’ question is being asked about a contemporary set of events over which the investigator has little or no control*” (Yin 1994: 9).

3.2 Case selection

Following Yin’s (2018) typology of case study designs, this thesis applies a single-case study design, which is suitable under specific conditions: A single-case study is particularly suitable when the selected case is critical, unusual, common, revelatory or allows for longitudinal insights. The selection of the Barroso region in northern Portugal as a single-case study aligns with several of these rationales and is closely linked to the theoretical framework guiding this research (Yin 2018: 49):

First, the criticality of the case is evident in relation to the GPN framework. Despite the growing relevance of raw materials in global production networks, particularly in light of the green and digital transitions, only few empirical studies have applied the GPN framework to the extractive sector (see i.e. Bridge 2008; Bridge & Bradshaw 2017). Regarding the GrPN framework, there are even fewer empirical case studies (see i.e. Kelly 2009) and none of these applied the GrPN framework to the extractive sector. The Barroso case thus offers a unique opportunity to test the GrPN framework by analyzing the tensions between the spheres of commercial production and social reproduction. As Yin (2018: 50) suggests, critical cases can help confirm, challenge or expand theoretical assumptions, thereby contributing to conceptual development.

Second, the case can be considered *unusual* or *exceptional*, as it represents a rare overlap between conflicting designations. Barroso is both a designated Globally Important Agricultural Heritage System (GIAHS) and a target for lithium extraction under the Critical Raw Materials

Act (CRMA) of the European Union. This dual recognition positions the region at the intersection of agricultural heritage preservation and strategic resource extraction, which makes it a highly uncommon site of socio-economic-environmental conflict.

Third, the case reflects elements of *commonality*, since similar conflicts are likely to emerge in other resource-rich areas that are environmentally or culturally sensitive. As lithium and other critical raw materials become increasingly central to geopolitical and industrial strategies, especially in the context of net-zero technologies and digitalization, the Barroso case becomes a representative example of the broader tension between territorial preservation (social reproduction) and supply chain imperatives (commercial production). Insights from this case can therefore inform a broader understanding of spatial conflicts in a time of increasing resource extraction.

3.3 Data collection

In qualitative research, the sample selection has a major influence on the quality of the research (Coyne 1997: 623). Therefore, particular attention needs to be given to the data collection-process.

In this thesis, a combination of a systematic literature search and a snowball technique was employed to identify documents which are relevant for the analysis in relation to the research question (Clark et al. 2021). The snowball technique describes a process in which a selection of relevant literature is made, and further relevant literature is derived from this initial literature (Clark et al. 2021). Other than in a quantitative method, external validity and generalizability are not the prime concern in the chosen research design, even though they are important. Therefore, this approach is a suitable technique to establish an empirical data basis. While the selection of initial literature as well as the literature chosen with the snowball technique are based on thematic preferences relevant to this thesis, the overall sampling can be classified as purposive sampling. This means that a selection is based on predefined characteristics to ensure relevance to the research objective (Clark et al., 2021). Thus, for this thesis, literature was selected that provides insight into

1. the environmental, socio-economic and cultural impacts of the planned lithium extraction on the Barroso region,
2. dependencies and influences of the reproduction and production systems on each other,

3. inherent contradictions driven by opposing imperatives of the two spheres and/or
4. insights into community practices and processes in the region.

The purpose of the literature search is to get an overview of research on lithium mining and land use in the region and to gain a comprehensive understanding of perceptions of the conflict and arguments from different stakeholders. This approach allows for a more holistic understanding of the region's development dynamics, taking various geographical scales into consideration.

First, a systematic search on SCOPUS was conducted. The search terms were:

- “Lithium AND Portugal” (138 documents on SCOPUS),
- “Barroso AND lithium” (18 documents on SCOPUS),
- “agricultural AND heritage AND barroso” (0 documents on SCOPUS),
- “Barroso AND Portugal” (1 document on SCOPUS),
- “Barroso AND land” (1 documents on SCOPUS),
- “Barroso AND land AND use” (0 documents on SCOPUS),
- “Barroso AND mining” (10 documents on SCOPUS).

All searches were limited to publications up to the year 2025 and within the field of Social Sciences. The SCOPUS search returned a total of 168 documents. These were further assessed based on their thematic relevance, resulting in 32 documents that build the foundation for this thesis. The literature found in this systematic search served as the foundation for this thesis. Further, and based on this search, the snowball technique, in which references cited in the initially identified literature were screened for additional relevant sources.

Additionally, an online search was conducted to find reports and articles that may not be included in academic databases but are crucial for incorporating various perceptions from different actors, such as government agencies or civil society as well as current developments and understanding the broader debate in the region. In order to take into account the local perspective of various actors, such as local media, some articles were translated using the translation program *DeepL*. This applies in particular to Portuguese texts that were translated into English. Some texts used for the analysis that were only available in German were also translated from German into English using *DeepL* in order to avoid biased wording by the author.

The identified literature serves as the basis for the document analysis in the next step. The identified literature includes a diverse range of sources and text types, such as academic papers, newspaper articles, NGO publications, reports of supranational institutions and intergovernmental bodies (i.e. FAO) and government reports. This range of sources is important to capture the different perceptions and perspectives of development in the Barroso region.

3.4 Data analysis

In order to answer the research question of this thesis, a qualitative content analysis based on Philipp Mayring's work (2014) is conducted. The qualitative content analysis offers a systematic approach for analyzing various kinds of text and allows to work deductively (Mayring 2014). Figure 3 shows a structure for the qualitative content analysis in a model which contains seven steps:

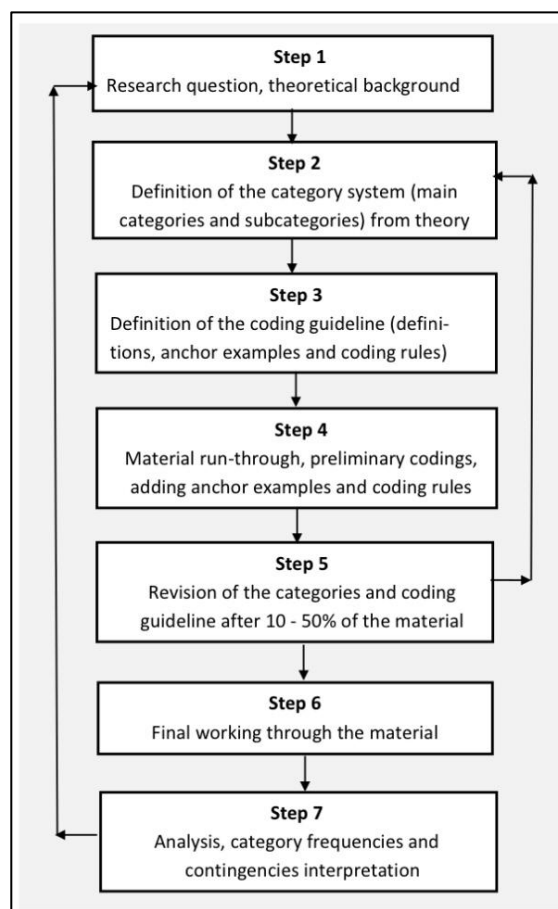


Figure 3: Steps of deductive category assignment (Mayring 2014: 96)

Step 1 encompasses the formulation of a clear research question and the description of the theoretical background. The research question must be compatible with the deductive approach, i.e., there must be an a priori interest in certain aspects of the material and a clear background. In step 2, the categories are defined (in appendix 1). To operationalize the research question into categories, research aspects must be transferred to the material. The categories must be theoretically grounded even if not all categories must come from literature. In this thesis, the category system is based on the GPN 1.0 and GrPN framework and thus the procedure is deductive. The categories are presented in detail below. In step 3 the coding guideline is developed. It contains the category label, category definition, anchor example and coding rules (see appendix 1). In step 4, the material is run-through and text passages are coded or added as an anchor example for a category. Also, coding rules are formulated for text passages, where the assignment to a category is not clear. Step 5 encompasses the revision of the categories and coding schemes. The category definitions and coding rules are reviewed regarding the research question. In this thesis, the revision of the categories and the coding scheme was conducted after coding around 50 percent of the documents. Step 6 consists of a final work through the material. If the coding guidelines have been changed, the material that has already been coded must be reviewed again. Further, all category assignments must be listed. In this thesis, a reworking of the material was not needed. The last step encompasses the analysis (Mayring 2014).

The categories used in this thesis for the analysis of the text material are derived from the conceptual-analytical framework, which underpins this research. The categories *value*, *power* and *embeddedness*, which are central to the GPN 1.0 framework, are also categories for the document analysis. As in the GPN 1.0 framework, there are further subcategories for each of the categories.

To capture not only dynamics in commercial production, the framework is expanded to include the *social reproduction sphere*. In feminist economic geography, this sphere is often discussed together with the commercial production sphere and encompasses areas such as households and communities (Winders & Smith 2018). MacLeavy, Roberts and Strauss (2016) drawing on McDowell's work from 1991, define the social reproduction sphere as "*a category of analysis which includes the family, the community and the welfare state*" (MacLeavy, J., Roberts, S. & Strauss, K. 2016: 2067). Winders and Smith define social reproduction as "*the activities*

necessary to maintain and reproduce life daily and intergenerational at both individual and social scales” (Winders & Smith 2018: 2). Building on this, the analytical framework, which is developed for this thesis, combines the three GPN 1.0 categories (value, power, embeddedness) with selected elements from the GrPN approach (Kelly 2009; Barrientos 2019). Specifically, it incorporates *dependencies and influences of productive and reproductive systems*, *contradictions between productive and reproductive systems*, and *impacts on local ecology and environment*.

Based on Kelly (2009) and Barrientos (2019), the first category, *dependencies and influences of productive and reproductive systems* captures how the two systems, namely the production and reproduction systems, are not only mutually dependent on each other but are also shaped by each other. This category is sub-categorized in two categories, *dependencies* and *influences*. The next category deals with the underlying *contradictions between productive and reproductive systems*. As described by Kelly (2009) and Barrientos (2019), these contradictions are driven by opposing imperatives. And lastly, the category *impacts on local ecology and environment* focuses on how commercial activities affect both directly and indirectly natural resources, habitats and ecological processes that are critical for the survival, wellbeing and reproduction of the local community.

These categories were chosen as they are most relevant and suitable for the topic of this thesis and can demonstrate the relation between commercial production and social reproduction systems (Barrientos 2019; Kelly 2009). These categories serve as a structure to examine the practices and processes in the two spheres that shape the Barroso region and its land use. Each category is seen as a practice and/or process through which the region and its land use is being shaped (see figure 4).

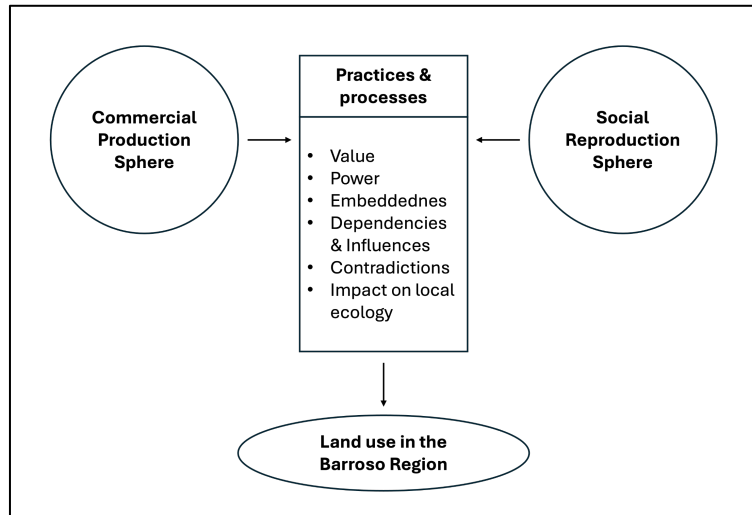


Figure 4: Framework (own representation)

Note: The categories are analytically distinct from one another, but empirically intertwined. Value and power are understood as categories that are continuously produced and contested through social, political and economic practices and processes.

3.5 Quality criteria

Qualitative research is often criticized for not being sufficiently scientifically sound (Noble & Smith 2015). Poorly justified methodological choices and a lack of transparency in the analytical work are commonly mentioned reasons for this criticism. Even the results of qualitative studies are often criticized as only representing a collection of the researcher's personal opinions with considerable researcher bias (Noble & Smith 2015). Therefore, it is even more important to ensure scientific rigor in a qualitative research approach.

While quantitative findings are usually tested for validity and reliability, utilizing statistical methods, such testing is not possible with qualitative data. Instead of validity, Noble & Smith (2015) propose the assessment of the alternative dimension of *truth value*, to ensure the quality of the findings. The dimension of *truth value* acknowledges the existence of multiple realities alongside the researcher's own reality, which can result in a misrepresentation in the methodological process (Noble & Smith 2015). In the case of this thesis, the chosen data basis represents various points of views on the chosen case and does not only reflect the researcher's own reality. Utilizing these different perspectives in a data source triangulation helps to validate the data, reduce potential bias and ultimately increase the dimension of *truth value* (Carter et al. 2014).

In terms of reliability, Noble & Smith (2015) propose the dimension of *consistency* as the counterpart in a qualitative research design. This dimension is determined by the *trustworthiness* of the applied methods and “[...] *is dependent on the researcher maintaining a ‘decision-trail’*” (Noble & Smith, 2015: 34). Therefore, decisions of the researcher need to be transparent and comprehensible, to achieve *consistency* (Noble & Smith 2015). Following the steps outlined by Mayring (2014), this thesis ensures that the procedure is consistent and understandable and strengthens the dimension of *consistency* in the quality of the research.

As a third criterion, the findings in quantitative research are assessed by their generalizability. However, a qualitative case study is not intended to generate generalizable findings (Yin 2018). Nevertheless, Noble & Smith (2015) propose the dimension of *applicability* as a counterpart to *generalizability*, in the context of qualitative studies. This dimension describes the applicability of the findings to other contexts, settings or groups (Noble & Smith 2015). One of the purposes of the present thesis is to demonstrate that the GPN 1.0 framework is not sufficient in capturing a differentiated picture of the development of a region. Thus, the results of the present thesis may be applicable to other contexts and settings, by demonstrating the shortcomings of the framework.

The final dimension defined by Noble & Smith (2015) to ensure quality of the research is *neutrality*. This criterion can be seen as an overarching dimension and is met, if *truth value*, *consistency* and *applicability* have been addressed within a qualitative study. By strengthening these dimensions, as previously outlined, the neutrality of this thesis is supported.

3.6 Limitations

The methodology of this study has some limitations. First, the study is based on secondary research as no fieldwork was conducted. The findings of the analysis are based on publicly available data. Therefore, the results could not be verified, and no further questions could be asked to deepen the understanding or pursue other directions.

Another point is that the categories for the qualitative content analysis were developed deductively, which limits the development of network patterns.

4. Analysis

In the following, the results of the qualitative content analysis are presented based on the categories developed during the coding process. The coding of the sources produced 188 references, with the coded text passages distributed as follows across the categories value, power, embeddedness, dependencies & influences, contradictions and impact on local ecology (see figure 5).

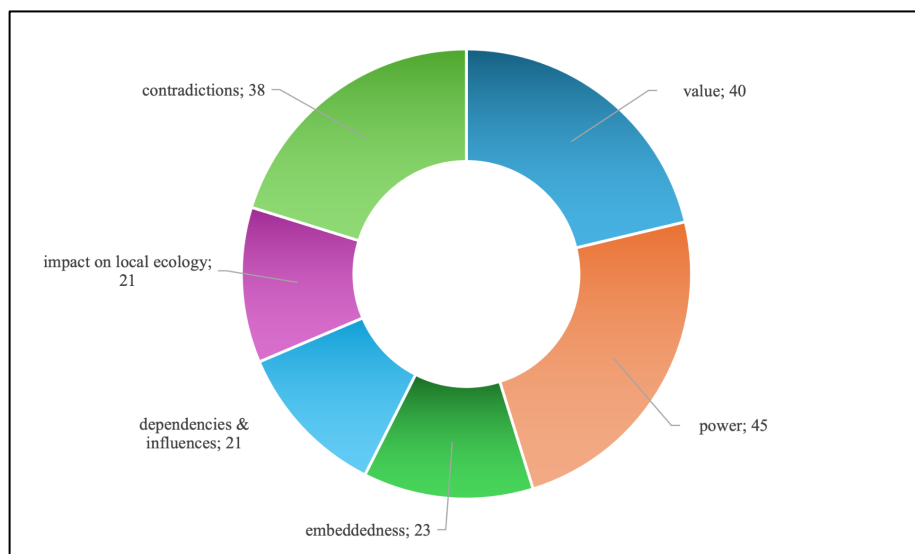


Figure 5: Distribution of coded text passages by category (own representation)

Each section of this chapter focuses on one thematic area (category) and includes a structured summary of the most relevant aspects discussed in the data. In addition to descriptive elements, selected direct quotes are used to illustrate key arguments and emphasize the voices represented in the material. The data is also analyzed briefly to show the relation between data, category and research question. The analysis aims to capture the complexity and nuance of each category by highlighting recurring patterns, variations, and tensions in how the topic is framed by different actors.

To contextualize the findings, the chapter begins with an overview of the Barroso region and the developments surrounding the proposed lithium mining project.

4.1 Barroso region

The following section provides an overview of the Barroso region, based on publicly available documents, reports, and academic literature. The description draws on multiple sources and seeks to provide a balanced and objective background for the findings discussed in the subsequent chapters.

The Barroso region or Terras de Barroso is located in Northern Portugal and encompasses in administrative terms the municipalities of Boticas and Montalegre. Upper Barroso covers a large part of the municipality of Montalegre, Lower Barroso covers the municipality of Boticas and also part of the municipality of Montalegre (see figure 6, FAO & ADRAT 2018).

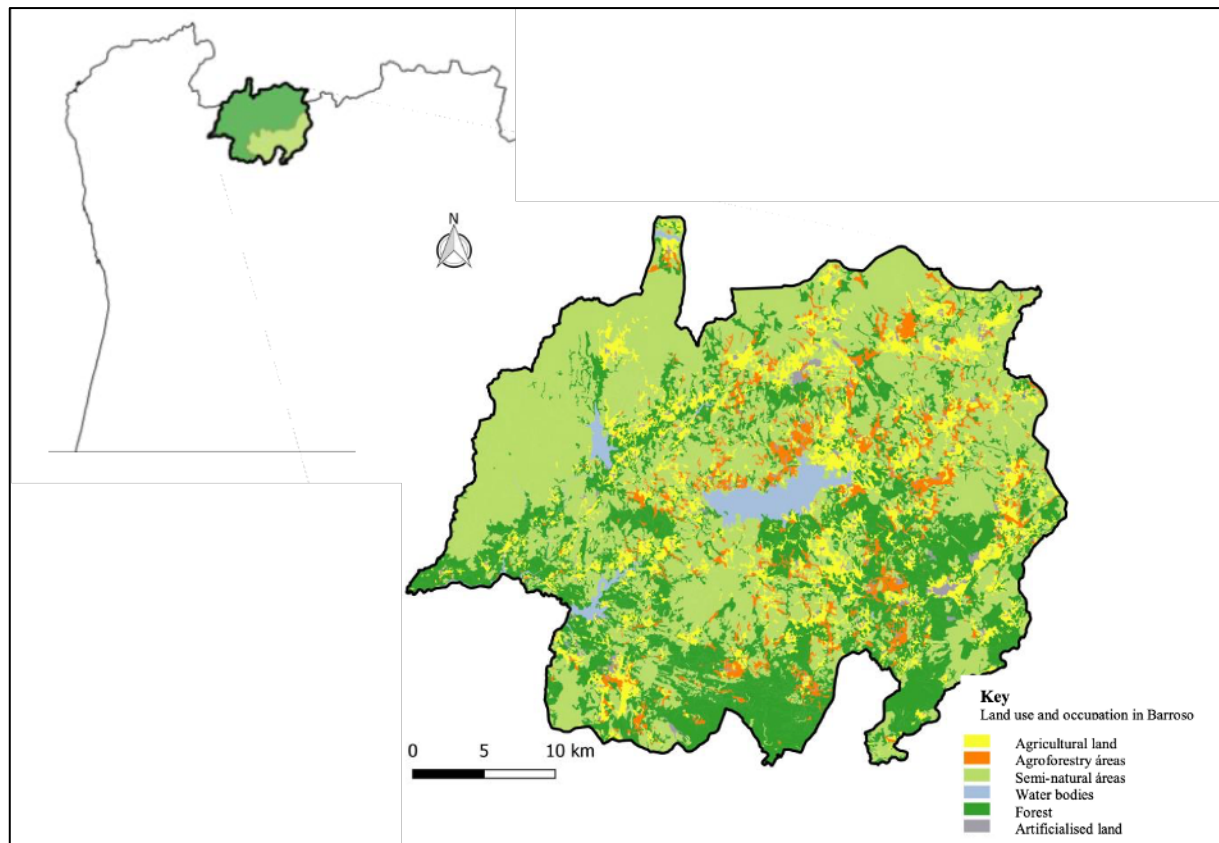


Figure 6: Key land use and occupation in the Barroso region (FAO & ADRAT 2018)

The region is characterized by forests and semi-natural areas (see figure 6). This mountainous region is known for its distinct topological and climatic conditions. Agriculture, livestock breeding, food processing, forestry, grazing, and tourism are the primary income sources in Barroso (Vieira 2020; Sini & Antonelli 2024). The region's economy is heavily reliant on

livestock production, particularly bovine, as well as the cultivation of crops suited to the mountainous terrain, such as potatoes and rye. The area's human occupation, which dates back thousands of years, has shaped a landscape characterized by agricultural, forestry, and grazing activities alongside significant and relatively intact environmental areas (FAO & ADRAT 2018; Vidal 2023). What distinguishes Barroso is not only its productive landscape but also its deep-rooted communal practices. Since 2018, the area around Covas do Barroso has been designated as Portugal's only Globally Important Agricultural Heritage System (GIAHS) by the FAO, making it one of only eight such regions in Europe. This recognition is due to the region's agroecological system, which integrates agriculture, forestry, and livestock farming in a harmonious way, while also emphasizing sustainable resource use (Vidal 2023). A central element of this system are the *baldios*, communally managed lands used for agriculture, grazing, and forestry. In Covas do Barroso, these lands make up nearly two-thirds of the territory and are not administered by municipal institutions but by the local population itself (Wandler 2024).

Barroso's social system is also marked by communitarian values and mutual support. Farming practices such as sowing and harvesting are collective events, with families and neighbors working side by side and sharing the yields. *"What makes this system so special is people's strong connection to the land,"* says António Machado from ADRAT, the local development association that submitted Barroso's application for world agricultural heritage. *"Everything is done with a lot of care to sustainably manage the pastures, water and landscape,"* he says. (Vidal 2023).

The region gained more attention for its geological resources in the last years. Starting in the early 1990s, the Portuguese National Geological Services institutions prioritized lithium inventory and research, intensifying again in the early 2000s. In 2006, a license was issued for the exploration of feldspar and quartz mineral deposits in a 120 ha concession area named *"Mina do Barroso"*. The concession rights were initially held by Saibrais – Areias e Caulinos, S.A. The rights were transferred to Imerys Ceramics Portugal S.A. in 2010. Imerys updated the Mining Plan in 2011, expanding the concession area to 542 ha and including lithium without public consultation or notice to local authorities. The revised plan was approved by the Directorate-General for Energy and Geology (DGEG) in 2016 and in the following year, the concession was transferred to Savannah Lithium, a British company. Savannah Lithium has been actively involved in the development of the Barroso Mine since 2016 and acquired the

rights to the Portuguese lithium deposit in 2017. The mine, located in close proximity to the village Covas do Barroso (see figure 7), which is part of the municipality of Boticas, would be the largest open-pit lithium mine in Western Europe alongside open-pit lithium mines in Serbia and Finland (Carter 2021; Dunlap & Riquito 2023; Friends of the Earth 2023; Universidade do Minho 2020).

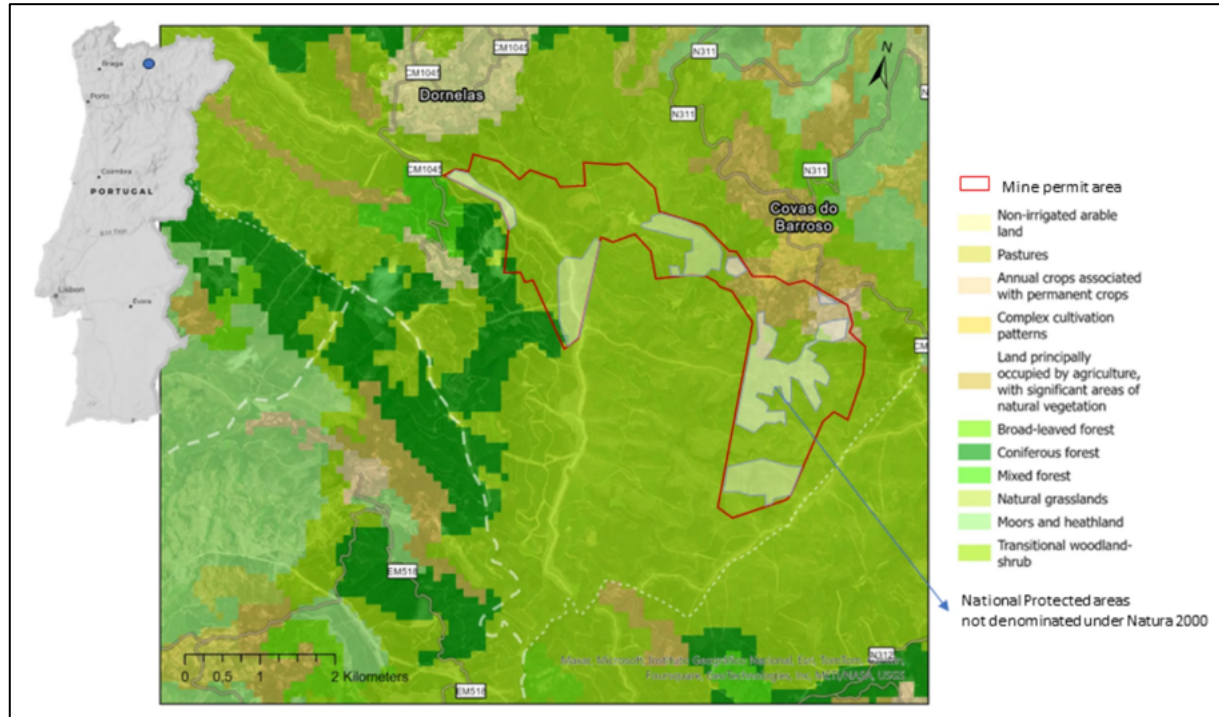


Figure 7: The concession area of the planned mining project “Mina do Barroso” in the Barroso region and its associated land uses (Ferola & Komnitsas 2025)

4.2 Value

The first category *value* encompasses text passages from a variety of actors, including Savannah Resources and its CEO, local residents, media outlets, the University of Minho (in cooperation with Savannah), and the Portuguese Secretary of State for Energy and Climate. Additional, though less frequent, contributions stem from international NGOs, the European Commission, and local development associations. These actors represent both the commercial production and social reproduction spheres and illustrate the plurality of ways in which value is understood and assigned. These diverse understandings do not merely coexist, they actively shape land use practices and decisions in the Barroso region.

The text passages in the category *value* are screened regarding the research question. It is analyzed how the Barroso region and its land use is shaped by practices and processes in the

two spheres. The analysis of text passages helps to identify how *value* is created, enhanced, and captured by different actors and how these different understandings of *value* shape decisions about land use.

Value creation in the Barroso region emerges through diverse practices and processes embedded in both the social reproduction and the commercial production sphere on different scales. These processes reflect not only what is considered valuable, but also how *value* is constructed, by whom, and under what institutional and spatial arrangements.

One form of *value creation* is rooted in the communitarian traditions of the Barroso region. These traditional practices are deeply intertwined with informal, non-capitalist forms of rural organization and are based on collective adaptation to a harsh environment. The community, as a defining cultural and social feature of the region, manifests in everyday practices such as the shared cattle grazing, the people's mill and oven, and the communal maintenance of paths and irrigation channels. These practices do not merely support subsistence, but they also create *value* in the form of cultural identity, social structure and ecological sustainability. The practices represent a type of *value creation* that is embedded in ways of living, in shared knowledge and in long-term stewardship of the land in an ecological feasible way (reference 124). The emphasis on self-sufficiency, such as eating what is grown, baking bread in community ovens, producing wine and cured meats, reflects not only a subsistence logic but also a deep-rooted social fabric in which *value* is embedded in practices and processes such as care and intergenerational renewal. These practices are embedded in long-standing organizational arrangements such as the *baldios* (community-managed common lands) and are spatially bound to the local scale of mountainous rural areas in Northern Portugal (reference 110, 124 & 146). Here, *value* is not only created through products, but more fundamentally through the process of transforming and caring for the land itself. The act of cultivation, of living with the land, is itself a process of *value creation*. These community-based systems reflect non-capitalist forms of *value creation* and depend on informal institutions, generational knowledge and shared labor. This connection between land and lived experience is further illustrated by a resident who states: "*This is where my brothers and I grew up tending the cows, which is why it has even greater meaning for me because I've known this area since I was very young*" (reference 10). Here, the land is not merely a resource to be exploited but a space of social reproduction and a carrier of memory. This represents important components of the social reproduction sphere, where *value* is tied to care, providing food, cultural meaning, and

intergenerational renewal. Here, *value* is created through memories, family ties, and a subjective connection to the land.

But *value* in the region is also created through external actors. As a journalist writes: “[...] *their profound attachment to their land and traditions makes Trás os Montes one of the most culturally unique parts of the country. Isolation has made the traditions here particularly rich and diverse. [...]*” (reference 124). By writing about the practices in the region and framing them as culturally rich and ecologically sustainable, the journalist actively participates in the construction of *value*. This process highlights how *value* is not only generated through local practices but also through their representation, recognition and narration by external actors. The journalist challenges discourses that portray residents as “*simple and unsophisticated*” (reference 124) and instead assign *value* to the cultural practices. This external attribution of *value* demonstrates that *value creation* can occur beyond the site of production itself through storytelling and selective framing. The journalist’s portrayal contributes to the symbolic and cultural valuation of Barroso’s collective land use practices and transforms them into something of potential interest for broader audiences. This kind of *value creation* is situated at the intersection of the social reproduction and commercial production spheres. While it assigns *value* to practices from the reproduction sphere, the narrative may generate economic *value* for the writing and for the region.

However, the understandings of *value* are not universally shared. A contrasting view is voiced by another resident, who frames *value creation* in terms of employment and economic opportunities arising from lithium mining (reference 21). This narrative aligns with the view of the commercial production sphere, in which *value creation* is associated with quantitative outcomes such as economic growth or job creation (Kelly 2009).

Another resident reflects critically on the notion of lithium’s *value* and states: “*You only know the place when you start exploring. [...]*” (reference 92). This potential *value* has only been created by the search for lithium in the region. This statement underscores that the *value* attributed to Barroso’s subsoil is not inherent but constructed through external exploration and interest. It highlights how actors from outside the region such as mining companies or governmental agencies, redefine the meaning and worth of the land. Here, *value* is created by external actors through practices of extraction, speculation and geopolitical demand for critical raw materials.

Value enhancement in the Barroso region is particularly visible through the formal and informal recognition of its cultural, environmental and agricultural importance. In contrast to *value creation*, which is closely linked to the introduction of new practices or the transformation of resources, *enhancement* refers here to the processes by which existing *values* are made more visible, desirable or economically usable. This often involves changes in perception, narrative or institutional labeling. One particularly powerful example of *value enhancement* is the designation of Barroso as a *Globally Important Agricultural Heritage System* (GIAHS) by the Food and Agriculture Organization (FAO) in 2018 (reference 124, 128 & 129). This international recognition contributes to enhancing the region's symbolic and economic *value* by framing it as a globally significant landscape, worthy of protection, investment, and attention. It translates locally embedded, socially reproduced practices into a globally legible register of "cultural heritage." Such recognitions do not create new practices, but rather elevate existing ones into a different valuation context. As such, the FAO designation can be seen as a mediating institution that translates community-based, place-specific *value* into a form that is legible to external actors, such as tourists, development agencies, or the state. This process is not merely symbolic, it has material effects: The increased visibility of Barroso has sparked the expectation that *value enhancement* through recognition and branding will translate into economic opportunities: "*The village would benefit considerably more from its increasing recognition as an agricultural world heritage site and its unspoiled nature. This would bring more visitors to the region, which in turn would bring more investment and work to the region.*" (reference 70). It also shows that the social reproduction sphere, which is built on cultural tradition and ecological responsibility, becomes a source for commercial valorization. Thus, *value enhancement* in the Barroso region illustrates also how socially and historically embedded practices acquire new meaning and potential through formal processes of external recognition, classification, institutional framing, and global narrative alignment. This perspective combines elements of both spheres. The quote illustrates how cultural and ecological assets in the sphere of social reproduction can be mobilized for economic purposes. Thereby, *value* can be enhanced and the recognition as a GIAHS acts as a vehicle for economic *value enhancement* here. It also shows the dependence of the commercial sphere on the reproduction sphere. The economic enhancement of *value* depends on the preservation and continued reproduction of its landscape, traditions and communal forms of land use.

In contrast, *value capture* dynamics become particularly visible in the context of the emerging lithium industry in the Barroso region. David Archer, former CEO of Savannah Resources, articulates a clear vision of *value capture* aligned with broader geopolitical and industrial strategies: *"Lithium exploration within the EU will allow Europe to capture value that would otherwise remain in China or South America. It will be a step that will improve the capacity of the European automotive industry and provide a response to the European economy."* (reference 97). This statement illustrates a clear logic of *value capture*: Value is not envisioned as remaining locally, but rather as contributing to the industrial upgrading and technological sovereignty of Europe as a whole. This idea stands in line with the CRMA. It is an attempt to frame Barroso's lithium reserves as a strategic European resource, which is critical for securing technological sovereignty and green industrialization in the Global North (reference 59, 97, 151, 173, 174 & 177). This quote also underscores GPN ideas that *value capture* does not have to be and is commonly not captured where created. While *value* is created through the appropriation and transformation of local resources, it is captured primarily at the national or supranational level. As Henderson et al. (2002) emphasize, *value capture* depends not only on the economic activity itself but on ownership structures, governance arrangements, and policy frameworks that mediate who gets what. Archer also argues that mining projects benefit all Portuguese people, not just the people in the region.

Similarly, the Portuguese Secretary of State for Energy and Climate frames lithium as a strategic resource and as a national opportunity: *"Lithium projects are an extraordinary opportunity for the country that will bring jobs and up to 9 billion euros in investment."* (reference 136). In this quote, the potential lithium project is seen as a national opportunity with the expectation that value will materialize in the form of foreign direct investment and employment. This reflects a top-down logic of *value capture*, in which the benefits of lithium extraction are seen at the level of national economy. However, this national framing of *value capture* may conflict with local perspectives, where residents question who truly benefits. As one journalist sums up: *"For the population, the project makes no sense, especially since, three years ago, the Barroso region was classified as a World Agricultural Heritage Site"* (reference 11). This statement reflects a local perspective in which the value of Barroso is primarily seen in its agricultural, cultural, and ecological heritage and not in its mineral resources.

Value capture in Barroso is contested and shaped by asymmetries of power between multinational corporations, national governments, and local communities. While corporations

and state actors envision lithium extraction as a means to capture *value* for national or supranational projects and aspirations (e.g., EU decarbonization), local actors raise concerns about dispossession, environmental degradation, and the loss of alternative value regimes rooted in agriculture, culture, and sustainability. These tensions reveal that *value capture* is not a neutral or purely economic process, but deeply political: it involves struggles over whose valuation frameworks prevail, who has the right to benefit from resources, and how development paths are defined.

These differing understandings of *value* influence land use decisions. The practices and processes shaping the land use in Barroso are deeply intertwined with the spheres of commercial production and social reproduction. Most local actors tend to emphasize cultural and environmental preservation, while most external actors tend to promote economic growth and industrial development. The category *value* thus plays a central role in answering the guiding research question because the creation, enhancement, and capture of *value* determine both the legitimacy of certain uses of land and the priority given to them. The analysis of the category *value* shows how different actors, situated at various geographical scales and embedded in distinct organizational contexts, create, enhance, and capture *value* in ways that reflect broader political-economic and socio-cultural logics. While the social reproduction sphere emphasizes communal life, environmental stewardship, and cultural continuity, the commercial production sphere frames *value* in terms of market opportunity, technological progress, and national strategy. These conflicting, overlapping, and sometimes complementary *value* regimes shape how land is imagined, used, and contested in Barroso.

4.3 Power

The power dynamics surrounding land use in the Barroso region are driven by competing interests from the government, corporations, local communities, and activists at global, national and local scales. The following analysis is divided into the three sub-categories *collective power*, *corporate power* and *institutional power*.

Community-led initiatives and international solidarity networks demonstrate *collective power* at both local and global levels (reference 166). Vidal and Takacsova (2024) quote an activist and describe how anti-mining activism in Barroso is deeply embedded in global movements

opposing extractivism and capitalist resource exploitation: “*‘We realized the problem is much bigger, it’s not in just one or two villages in Serbia or Portugal.[...]It’s a global capitalist problem, so we need to unite for the movements to succeed.’*” (reference 167). This framing strengthens the political legitimacy of the movement and facilitates the building of solidarity across borders, which is a key mechanism through which *collective power* is scaled up within GPNs. In doing so, local actors reposition themselves from passive recipients of top-down development plans to agents of resistance within a transnational field of contestation. In Barroso, the mobilization of *collective power* takes various forms. The local resistance in Barroso is not confined to symbolic protest but encompasses a multifaceted repertoire of action, including legal interventions, electoral boycotts, sustained public demonstrations, and the formation of trans-local alliances (reference 140 & 158). Collective power operates not only through local resistance but through the deliberate construction of transnational solidarity. Protest camps serve as political platforms for knowledge exchange, alliance building and mutual recognition among affected communities worldwide. By making visible the structural similarities of extractive pressures across contexts, activists create a shared narrative that legitimizes their claims and increases their reach (reference 68, 140 & 166).

Importantly, activists confront not only corporations but also national and supranational institutions. As a journalist notes “[...] *their resistance is not only fueled by fear for the future. It is fueled by the feeling of fighting alone against powerful opponents: against the government in Lisbon. Against the European Union. And also against many environmentalists who show little solidarity with Covas.*” (reference 23). This quote underscores that *collective power* in this case is also a form of fighting status quo, a struggle not just over territory or resources, but over political voice and inclusion in decision-making processes. The activists’ sense of abandonment by mainstream environmental actors further reveals the contested terrain of legitimacy within environmental politics.

While *collective power* can drive resistance and create strong trans-local alliances, it is not without its internal frictions. The very process of mobilization can strain social cohesion within the communities it seeks to defend. As one resident indicates: “*I am proud that we have been able to prevent this mine so far but I’m also sad because the fight against the mine is dividing our small community.*” (reference 36). This quote illustrates that when exercising collective power, it is not only possible to unite, but also to fragment if the people in a community do not have the same opinion. Mobilizing around a shared threat often demands taking clear political

stances, investing time and resources, and sometimes confronting long-standing social ties or differences in priorities. In small, closely-knit rural communities like Covas do Barroso, where interpersonal relationships are deeply intertwined with economic and social life, the pressure to align with or distance oneself from activist efforts can create tensions that challenge community livelihood.

In the case of Savannah Resources and the lithium mining project in Barroso, *corporate power* manifests through economic leverage, discursive framing, and political entanglements that shape both local realities and transnational narratives.

Mining corporations exert significant influence over land use decisions through the deployment of financial, discursive and political strategies. By framing lithium as essential to the global energy transition, mining corporations position themselves as necessary actors in climate action narratives (reference 170 & 171). Savannah's CEO Emanuel Proença justifies lithium projects as a necessity: *"Reducing emissions from everyday travel is essential for meeting global carbon reduction targets. Electric vehicles (EV), powered by lithium-ion batteries, are at the forefront of this initiative, making lithium a critical material."* (reference 172). This narrative positions Savannah as a necessary actor and the mining of lithium as essential to global climate policy. These discourses are not neutral. They serve to morally legitimize mining by linking corporate goals with broader public goals such as decarbonization. At the same time, they obscure the local socio-ecological consequences of mining. This is reflected in Savannah's self-portrayal as a pioneer of "responsible mining". Former CEO David Archer declares: *"[...] our facilities will become pioneers of an innovative mining model, with regard to the concern for responsible and sustainable exploration in Europe. We want to use the best techniques, cutting-edge technology and set an example of how the best available techniques can be used in this industry"* (reference 94). Such statements reflect a form of technological legitimation, where corporate practices are framed as modern, efficient and sustainable.

An NGO states that *corporate power* is not only discursive but also strategic. It is argued that corporations exploit informational asymmetries, bureaucratic complexity and the marginality of rural areas to impose extractive agendas with minimal accountability: *"[...] companies choose small communities like Barroso, which has 191 inhabitants, on purpose, so that is it harder for the locals to participate, as they inevitably face obstacles: bureaucracy, lack of information and transparency, outcomes of public participation that is merely symbolic, not being taken into account in the Environmental Impact Assessments."* (reference 49). Moreover,

the marginalization of local voices is intensified by efforts to delegitimize resistance. When asked about local protests, former CEO David Archer dismisses them: “*Many of these movements and many protestors come from France and other countries. They are part of an anti-development group that protest against all types of projects*” (reference 100). This rhetoric portrays the resistance as coming from outside, being irrational and ideologically motivated. It also follows a discursive strategy that also subordinates the value system of the movements to the value system of commercial production.

Corporate legitimacy is further maintained through narratives about regional underdevelopment: “*They treat Barroso as a dying region that needs to be saved by the enlightened lords of developed cities*” (reference 116). Companies use framings of development and progress to justify dispossessions and environmental harm under the banner of modernization.

Friends of the Earth further critique the industry tactics:

“If you're a mining company, your path to profit relies on getting rid of inconvenient obstacles like people living in the area, and irreplaceable parts of ever-more-fragile natural world. This is why the mining industry is working hard to ensure that communities in Europe (and worldwide) have no real power to reject mining projects, and ensure they can be bought off. [...] When community feedback or objections do not comply with prevailing pro-mining agendas, citizen contestation is frequently labelled and dismissed as originating from a not-in-my-backyard ('NIMBY') attitude. This discourse reinforces an already unacceptable power asymmetry between mining companies and local people and creates pro-industrial bias in what should be neutral and objective consultation processes.” (reference 56).

Instances of corruption reveal how *corporate power* is not merely economic but deeply entwined with political structures. Lithium mining projects were central to the corruption investigation that led to the resignation of Portugal’s Prime Minister in 2023, demonstrating that corporate influence extends to the highest levels of governance (reference 85 & 133). This is what Tiago Teixeira describes as *corporate capture*. In his work, he explains that *corporate power* refers to processes in which multinational companies influence government initiatives, regulations and strategies in their own interests (Teixeira 2023).

Institutional power encompasses the capacity of national and local state, inter-state agencies and non-state institutions such as UN agencies to influence the decisions and strategies of firms and other actors embedded in the GPN (Henderson et al. 2002). In the context of the lithium project in the Barroso Region, the Portuguese government, alongside the European Union, plays a central role in shaping the land use through policies and legal frameworks. Mining projects, particularly lithium extraction, are supported as part of the EU's Critical Raw Materials Act, which aims to secure supply chains for the energy transition (reference 78). At the national level, this commitment translates into enabling legislation, including provisions for expropriation of land for projects deemed to be of strategic public interest (reference 42 & 135). Such institutional arrangements illustrate how *state power* can be mobilized in support of corporate interests, often undermining local self-determination. *Institutional power* manifests not only in legislation and policy but also in the concrete structuring of participation and access. So, *institutional power* is reflected in the limited access to information and legal resources for local communities (reference 47 & 48). The NGO *Yes to Life, No to Mining* describes how communities are effectively excluded from decision-making processes through a combination of governmental alignment with corporate interests and the systematic denial of transparency. An example of the “Green Mining Conference” in Lisbon illustrates this procedure. While Savannah's CEO publicly emphasized the company's alleged integration into the community, actual residents protested outside and were excluded from the official debate (reference 83). This incident illustrates how institutional structures can selectively strengthen corporate voices while silencing or marginalizing opposing opinions, not through overt suppression, but through the strategic design of participation itself, such as who is heard, who is given access and who is left out.

As described earlier, the extent of institutional entanglement is further revealed through high-level political scandal, which led to the resignation of the Portuguese Prime Minister Antonio Costa in 2023 (reference 85, 119 & 133). These developments underscore the complex ways in which *institutional power* can manifest within governance processes. The involvement of high-level political figures and regulatory bodies in investigations in connection with lithium raises questions about transparency and the robustness of checks and balances in environmental decision-making. While the approval of the Environmental Impact Assessment by APA may formally represent a procedural step in line with regulatory requirements, the broader political context in which this occurred invites closer attention (reference 119, 133 & 175). Rather than functioning solely as neutral instances, institutions may intentionally or otherwise facilitate the

progression from approval to implementation, particularly when national priorities such as energy transition and resource security are at stake.

Institutional power in the Barroso region case shows how state and supranational bodies, rather than acting as neutral authorities, actively facilitate extractive agendas through legal, administrative, and discursive means. This creates a structural imbalance in which local communities are legally restricted, politically marginalized and deprived of information, even as their lands are reimagined as strategic assets in a broader project of green modernization.

The power structures, which influence land use in Barroso, are highly asymmetrical, as governments and corporations have significant influence over decision-making. *Corporate power* operates through discursive legitimation, strategic marginalization, and political influence, enabling corporations to shape territorial outcomes in ways that reflect their own economic imperatives while simultaneously obscuring or silencing alternative voices and visions. *Collective power* is enacted through place-based resistance and transnational activism. These dynamics reveal the capacity of local actors to challenge the dominant logics of resource extraction embedded in GPNs. Local communities and activists continue to resist through legal, political, and grassroots efforts, and so demonstrate that power is not absolute but contested. The conflict over lithium mining in Barroso reflects broader struggles over environmental governance, economic interests, and democratic participation in land-use decisions.

4.4 Embeddedness

Regarding *territorial embeddedness*, the case of the Barroso region reveals how Savannah Resources' project is entangled in local spatial and social dynamics. In Barroso, land ownership and decision-making authority are not solely determined by national institutions but also involve local governance structures such as the *baldios*, the community-managed common lands. Despite national-level approvals, the local governance structures act as a barrier to external corporate interests, emphasizing the role of localized institutional frameworks in shaping land use (reference 26). Furthermore, the contestation over mining is not limited to legal processes. The community resistance in the village plays a crucial role in contesting the expansion of mining activities (reference 81). Here, *territorial embeddedness* is not only about a firm's ability to settle in a place, but also about the ways in which that place resists and shapes the economic activities. Beyond legal and community resistance, emotional dimensions of

territorial embeddedness are revealed. Local leaders and residents express existential concerns tied to place-based identities (reference 71). This shows that *territorial embeddedness* is also about identity, histories and livelihoods that shape community responses to the mining plans. This deep-rooted connection to place has sparked collective mobilization, for example, the local residents have formed an activist group (reference 84).

Regarding the *network embeddedness*, the Lithium project in Barroso is deeply integrated in broader European and global supply networks. The global demand for lithium is driven by economic and technological transitions, particularly the shift towards renewable energy. According to the International Energy Agency (IEA), the market for minerals, which are crucial for the energy transition, has more than doubled within five years and reach US\$320 billion in 2022 (reference 169). In response to growing geopolitical risks and increasing resource dependency, the European Commission introduced the Critical Raw Materials Act (CRMA) and an associated list of strategic materials, including lithium. These policy aims to secure access to resources which are considered essential for the green and digital transformation, as well as for sectors such as defense and aerospace (reference 188).

Savannah Resources aligns with these European priorities and benefits from them, as David Archer, former CEO of Savannah Resources describes: “*There has been a lot of support from Brussels, because this could be crucial for the ongoing energy transformation, increasing European resilience and ending dependence on raw materials from China.*” (Reference 96). By aligning their projects with European policy goals, corporations strengthen their position within the broader supply network, using geopolitical arguments to justify resource extraction. Since the project in Barroso is designated as a Strategic Project, Savannah Resources profits from additional concrete benefits such as “*streamline permitting provisions*” or “*support in accessing funds*” (Reference 186 & 187).

In this case, the *territorial embeddedness* is visible in the way Savannah Resources must navigate local structures, community resistance, and environmental regulations, while *network embeddedness* highlights most prominently how lithium extraction is integrated into global production chains and European policy frameworks. Ultimately, the case of Barroso illustrates how local land use is shaped not only by activities on the ground in the village but also by supranational policy frameworks and strategies.

4.5 Dependencies & Influences

The category *dependencies and influences* is derived from the GrPN framework. In the case of the Barroso region, the planned lithium mine exerts significant influence on the local reproductive system. The livelihoods of the people in the region depend on agriculture, rural tourism, and small-scale local industries. These activities are embedded in ecological cycles and intergenerational practices. Recent plans to introduce a lithium mining project raise concern over the potential disruption of these established modes of living. Residents worry that the shift towards an industrial economy will erode traditional ways of living (reference 45). Similarly, locals point out that the mine's material infrastructure could destroy essential resources. They fear the mine would not only extract lithium but also ecological value, attractiveness for tourists and work opportunities. Thus, the productive system threatens to destroy the very basis upon which the local reproductive system depends such as water, intact ecosystems and social recognition (e.g. through tourism) (reference 30).

The *influence* on employment is also viewed critically: there are concerns that the region will not benefit from the predicted jobs, or as a resident articulates: "*Mining might create a few short-term jobs, but it will destroy many more in the long term*" (reference 138). Since the mine would destroy land that provides livelihoods and jobs for many, some believe that more jobs would ultimately be lost than created. Furthermore, external actors such as Savannah Resources, who support lithium mining due to EU strategies or industrial demand, often ignore the local subsistence economy and existing jobs in the region. While external projections count productive gains, they obscure reproductive losses. Also, regional development policies often prioritize formal employment metrics over more complex forms of local livelihood and social reproduction (reference 112). But the commercial production also influences nonmaterial aspects in the community. The plans for the mine have already impacted the cohesion within the community and led to a division within families (reference 37 & 39).

At the same time, the planned mining project is deeply dependent on the approval of the people living in the region. While the productive sphere may appear autonomous especially under policies such as the Critical Raw Materials Act, which classified the region as a strategic project, its implementation remains entangled with local social, legal and ecological structures. Most directly, the mine depends on access to communal land which is managed through communal systems. As mentioned earlier, despite national-level approval, Savannah Resources needs the

consent and cooperation of local land management institutions such as the *baldios* (reference 26). Even when national or supranational frameworks (e.g., the EU's Critical Raw Materials Act) reduce legal barriers or enable expropriation, political and logistical feasibility still often hinges on social consent or at least the pacification of the conflict. Thus, the production system does not operate independently of social reproduction.

Savannah Resources also draws rhetorically on reproductive concerns to legitimize its operations. David Archer claims: “*In the past ten years, Covas has lost almost 25 percent of its population. [...] Our mine will bring life back to the village.*” (reference 33). This framing uses the notion of social reproduction, here the persistence and regeneration of the community, as a justification for extraction. It instrumentalizes the reproductive system to serve its own goals. However, many residents contest this claim that the production system does not necessarily support the local population. While the mining project claims to regenerate local reproduction, it is more likely to destroy the livelihood and existing jobs. The jobs, profits and markets promised are not integrated into but rather imposed upon existing social and ecological economies (reference 14). The local economy is not easily absorbable into the production regime, as it is rooted in long-term sustainability, knowledge transfer, and environmental stewardship and operates on fundamentally different logics.

The Barroso region illustrates a complex interdependence between productive and reproductive systems. While mining is presented as a driver of economic revitalization from the commercial production perspective, it simultaneously disrupts traditional agricultural and social structures. The region's land use is caught between long-standing sustainable land use and industrial extractive demands, with each system influencing and reshaping the other in profound ways.

4.6 Contradictions

The category *contradiction* is derived from the GrPN framework and highlights the fundamental tension between the *commercial* and the *social reproduction sphere*. Based on the work of Barrientos (2019), these spheres are both driven by opposing imperatives. While the commercial sphere is driven by profit maximation, the reproductive sphere is based on care and well-being (Barrientos 2019: 92).

A major *contradiction* in this case develops from the different assumptions of what is defined as desirable and legitimate economic activity and work. From the perspective of the commercial

production sphere, lithium mining is framed as a vehicle for economic growth and regional development, often accompanied by promises of job creation and infrastructural investment (reference 121, 137 & 156). However, this narrative overlooks and undermines the already existing activities that sustain the region and the community. Barroso is sustained by a self-sufficient, land-based economy, in which many residents engage in agricultural practices, mutual support, and community care (reference 147). Forms of work that are central to the social reproductive sphere but not recognized as such by dominant economic metrics. Herein lies the *contradiction*: the mining, often legitimized through creation of jobs and economic development, destroys existing jobs in the region. As one resident put it and quoted before: “[...] *this will not bring more wealth, it will destroy other jobs [...]*” (reference 14). While mining may offer formal employment, it simultaneously undermines the socio-economic foundations of the region by threatening livelihoods that do not fit into the capitalist logic of wage labor. The transition to a mining-based economy would not integrate in the existing system, rather it replaces it. The assumption that the region lacks economic activity stems from a narrow definition of what counts as work. In that definition, work is based on income generation and production rather than maintaining community well-being or ecological care. In this case, the coexistence of mining and maintaining the existing livelihood is not only difficult, but mutually exclusive. The *contradiction* lies in the fact that the goal of bringing more wealth to the region means destroying the previous livelihood (reference 117). Another central *contradiction* around the lithium mining in Barroso lies in the conflicting understandings of what constitutes *green*, whether in terms of a green transformation or a sustainable green lifestyle. “*The Barroso region in northern Portugal illustrates the paradoxes of the European Green Deal*” (reference 5) writes a journalist in an article about the ongoing processes in the region. While institutions such as the European Commission frame lithium as a strategic and necessary raw material for a low-carbon green future, this framing is fundamentally challenged by local actors and environmental organizations. They argue that lithium extraction, particularly in ecologically intact areas like Barroso, threatens to destroy exactly what is already considered sustainable (reference 89). This paradox is acute in Barroso, a region internationally recognized for its sustainable land-use systems and formally classified as a *Globally Important Agricultural Heritage System* (GIAHS) by the FAO and now threatened by industrial mining. FAO and ADRAT as organizations concerned with sustainable agriculture and rural development emphasize the uniqueness of Barroso’s communal land-use system and the region’s ability to maintain self-sufficient and ecologically sustainable food production. They also highlight how

local cooperation and community-based land management have historically provided stability, which stands in contrast to the uncertain and externally driven nature of mining investments (reference 142, 144 & 148). This *contradiction* is not only material, but conceptual. It is rooted in the conflicting definitions of what qualifies as "green." Institutional narratives often emphasize technological fixes like electric mobility, while disregarding lived, place-based ecological knowledge and practices. One local resident articulates this dissonance: "*Of course lithium is needed for batteries. It is essential for the energy transition. But we should ask ourselves what we use this energy for. Is lithium supposed to make consumerism sustainable? And what green transition are we talking about if we destroy the green? Look! Everything here is green!*" (reference 89). A resident and head of the environmental organization Povo e Natureza do Barroso reinforces this perspective: "*What is at stake is an ancestral system, a truly sustainable agricultural system that has been passed on from generation to generation for hundreds, if not thousands of years*" (reference 138).

In line with this, international non-governmental organizations such as Friends of the Earth further criticize this *contradiction* by pointing out the greenwashing of extractivist strategies. They argue that the EU's focus is on economic growth that maintains resource dependency under a "green" pretext and decarbonization instead of offering systemic alternatives such as degrowth, material footprint reduction and public transport solutions. They stress that a truly just transition must respect local autonomy and minimize extractive dependencies, rather than simply shifting environmental burdens from fossil fuels to new raw materials (reference 86, 159, 164).

Another point is that the so-called green transformation is not a real transformation, if the mode of transportation is not changing. In this sense, the so-called "green transformation" risks becoming a technological transition without systemic change. This is supported by the statements:

"the 'energy transition' and 'electric mobility' are still based on the logic of the individual car, being nothing more than a technological transformation that benefits the same people as always and not a paradigm shift, as would be the creation and strengthening of collective transport networks and the recovery of technologies such as streetcars, which have existed for over a century and do not need batteries to work." (reference 114) and "*It is a falsification to talk about a right green transition.[...] it cannot be a transition if, to implement it, you intensify the consumption of fossil [fuel]*

energy. It cannot be green if it only considers the problem of emissions and not the consequences of mining and extractive industry." (reference 86).

Ultimately, the *contradiction* around “green” in Barroso reveals a deeper ideological divide: between a growth-oriented, technocratic notion of sustainability, and a locally rooted, relational understanding of ecological stewardship. While the former risks continuing extractivism under a new label, the latter defends already existing systems that embody long-term sustainability in practice.

The Barroso region is an example of a fundamental *contradiction* between the productive system of industrial resource extraction and the reproductive system of traditional agriculture and communal land use. The *contradictions* between productive and reproductive systems in Barroso reflect a larger global tension between economic growth, environmental sustainability and social justice. While lithium mining is presented by some as a necessary step towards a low-carbon future, it simultaneously threatens localized, self-sufficient systems that have long maintained ecological balance and community wellbeing. This tension arises from competing perceptions of what is green and what sustainable living should look like, which are expressed through fundamentally different land-use logics: lithium mining prioritizes subsurface extraction to render existing technologies more environmentally friendly and enable green growth, while soil-adapted agriculture represents surface-based land use rooted in sustainable community living. In the Barroso region, coexistence of these two sectors is not possible as they are mutually exclusive, but both are localized.

4.7 Impact on local ecology

In his work, Kelly (2009) emphasizes that local ecology and environment form a critical dimension of the social reproduction process (Kelly 452). Building on this, Barrientos (2019) highlights the need to examine the “*implications of commercial activity for local ecology and environment at the community level.*” (Barrientos 2019: 90). Based on these assumptions, the category *Impact on local ecology* was developed to capture how stakeholders articulate the environmental impacts of lithium mining in Barroso.

A notable pattern emerges in the distribution of contributions: most of the 22 text passages dealing with *impacts on local ecology* come from local residents, indicating that this topic is of particular importance to this group of actors. Living sustainably and in alignment with nature

is a key aspect of social reproduction in Barroso that is often overlooked in the commercial production sphere.

Local residents, mostly embedded in the social reproduction sphere, express significant concerns about the environmental consequences of lithium mining (reference 2). These concerns are caused by their dependency on the land for agriculture and water access (reference 9, 38 & 46). Traditional water management systems are a key practice in the social reproduction sphere, ensuring the sustainability and continuation of agriculture and daily life. Mining is perceived as a threat that, through its impact on the environment, end these existing traditions and thus also has an impact on the livelihoods of the local population. (reference 46). The potential mining is also framed through the lens of identity, questioning the viability of economic compensation as a trade-off for environmental destruction: “[...] *They talk to us about compensation, minimization, and landscape restoration. But the relationship with nature is the only reason to live in such an isolated place. What development is possible for an area where no one would want to live?*” (reference 87). This statement illustrates that decisions about land use are influenced not only by economic factors but also by social and emotional ties to the landscape. This underlines the importance of preserving the local environment for the maintenance of social reproduction, as it is clear from the quote that the connection to nature is the main reason for living in this region.

NGOs also contribute to the discussion and often align with the concerns of the local residents. A National Manifest, supported primarily by NGOs, summarizes the ecological threats of large-scale mining (MININGWATCH Portugal 2020). Based on that, open pit or large-scale mining leads to contamination of water, soil and air and thus food sources in the region could be destroyed. It is also argued that mining has an impact on public health and ultimately the quality of life. This perspective frames the environmental impacts as far-reaching and structurally damaging, extending beyond local concerns to broader national and even global scales. By connecting mining to water scarcity, biodiversity loss, and depopulation, environmental organizations strengthen the argument that the land’s primary value lies in its preservation rather than industrial exploitation (reference 118).

In contrast, actors from the commercial production sphere, such as Savannah Resources, present a different narrative, emphasizing sustainability measures and economic benefits. David Archer, former CEO of Savannah Resources, explains how they ensure a minimal impact on the environment, including aspects such as conservation of water resources, building a bypass

road and planting trees after the end of mining in 2036 (reference 32). This represents an attempt to mitigate environmental concerns by promoting the idea of controlled and responsible mining. It focuses on technological solutions, reclamation efforts and long-term planning.

5. Discussion

This chapter discusses the results of the analysis with regard to the research question of how the Barroso region and its land use are shaped by practices and processes in the spheres of commercial production and social reproduction. The results of the analysis are also contextualized in relation to the framework of global (re)production networks and other fields of research. In addition, the limitations of the thesis and future research opportunities are discussed.

5.1 Interpretations and implications of the results

The discussion reflects on how the analytical categories used in this study contributed to answering the research question. The Barroso region is a site of conflict which results from the opposing interests of the social reproduction sphere and the commercial production sphere. The defined categories (*value, power, embeddedness, influences & dependencies, contradiction, impact on local ecology*) were instrumental in uncovering how these competing interests shape the Barroso region. These categories did not function as separate or self-contained dimensions of land use. Rather, they serve as analytical tools to structure the empirical material and reveal different but deeply interconnected processes that shape land use in Barroso. Therefore, the results of the different categories are not repeated separately below but are combined in order to answer the research question.

The analysis shows that the region and its land use are shaped through a conflictual interplay between practices and processes in the sphere of commercial production and social reproduction. While practices in the sphere of commercial production prioritize extraction, economic growth and geopolitical security, practices of the social reproduction sphere focus on practices and processes that sustain livelihoods, human-environment relations and community

wellbeing. Importantly, the analysis also shows that actors cannot always be neatly assigned to either sphere of commercial production or social reproduction. The inhabitants of Barroso, for example, are primarily associated with the sphere of social reproduction as they sustain practices such as the longstanding sustainable agriculture, communal land use and community wellbeing. At the same time, these cultural and ecological assets are also preserved and mobilized for economic purposes, such as tourism. Similarly, the state operates across both spheres and actively promotes lithium extraction as part of industrial and economic strategies, but simultaneously claims to act in the interest of social reproduction by invoking narratives of employment, regional development and thus, long-term societal well-being. Further, the analysis shows that land use in Barroso is not the outcome of technical or economic necessity, but the result of contested practices and processes through which commercial production-oriented priorities are systematically elevated, while reproductive practices are devalued and rendered invisible, as further explained in the following.

In the Barroso region, a fundamental opposition exists in the way land is valued and what is considered as valuable and by whom. On the one hand, the GIAHS designation recognizes the land for its cultural, ecological and heritage value, which is based on centuries of sustainable agricultural practices that ensure the community's social reproduction. On the other hand, the planned lithium mining project reduces the land to its mineral content at subsoil level and values the land almost exclusively for its economic potential in the global green transitions. Here, value is created through quantitative contributions to industrial supply chains, energy technologies and geopolitical resilience. The analysis shows that actors operating in the spheres of commercial production and social reproduction articulate different valuation frameworks, which in turn, legitimize different future land use practices and policy decisions for the region. Land use is shaped by processes involving struggles over whose valuation frameworks prevail, who has the right to benefit from land and resources, and how development paths are defined and legitimized. In this sense, from a GPN perspective, value is not inherent in the land itself, but is continuously generated through social, political, and economic practices at multiple geographical scales. This understanding foregrounds land primarily as a potential source of economic value through raw material value. Forms of value rooted in social reproduction such as place-based attachments, subsistence practices and collective care relations, remain marginal or invisible.

This is partly because dominant actors in the commercial production sphere constantly undermine valuation frameworks rooted in the sphere of social reproduction: The region is

framed as "underdeveloped" or local resistance is dismissed as "NIMBYism" (not in my backyard). These discursive strategies function to delegitimize place-based attachments and long-standing practices of land stewardship. Such framings are not neutral descriptions but forms of exercising power that define which practices, landscapes and livelihoods are recognized as economically relevant and which are rendered irrational, backward or obstructive. These observations are consistent with findings from feminist scholarship, which has long highlighted how social reproduction is rendered invisible or subordinate within dominant economic frameworks (Winders & Smith 2018). This case study illustrates how this devaluation directly impacts land use, as extractive projects are prioritized while reproductive practices are marginalized.

The prevailing value framework and thus land use in Barroso are further reinforced by asymmetrical power relations that operate at the global, national, regional and local levels. In the sphere of commercial production, corporate power manifests itself through a combination of discursive framing and political entanglements. Savannah Resources positions lithium extraction as essential for the global energy transition. By framing lithium as a necessary resource for public goals such as decarbonization and European resilience, Savannah Resources morally legitimizes mining and presents its local socio-ecological consequences as technically avoidable or insignificant in relation to these goals. These findings resonate with research on "green extractivism", which highlights how raw material extraction is made socially and politically acceptable through certain discourses. Voskoboynik and Andreucci (2022), for example, show how lithium mining is framed as compatible with or even necessary for climate change mitigation or economic development.

Further, corporate power does not operate in isolation but is embedded within broader political and regulatory networks. Institutional actors, particularly the Portuguese government and the EU, play a central role in shaping land use in the Barroso region through legal and administrative frameworks, such as the CRMA. By classifying lithium as a critical raw material and the lithium mining project as a strategic project, institutional actors enable fast-track approval procedures and financial support. This shows how in this case institutional power actively promotes extraction and thereby supports corporate interests.

Recent work by Eyselein and Dorn (2025) helps to contextualize these findings within broader debates on critical raw materials. They state "*criticality is a dynamic, relative projection onto raw materials.*" (Eyselein & Dorn 2025: 2), constructed through assessments centered on economic importance and supply risk. Nevertheless, Eyselein and Dorn argue that "*criticality*

extends beyond 'objective' factors - such as supply and demand - as experts construct criticality by selectively excluding or valuing knowledge and data based on subjective risk and related crisis perceptions." (Eyselein & Dorn 2025: 4). This shows how the value of raw materials is constructed through the assigning of "criticality" as a category to particular raw materials, the classification of lithium as a critical resource, certain selected knowledge and institutional decision-making processes. In this sense, the classification of lithium as "critical" is not a neutral process but a powerful mechanism through which certain valuation frameworks are institutionalized and others rendered invisible. As a result, land is often understood in institutional contexts merely as a substrate for raw material extraction, while its reproductive functions are systematically devalued. This shows that land use in Barroso is shaped by a political economy in which the reproductive value of land is subordinated to its constructed raw material value.

However, the case of Barroso also reveals the limits of this abstraction. Neither institutions nor corporations operate in an empty or fully deterritorialized space. The planned mining project remains materially and socially dependent on territorially embedded conditions, including access to communal land or local infrastructure.

The tension in the region leads to the emergence of collective forms of power. Local communities and activist networks are mobilizing forms of collective power that are territorially anchored and increasingly networked beyond the region to resist the lithium project. In doing so, local resistance to the lithium project is linked to protests and transnational debates on resource extraction and just transitions. Rather than acting merely as a symmetrical counterforce to commercial and institutional power, collective power in Barroso exposes the contradiction between commercial production-oriented land use decisions and the territorial conditions necessary for social reproduction.

The project, which is framed as a solution for a "green" future, is poised to dismantle a heritage system that has already achieved a sustainable, symbiotic relationship with its environment. Good ecological conditions in the Barroso region are not merely an environmental backdrop but constitute a material foundation for social reproduction. Indeed, agricultural practices, communal land use, food provision, cultural traditions and emerging forms of rural tourism all depend on intact ecosystems. The planned extraction threatens precisely those material conditions, such as land, water or social cohesion, upon which the reproductive system depends. Since the sphere of social reproduction depends on an intact ecosystem, it is not possible to combine both forms of land use. Thus, the transition to a mining-based economy would not be

complementary to the existing system of social reproduction in the region but would fundamentally replace it with a form of social reproduction oriented towards the production of a capitalist accumulation regime. The core contradiction therefore lies in the fact that the promise of increased wealth and development through mining entails the destruction of the economic and social practices that have sustained the region for centuries.

5.2 Limitations

As the scope of this thesis is to analyze the conflicting objectives and impacts of land use practices specific to the Barroso region, some limitations on its applicability have to be acknowledged. For this thesis, a qualitative content analysis based on Mayring (2019) is used. The categories were created deductively, meaning the categories were derived from theory before the coding process and then later applied to the texts (Mayring & Fenzl 2019). While this approach allows to narrow the findings to the predefined categories, it limits the potential to gain insights outside these categories. Additionally, both the decision on which codes to develop and the allocation of the data segments to the categories are at least partially subjective (Linneberg & Korsgaard 2019).

A qualitative content analysis allows the inclusion of a wide range of perspectives, but in this work it is limited by the reliance on publicly available sources. This means that only published opinions and representations could be considered, without the possibility of clarifying ambiguities or engaging with the interviewees or authors directly. Therefore, the empirical data used throughout this work could be subject to both an access and reporting bias.

Lastly, it should be noted that this study addresses a contemporary topic, which ongoing development is heavily dependent on political decisions that are not final. Therefore, this work should be viewed in light of and as an analysis of current conditions and discussions covering the timespan from 2018 to 2025.

5.3 Outlook

Based on the results of this thesis, several avenues of future research can be derived.

The conflict in the Barroso region must be understood within broader geopolitical and political-economic dynamics of the current energy transition. Lithium has become a key resource in European climate and industrial strategies, particularly in efforts to enhance energy sovereignty and reduce dependence on global supply chains (Dorn 2021).

Future research could build on this case by adopting a comparative perspective, for instance, by examining other lithium mining projects in Europe, such as in Serbia or in Spain. Such comparisons could help to assess whether similar patterns of value hierarchization, power asymmetries and marginalization of reproductive practices occur in different political and institutional contexts. Moreover, further studies could critically examine how environmental discourses influence resource policy and land use decisions in different geographical contexts. Methodologically, future research could complement this analysis with in-depth fieldwork, participatory approaches, or interviews with actors to explore whether and how the dynamics identified here resonate on the ground.

Finally, this thesis points to the need for continued theoretical reflection on how analytical frameworks themselves shape what is rendered visible or invisible. Combining GPN with GrPN has made it possible to question dominant assumptions about economic activity and development. Building on this, future research could further develop approaches that decenter commercial production and more fully account for the practices and relations that sustain life, livelihoods and socio-ecological systems.

6. Conclusion

This thesis set out to examine how land use in the Barroso region is shaped through practices and processes in the spheres of commercial production and social reproduction. By combining the GPN approach with the GrPN approach, the analysis aimed to move beyond narrowly economic understandings of land, value and development and to highlight the conflicts associated with today's critical resource extraction.

The findings demonstrate that land use in Barroso is not the outcome of neutral assessment. Rather, it is produced through contested practices in which production-oriented priorities, such as extraction, growth and geopolitical security, are politically elevated, while reproductive

practices that sustain livelihoods, ecosystems and community wellbeing are systematically devalued and rendered invisible.

The classification of lithium as a critical raw material illustrates how value is actively constructed through technocratic and institutional processes that privilege economic importance and supply security, while excluding knowledge rooted in lived experience, land stewardship and care relations. These valuation frameworks are reinforced by asymmetrical power relations operating across different geographical scales, in which corporate and institutional actors are able to shape land use through legal frameworks, discursive strategies and policy instruments. Thereby, lithium mining is legitimized through discourses of green transition and criticality, which frame extraction as necessary and inevitable, even as it undermines the very ecological and social conditions upon which local forms of social reproduction depend.

Thus, the analysis demonstrates how land use in the region is shaped not simply by competing activities, but by a hierarchical ordering of commercial production and social reproduction that is actively reproduced through institutional, discursive and political practices.

Further, the findings challenge narratives that frame extractive projects as complementary to existing local economies. In Barroso, the transition to a mining-based economy does not integrate into the reproductive system but threatens to replace it. The ecological degradation associated with extraction directly undermines the material foundations of social reproduction, including agriculture, water systems, communal practices and social cohesion.

From a theoretical perspective, this study demonstrates the value of combining the GPN approach with feminist and social reproduction perspectives. The GPN framework proved useful for tracing multi-scalar power relation, value dynamics and embeddedness in shaping land use. However, it was only through the integration of feminist geography that the analysis could systematically account for the reproductive functions of land, the invisibilizations of care and subsistence practices and the social dimension of value. By integrating elements from GrPN, this thesis contributes to expanding the GPN framework beyond its production bias. The analytical categories were used to find out about the ongoing practices and processes that shape land use. Nevertheless, they cannot be treated as discrete explanatory units but as interrelated lenses that together illuminated how land use is produced through overlapping and mutually reinforcing processes. The thesis demonstrates that social reproduction is not an external social dimension but a constitutive part of global processes around land uses.

Overall, the case of Barroso illustrates that contemporary green transitions are not merely technological or economic transformations, but localized processes that reorganize land,

livelihoods and social relations. By foregrounding social reproduction, this thesis contributes to critical debates on extractivism, green transitions and land use, and calls for approaches to sustainability that recognize and protect reproductive systems upon which both communities and ecosystems depend.

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Category	Sub-Category	Definition of category	Anchor example	Coding rules
Value	Creation	<i>Value creation</i> is understood as the generation of surplus value and economic rent. Value creation is shaped by the condition under which labour is converted into productive activity and the broader institutional and spatial context in which this occurs (Henderson et al. 2002). Here, <i>value creation</i> is understood more broadly and thus not only encompasses value creation in economic or monetary understanding.	“<i>These forests play a key role in [...] the creation of aesthetic and landscape value and the preservation of biodiversity</i>” (reference 1)	All text passages dealing with the creation of value, both practices and processes of value creation are assigned to this category. This includes: 1. Passages that discuss how local economic activities contribute to the creation of overall economic value of the region 2. Passages that highlight the significance of cultural heritage, traditions, and community practices that add intrinsic value to the region. 3. Passages reflecting how community engagement, social network and local governance influence value creation
	Enhancement	<i>Value enhancement</i> is understood as the upgrading of production activities, for example through knowledge transfer, technological innovation or institutional support. Value enhancement involves regional institutions fostering specific regional assets such as skilled labor, stable infrastructure or cooperative industrial relations that enable firms to carry out high value-added activities (Coe et al. 2004). Here, value enhancement encompasses also the processes by which existing values are made more visible, desirable or economically usable. This often involves changes in perception, narrative or institutional labeling.	“<i>And of course, we [Savannah Resources] will provide Portugal with a number of opportunities to develop the lithium value chain downstream</i>” (reference 12, author’s addition)	All text passages that deal with the increase of an existing value and its influence on the region are assigned to this category.
	Capture	The category <i>value capture</i> deals with the practices and processes through which the	“ <i>Lithium exploration within the EU will allow Europe to capture value that would otherwise</i>	All text passages that deal with the practices and processes of value appropriation and their

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		created and enhanced value is appropriated (Coe et al. 2004). This refers to the question of who benefits from the resources and value of the region and how the distribution of value affects the region and its land use?	<i>remain in China or South America.” [...] (reference 97)</i>	influence on the region are assigned to this category.
Power	Corporate	This category refers to practices and processes through which companies exercise power and thereby influence decisions and resource allocations (Henderson et al. 2002); here it refers to the influence on the region and its land use.	<i>“There’s a universal agreement that the mining industry will need to deliver a significant increase in the volume of commodities currently produced in order to supply the energy transition and help to tackle climate change” (reference 171)</i>	Text passages that explicitly refer to the various practices and processes of corporate exercise of power and their influence on the region are assigned to this category.
	Collective	This category refers to the capacity of stakeholder to exert influence over firms and governments (Henderseon et al. 2002); here it refers to the practices and processes of collective action, such as protests, local mobilizations and community decisions that affect the region and its land use.	<i>“Since residents of Covas do Barroso first heard about Savannah Resources’ plans in 2017, they have been organizing protests and anti-mining camps, are refusing to lease the village’s common lands, and have filed legal challenges to stop the company’s operations.” (reference 158)</i>	Text passages that explicitly refer to the various practices and processes of collective power and their influence on the region are assigned to this category.
	Institutional	This category includes how institutional practices, such as legislative or regulatory measures, influence decisions and strategies of firms and other actors (Henderson et al. 2002).	<i>“The common feeling is that these projects will largely be approved, since the Government is in favour of this exploration (or exploitation), despite the negative environmental, social, and biodiversity impacts, and community opposition.” (50)</i>	Text passages that explicitly refer to the various practices and processes of institutional power and their influence on the region are assigned to this category.
Embeddedness	Territorial	<i>Embeddedness</i> illustrates how economic activities are shaped by and anchored within specific contexts. <i>Territorial embeddedness</i> refers to the practices and processes through which companies and economic actors are influenced by and interact with the specific local conditions, resources and institutional environments in which they operate. It emphasizes how firms adapt to and are shaped by the geographic, cultural and	<i>“After heated discussions in the village, Aida Fernandes banned Savannah’s employees from accessing the common land. Even though the company has received permission from the Portuguese state to explore, Baldio has jurisdiction over the land.” (reference 26)</i>	Text passages are assigned to this category if it is mentioned how the structures are in a region in which a company operates or how firms adapt to local structures. Text passages are not assigned to this category if the economic activities do not relate to specific local contexts.

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		regulatory context of a particular territory (Henderson et al. 2002).		
	Network	<i>Embeddedness</i> illustrates how economic activities are shaped by and anchored within specific contexts. <i>Network embeddedness</i> refers to the practices and processes through which companies and economic actors are integrated and influenced within the broader production network (Henderson et al. 2002).	<i>"There has been a lot of support from Brussels, because this could be crucial for the ongoing energy transformation, increasing European resilience and ending dependence on raw materials from China." (reference 96)</i>	Text passages are assigned to this category if they refer to a broader network of actors, institutions or policies in which another actor operates.
Dependencies and Influences of productive and reproductive systems	Dependencies	This subcategory is based on Kelly (2009) and Barrientos (2019) and refers to the interdependence of productive and reproductive systems. It describes how one or both systems are dependent on the other in order to function.	<i>"In the past ten years, Covas has lost almost 25 percent of its population. [...] Our mine will bring life back to the village." (reference 33)</i>	Text passages are assigned to this category if they explicitly or implicitly describe how one or both systems require the other one in order to maintain its function. If a text passage is about general relationships or interactions, but not about dependencies, the passage is not assigned to this category.
	Influence	This subcategory refers to how productive and reproductive systems shape and influence each other (Barrientos 2019; Kelly 2009). The focus here is on how one system is changed or directed by the actions or structures of the other.	<i>"Mining might create a few short-term jobs, but it will destroy many more in the long term." (reference 138)</i>	Text passages are assigned to this subcategory if they describe how one of the systems actively influences or shapes the other. Passages are not assigned to this category if only general interactions are described without a clear identification of how one system influences the other.
Contradictions between productive and reproductive systems		This category examines the conflicts and tensions between the productive and reproductive systems that arise from their <i>opposing imperatives</i> (Barrientos 2019: 90): while the productive system is driven by a dynamic of profit maximization, the reproductive system aims to ensure care, recreation and social reproduction and is driven by a dynamic of care and well-being (Barrientos 2019).	<i>"[...] And what green transition are we talking about if we destroy the green? Look! [...] Everything here is green!" (reference 89)</i>	Text passages are assigned to this category if the text explicitly or implicitly refers to contradictions between economic goals and social reproductive goals.

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Impacts on local ecology and environment		Based on Kelly (2009) and Barrientos (2019), this category refers to the impact of commercial activities on the local environment and ecology. It considers both direct and indirect impacts on natural resources, habitats and ecological processes that are important for the survival and reproduction of the local community.	<i>“Aida Fernandes and Nelsom Gomes, cattle ranchers, fear that the open-pit mine will leave a trail of destruction, dust, noise and pollution.”</i> (reference 8)	Text passages are assigned to this category if they explicitly refer to aspects such as the use of local natural resources or if they describe how economic activities affect the natural habitats. The text is not assigned to this category if it deals with general environmental issues that are not directly related to commercial activities.
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Reference number	Category	Sub-category	Actor (group)	Textpassage	Reference	Original language
1	value	creation	FAO	These forests play a key role in [...] the creation of aesthetic and landscape value (mostly associated with forest and agrosystem mosaics) and the preservation of biodiversity	(Development Association of the Alto Tâmega Region (ADRAT), 2018)	
2	Impacts on environment		Local communities & environmentalists	However, there is strong opposition to lithium mining from environmentalists and local communities who fear extraction could destroy the environment and nearby farms.	(Sharma, 2023)	
3	power	institutional	Portuguese Government	Despite local resistance, the Portuguese Government approved six sites for lithium exploration last year.	(Sharma, 2023)	
4	Impacts on environment		Media	From the Portuguese hills that serve as pasture for sheep, minerals could soon be produced to manufacture batteries and serve the strategy of decarbonizing the European economy.	(Gonçalves, 2024)	portuguese
5	contradictions		Media	The Barroso region in northern Portugal illustrates the paradoxes of the European Green Deal	(Gonçalves, 2024)	portuguese
6	Impacts on environment		Media	The hills that are used as pasture for sheep could soon be used to produce minerals to make batteries and serve the European economy's decarbonization strategy.	(Gonçalves, 2024)	portuguese
7	Impacts on environment		Local residents	The Portuguese shepherd fears that mining will harm his livelihood. "I am against the mine. I don't think it will bring anything good. That's why I am against it. It goes against everything I have done in my whole life and continue to do, which is herding and walking with cattle," Paulo Pires told euronews.	(Gonçalves, 2024)	portuguese
8	Impacts on environment		Local residents	Aida Fernandes and Nelsom Gomes, cattle ranchers, fear that the open-pit mine will leave a trail of destruction, dust, noise and pollution.	(Gonçalves, 2024)	portuguese
9	Impacts on environment		Local residents	[...] demonstrate that the exploration holes at the mine site could have a negative impact on groundwater	(Gonçalves, 2024)	portuguese
10	value	creation	Local residents	"This is where my brothers and I grew up tending the cows, which is why it has even greater meaning for me because I've known this area since I was very young. [...]"	(Gonçalves, 2024)	portuguese
11	value	creation	Local residents	For the population, the project makes no sense, especially since, three years ago, the Barroso region was classified as a World Agricultural Heritage Site. "This is where my brothers and I grew up tending the cows, which is why it has even greater meaning for me because I've known this area since I was very young. And now, knowing that it's going to be destroyed just because,	(Gonçalves, 2024)	portuguese

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				because they remembered, is very sad for me. It's heartbreaking to know that everything around us is going to disappear.		
12	value	enhancement	Savannah Resources	And of course, we will provide Portugal with a number of opportunities to develop the lithium value chain downstream.	(Gonçalves, 2024)	portuguese
13	value	creation	Ministry of Environment and Climate Action	"We want to use our lithium potential to position ourselves in the value chain of a crucial element in decarbonization," said Joao Pedro Matos Fernandes, Portugal's Minister of Environment and Climate Action	(Gonçalves, 2024)	portuguese
14	dependencies and influences		Local residents	"[...] we don't have that many unemployed people. [...] People from outside will come in the morning in vans and leave at the end of the day, from other municipalities. Therefore, this will not bring more wealth, it will destroy other jobs that we have in rural tourism, gastronomy and agriculture"	(Gonçalves, 2024)	portuguese
15	dependencies and influences		Local residents	"I am not against lithium. But I am not in favor of polluting my village and other villages like mine, to clean up the cities."	(Gonçalves, 2024)	portuguese
16	power	institutional	International NGO	The government appears to be pushing to go ahead with the mining of lithium (the new white gold) at any cost	(Treadwell, 2021)	
17	power	institutional	International NGO	Civil society is concerned the government seems to be covering its ears and eyes to the concerns of local communities, even if this may eventually jeopardize the national benefit by devastating natural resources in the long run.	(Treadwell, 2021)	
18	Impacts on environment		International NGO	[...] the mine will be located in an area considered World Heritage by FAO, while it will also put at risk the biodiversity of the region, affecting endangered species such as the river warbler, the Iberian wolf or the water mole.	(Treadwell, 2021)	
19	Impacts on environment		International NGO	The foreseen financial compensation also risks not clearly benefiting the local population, considering that the mine, which has a duration of 12 years, will be visible 30km away, and the financial compensation does not reflect the danger of the population no longer being able to raise cattle in a region where the quality of meat and honey is demarcated.	(Treadwell, 2021)	
20	power	institutional	International NGO	To make matters worse, the Government has decided to launch a public consultation for the strategic environmental assessment of eight more areas for lithium prospecting in Portugal, at a time when local elections have taken place and the local authorities have not yet started their mandates, criticizing the Government's timings for starting this process when the local authorities are not yet properly prepared or authorized to analyse the process.	(Treadwell, 2021)	
21	value	creation	Local residents	He is convinced that Covas do Barroso will benefit from the mine, even if half the mountain disappears before his eyes. The lithium boom will create jobs. For this, he is willing to risk more than money.	(Asmuth, 2022)	german
22	contradictions		Local residents	"It is wrong to destroy something that is good in order to make something better that is bad. Why should our beautiful nature disappear into a huge hole?" she asks. "Are there no other ways to combat climate change?"	(Asmuth, 2022)	german

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23	power	collective	Local residents	“[...] their resistance is not only fueled by fear for the future. It is fueled by the feeling of fighting alone against powerful opponents: against the government in Lisbon. Against the European Union. And also against many environmentalists who show little solidarity with Covas.”	(Asmuth, 2022)	german
24	contradictions		Media	If it were about coal, the matter would be clear. But lithium offers hope for lower CO2 emissions. Does climate change justify the destruction of a landscape that has just been designated a World Heritage Site? Don't we all have to make sacrifices?	(Asmuth, 2022)	german
25	power	instutional	Local residents	“After heated discussions in the village, Aida Fernandes banned Savannah's employees from accessing the common land. Even though the company has received permission from the Portuguese state to explore, Baldio has jurisdiction over the land.”	(Asmuth, 2022)	german
26	embeddedness	territorial	Local residents	“After heated discussions in the village, Aida Fernandes banned Savannah's employees from accessing the common land. Even though the company has received permission from the Portuguese state to explore, Baldio has jurisdiction over the land.”	(Asmuth, 2022)	german
27	Impacts on environment		Local authorities	The politician sees the region at a crossroads in view of the mining project in Covas, 20 km away: either it will soon be home to Europe's largest lithium mine, or it will remain a region with World Heritage status. “We were awarded this status because we have been farming in harmony with nature for centuries. If mountains disappear, that can hardly be considered harmonious.”	(Asmuth, 2022)	german
28	Impacts on environment		FAO	In fact, the Food and Agriculture Organization of the United Nations is gathering information on the mine's potential environmental impact and has not ruled out the possibility that the title could be revoked.	(Asmuth, 2022)	german
29	contradictions		Local authorities	“The largest open-cast mine was 600 meters long, 500 meters wide, and 150 meters deep. When I asked them why they didn't mine underground, they said it wasn't profitable. When I asked if they filled the holes back in, they said it was too expensive.”	(Asmuth, 2022)	german
30	dependencies and influences	influence	Local authorities	[...] he talks about his concern that the mine will consume too much water, about the roads that will have to be built for the 200 trucks a day, about the tourists who will no longer come, about the jobs that could be jeopardized as a result.	(Asmuth, 2022)	german
31	power	corporate	Savannah Resources	There are always protests against mining projects because people don't look at the facts.	(Asmuth, 2022)	german
32	Impacts on environment		Savannah Resources	Savannah has therefore listed more than 200 measures in a 3,000-page environmental impact assessment with which the company intends to minimize environmental damage, says Archer: “We will conserve water resources and only use organic substances that do not contaminate the soil in the ore washing plant. We are building a bypass road. Blasting will only take place every two days. We guarantee sustainable use of the site after the mine closes in 2036. We will plant trees and create lakes.”	(Asmuth, 2022)	german
33	dependencies and influences	dependence	Savannah Resources	In the past ten years, Covas has lost almost 25 percent of its population. [...] Our mine will bring life back to the village	(Asmuth, 2022)	german
34	value		Savannah Resources	According to estimates, there are more than 280,000 tons of lithium in the area. This could cover six percent of Europe's expected demand in 2030. “The mine is of strategic importance for Europe.” The company expects revenues of more than €1.5 billion over the mine's projected 11-year lifespan. Most people in Covas do not see the mine as a source of profit.	(Asmuth, 2022)	german
35	value		Local residents	Most people in Covas do not see the mine as a source of profit.	(Asmuth, 2022)	german

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36	power	collective	Local residents	"I am proud that we have been able to prevent this mine so far," says Pires. "But I am also sad because the fight against the mine is dividing our small community."	(Asmuth, 2022)	german
37	dependencies and influences	influence	Local residents	"I am proud that we have been able to prevent this mine so far," says Pires. "But I am also sad because the fight against the mine is dividing our small community."	(Asmuth, 2022)	german
38	Impacts on environment		Local residents	Pires cannot imagine that the water, whose purity they are so proud of in Barroso, will not be affected by the mine. "As long as the mine is profitable, maybe ten years, Savannah will stay. Then they will leave and leave us with a destroyed landscape. Who will buy our products then? There will be no more agriculture. For us, the mine is not sustainable."	(Asmuth, 2022)	german
39	dependencies and influences	influence	Local residents	The plans for the mine had already divided neighbors and torn apart not only her own family. "I have lost a lot in our struggle," Fernandes laments. Her father is on her older brother's side. [...] When he meets his sister at "o nosso Café" or on the street, they sometimes talk briefly. But there are no more mutual visits and joint celebrations like there used to be.	(Asmuth, 2022)	german
40	embeddedness	network	Media	The demand for batteries is increasing so rapidly that energy analysts are already predicting a global shortage of key components such as lithium and copper. Europe also wants to become less dependent on imports. European lithium would also mean shorter supply chains and lower prices for domestic battery manufacturers and the automotive industry. Even the European Union's environmental policy is on the side of the mining companies that want to extract lithium. The argument of lower CO2 emissions beats the warnings of environmental damage on site. And the Portuguese government has introduced a new mining law that also requires the consent of the local population for mines. However, it also allows land to be expropriated for projects of national importance.	(Asmuth, 2022)	german
41	contradictions		Media	Even the European Union's environmental policy is on the side of mining companies that want to extract lithium. The argument of lower CO2 emissions outweighs warnings of local environmental damage.	(Asmuth, 2022)	german
42	power	institutional	Media	And although the Portuguese government has introduced a new mining law that requires the consent of the local population for mines, it also allows land to be expropriated for projects of national importance.	(Asmuth, 2022)	german
43	value	creation	Geologist	"Around one percent of the world's lithium reserves are located in Portugal. That may not sound like much, but it accounts for around ten percent of Europe's lithium reserves," says Alexandre Lima. Much of this is spodumene, an ore that contains lithium and is particularly suitable for further processing.	(Asmuth, 2022)	german
44	embeddedness	territorial	Professor	The mine in Covas should have been a model for other projects. However, resistance is hampering plans in other regions. Alternative deposits should therefore be considered, as there are some places with potential where people would be more open to a mine.	(Asmuth, 2022)	german
45	dependencies and influences	influence	Local residents	Mariea fears that the mine would change their way of life irreparably - people would leave their farming land, their homes, and the narrow trails they have been taking for centuries between the fields. This would isolate individuals, disrupting community life, leaving people no choice but to move out of their ancestral homes - an expulsion, as far as she sees it.	(Silk, 2023)	

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46	Impacts on environment		Local residents	Covas do Barroso has a very old, traditional system of water maintenance and use. Draught is not a problem for the people there, not even for farming, and that is entirely their merit. It was a complex system of small water tanks, fountains and irrigation tunnels that you could see (or hear) throughout the whole village - water you could safely drink and access easily, a fact we had all been very grateful for in the Portuguese August heat. An open pit mine poses a serious risk to this sustainable water management, as a mine pumps enormous amounts of water, depleting the river and underground water. Not to speak of the risk of contamination of water bodies by heavy metals and chemicals released and used in the mining process, which can poison water bodies and their ecosystems for multiple generations - this alone could irreparably destroy Barroso as we know it, according to the testimony of experts on hydrology and geophysics. And as far as the local community is concerned, they do not see the benefits of having their land destroyed.	(Silk, 2023)
47	power	institutional	Media	Judicial: There is no real access to information/ documents for local communities, as they face insurmountable obstacles and restrictions [...]. "Our lawyers were told that, if they wanted the documents that the Portuguese Environmental Agency (APA) used to green-light the Barroso mining project, they had to travel down to Lisbon to their headquarters, to get them. When they did so, after being kept waiting for a long time, they were finally denied access to any documents whatsoever, and ended up being kicked out by security". With no information, there can be no access to justice	(Silk, 2023)
48	power	collective	Media	Administrative: local authorities can deny operating permits to mining companies, they can prohibit transit of heavy vehicles (such as those needed for mining), and so on. - this, however, requires the political will from the side of the local authorities	(Silk, 2023)
49	power	institutional	Media	Public participation: public consultation, etc. - there are many failures of the democratic process though: companies choose small communities like Barroso, which has 191 inhabitants, on purpose, so that it is harder for the locals to participate, as they inevitably face obstacles: bureaucracy, lack of information and transparency, outcomes of public participation that is merely symbolic, not being taken into account in the Environmental Impact Assessments (citizenwashing) etc. [...] however, the Environmental Impact Assessment did not reflect the outcomes of the public consultation, in what can only be described as citizenwashing."	(Silk, 2023)
50	power	institutional	Local residents	25% of the territory in Portugal is marked for mining prospecting. [...] The common feeling is that these projects will largely be approved, since the Government is in favour of this exploration (or exploitation), despite the negative environmental, social, and biodiversity impacts, and community opposition. Corruption is a big factor here since these large, rich mining companies work behind closed doors and at the sidelines of the law to bribe local officials, buy off local people in vulnerable situations, and conduct information campaigns (greenwashing and citizenwashing).	(Silk, 2023)
51	contradictions		Portuguese Environmental Association	"The Commission's proposed CRMA will facilitate mining in a devastating way, it does not take into account principles of circular economy, and it does not envisage human rights or social justice". (from the Portuguese environmentalist association and EEB member ZERO:)	(Silk, 2023)

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52	power	corporate	Geologist	Before the meeting ended, we learnt another piece of crucial information, delivered by geologist Dr. Teresa Fontao. "Portugal does not have lithium reserves - there are standards to define what qualifies as a reserve of minerals, and there is nowhere in Portugal that qualifies. We definitely do not have the biggest lithium concentration in Europe." So, this mad race to mine lithium in Portugal in the name of the green transition - it's not even worth it! "With no transparency, it is easy to manipulate the public's view with narratives around the wonderful opportunity of lithium deposits."	(Silk, 2023)
53	power	corporate	Media	It seemed clear to all what the strategy of the mining companies is. The same phenomena were observed everywhere: corruption of public opinion, capitalist manipulation of people in need, and perverse corruption of local and national officials. Activists from Montalegre gave their testimony of how Lusorecursos, the company aiming to explore lithium in the area, is co-opting local events and the local government, throwing money everywhere with sponsorships of everything that happens there, down to magic shows, infiltrating themselves insidiously in every aspect of the community.	(Silk, 2023)
54	value	creation	European Commission	Part of the Commission's strategy is to bring mining closer to home - the idea goes that this would kill two birds with one stone: a boon to the EU's drive for strategic autonomy for resources, and an opportunity to oversee projects in a more sustainable manner.	(Bolger, 2021)
55	dependencies and influences	dependence	International NGO	The problem with mining is that you can't choose where the materials you want to dig up are. If you're a mining company, your path to profit relies on getting rid of inconvenient obstacles like people living in the area, and irreplaceable parts of ever-more-fragile natural world.	(Bolger, 2021)
56	power	corporate	International NGO	If you're a mining company, your path to profit relies on getting rid of inconvenient obstacles like people living in the area, and irreplaceable parts of ever-more-fragile natural world. This is why the mining industry is working hard to ensure that communities in Europe (and worldwide) have no real power to reject mining projects, and ensure they can be bought off. It uses the industry-coined concept of 'Social License to Operate' to smooth the way for mining in Europe with as little community input and dissent as possible. The premise of Social License to Operate is that companies will eventually start mining, and that local communities do not have a genuine right to stop them. When community feedback or objections do not comply with prevailing pro-mining agendas, citizen contestation is frequently labelled and dismissed as originating from a not-in-my-backyard ('NIMBY') attitude. This discourse reinforces an already unacceptable power asymmetry between mining companies and local people and creates pro-industrial bias in what should be neutral and objective consultation processes.	(Bolger, 2021)
57	power	corporate	International NGO	Community testimonies, investigations and submissions to both the Aarhus Convention and the European Parliament's Petitions Committee have time and again reported that local processes are lacking in good governance, that there has been little or no transparent sharing of data from public institutions and from mining companies, and that companies are failing to declare their interests to citizens at research, development and prospecting stages of the mining process.	(Bolger, 2021)
58	contradictions		International NGO	The goal must be less mining. This means stopping the growth obsession and policies which uphold it, and making sure actions to reduce consumption, decarbonise, and make the economy more circular must all happen in parallel. As a start, the EU should agree a headline target to cut its material footprint. To support this target, socially and ecologically just degrowth strategies must be implemented in Europe. For example, policies reducing reliance on car travel and the number of cars on the road, while making high quality public transport accessible to all and promoting active commuting like cycling and walking.	(Bolger, 2021)

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59	value	capture	International NGO	In fact, Portugal is recognized as one of the countries with sufficient reserves for an economically viable commercial exploitation and in the Iberian Peninsula, with its mining resources, such as lithium, and with a strong automotive industry, we can aim to be a European power, and perhaps a world power, in battery technology, fundamental for Portugal and Spain decarbonization strategy, but also for the European decarbonization strategy. With the transformation of the automobile market for electric vehicles, countries with that have an important advantage in the international market. Portugal and Spain have that possibility. Considering that Portugal and Spain are important poles in the automotive industry, that lithium resources are available and that both countries can deliver cheap and green energy, developing all value chains on the Iberian Peninsula will be able to maximize the added value of the lithium mining process, combining prospecting and extraction with a capacity for refining raw materials, to trace added value for association with a transforming industry, valuing European production.	(Minister for the Environment and Climate Action, 2020)	
60	contradictions		local residents	“Over there, behind the hill, that’s where they want to destroy everything,” says Pires. By “they,” he means the international mining company Savannah Resources. What Pires and the other residents here consider their tradition and home is seen by “the Company”—as everyone here calls it—as a huge business opportunity.	(Wandler, 2024)	german
61	contradictions		Local residents	They call what they want to do here strategically important for the future. But what kind of future is it where they destroy everything?	(Wandler, 2024)	german
62	dependencies and influences		Local residents	Pires fears that the mines will cause air pollution, dust, and noise. Large roads and other infrastructure would have to be built. The amount of water used to wash the mineral out of the rock using toxic chemicals would be horrendous, and the previously crystal-clear rivers would be contaminated.	(Wandler, 2024)	german
63	power	institutional	Local residents	For a long time, the people of Covas do Barroso hoped that the authorities would stop mining for environmental reasons. However, an environmental assessment in May 2023 ruled in favor of mining. The report mentions water treatment and reforestation of the huge pits. For Savannah Resources, this paper is an important step forward. For the people here, however, says Pires, it is “a disaster.” Lithium mining would be “the end.”	(Wandler, 2024)	german
64	contradictions		Local residents	Pires is certain that simply replacing gasoline and diesel vehicles with electric vehicles is not the solution. He believes that the planet only has a future “if we radically change our consumption habits.” A new cell phone every two years, a new car every four or five years—that is not sustainable, even without fossil fuels. Pires talks about a “transportation revolution,” about expanding local and long-distance public transportation. “And how much diesel is burned just to operate the mines?” he asks.	(Wandler, 2024)	german
65	power	institutional	Local residents	Unlike many in the village, Loureiro never moved away. [...] Now the couple fears expropriation if the mine really does go ahead. Because then it could be declared a project of public and strategic interest.	(Wandler, 2024)	german
66	Impacts on environment		Local residents	Their two to three hectares of farmland are home to old olive trees and grow vegetables and all kinds of plants that serve as cow feed alongside pasture grass. “Even if they reforest the land after six or seven years of mining, it will never be the same as it is now,” Loureiro is certain.	(Wandler, 2024)	german

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67	value	creation	Media	People like Paulo Pires and Maria Loureiro are the reason why the UN Food and Agriculture Organization (FAO) has taken notice of this region in northern Portugal. Since 2018, the area around Covas do Barroso has been a World Heritage Site for agriculture, the only one in Portugal. The area “has been inhabited by humans for thousands of years and today shows a pattern shaped by human activities in agriculture, forestry, and grazing. In addition, there are a number of very important and relatively intact environmental areas,” according to the justification. The interplay of agriculture and grazing is crucial for the preservation of this unique landscape.	(Wandler, 2024)	german
68	power	collective	Local residents	The local initiative against lithium mining is now networked with others in Portugal and neighboring Spain; they held a protest camp in Covas do Barroso for four summers in a row. “Participants come from all over, including from abroad,” says Fernandes with satisfaction. The most spectacular action: “We blocked the machines for test drilling up there for seven months straight,” reports Fernandes. Whenever the workers set out in the morning, the villagers were already there. “Finally, they left and the company declared the work successfully completed.”	(Wandler, 2024)	german
69	dependencies and influences	influence	Local residents	“They want to lure us with jobs, but first of all, we don't need them here. Everyone has work. Secondly, a mine only creates a few jobs. Mining is mainly done by machines.”	(Wandler, 2024)	german
70	value	creation	Local residents	The village would benefit considerably more from its increasing recognition as an agricultural world heritage site and its unspoiled nature. This would bring more visitors to the region, which in turn would bring more investment and work to the region	(Wandler, 2024)	german
71	embeddedness	territorial	Local residents	Anyone looking for supporters of mining in Covas do Barroso will search in vain. Even the head of the village, Lucia Mo, and the mayor of Boticas, to whose district Covas do Barroso belongs, reject the plans. For the 56-year-old [...] the mining plans mean a whole world collapsing. What she wants: “To protect and improve the traditional way of life.	(Wandler, 2024)	german
72	value	creation	Local residents	In doing so, they [Lucia Mo] and politicians in Boticas are banking on the region's popularity following its designation as a World Heritage Site. Public funds have already been used to establish a center for nature and biodiversity, which offers hiking tours for tourists, among other things.	(Wandler, 2024)	german
73	embeddedness	territorial	Local residents	The company has acquired the land required [for open-cast mining] from private individuals. Nevertheless, local residents complain that the company is repeatedly encroaching on communal land. Within hours, forests are suddenly cleared and land dug up. The village community has already filed a complaint against this with the regional court. Until a decision is made, the residents are organizing themselves. Since the beginning of November 2023, the community has provided guards for certain sections of the forest. The mine operator sends an excavator every day and the police come every day to take the personal details of everyone involved.	(Dorn, 2023)	german
74	value	creation	Media	On the communally managed land where lithium is to be mined in the future, people keep cows and sheep, breed bees, hunt, and cut wood for heating. Some products are sold at nearby markets, but essentially, this is still a rural subsistence economy.	(Dorn, 2023)	german

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75	contradictions		Media	Most of the production is for self-sufficiency; people produce little surplus and consume very little compared to other regions of the country. This ecological and social practice is so unique in Europe that the Food and Agriculture Organization of the United Nations (FAO) recognized it as an important agricultural heritage system in 2018. However, based on purely economic indicators, Covas do Barroso is the epitome of a peripheral and structurally weak municipality: no industry, little growth, a stagnating population. All that is now set to change. In the capital Lisbon, often referred to as the “empire” in Covas do Barroso, new growth potential is being seen for the region. In addition to several lithium mines, a lithium refinery is to be built there in order to keep part of the added value in Portugal and create new jobs.	(Dorn, 2023)	german
76	value	capture	Media	In the capital Lisbon, in Covas do Barroso, often referred to as the “Empire,” new growth potential for the region is being seen. In addition to several lithium mines, a lithium refinery is to be established there in order to keep part of the added value in Portugal and create new jobs.	(Dorn, 2023)	german
77	embeddedness	network	Media	Lisbon's plans are embedded in the European Union's efforts to develop a European battery industry. In order to benefit from the market for electric vehicles, the EU launched the European Battery Alliance back in 2017, supported by the European Commission and the European Investment Bank. The European Raw Materials Alliance was also launched in September 2020. In the same month, lithium was added to the European list of critical raw materials. [...] As a particularly light element with a high storage capacity, lithium has become a central component in today's rechargeable batteries. Many industries require lithium-ion batteries, but it is mainly the automotive industry that is driving the growing demand.	(Dorn, 2023)	german
78	power	instutional	Media	However, with the energy crisis and fears of growing geopolitical tensions—and the associated supply bottlenecks—the EU is increasingly striving to establish its own value chains. It plans to pass the Critical Raw Materials Act (CRMA) in 2024. [...] At the same time, important raw materials projects in the EU are to be approved more easily, and strategic projects are to be supported with financing.	(Dorn, 2023)	german
79	contradictions		Local residents	Her opposition has nothing to do with “Nimbyism” (not in my backyard), where local groups only oppose a project if it directly affects them. Rather, she questions growth- and consumption-oriented solutions to the climate crisis in general and calls for a radically different economic strategy instead. For her, the desired “green transition” contradicts the planned extraction of raw materials: “Why destroy a functioning ecological and social ecosystem for the sake of a green transition?” she asks. At the same time, she emphasizes that all of this concerns her livelihood. “We live off the communal land and don't know what else we can do to stop the mine. Where are we supposed to go?”	(Dorn, 2023)	german
80	power	collective	Local residents	Local population claimed access to community-owned lands for drilling occured under threats of legal actions against anyone opposing the company's presence. Legal action was also initiated by the commons (baldio) assembly against the mining company for attempting to usurp part of its traditional lands. The conflict intensified during the exploration drilling campaign of 2023 when community members intervened against ongoing earthworks.	(The Iberian Mining Observatory (MINOB), 2024)	
81	embeddedness	territorial	Local residents	Local population claimed access to community-owned lands for drilling occured under threats of legal actions against anyone opposing the company's presence. Legal action was also initiated by the commons (baldio) assembly against the mining company for attempting to usurp part of its traditional lands. The conflict intensified during the exploration drilling campaign of 2023 when community members intervened against ongoing earthworks.	(The Iberian Mining Observatory (MINOB), 2024)	

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82	embeddedness	network		Savannah Resources is listed as a beneficiary in the Horizon Europe EXCEED project on the valorisation of mineral and metallic lithium exploitation by-products. The project funded by the European Commission includes research on how to improve public acceptance of projects through engagement with the public and strategies on Social License to Operate (SLO).	(The Iberian Mining Observatory (MINOB), 2024)
83	power	institutional	International NGO	"There is a lack of transparency and access to timely information in what should be democratic processes. We are up against a government lobby and a propaganda campaign led by the mining company, validated by the government and supported by institutions that ought to be working to protect our basic constitutional rights. At the recent "Green Mining Conference" in Lisbon the mining industry took pride of place. The CEO of Savannah Resources spoke of his good relationship with the community - while the community members were outside protesting against his mine!"	(Yes to Life No to Mining, 2021)
84	embeddedness	territorial	Local residents	But in the opinion of many local residents, these mines should not be built. Once the plans reached the public, community members joined together to form Unidos em Defesa de Covas do Barroso (UDCB), and the group opposes this project with demonstrations, assemblies, tent camps, and legal actions.	(Sini & Antonelli, 2024)
85	power	collective	Media	Lithium mining in Barroso is among the projects at the center of a corruption investigation that engulfed the Portuguese government beginning on November 7, 2023. The fight over these mines is therefore not as local as it might seem. Indeed, the banner welcoming visitors to Covas do Barroso, "Nao as Minas, Sim à Vida" ("no to mining, yes to life"), poses inescapable questions about the global model of green transition.	(Sini & Antonelli, 2024)
86	contradictions		Local residents	"It is a falsification to talk about a right green transition. It cannot be just if it does not respect the autonomy of the local populations, it cannot be a transition if, to implement it, you intensify the consumption of fossil [fuel] energy. It cannot be green if it only considers the problem of emissions and not the consequences of mining and extractive industry."	(Sini & Antonelli, 2024)
87	Impacts on environment		Local residents	"Covas do Barroso has been a [UN Food and Agriculture Organization] World Heritage Site for agriculture since 2018, the mine is incompatible with the development of the area. They talk to us about compensation, minimization, and landscape restoration. But the relationship with nature is the only reason to live in such as isolated place. What development is possible for an area where no one would want to live?"	(Sini & Antonelli, 2024)
88	Impacts on environment		Local residents	He has 170 sheep, and his business, like that of the other shepherd and farmers of Covas do Barroso, is threatened by lithium mining. "Part of my land is in danger of being included in the mine area. Where will I graze the sheep?" Pires is worried that the valley's water resources will be compromised. "With the drilling, some farmers are already now complaining about the lack of water in the wells," says Pires. "What will happen to the troughs and streams?"	(Sini & Antonelli, 2024)
89	contradictions		Local residents	"Of course lithium is needed for batteries. It is essential for the energy transition. But we should ask ourselves what we use this energy for. Is lithium supposed to make consumerism sustainable? And what green transition are we talking about if we destroy the green? Look!" he exclaims, laughing. "Everything here is green!"	(Sini & Antonelli, 2024)
90	value	capture	Local residents	"They say that such a sparsely populated area has only to gain from such a project," he says with a bitter smile. "But if we look at the lithium value chain, in addition to mining, there is battery production, electric car fabrication, and finally battery recycling. All these industrial activities will be elsewhere. Nothing will remain here."	(Sini & Antonelli, 2024)
91	power	collective	Local authorities	Regarding future prospects, the mayor uses clear words: "As far as it is in our power, we will not give authorizations, but if the government decides to go ahead, it risks facing a popular uprising."	(Sini & Antonelli, 2024)

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92	value	creation	Local residents	"We (hear) a lot of this thing that (Portugal) is the 5th place, the 6th place, 8th place (with the largest lithium reserves). But this is exactly the same as saying nothing", he tells his interviewer. "You only know the place when you start exploring..."	(Donn, 2023)	
93	contradictions		Local residents	There are also the arguments (now much more widely accepted) that electric vehicles almost certainly are not the answer. [...] In Gomes' mindset, the political mantra that lithium is vital for decarbonisation simply doesn't wash. "We do not understand how, in order to clean up pollution, we have to destroy forests, the environment, water courses and the lives of the people who live here", he told Euronews.	(Donn, 2023)	
94	power	corporate	Savannah Resources	We believe that it will be an important message to the international mining community that there are mining opportunities in Portugal and that our facilities will become pioneers of an innovative mining model, with regard to the concern for responsible and sustainable exploration in Europe. We want to use the best techniques, cutting-edge technology and set an example of how the best available techniques can be used in this industry.	(Petiz, 2021)	
95	value		Savannah Resources	We believe that we are making a responsible development to move forward in a way that benefits all Portuguese people, because this affects the mining industry, but it is an asset that benefits the entire country.	(Petiz, 2021)	portuguese
96	embeddedness	network	Savannah Resources	There has been a lot of support from Brussels, because this could be crucial for the ongoing energy transformation, increasing European resilience and ending dependence on raw materials from China.	(Petiz, 2021)	portuguese
97	value	capture	Savannah Resources	Lithium exploration within the EU will allow Europe to capture value that would otherwise remain in China or South America. It will be a step that will improve the capacity of the European automotive industry and provide a response to the European economy. China today represents a very significant competitive challenge, because they are committed to dominating the global electricity space and this is an opportunity for Europe to maintain its competitive advantage.	(Petiz, 2021)	portuguese
98	embeddedness	network	Savannah Resources	The development of this mine will certainly catalyze other parts of the industry in the future. We are on the lookout for partners interested in refining or converting lithium, and since it is not our business, we can guarantee a center of gravity capable of attracting the interest of manufacturers.	(Petiz, 2021)	portuguese
99	value	creation	Savannah Resources	It is a huge opportunity for Portugal, both in terms of employment and technological development. We are working in partnership with many Portuguese companies, for example, to develop a smart mine that can be controlled remotely with a series of environmental monitoring sensors, which provide real-time information via an app, etc.	(Petiz, 2021)	portuguese
100	power	corporate	Savannah Resources	In recent days, there have been demonstrations by the population and environmental organizations against the project. What is your view of these movements? Many of these movements and many protesters come from France and other countries. They are part of an anti-development group that protests against all types of projects..	(Petiz, 2021)	portuguese

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101	contradictions		Savannah Resources	But since lithium is essential to the energy transition - which these organisations advocate - do you see this opposition to lithium mining here as a question of "not in my backyard"? Yes, there is an element of that...but it is a question of responsibility...It would be desirable to build a circular economy and I do not think it is right that consumers want green electricity but do not want to get involved in the raw material needed to power it. Consumers have to be responsible. Especially because it is better to produce in accordance with European environmental laws, which are much stricter and more serious in Europe, and in a political context of leadership for sustainability and best incredible improvement in life in Europe, in our cities, in air quality, with a positive impact on all areas, reducing CO2 emissions. And lithium is the raw material that makes this change possible. You can't make these batteries without lithium	(Petiz, 2021)	portuguese
102	dependencies and influences	influence	Savannah Resources	Our project includes initiatives that ensure progressive mitigation of the effects during the mining period and, at the end of the mine's lifespan, when it is deactivated, the pit will be transformed into a lake for recreation or possibly into facilities that allow the exploitation of renewable energy. The site could play a very long-term role in Portugal's renewable energy matrix.	(Petiz, 2021)	portuguese
103	dependencies and influences	influence	Savannah Resources	How many jobs will be created? Around 200 direct jobs and 600 indirect jobs. But in these 200 direct jobs we are talking about families, so the impact of people who benefit could be three times greater. There has been a major population decline in the area. Boticas has lost around 30% of its inhabitants in the last ten years, according to the latest census. The population in the area has fallen from 260 to 190 people, with an ageing demographic profile. And this project has the potential to change that too, as it will bring demand for housing and catalyse the relocation of public services - schools, health services, post offices, etc. The mine will be part of the solution to revitalise this region and reverse desertification, and will provide a market for agricultural products, encouraging agricultural production and other activities as well.	(Petiz, 2021)	portuguese
104	dependencies and influences	influence	Savannah Resources	These are specialized jobs, such as nurses, geologists, environmental scientists, accountants, IT technicians, in other words, valuable careers with salaries above the regional average. It will be transformative for Boticas.	(Petiz, 2021)	portuguese
105	dependencies and influences	influence	Savannah Resources	("Savannah Lithium has also set up compensation funds worth €600,000/year to work with the community and on good neighbor programs. How will this materialize?") We want to work with the local community on various types of programs consistent with what they need and identify with. This could be vocational schools, local business promotion activities, training, or the purchase of ambulances. We will also work closely with the firefighters in the region, who will have access to our facilities and resources, our clinic...There is a great deal of involvement and a spirit of cooperation with the community.	(Petiz, 2021)	portuguese
106	value	creation	Savannah Resources	The foundation will also have the mission of building capital over the lifetime of the mine so that at the end of that time there will be money for community programs to continue and grow for decades, We want to leave a long-term legacy and not leave everything as it was in 16 years.	(Petiz, 2021)	portuguese
107	value	creation	Savannah Resources	We believe that the lithium industry has a lot of value for the Portuguese economy and will be essential to complement the economy at a time when tourism is still suffering so much from Covid. These types of industries will add resilience to the Portuguese economy, long-term jobs and capacity and will crystallize the industry by bringing more investment to the country.	(Petiz, 2021)	portuguese

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108	embeddedness	network	Media	In her editorial, Petiz classifies Barroso as a "region increasingly deprived of people and of means of subsistence or diversification of sources of income." What she classifies as a "moribund region" is actually classified by the FAO as Globally Important Agricultural Heritage System (GIAHS) since 2018 "based on the traditional way of working the land, treating livestock, and on the mutual aid of its inhabitants." It is the only region in Portugal with this classification and one of the 7 in Europe. Much of the region is also part of the Geres-Xurés Transboundary Biosphere Reserve, created in 2009.	(Norega, 2021)
109	contradictions		Media	In her editorial, Petiz classifies Barroso as a "region increasingly deprived of people and of means of subsistence or diversification of sources of income." What she classifies as a "moribund region" is actually classified by the FAO as Globally Important Agricultural Heritage System (GIAHS) since 2018 "based on the traditional way of working the land, treating livestock, and on the mutual aid of its inhabitants." It is the only region in Portugal with this classification and one of the 7 in Europe. Much of the region is also part of the Geres-Xurés Transboundary Biosphere Reserve, created in 2009.	(Norega, 2021)
110	value	creation	Media	In this region, the "means of subsistence" and the "sources of income" come greatly from agricultural activity and cattle raising, namely from Barrosa breed. This is a cattle breed that has already been in danger of extinction, precisely during the periods of greatest mining activity in the region (mostly tungsten extracted in galleries until the 80s), and its meat is, according to many, the best in Portugal.	(Norega, 2021)
111	Impacts on environment		Media	[Whoever has been to Barroso, and got to know the people and their way of life, easily understands] what a huge number of open-pit mines represent for a region that lives from agriculture and animal husbandry. The explosions, the dust, the deviation of water courses for its use in mining and the contamination of the remaining rivers are incompatible with this lifestyle. Even more so when we talk about mines that will be just 40 metres away from the nearest houses, in the case of the Borralha mine, or 200 metres away, in the case of the mine planned for Covas do Barroso.	(Norega, 2021)
112	dependencies and influences	dependence	Media	In these studies and forecasts, they count jobs from who knows where, but they don't count the people whose subsistence is threatened by these projects. If all the mining projects for the Barroso region were to go ahead, how many hundreds of farmers, shepherds, cattle ranchers, and beekeepers, and their families of course, would have to abandon the way of life they have always known?	(Norega, 2021)
113	dependencies and influences	influence	Media	[...] how do you revitalize and reverse the desertification of a region by diggin holes in it? Who will want to live next to huge craters, next to daily explosions of 720 kilos - in the case of Borralha Mine-, to see from the window of their house heaps almost 200 meters high - as they plan to do in Covas do Barroso?	(Norega, 2021)

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114	contradictions		Media	"The development of the lithium industry has brought us a new hope to truly act for change against climate change. And electric mobility will allow an incredible improvement of life in Europe, in our cities, in air quality, with positive impact in all areas, reducing CO2 emissions. And lithium is the raw material that makes that change possible. You can't make these batteries without lithium." We could dismantle this speech by explaining in detail that lithium cars are not sustainable because the batteries have a short life span (somewhere between 4 and 10 years), which can be even shorter if the battery is exposed to hot climates; that there are several difficulties and obstacles to their recycling; that the price of these cars is very high, being accessible only to a reduced elite; that the "energy transition" and "electric mobility" are still based on the logic of the individual car, being nothing more than a technological transformation that benefits the same people as always and not a paradigm shift, as would be the creation and strengthening of collective transport networks and the recovery of technologies such as streetcars, which have existed for over a century and do not need batteries to work.	(Norega, 2021)
115	contradictions		Media	The people are not against clean energy. The people are against that, on the pretext of a supposedly "clean" energy that is not clean, the territories and the ways of life of people and future generations are destroyed. Without consulting or even informing the local population. All so that, in this case, a small urban elite can move from one place to another without a guilty conscience, without wondering what happens to the regions where the war material comes from or what happens to the lithium batteries at the end of their useful lifespan.	(Norega, 2021)
116	power	corporate	Media	They treat Barroso as a dying region that needs to be saved by the enlightened lords of developed cities. Behind the pretty speeches hides the will to destroy a paradise on earth in the name of the greed of a handful of investors and CEOs. And in some other underdeveloped or dying place that nobody knows about, a graveyard of "green" batteries full of toxic and contaminating substances, which no one knows how to recycle, is also born.	(Norega, 2021)
117	contradictions		Media	They treat Barroso as a dying region that needs to be saved by the enlightened lords of developed cities. Behind the pretty speeches hides the will to destroy a paradise on earth in the name of the greed of a handful of investors and CEOs. And in some other underdeveloped or dying place that nobody knows about, a graveyard of "green" batteries full of toxic and contaminating substances, which no one knows how to recycle, is also born.	(Norega, 2021)
118	Impacts on environment		Portuguese NGO	Mining especially if performed as an open pit or large scale, contaminates water, soil, and air and destroys food sources. Mining presents risks to public health and reduces the quality of life of the population. Mining also has impacts on the social relations and the livelihoods of the local communities. The water consumption of mining operations is unsustainable in a country in which this resource is already scarce, and may also result in lower water tables with impact on agriculture and infrastructure (e.g. cracks in buildings or roads). Mines fragment the landscape, reduce the quality and economic potential of regional products and nature tourism, and contribute mid/long term to the devaluation and depopulation of our rural world.	(MININGWATCH Portugal, 2020)

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119	power	collective	Local communities & environmentalists	Lithium projects have faced strong opposition from local residents and environmentalists. They say the processes lacked transparency and have repeatedly warned of the "dangerous promiscuity" between decision-makers and mining companies. They have also been demanding stronger regulation. In a joint statement, eight anti-mining groups said the current situation was proof their concerns were legitimate, namely because APA President Nuno Lacasta was named a suspect along with Infrastructure Minister Joao Galamba, who previously served as energy secretary. "Lithium mining projects in Portugal must be immediately cancelled to not allow territories and populations to be affected based on corrupt and unclear processes," the groups said.	(Demony, 2023)
120	power	institutional	Local communities & environmentalists	They accused APA of working in the interest of mining companies and said the government had "created a network of business opportunities to benefit very few (people)". [...] In 2019, Portugal's government came under fire from lawmakers for signing a contract giving exploration rights for lithium mining to Lusorecursos when the company was only three days old. The UDCB movement, which is campaigning against mining expansion in the Barroso region, where Savannah Resources want to develop its project, said in a separate statement that the environmental approvals given by APA should be reviewed. Catarina Scarrott, from the UDCB, told Reuters the movement had been denied access by APA to environmental documents related to the project in Barroso. APA did not immediately to a request for comment on this accusation.	(Demony, 2023)
121	contradictions		Local communities & environmentalists	Wie sie [United in Defense of Covas de Barroso] uns erklärten, sind diese Gemeinschaften autark und haben alles, was sie brauchen, also lehnen sie etwas ab, das ihnen keinen Nutzen bringt und ihnen irreparablen Schaden bringt. Deshalb lassen sie sich nicht von den Sirenengesängen täuschen, die neue Jobs versprechen, denn sie brauchen diese auch nicht. Ebenso teilten Barroso Aktivisten ihre Überlegungen zu den vermeintlichen Klimaarbeitsplätzen, die sie versprechen, da diese aus einer kapitalistischen Perspektive verstanden werden, die weder die tatsächlichen Bedürfnisse von Gemeinschaften und Menschen, noch die Auswirkungen, noch ein Leben in Harmonie oder Würde usw. in Frage stellt im Gegenteil, sie basieren auf der Logik des Extraktivismus.	(Mantxo, 2021)
122	Impacts on environment		Local residents	Savannah also wants to buy private land from people like Maria Loureiro, who farms at the other end of the village. She grows olive trees and has cows which trot past us with bells jingling around their necks. "We're not for sale, we don't want to sell," she tells me. She resents the offers of compensation and royalties for the area. "If I sold my land, what would I do?" she asks. She would also lose access to pasture on the common land if the mine went ahead. [...] He says that even if people are compensated for the duration of the mine they "will never go back to producing agricultural products again because in the meantime they'll leave or they'll just give up farming".	(Bayley, 2023)
123	value	creation	Secretary of State for Energy and Climate	Portugal's Secretary of State for Energy and Climate, Ana Fontoura Gouveia, is backing the Barroso mine and further exploitation of lithium in Portugal. She says the mine will bring new jobs and funding through royalties to the area.	(Bayley, 2023)

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124	value	enhancement	Media	Its residents are sometimes dismissively (and wrongly) portrayed as simple and unsophisticated. The truth is that their profound attachment to their land and traditions makes Trás os Montes one of the most culturally unique parts of the country. Isolation has made the traditions here particularly rich and diverse. Ancient Catholic rites have combined with the cultural vestiges from the many other peoples who, over several centuries, have found their way to the region: Visigoths, Celts, Romans, the soldiers of Napoleon's army. To survive the unforgiving geography, residents of the Barroso have, over time, developed a complex farming system that relies on the collective management of the water, forests and pastures used by their animals. This method has helped keep the soil fertile, the rivers and springs clean, and the landscape unblemished. It is a system based on self-sufficiency, where residents eat what they grow, bake their own bread (often in their village's ancient community oven), step on grapes from their orchards to make wine, and slaughter hogs to make sausages and ham - which they smoke above their kitchen's fireplace. In 2018, the United Nations Food and Agriculture Organization included the distinctive region on its list of "Globally Important Agricultural Heritage Systems." It was among the first European sites to receive such designation. The title was a morale booster for residents, who benefited from the new status by highlighting the environmentally friendly way in which their products are made and promoting the region as a prime location for ecotourism.	(Vieira, 2020)
125	dependencies and influences	influence	local resident & activist	"The government is always complaining that the interior of the country keeps losing population. Well, we are the ones who chose to stay and raise our families here. We are here out of choice, not because of a lack of options. And now they come to threaten our way of life," said Nelson Gomes, one of the leaders of the resistance movement in Covas do Barroso. "They talk about the jobs that will be created, but they don't realize that those are much less than the livelihoods that will be destroyed."	(Vieira, 2020)
126	contradictions		local residents	"The mining company offered a ridiculously low amount as compensation for my property. But even if it was good, what would I do with it?" he said. "Why would I want to leave a place like this?"	(Vieira, 2020)
127	contradictions		Media	The hilly Barroso region of northern Portugal has been recognized for its centuries-old and "globally important" farming system that combines agricultural biodiversity, resilient ecosystems and a valuable cultural heritage. But the region is also home to what's believed to be one of Europe's largest deposits of lithium, an element that will be critical in the ongoing clean energy transition, with EU and Portuguese officials saying mining projects in Barroso will be key to securing domestic supplies of the metal.	(Vidal, 2023)
128	value	enhancement	Media	The harmonious interconnection of agriculture, forestry and livestock pastoral production has made Barroso the only region in Portugal - and one of only eight in Europe - to be recognized by the United Nations' Food and Agriculture Organization (FAO) as a Globally Important Agricultural Heritage System (GIAHS).	(Vidal, 2023)
129	value	enhancement	Local development association (ADRAT)	"What makes this system so special is people's strong connection to the land," says António Machado from ADRAT, the local development association that submitted Barroso's application for world agricultural heritage. "Everything is done with a lot of care to sustainably manage the pastures, water and landscapes," he says.	(Vidal, 2023)

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130	embeddedness	network	Media	The approval from Portugal's environmental agency coincided with a European Union's (EU) proposal for legislation to speed up mining licenses. The recently proposed Critical Raw Materials Act, which will likely enter force in 2024, would see the EU mine at least 10% of the strategic raw materials it uses to secure more of the battery supply chain and reduce the bloc's dependency on imports, as the EU tries to limit its reliance on powers like China, which controls the supply of critical minerals.	(Vidal, 2023)
131	Impacts on environment		Local communities & environmentalists	Savannah aims to start production in 2026. But Aida Fernandes and others in her village have vowed to stop it. Citing fears the mine scar the landscape, contaminate the water, erode the soil, disrupt local livelihoods and deprive them of communal lands, farming communities have strongly opposed the mining plans in Barroso.	(Vidal, 2023)
132	contradictions		Local residents	"We will never sell," says Maria Loureiro, a farmer who owns olive groves in the proposed mining area. "We live off the land. No amount of money can buy what I inherited from my parents and my grandparents."	(Vidal, 2023)
133	power	instutional	Media	In November, an investigation into alleged corruption in connection with lithium, hydrogen and data center projects led to the resignation of Portuguese Prime Minister Antonio Costa after prosecutors detained his chief of staff. The investigation named as suspects the former Secretary of State for Energy and the president of APA, the Portuguese Environmental Agency. The agency had previously been ordered to pay a fine for denying Covas do Barroso's lawyer access to documentation related to environmental licensing.	(Vidal, 2023)
134	power	corporate	Media	Local communities campaigning against lithium mining have urged authorities to suspend and review all lithium projects while authorities carry out the investigation and have filed lawsuits to stop mining. But even as the ministry of environment, APA and lithium mining companies' offices are searched, Savannah continues drilling.	(Vidal, 2023)
135	power	instutional	Media	If no agreement is reached between the company, the <i>baldios</i> association and land owners who refuse to sell, the state can declare the project to be of strategic public interest to expropriate private land and force Covas do Barroso to lease the common lands needed for the mining project.	(Vidal, 2023)
136	value	creation	Secretary of State for Energy and Climate	Portugal's environment ministry says local lithium resources are of strategic interest and will have a key role to play in meeting the EU's decarbonization targets. The secretary of state for energy and climate, Ana Fontoura Gouveia, says lithium projects are an "extraordinary opportunity" for the country that will bring jobs and up to 9 billion euros (\$9.6 billion) in investment	(Vidal, 2023)
137	contradictions		Local residents	But promises of economic development and pledges of the "highest social and environmental standards" have failed to convince local populations. Mining jobs will last little more than a decade, while communities in Barroso have farmed these lands for many centuries.	(Vidal, 2023)
138	dependencies and influences	influence	Local communities & activists	"Mining might create a few short-term jobs, but it will destroy many more in the long term," say Vítor Afonso, the head of the environmental organization People and Nature of Barroso (Povo e Natureza do Barroso), who also has a local ecotourism business. "What is at stake is an ancestral system, a truly sustainable agricultural system that has been passed on from generation to generation for hundreds, if not thousands of years," he says.	(Vidal, 2023)

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139	contradictions		Local residents	Barroso's low-input system, he says, relies on the sustainable management of local resources. "We have done a lot to preserve the environment and suddenly we risk losing everything," Cadime says. With the increasing dominance of unsustainable industrialized agriculture, and at a time when the world is facing an unprecedented loss of biodiversity, farmers in Barroso say their work is more important than ever to preserve one of Europe's last agricultural heritage systems and maintain crucial ecosystem services. The ancestral knowledge Cadime inherited from his parents and grandparents taught him to adapt to the mountainous region's harsh conditions. It could also prove helpful as a model of resilience and adaptability to climate change that ensures local food security. But mining projects in Barroso, he says, "will destroy what we've worked so hard to preserve and will put future generations at stake."	(Vidal, 2023)
140	power	collective	Media	The people of Barroso have vowed to fight against the mining plans by all possible means, including appeals to national and European courts. Antimining activists in Montalegre are working on legal challenges to stop operations, have boycotted elections and have been organizing demonstrations for the past six years. Since 2021, an antimining camp has been held in Covas do Barroso every summer, bringing together local farmers, national and international environmentalists and activists. Last August, about 200 people traveled to Barroso to participate in the solidarity camp. Activists from as far as Latin America, Serbia and France joined discussions on how they are also affected by extractive projects, and demonstrated alongside people from Covas do Barroso with colorful signs and banners saying "No to mines, yes to life."	(Vidal, 2023)
141	contradictions		FAO	The Globally Important Agricultural Heritage System (GIAHS) programme aims to identify, support and safeguard agricultural systems that sustain and conserve our biodiversity and genetic resources for food and agriculture, rural livelihoods, knowledge systems, cultures and remarkable landscapes. They are the quintessence of what sustainable development should be.	(FAO, 2025)
142	contradictions		FAO	The GIAHS Programme recognizes the crucial importance of the well-being of family farming communities in an integrated approach while directing activities towards sustainable agriculture and rural development. It further seeks to support the present-day resilience of these traditional agricultural systems and thus provide a sustainable legacy for the benefit of future generations.	(FAO, 2025)
143	contradictions		FAO & ADRAT	Unique social system Due to greater isolation for many years, the communities in this area have organized themselves so as to manage their problems and resources independently, promoting community management methods, even though private ownership and rights never ceased to exist. That is why the social organizations and mutual support are one of the main characteristics of the system despite the challenges brought with agriculture modernization. Sowing, treatment and harvesting operations are usually carried out jointly by the entire household and neighbours. In addition, common lands are shared lands for livestock grazing. It plays an important role in the region's land structure since it accounts for 64% of the region's total UAA.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)
144	contradictions		FAO & ADRAT	This mountain agriculture has a multifunctional outlook, while one of its key tasks (albeit not always properly rewarded) is the maintenance of the quality of natural resources, the landscape and the cultural identity of its inhabitants.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)

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145	Impacts on environment		FAO & ADRAT	Being a region affected by serious rural exodus and depopulation problems, the future conservation of this agrarian system will depend on the ability to encourage agricultural and livestock products economically in an attractive enough way to ensure the continuity of production and the habits of younger generations, while protecting the natural resources and the landscape which identify this mountainous region so well.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)
146	value		FAO & ADRAT	Communitarianism is one of the most typical values and customs of Barroso, closely associated with the rural practices of collective living and its need to adapt to the environment. It is a form rural organization, circumscribed to a given territory and based on a deep sense of solidarity and cooperation between neighbours. In Portugal, examples of this community organization can only be found today in some more remote mountainous areas of the northern region. Among the communitarian activities and customs are the creation of the People's Ox, the People's Mill and Oven, the Vezeira (shared cattle grazing), and the clearing of paths and irrigation channels.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)
147	contradictions		FAO & ADRAT	Each village works like a self-contained community where matters of justice and topics of collective interest were settled by a council of local good men who met on the village green, where there was sometimes a stand or enclosure specifically designed for the purpose. The flocks grazed together on common land, the bread was baked for each family (and still is in some villages) in the people's oven and the flour was milled in the communitarian mill. Each village had the people's ox, fed by everyone, to service the cows and to fight. The mills, fulling mills, fountains, and washers are further examples of subsistence structures for collective use.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)
148	contradictions		FAO & ADRAT	Agricultural work usually takes place in a community spirit of mutual assistance, that is to say, activities such as harvesting, threshing and digging potatoes is carried out by several families or friends, alternately carrying out the work for each other.	(Development Association of the Alto Tâmega Region (ADRAT), 2018)
149	embeddedness	network	University & Savannah Resources	Currently, European battery production accounts for only 3% of the global total. Asia, with 85% of the market, and the United States dominate global production. Recently, the European Union, in order to break its dependence on an area crucial to its security and competitiveness, has streamlined a number of initiatives involving public and private entities. Of these, the most relevant for its scope and ambition is the so-called European Alliance for Batteries, which has as its main purpose to build in Europe an ecosystem that encompasses the entire value chain of battery production: mining and processing, battery materials, cell production and battery production systems as well as their use and recycling.	(Carballo-Cruz & Cerejeira, 2020)
150	power	corporate	University & Savannah Resources	In Portugal, the project that is currently at a more advanced stage in terms of licensing is that of Mina do Barroso in the municipality of Boticas, promoted by Savannah Lithium, Lda. Despite the support of the Portuguese government, this project has faced some resistance at the local level, largely due to misinformation and poor management of prospecting and licensing processing in similar projects elsewhere in the country.	(Carballo-Cruz & Cerejeira, 2020)

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151	value	creation	University & Savannah Resources	In addition to the strategic importance of the project at European level, its strategic relevance to Portugal is indisputable. The exploitation of LCT pegmatites from the Mina do Barroso project and the corresponding production of concentrate puts the country in a privileged position to activate activities downstream of the battery value chain and even the value chain of the new extended electrical mobility. These include the construction of a refinery for the production of lithium derivatives, the construction of a factory for cells and battery systems and, potentially, the location of an electric car production plant or small production plants of other vehicles such as motorcycles, bicycles or scooters, among others. The realization of these investments would have a very significant multiplier effect on the Portuguese economy, which would considerably increase the national added value associated with these branches of activity. Regardless of the investments that can be mobilized downstream in the value chain, the Mina do Barroso project itself will have a not insignificant impact, for its contribution to GDP formation and the increase in Portuguese exports.	(Carballo-Cruz & Cerejeira, 2020)
152	value	creation	University & Savannah Resources	The implementation of the Mina do Barroso project would have very significant impacts on the Portuguese economy. It is estimated that the country's Gross Output would increase by 168 million euros in the investment phase and around 90 million euros per year in the operation phase. The project's contribution to GDP would be EUR 65 million in the investment phase and almost EUR 34 million per year in the operational phase. The impact on employment would be 2,800 jobs (equivalent annual employment) in the investment phase, and almost 1,500 in the operation phase. The annual impact of the project on exports during the operation phase would exceed EUR 110 million.	(Carballo-Cruz & Cerejeira, 2020)
153	value	creation	University & Savannah Resources	The Mina do Barroso project is of great importance to the Portuguese economy: For the impact it could have on added value (+ EUR 437 million) and Portuguese exports (+ EUR 1,212 million) throughout the working phase of the project. The project will allow an increase of 20% of Portuguese exports of metal ores and other products from the extractive industries; For the drag effect it may induce on supplier sectors of the extractive industry. The total direct and indirect impact on the gross output in related sectors is EUR 1,161 million; For the stimulus that it can give to activities situated downstream of the activity of mineral extraction, for processing purposes; Because it could boost research and development and innovation activities, both upstream and downstream, in the value chains associated with the ores under exploitation; Because it will be able to promote professional training programmes, human resources qualification and the acquisition of skills specific to the sector; the impetus it could give to the development of other phases of the battery value chain, in particular the conversion of the mineral into lithium carbonate and lithium hydroxide and even in the long term to the manufacture of batteries, and consequently to the generation of national added value; For its ability to generate public revenues, via taxes, especially on company profits and salaries (IRC: +16 million euros /year; IRS: +2.3 million euros /year), social security contributions (+1.2 million euros /year) royalties (+ 3.6 million euros/year) and miscellaneous fees; For its demonstrative effect on the extractive industry. The project could serve as an incentive to develop other initiatives in the field of extractive industries for the exploration of the same or other ores and be used as good practice in the context of the country.	(Carballo-Cruz & Cerejeira, 2020)

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154	value	creation	University & Savannah Resources	The Mina do Barroso project is of great importance for local economy: Because it has a high potential for direct job creation (+215 jobs / year) and indirect and, consequently, of fixing and attracting the active population. It is estimated that the overall impact at national level on job creation is 2,800 jobs (of equivalent annual duration) in the investment phase and almost 1,500 in the operation phase, a significant share of which may correspond to locally contracted employment; Because the type of jobs to be created requires easy-to-learn skills that facilitate the integration of local workers (from the municipality of Boticas or the surrounding region). The company estimates an annual investment in continuing training per worker of around 5,000 euros during the operation of the mine. About 10% of the staff to be hired should have higher education; Because it can contribute to boost local companies with the capacity to become service providers of the extractive company. Of the 100 larger companies in the municipalities of Boticas, Montalegre and Ribeira de Pena, half belong to sectors of activity related to the needs of the construction and operation of the extractive project. These companies may be potential suppliers of services, equipment and consumable products of the extractive company. Because the generation of employment and income locally, either in the project, in related activities or in activities driven by additional income, will allow to fix and attract population and, therefore, generate demand for public services, ensuring minimum risk of closure of public services due to a demand gap. This argument is also valid for certain types of private services, which need minimal scales to ensure their viability;	(Carballo-Cruz & Cerejeira, 2020)
155	value	creation	Savannah Resources	According to Savannah Resources, the lithium buried under Covas do Barroso would be enough to produce about half a million electric car batteries each year. The company has marketed the project as a source of much-needed lithium for an electrified future that would create 215 direct jobs, along with between 500 and 600 indirect jobs, and contribute hundreds of millions of dollars to Portugal's GDP.	(Vidal & Takacsova, 2024)
156	contradictions		Media	But the promises of jobs and investment have failed to convince local communities. The proposed lithium mine would be open for only about a decade; they have been farming these lands for centuries.	(Vidal & Takacsova, 2024)
157	Impacts on environment		Local residents	"Mining requires a lot of water. It will take the water we need for our pastures, for the corn and potatoes we grow. It will ruin hundreds of hectares of common lands and will have a lot of impact on our products," Libo says, apprehensively. The company hopes to receive its final environmental license this year and aims to start production in 2026. But residents of Covas do Barroso are determined to halt it. Fearing the mine will turn the verdant hills into craters, contaminate local resources, disrupt livelihoods and deprive them of communal lands, residents of Covas do Barroso have strongly opposed Savannah Resources' plans.	(Vidal & Takacsova, 2024)
158	power	collective	Local residents	Since residents of Covas do Barroso first heard about Savannah Resources' plans in 2017, they have been organizing protests and anti-mining camps, are refusing to lease the village's common lands, and have filed legal challenges to stop the company's operations. "They think people here have to be sacrificed so they can take the lithium from our hills. But they have to respect us and our way of living," Libo says.	(Vidal & Takacsova, 2024)

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159	contradictions		Media	Under the banner of a “green transition,” the rush for critical raw materials— the minerals and metals used to produce everything from car batteries to cellphones — has accelerated across the world. But Europe depends heavily on imports, primarily from China, which controls supply chains of the metals and minerals needed for electric cars, wind and solar power installations and electronics. To reduce its reliance on Chinese supplies, the European Union is hastening to revive mining across the continent and speeding up licensing processes. In March, the EU approved the Critical Raw Materials Act, which sets targets for the bloc to mine at least 10% and process 40% of the strategic raw materials it uses.	(Vidal & Takacsova, 2024)
160	value	creation	Secretary of State for Energy and Climate	Arguing that lithium is essential for decarbonization, the Portuguese government has defended plans to scale up the mining industry to produce the higher-grade lithium used in electric car batteries. According to Secretary of State for Energy and Climate Ana Fontoura Gouveia, lithium projects, including the one by Savannah Resources, are of strategic interest and could create jobs and attract up to \$9.7 billion in investment.	(Vidal & Takacsova, 2024)
161	power	collective	local residents	“If we kept complaining, it’s because we had reasons to,” says Aida Fernandes, the head of the <i>baldios</i> association managing Covas do Barroso’s common lands and a leader of protests against mining. The corruption probe highlighted the concerns the local community had been voicing for years about the lack of transparency in the licensing of mining projects in Barroso and what they allege are close ties between decision-makers and mining interests.	(Vidal & Takacsova, 2024)
162	contradictions		local residents	Many in Barroso, however, have contrasting views. Instead of benefiting economically, they believe they will bear a disproportionate share of the costs of mining and will be impoverished by pollution. “We have everything to lose,” Fernandes says. “That is why we are determined to stop it.”	(Vidal & Takacsova, 2024)
163	power	institutional	Media	Since the association managing Covas do Barroso’s common lands has refused to lease any plot of land to Savannah Resources and many locals have rejected the company’s offers to buy their private lands, so far the company has managed to secure only about 235 acres, a fraction of the land it needs to develop the mine. Yet the state can declare the project to be of strategic public interest to force the association to lease the lands needed for mining and to expropriate private lands.	(Vidal & Takacsova, 2024)
164	contradictions		local residents	“They say they are protecting the environment, but the mine will destroy everything,” she mutters. “It will destroy everything I built here.”	(Vidal & Takacsova, 2024)
165	contradictions		International NGO	“The concept of green mining is a form of greenwashing,” says Miguel Sequeira of the environmental organization GEOTA. “Mining can be done in a responsible way, but it always involves the extraction of nonrenewable resources and irreparable damage to local ecosystems, so it is not sustainable. It can’t be green.” Instead of simply switching to electric cars, environmental groups argue that the energy transition should be used as an opportunity to rethink current models of transportation and consumption. “We need to question the system of transport that is focused on private vehicles,” Sequeira says. “One of the ways to reduce the demand for lithium is to think about alternative models of transport that are public and shared, to invest in recycling to make use of what has already been extracted and to focus on efficiency to reduce waste and energy consumption.”	(Vidal & Takacsova, 2024)

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166	power	collective	Media	The village has become a meeting space where activists from around the world gather in solidarity to share information and set the agenda for campaigns against extractivist projects. Since 2021, an anti-mining camp has been held in Covas do Barroso every summer, bringing together local farming communities, national and international environmentalists and activists.	(Vidal & Takacsova, 2024)
167	power	collective	Activist	"We realized the problem is much bigger, it's not in just one or two villages in Serbia or Portugal", she says. "It's a global capitalist problem, so we need to unite for the movements to succeed." These networks help activists mobilize support, gain recognition and support each other in attempts to halt mining projects.	(Vidal & Takacsova, 2024)
168	power	collective	Anti-lithium groups	In 2022, representatives of nine anti-lithium groups from Portugal, Serbia, Germany, Chile, Argentina and Spain — all countries with significant lithium deposits — signed a declaration in Jadar to unite in resistance to lithium projects. "It was beautiful seeing people from different parts of the world having this agreement to work together," says Damjanovic, who was one of the activists to sign the document in Gornje Nedeljice, a Serbian village known for its resistance to Rio Tinto's mine. According to the signatories, the document "is a basis for mutual support, cooperation, exchanging information and help against the expansion of lithium ore mining and other kinds of extractivism brought by an unjust energy transition motivated by profit." By scaling up their opposition from the local to the global, the groups aim to exert more pressure on mining companies and to share information and resources.	(Vidal & Takacsova, 2024)
169	embeddedness	network	International Energy Agency	According to the IEA, the market size of key energy transition minerals, driven by rising demand and high prices, has more than doubled over the past five years, reaching US\$ 320 billion in 2022. This upward trend presents new revenue opportunities for the mining and metals industry and its partners, creates jobs for society, and can, in some cases, help to diversify economies that are dependent on coal.	(Leonida, 2024)
170	power	corporate	International Energy Agency	Today, there is a growing realization that the key to unlocking opportunities such as these lies, not only in decarbonizing businesses and their operations, but in making the energy transition central to everything that companies do, say and stand for.	(Leonida, 2024)
171	power	corporate	Mining industry	"There's a universal agreement that the mining industry will need to deliver a significant increase in the volume of commodities currently produced in order to supply the energy transition and help to tackle climate change," he (Marc Bishop Lafleche, CEO Ecora Resources) told me	(Leonida, 2024)
172	power	corporate	Savannah Resources	Savannah's CEO, Emanuel Proença, explained: "Reducing emissions from everyday travel is essential for meeting global carbon reduction targets. Electric vehicles (EV), powered by lithium-ion batteries, are at the forefront of this initiative, making lithium a critical material."	(Leonida, 2024)
173	value	creation	Savannah Resources	"I'm very proud of the work we're doing, with Savannah poised to assist Europe in reaching its EV and transport sector emission goals by providing a local source of lithium."	(Leonida, 2024)
174	value	creation	Savannah Resources	Savannah's overarching strategy is to responsibly supply European lithium for Europe's energy transition. Once in full production, Barroso is expected to produce enough lithium for approximately 0.5 million vehicle battery packs per annum. This will aid in accelerating the energy transition by facilitating the lithium battery supply chain in Europe.	(Leonida, 2024)

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175	power	institutional	Savannah Resources	In May 2023, the Portuguese environmental agency, APA, approved Savannah's Environmental Impact Assessment, awarding the project its Declaration of Environmental Impact (DIA). This major milestone is essential to the project's environmental licensing process (it's located on a 30-year mining lease which was awarded in 2006).	(Leonida, 2024)
176	embeddedness	network	Savannah Resources	"We're also part of two European Horizon research projects which are focused on improving the recovery rates of lithium and other minerals from orebodies like Savannah's, while also reducing the amount of water used in the various processing steps to produce lithium hydroxide and the amount of emissions produced," said Proença.	(Leonida, 2024)
177	value		Savannah Resources	"Not only does Europe need local lithium production, but it also needs infrastructure such as processing facilities in order to complete the battery supply chain", added Proença. "I take pride in the work that we at Savannah are accomplishing to become an integral part of the battery supply chain in Europe, as well as the overall decarbonization initiatives laid out by the EU."	(Leonida, 2024)
178	dependencies and influences	dependence	Local authorities	Nach hitzigen Diskussionen im Dorf hat Aida Fernandes den Mitarbeitern Savannahs den Zutritt zum Gemeindeland verboten. Auch wenn das Unternehmen vom portugiesischen Staat eine Erlaubnis zur Erkundung bekommen hat, liegt die Zuständigkeit für das Land beim Baldio.	(Asmuth, 2022)
179	embeddedness	network		Emanuel Proença, CEO of Savannah Resources stated: "The conclusion of the Strategic Project classification process marks a significant step toward fostering a more resilient and secure supply of critical raw materials essential for Europe's green and digital transitions, as well as the aerospace and defense sectors. In terms of the Barroso Lithium Project, it recognizes the quality of the work Savannah has been undertaking for years, not only on the technical aspects of the Project but also on its social and economic parameters, including our engagement and collaboration with our local communities. Savannah's local staff now number around 30 people, who live and work in the Barroso area every day, and many more will follow. Savannah is committed to the sustainable development of the Project, attending to the needs of the community and creating the conditions for a solid economic development of the Barroso region."	(Savannah Resources plc, 2025)
180	embeddedness	network		Through the Project, Savannah will help Portugal to play an important role in providing a long-term, locally sourced, lithium raw material supply for Europe's lithium battery value chain. Once in operation the Project will produce enough lithium (contained in c.190,000tpa of spodumene concentrate) for approximately half a million vehicle battery packs per year, and hence make a significant contribution towards the European Commission's Critical Raw Material's Act goal of minimum 10% if European endogenous lithium production from 2030.	(Savannah Resources plc, 2025)
181	dependencies and influences			Savannah is focused on the responsible development and operation of the Barroso Lithium Project so that its impact on the environment is minimized and the socio-economic benefits that it can bring to all its stakeholders are maximized.	(Savannah Resources plc, 2025)
182	dependencies and influences			The project will apply conventional production techniques, amplify positive social impact in the region, while minimizing environmental impact, visual disturbance and carbon footprint.	(European Commission, 2025b)
183	value	capture		The Project Promoter is owned by the listed company, Savannah Resources PLC, which means any EU investor can take part in the future success of the venture.	(European Commission, 2025b)
184	embeddedness			The Barroso Lithium Project would make a meaningful contribution to the secure supply of Lithium.	(European Commission, 2025b)

Appendix II

185	embeddedness		This project will position Portugal as a key player in the EU's battery raw materials value chain, potentially leading to the development of downstream industries in the country, while providing feedstock for other EU players.	(European Commission, 2025b)
186	embeddedness	network	With the designation of Strategic Project comes important benefits, namely the coordinated support by the European Commission, Member States and financial institutions to become operational. This includes support in accessing funds and connecting with relevant off-takers. In addition, the Strategic Projects also enjoy from streamlined permitting provisions, helping to increase visibility for the promoters of the projects. In accordance with the CRMA, the permit-granting process will not exceed 27 months for extraction projects (in which the Barroso Project is included) and 15 months for other projects (a significant improvement from the current permitting processes that can last from five to ten years).	(CaixaBI Investment Bank, 2025)
187	embeddedness	network	These projects will be able to benefit from coordinated support by the Commission, Member States and financial institutions to become operational, notably regarding access to finance and support to connect with relevant off-takers. They will also benefit from streamlined permitting provisions, to ensure predictability for project promoters while safeguarding environmental, social and governance standards. In line with the CRMA, the permit-granting process will not exceed 27 months for extraction projects and 15 months for other projects. Currently, permitting processes can last from five to 10 years.	(European Commission, 2025a)
188	embeddedness	network	Access to raw materials is essential for the Union economy and the functioning of the internal market. There is a set of non-energy, non-agricultural raw materials that are considered to be critical due to their high economic importance and their exposure to high supply risk, often caused by a high concentration of supply from a few third countries. Given the key role of many such critical raw materials in realizing the green and digital transitions and in light of their use for defense and aerospace applications demand is likely to increase against the background of rising geopolitical tensions and resource competition. Furthermore, if not managed properly, increased demand for critical raw materials could lead to negative environmental and social impacts.	(European Union, 2024)