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Inhalt

- 4 MATHIAS KRAMS, ANNA PREISER
Intro: Die imperiale Lebensweise ‚at work‘ in Lateinamerika. Zur Wirkungsweise eines ausbeuterischen Verhältnisses
- 27 GABRIELA MASSUH, BRUNO FORNILLO, CAMILA MORENO, ULRICH BRAND
The Imperial Mode of Living wins until its own death – On green capitalism and the struggles of social movements at its margins
- 44 ANNA LANDHERR, JAKOB GRAF
Territoriale Macht und periphere imperiale Lebensweise – Internalisierungsmechanismen in der chilenischen Bergbaustadt Tierra Amarilla
- 70 FELIX MALTE DORN
Inequalities in resource-based global production networks: resistance to lithium mining in Argentina (Jujuy) and Portugal (Região Norte)
- 92 SchwerpunktredakteurInnen und AutorInnen
- 96 Impressum

FELIX MALTE DORN

Inequalities in resource-based global production networks: resistance to lithium mining in Argentina (Jujuy) and Portugal (Região Norte)

Abstract *Lithium is discursively linked with ‘sustainable’ technological innovations. Electromobility is expected to be a – still market-based and growth-centred – answer to the ecological effects of the capitalist economic system. As a result, the sharp increase in worldwide lithium mining project is a vivid example of a form of continuation of the imperial mode of living, and resistance to lithium mining is spreading in many places. Using the case studies of Salinas Grandes (Jujuy, Argentina) and Covas do Barroso (Região Norte, Portugal) as examples, this paper analyses the impacts of hegemonic development discourses along global production networks. In doing so, the concept of the ‘imperial mode of living’ helps us to understand the resistance against predominant development paradigms beyond an established Global North-Global South dichotomy. In both cases, the resistance against lithium mining illustrates not only global, but also profound intra-societal structures of inequality.*

Keywords *Global production networks, North-South relations, political ecology, imperial mode of living, natural resources, social-ecological inequalities*

1. Introduction

Lithium, as a resource, has gained momentum in recent years. It is a key component in the manufacture of Li-Ion batteries and the production of electric vehicles. As an integral part of all debates on the Green Economy,

electromobility should provide a – still market-based and growth-centred – answer to the negative ecological effects of the capitalist economic system. The raw material is therefore discursively linked to the goal of ‘sustainable’ technological innovations and a decarbonisation of the global economy, making it an example of a ‘strategic resource’ of the 21st century.

To benefit from the electric vehicle market, the European Union (EU) has a major interest in developing a European battery industry. Launched in 2017 and supported by the European Commission and the European Investment Bank, the European Battery Alliance (EBA) aims at establishing a domestic battery cell value chain. This aim is accompanied by the wish for resource self-sufficiency and a reduction in the import reliance rate. The EU is currently importing 86% of its lithium, with 66% coming solely from Chile (European Commission 2018). In the context of the EBA’s strategic action plan, the European Raw Materials Alliance (ERMA; following the EU’s 2008 Raw Materials Initiative) was implemented in September 2020. That same month, lithium was added to the 2020 List of Critical Raw Materials (European Commission 2020).

Under these circumstances, lithium has recently gained visibility. While the ‘lithium-rush’ has long reached South America (Dorn 2021b), the resource deposits in the north of Portugal and Spain are now of particular relevance for the EBA. In this paper, I compare lithium mining in Salinas Grandes (northwest Argentina) and Covas do Barroso (northern Portugal) using the global production network (GPN) approach. In what at first glance appear to be two very different contexts, various similarities can be identified. Among the national governments, the lithium deposits raise hopes for investments, export revenues, value added, and economic growth. In the areas of exploration/extraction, local communities reject any form of mining project. The exploration projects repeatedly lead to protests and conflict.

This article assumes that capitalism leads to an inexorable expansion to, and valorisation of, a capitalist outside (Dietz/Engels 2014; Luxemburg 2013) and to increasing levels of inequality (Piketty 2020). Building on these assumptions, I use the example of lithium mining in the two case studies to explore the hypotheses that (1) lithium mining, besides perpetuating unequal North-South relations, leads to new intra-societal social-ecological inequalities and conflicts, and that (2) electromobility therefore constitutes the preservation of a non-sustainable, imperial mode of living

(IML). With the IML, Brand and Wissen (2017) draw attention to the externalisations of everyday practices. Everyday life in capitalist centres is essentially made possible through shaping social relations and natural relations elsewhere (ibid.: 43). The IML is therefore based on, and reproduces, inequality, power, and domination.

Resource conflicts are of increasing interest in human-environment research. This article builds on a broad (but not exclusively) geographical debate on resistance to so-called mega development projects. Conflicts materialise in the context of large-scale oil and gas projects (Bebbington 2012; Perreault/Valdivia 2010), the expansion of industrialised (genetically modified) agriculture (Alonso-Fradejas 2015; Brad et al. 2015; Hafner 2018; Lapegna 2016), infrastructure projects such as the installation of hydroelectric power plants (Weißermel 2019), and mining projects (Svampa 2020). Building on this body of work, in this article I analyse the persistence of resource conflicts in the context of a global 'sustainability transition'.

Using a political ecology perspective, I apply the GPN approach to the extractive sector. This analytical framework draws on methods of qualitative social research. I build on 10 months of ethnographic fieldwork carried out between February 2018 and August 2019 (northwest Argentina; 109 interviews) and a series of virtual interviews realised between September 2020 and December 2020 (Portugal; 11 interviews). Next to interviews with different stakeholders (company representatives, geologists, government authorities, NGOs, community representatives, activists, and the local population), documentary research (official reports, press and web site records, documentation from community organisations, social media) has been conducted since 2017.

In the following section, I introduce the theoretical-conceptual framework of resource-based GPNs. I present the institutional settings, actor constellations, and local perceptions of lithium extraction in Salinas Grandes (Argentina) and Covas do Barroso (Portugal). In section four I discuss and compare national development narratives and local resistance movements in the two cases. I then contextualise the resistance of local populations beyond an established Global North-Global South dichotomy. In doing so, the IML concept proves to be fruitful.

2. Theoretical considerations: resource-based global production networks

The increasing globalisation of nature reveals profound structural inequalities. While transnational corporations benefit from the extraction of raw materials and subsequent incorporation into industrial production chains, social-environmental costs and risks are externalised, and enhance asymmetric dependencies between commodity supplying and demanding countries. Even within national contexts, natural resource extraction leads to an unequal spatial and temporal distribution of benefits and risks (Göbel 2013: 136). Against this background, I consider the GPN-approach particularly suited for analysing and understanding configurations of the IML. At the same time, focusing on the supply-side and the externalisation of social-ecological production costs, I argue that on a meta-level the IML builds upon GPNs. As I will show subsequently, what Tsing (2019) terms the 'alienation of nature' combined with control through power relations is what enables the perpetuation of the IML.

The GPN approach is often attributed to the so-called Manchester School (Coe et al. 2008; Henderson et al. 2002). Based on a critique of the global value chain approach and the global commodity chain approach, Henderson et al. (2002) introduce a framework that shifts attention to the social circumstances of commodity production and consumption. The GPN approach aims at a better understanding of economic integration and regional 'development processes'. To deal with the complexity of value creation processes, the GPN approach replaces the linear chain metaphor with the network concept. It focuses on the dynamic connections between different actors, groups of actors, and spatial scale levels. Next to economic actors, it explicitly includes non-economic actors, such as local, regional, and national institutions, NGOs, (indigenous) communities, trade unions, and civil society organisations (Kister 2019).

The GPN approach develops a relational, process-oriented and spatial view of production processes. The theoretical analytical framework is based on the three categories of value, power and embeddedness. These provide the tools for decoding complex economic, institutional and social local-

global interactions, and for analysing power relations and interactions between economic and non-economic actors. GPNs aim at a horizontal, multi-layered and multi-dimensional analysis of the transnational organisation of production in relation to development processes (Henderson et al. 2002: 442). Extraction processes are also largely organised transnationally, so that resource-based GPNs are structured by transnational elites, institutions and ideologies. The GPN approach strives to dissociate itself from the often state-centric development understanding of its predecessors.

GPN analysis is based on an economic perspective regarding the organisation and coordination of inter-firm linkages embedded in specific networks and territories. At the same time, both environmental and social issues are largely ignored (Dorn/Huber 2020; Yeung 2021). In contrast, political ecology (PE) attends to local environmental change. This change occurs as a consequence of direct local actions and/or indirect actions at other spatial levels. Starting from ecological changes caused by economic, political and social power and interest constellations, classical political ecology examines resource conflicts in rural areas of the Global South (Bryant 1992). Taking into account a specific understanding of nature, a PE analysis considers different spatial scales (i.e. multiscale), place-based and non-place-based actors, and their power relations. PE thus examines (unequal) development in terms of an unequal distribution of resources and environmental risks.

While the GPN-approach offers much potential to trace and understand extractive contexts, identify impact chains, and critically examine international resource governance (Bebbington 2009; Bos/Forget 2021; Bridge 2008; Dorn/Huber 2020; Schmitt/Schulz 2016), PE has the potential to add further important perspectives to GPN analyses (Dorn/Huber 2020). First, it understands human-environment relations as being determined by discourses of knowledge and power. Second, PE research holds the imperative of including historical dimensions (e.g. coloniality for the Latin American context). Third, and most importantly, PE extends the GPN approach by an explicit conflict focus. Conflicts are a central topic of resource research, but they can rarely be explained on the basis of an unequal distribution of economic gains. Instead, conflicts related to resource extraction usually result from territorial identity issues, diverging human-environment relations, and the unequal distribution of environmental risks (Dorn 2021b).

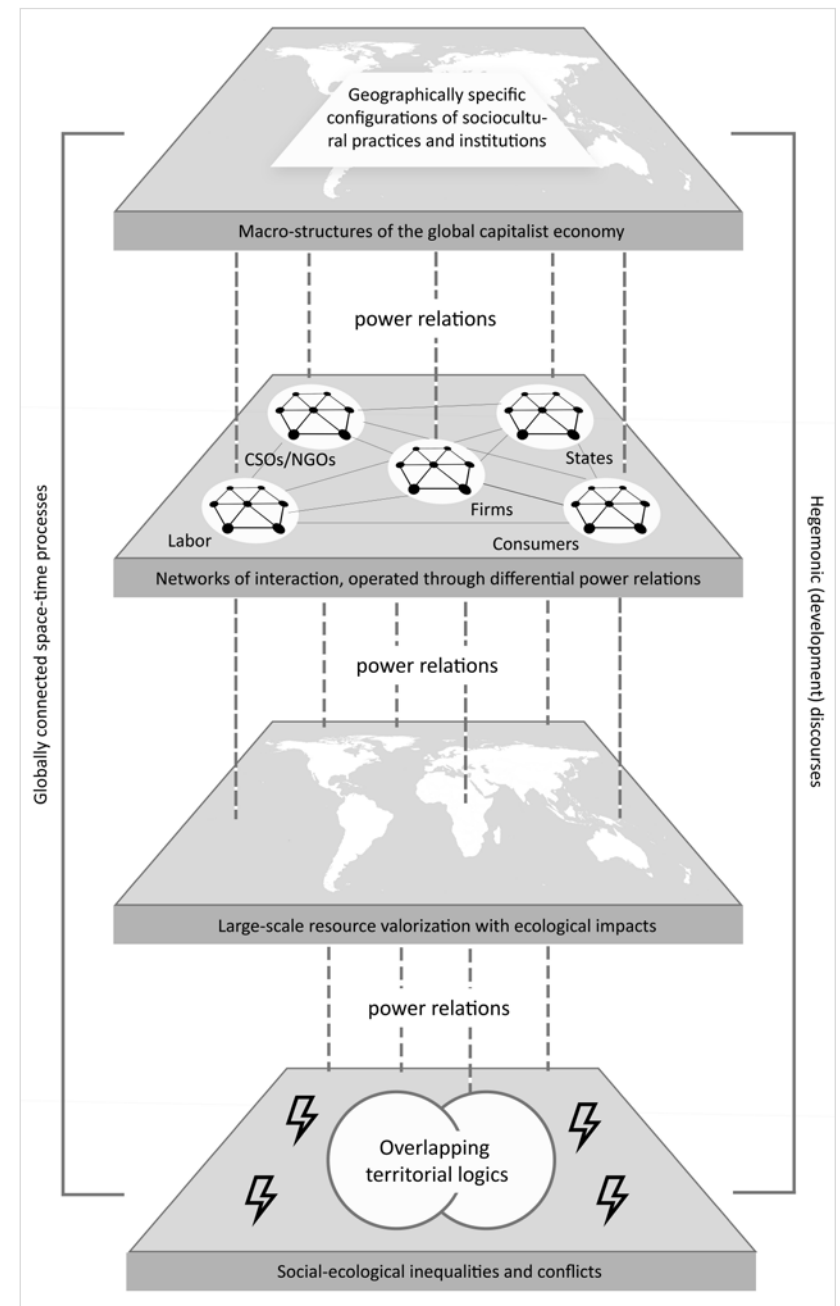


Figure 1: A resource-based GPN. Own illustration, adapted from Coe et al. 2008

The introduced framework may be too ambitious for a single research agenda. I therefore advocate examining partial aspects, while not losing sight of the holistic framework (see Figure 1). Figure 1 visualises the introduced framework of GPN in the context of the extractive sector. The model is divided into four levels: (1) macrostructures of the capitalist economy, (2) interaction networks in transnational space, (3) local/regional resource valorisation, and (4) the microlevel. Resource valorisation with ecological impacts (level 3) underlines the political-ecological perspective. The micro level provides a detailed understanding of diverging perceptions, resulting conflicts, and social-ecological inequalities. The GPN is controlled through (unequal) power relations that permeate the different scales. The key issue is not to reduce the analysis of (unequal) development to a purely quantitative economic dimension. Instead, qualitative social research should be used to shed light on the social impacts of local environmental change and the (unequal) distribution of environmental risks, power asymmetries and unequal access to natural resources. In Salinas Grandes and Covas do Barroso, there is so far no active lithium exploitation. Thus, no value is created and captured. In the following empirical analysis, I will therefore prioritise an analysis of GPN's analytical category *power*, understood as the assertion of one's own interests and the domination of discourses. The goal is to identify key positions within a GPN that unfold their power relationally and processually. Subjects are not endowed with a certain level of power per se; this is instead due to their network power, which unfolds in relationships and is subject to continuous shifts.

3. Lithium mining in Argentina and Portugal: Actors, power, and structures of inequality

3.1. Resource federalism and continued resistance in Salinas Grandes (Argentina)

The actual discovery of lithium in Argentina dates back almost a century (Nacif 2019), but the discussion about the valorisation of its lithium deposits has gained momentum in the past two decades. Power relations in the context of lithium mining projects have to be considered in relation to different scales (global, national, regional, local) and levels (e.g. insti-

tutional, corporate, collective). On the institutional level, as of the 1990s, Argentina went through a series of legal and institutional reforms that – initiated and promoted by the World Bank (ibid.) – particularly affected the mining sector. The 1993 Mining Investment Law grants enormous tax benefits, 30 years of fiscal stability and royalties of maximum 3% to the operating companies (Law 24.196, 1993). Furthermore, article 124 of the 1994 constitutional reform transferred the ownership of natural resources from the Argentine state to the respective provinces. For Jujuy, Salta and Catamarca¹, three provinces with comparatively high poverty rates, the receipt of investments and the collection of royalties offer the opportunity to create jobs, improve their provincial budget and strengthen their political independence vis-à-vis the national government.

Next to Catamarca's Fénix project (since 1997), the inauguration of Jujuy's Salar de Olaroz mine in 2014 made the country the fourth largest lithium producer after Australia, Chile, and China, and the world's second largest lithium carbonate exporter (USGS 2020). Depending on the calculation method, the number of lithium mining projects within the country (encompassing exploration, construction and extraction) varies from 40 to more than 60 (Dorn/Ruiz Peyré 2020; Marchegiani et al. 2019). The number of licenses targeting pertaining to lithium mining is significantly higher.

As mining commodities are a provincial matter, in the context of the Salinas Grandes case study it is necessary to further elaborate on the political implementation in Jujuy (a minor part of the salt pan is also located in Salta). Both under the government of Morales (in power since 2015, re-elected in June 2019) and his predecessors (Barrionuevo and Fellner), Jujuy aims at assuming national leadership in terms of expanding lithium added value. In this context, there are several political initiatives and projects worth mentioning (for a detailed overview see Dorn 2021b): in 2011, for example, the government of Barrionuevo declared lithium a strategic resource and driver of the province's socio-economic development. That same year, the government created the private law provincial company Jujuy Energy and Mining State Society (JEMSE).² The company's mission is to promote research, exploration and development in the mining and renewable energy sector.

The self-declared goal of Morales' government is to change the provincial production and energy matrix. The announcement of South

America's first Li-ion battery factory in Perico Industrial Park, the province's new slogan "Jujuy Energía Viva" (Jujuy Living Energy), the creation of Cauchari Solar Park (supposed to be the world's highest and South America's largest solar park), and the establishment of a series of autonomous solar villages exemplify the government's progressive development rhetoric. Olaroz Chico, a community located in close proximity to Jujuy's first lithium extraction project, was the first solar village inaugurated.

We can see that constraints of the international monetary system have strongly influenced the institutional setting. These economic imperatives are no longer questioned, but rather reproduced within the national and provincial government. Jujuy's government has a vested interest in the valorisation of the lithium deposits. Locally, the perception of lithium mining is multi-faceted. While the communities of the department of Susques (Salar de Olaroz-Cauchari) largely collaborate with the mining companies, the 33 indigenous communities of Salinas Grandes (25 in Jujuy, 8 in Salta) resist any form of exploration on their territory. The majority of the people are descendants of indigenous peoples. Their local economy is characterised mainly by transhumant grazing. This is complemented by artisanal salt extraction, the production of woven goods, subsistence agriculture, tourism, and temporary wage labour in mining.

In early 2010, the communities of the Salinas Grandes basin noticed unusual activities within the salt flat. Residents described the sudden circulation of off-road vehicles and machinery (interviews ARG40 and ARG52). Shortly afterwards, the lithium mining company South American Salars (Orocobre) approached the local (salt) Mining Cooperative Salinas Grandes to acquire its concessions. Despite poor infrastructure, a general lack of communication options and high financial costs, as of May 2010 the communities came together in the Board of the Indigenous Peoples of the Salinas Grandes-Guayatayoc basin.

On the one hand, the communities tried to attract national attention with visible and symbolic protest actions, such as roadblocks. On the other hand, with the help of the lawyers Alicia Chalabe and Rodrigo Solá, legal steps were instigated to demand the right to prior consultation and to stop the projects. The communities were supported by regional, national and international organisations, such as ENDEPA, FARN and Amnesty

International. After a visit to the region by the UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya, in 2011, and a hearing before Argentina's Supreme Court in 2012, there were rapprochements between the provincial government and the communities. However, in early 2019 the conflict escalated again. The provincial government had approved further exploration without the consent of local communities. These quickly came together and expelled the operating company.

How could such resistance materialise with the arrival of lithium mining? In the local communities, uncertainty prevails regarding the ecological impact of lithium mining. Along with the perceived curtailment of the communities' self-determination, this uncertainty has generated a highly politicised and hostile discourse – salt mining and tourism could never exist alongside invasive mega-mining projects. Lithium mining was also claimed to be an attack on all animals, on people, on water, on the *pachamama*, and ultimately on life. Next to a historically conditioned social construction of territory, resulting in a consolidated local identity (see Dorn 2021a), the resistance to lithium mining has to be seen as a continuity of struggle against the government for property titles and the handover of common lands (*tierras comunitarias*). These common lands form the basis for the local pastoral system and continue to be used and managed collectively. Although the lands were never officially handed over to the communities, they were recognised through Argentina's ratification of the ILO Convention 169 in 2000. This aspect is further framed by a far-reaching economic independence resulting from pastoralism, salt extraction and work in tourism (tour guides, production of handicrafts and woven goods). Thus, occasional paid works complement forms of the subsistence economy (in order to buy fruits and vegetables, clothing, internet access, motorcycles, and cars). While only a few residents seek job opportunities in mining projects, local inhabitants basically consider themselves independent of the global labour market.

The Salinas Grandes communities' association is an example of collective power. By defending their territory and their way of life, the communities have managed to temporarily stop the valorisation of their land, and thus their integration into a lithium GPN. However, the numerous lithium projects in the immediate vicinity indicate that the expansion of the IML can be prevented only partially.

3.2. Political centralism and environmental movements in Covas do Barroso (Portugal)

The westernmost country on the European mainland is the continent's largest lithium producer; Portugal currently produces 11% of Europe's lithium. So far, Portugal's lithium is not 'battery-grade', but destined for the glass and ceramics industry. With several pegmatite and spodumene lithium deposits (rock deposits), it has the most important lithium deposits in Europe (European Commission 2018; Viegas et al. 2012).

Similar to the case of Argentina, Portugal's institutional setting is strongly influenced by the international monetary system. After the 2008 economic crisis, Portugal struggled with a rising budget deficit and a growing public debt. In 2011, the country received emergency loans of EUR 78 billion from the EU and the International Monetary Fund (IMF). Next to a reform of the public administration, the structural reforms also included the privatisation of companies, a health reform aimed at savings in health expenditure, a transformation of the economy towards export-led growth, and measures to reduce "excessive licensing procedures, regulations and other administrative burdens for businesses", including permits for mining and geological exploration (European Commission 2014: 65).

According to the European Parliament (2019: 6) "the structural reforms introduced with the help of the EU and the IMF have improved productivity and competitiveness". Mining is also seen as a line of recovery. The Portuguese government established a lithium working group that indicated the potential of Portuguese lithium for the manufacture of batteries for electric vehicles (Grupo de Trabalho Lítio 2017). With Resolution 11/2018 of the Council of Ministers, the government approved new "strategic guidelines for the valorisation of lithium minerals potential in Portugal". These include the promotion of public tenders for prospecting, research and exploitation activities, and the evaluation of the opportunity to establish two technological units: one for industrial processing, and one for developing knowledge and technologies for the entire lithium value chain (Conselho de Ministros 2018).

The central government emphasises the development opportunities associated with a potential lithium extraction. By aiming at a lithium and industry cluster (for example, by laying emphasis on the building of a

lithium refinery), it internalises and fuels development imaginaries such as 'the white gold'. Lithium mining should also generate new jobs for structurally weak regions. While the Portuguese government dreams of industrialisation and economic growth (interviews PRT7 and PRT10), Portuguese social scientists describe the country's politicians as naïve and as a puppet in the EU's plans. They stress that Portugal is powerless in face of the EU's development discourse because of the Troika's structural adjustment measures. They thus criticise lithium mining as a Trojan horse for mining (interviews PRT1 and PRT10).

Besides conducting several tenders, the Portuguese government has already signed two extraction contracts, one with Luso Recursos in Montalegre and one with Savannah Resources in Boticas. The latter operates the country's most advanced lithium exploration project, close to the village of Covas do Barroso. Through EIT InnoEnergy (responsible for the industrial development activities of the EBA), the British company receives direct support from the EU (Savannah Resources 2020). It is the country's only spodumene project and is considered to be particularly promising.

Covas do Barroso is located in the municipality of Boticas (Vila Real district, Norte region), an area that from 1936 to 1976 constituted the Trás-os-Montes e Alto Douro Province. It is a historically marginalised region that is still seen as archaic, sparsely populated and isolated. Colloquially, people still use the term Trás-os-Montes ("Behind the Mountains", interview PRT1) to describe it. Abandoned gold and uranium mines left severe scenic damage in the past, while dams and reservoirs to produce energy for urban agglomerations were created against the will of the population (Faget 2019). The 2008 financial crisis only accelerated the process of rural exodus (interviews PRT10 and PRT11).

Besides the strong dichotomy between coastal urban centres and de-populated inland areas, the Norte region had the lowest GDP per capita in Portugal by 2016 (European Parliament 2019). In Covas do Barroso, local inhabitants mainly live from small-scale agriculture, livestock (cattle, sheep and goats), forestry, beekeeping and tourism. The agricultural system is traditionally organised and strongly based on communitarianism. Many people also come back a few years after they have migrated. They engage in organic farming, ecotourism, or other alternative forms of farming. Since 2018, the municipalities of Boticas and Montalegre are considered *Glob-*

ally Important Agricultural Heritage Systems by the Food and Agriculture Organization of the UN.

This agricultural system is based on the communal use of lands. In Covas do Barroso, 202 inhabitants own 2000 hectares of common land (*baldios*). The lithium mining project is located on a large part of these lands, so that local residents now fear expropriation (interview PRT4; Georges 2020). The defence of the commons and fear of environmental pollution accompany the desire for self-determination. People usually refer to the government in Lisbon as ‘the empire’. They see the benefits of lithium mining mainly as being for the government, complain about the lack of transparency, and feel disregarded.

Particularly since 2018, numerous resistance movements emerged in different regions of Portugal. In Covas do Barroso, people came together in the local association “United in defence of Covas do Barroso – No to mines, yes to life” (*Unidos em defesa de Covas do Barroso - Não às minas, sim à vida*). In addition, there are also movements in Montalegre, Braga, Argemela, Alto Minho, Beira Serra, Serra da Estrela, Soajo and Lisbon, among others. The movements are primarily organised online. They reach their audiences via Instagram, Twitter and Facebook, and organise walks for awareness and protest actions. Initially unrelated, they joined together for a number of actions. There were larger demonstrations in Serra da Estrela on August 24, 2019, and in Lisbon on September 21, 2019. In September 2019, several movements from Portugal and Spain joined forces to protest against a lithium mining project in Serra d’Arga; this indicated the emergence of a loose Iberian movement. On January 17 a coalition of movements published their concerns in a national manifesto (Manifesto Nacional 2020).

The environmental activism of civilians has surprised the Portuguese government (interviews PRT7 and PRT10). After the dictatorship, this activism was non-existent for a long time (Figueiredo et al. 2001). Since then, democratic awareness, the demand for active participation, and activism have increased. In Covas do Barroso, the resistance against lithium mining questions the top-down policies of the EU and of the Portuguese government. People see the valorisation of their land as being exclusively for the benefit of the large urban centres. They demand autonomy with regard to their lifestyle and territory. Economic self-sufficiency and independence enable this

resistance. Through its location and actions – e.g. the National Assistant Secretary of State and Energy João Galamba was chased out of the village – the resistance of the photogenic and telegenic ‘Gallic village’ quickly gained international attention (see for example Balch 2020; Faget 2019; Georges 2020; Vieira 2020). Throughout all movements, people trust in an established democracy. However, despite media coverage for Covas do Barroso, the resistance movements have not yet managed to stop the explorations.

4. Resistance to the imperial mode of living

As is the case with global supply chains, GPNs are based on alienation (Tsing 2019). This becomes more evident when we take a closer look at the global relevance of a commodity that is insignificant to the communities under study here. Lithium plays a key role for a sustainability transition – particularly in terms of the manufacture of electric vehicles – in the urban centres of the Global North and China. The detachment of an element from its original environment and the change in meaning along a value chain – the alienation – make the resource economically relevant and allow for potentially unlimited accumulation. For the indigenous communities of Salinas Grandes and the community of Covas do Barroso, the raw material itself plays only a minor role. Rather, they feel a strong sense of spatial identity regarding their respective territories. In both cases, there is no active mining project yet. Through the unfolding of a global discourse and test drilling, however, they are already integrated into GPNs. In Argentina’s salt flats, the interest of transnational companies is triggered through comparative cost advantages. The extraction from brines is approximately half the cost compared to that from hard rock (European Commission 2018: 6). The Portuguese rock deposits do not have these economic advantages, but have to be considered as a strategic and geopolitical project in the context of the EBA. The increasing number of projects to secure national (in this case EU-wide) resource sovereignty is not unique to lithium. The production of shale oil and gas in the USA, for example, is also a strategic geopolitical decision (Svampa 2020). The disruption of global supply chains during the early months of the coronavirus pandemic has further increased the visibility of this issue.

There are obvious differences between the two cases. One case refers to an indigenous community in the High Andes, the other one to a village within the EU. However, there are also significant similarities. Both Argentina and Portugal face situation-specific limitations in their national flexibility that shape the institutional (power) setting. Thus, in the first days of his presidency, Argentina's President Alberto Fernández announced that lithium would play a major role in repaying the national debt, along with the soy agribusiness and shale oil and gas exploitation in Vaca Muerta. Portugal, for its part, was forced into structural reforms and austerity policies by the Troika control body due to its debts on international financial markets (Piketty 2015). Everything was subordinated to the imposed target of 2% growth (European Commission 2014).

With regard to their ideas of progress and modernisation, both Portugal's central government and Jujuy's provincial government are – through constraint and their own impetus – bound to a hegemonic discourse of growth and development. The governments' development discourses materialise in the projects, initiatives and events described above, making use of both symbolic and material-physical dimensions. The imaginary of the 'white gold' is reproduced at the respective institutional levels (see also Barandiarán 2019). In Jujuy, the links between lithium mining and renewable energy production, and between lithium mining and the supposed production of batteries, are repeatedly underlined in official government documents and speeches by the governor. In Portugal, ideas of future technologies and the prospect of a lithium refinery are marketing tools to make lithium mining more appealing to local groups. Both governments endorse lithium mining, for example finalising bids without consulting local inhabitants.³ State and transnational companies therefore play – voluntarily or involuntarily – on the same team. This results in power asymmetries, to the detriment of local communities. In both cases the governments' development plans do not take local communities into account.

Considering the holistic resource-based GPN framework, it can be stated that the valorisation of lithium takes place in the context of a sustainability transition at the global level. Figure 1 visualises how the local level is ultimately embedded into macrostructures of the capitalist economy, namely, electro-mobility, Green Economy and green growth. We can observe that, even in this early phase of the mining projects, inequalities

within GPNs arise from unequal power relations. Considering the two countries' debts, these asymmetries arise on various levels. The mining projects are imposed as the materialisation of hegemonic development projects.

National development narratives (e.g. neo-extractivism) foster the development and valorisation of resources, and lead to the issue of mining licenses. At the local level, the PE perspective allows for grasping how overlapping territorial logics provoke conflicts, and that ecological implications result in winners and losers of environmental change. Even if no extraction has yet taken place, there are struggles around nature appropriation and processes of valuation. In the respective national context, local resistance is opposed to the government's development narrative. Both politically and in the urban context, we can observe a devaluation of local forms of production and regional economic models. In Trás-os-Montes, local groups are often referred to as 'hillbillies'. In Argentina, the use of the "desert metaphor" (Svampa 2020: 41) not only makes use of the imagery of a supposedly 'empty' space, but also implies a continuity of the colonial struggle against indigenous peoples.⁴ Local communities counteract the institutional-corporate power nexus through legal and public actions. They protest against the dispossession of land, water, landscape, and environment (Bebbington 2009; Harvey 2019), and demand democratic participation, respect for (indigenous) rights, and self-determination. The IML emphasises the unsustainability of consumption patterns, which come at the expense of people and nature. In this context, electro-mobility serves to maintain consumption patterns and lifestyles that cannot be generalised (Brand/Wissen 2017). This not only shows how the consequences of everyday practices are spatially and temporally externalised, but also that the IML relates on, and is (re-)constituted by GPNs. Trying to prevent the incorporation into the lithium-GPN, the conflicts presented here have to be considered as social-ecological conflicts that question the IML.

5. Conclusion

The conflicts depicted are examples of new resource conflicts in the context of a global sustainability transition. At this point, electromobility

can neither be judged as good nor as bad *per se* (see also Henderson 2020). Rather, innovations such as electromobility have to be evaluated in the framework of their social-ecological embeddedness. In this context, it becomes evident that the Green Economy does not reflect on the system-inherent logics of the capitalist mode of production. While it recognises research on the ‘planetary boundaries’, it reduces interrelated multiple crises to the variable of carbon dioxide emissions. Meanwhile, the modernisation and growth paradigm leads to local resource conflicts, power asymmetries and social inequality. Still based on the growth imperative, the Green Economy has to be considered as a natural development within the framework conditions of capitalism: capitalism tends to produce ever greater inequality (Piketty 2020) and requires a capitalist outside that stabilises the system by perpetuating primitive accumulation at the periphery (Harvey 2019).

In the two very similar case studies, the disregard and displacement of common land have to be understood as an expansion of the capitalist resource frontier. On the one hand, lithium mining further manifests existing North-South relations. On the other hand, new resource conflicts also emerge in the Global North. The latter have to be contextualised within pronounced asymmetries between the urban centres and the peripheries of the Global North, including the disproportionate use of natural resources since the beginning of industrialisation. Increasing wealth inequality and the inexorable expansion of capitalism into rural areas, including the dispossession of commons, have led to new intra-societal North-South relations. In the case of resource extraction, these inequalities have to be considered as social-ecological inequalities. I therefore call for identifying and analysing these inequalities beyond the established North-South dichotomy. The described resistance movements subliminally question the endless commodification of nature, and can be seen as individual elements of a larger social-ecological transformation.

In this article, I have shown the reciprocal relationship between resource-based GPNs and the IML, offering the potential for a holistic and critical cartography of social-ecological inequality and resource conflicts. This potential results from the interplay of a greater level of abstraction and the precise decoding of local-global processes, actors, and power relations. Linking these strands of literature with eco-Marxist perspectives (Altvater

2011) and the Capitalocene (Moore 2017; Reyes Núñez/Veiga 2021) holds potential for future research, providing further insights for contextualising resource-based GPNs within the expansion of commodification and capital accumulation.

- 1 Jujuy, Salta and Catamarca possess a large proportion of all Argentine lithium resources. The province of Jujuy alone accounts for 37% (Secretaría de Política Minera 2019).
- 2 I use approximate English translations for the names of companies and institutional bodies but maintain their Spanish/Portuguese acronyms, by which they are commonly known.
- 3 According to the ILO 169 Convention, the state should actually act as a guarantor with regard to the implementation of indigenous law and free, prior and informed consent.
- 4 In the 1870s, General Roca’s Conquest of the Desert (*Conquista del Desierto*) aimed at extending Argentine power into Patagonia. Today, the conquest is also called a genocide of the indigenous population. More than 1,000 Mapuche were killed and many more were displaced.

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Interviews

Interview	Function and/or organisation (at the time of the interview)	Location	Date
ARG40	President of indigenous community Santuario de Tres Pozos / member of Cooperativa Minera Salinas Grandes	Santuario de Tres Pozos	26.03.2019
ARG52	Pastoralist	El Moreno	05.05.2019

Interview	Function and/or organisation (at the time of the interview)	Location	Date
PRT1	Social scientist	Virtual	13.10.2020
PRT4	Member of Unidos Em Defesa de Covas do Barroso	Virtual	28.10.2020
PRT7	Local resident Covas do Barroso	Virtual	24.11.2020
PRT10	Mining Watch Portugal	Virtual	25.11.2020
PRT11	Local resident Covas do Barroso	Virtual	07.12.2020

Abstract *Lithium ist diskursiv mit ‚nachhaltigen‘ technologischen Innovationen wie Elektromobilität verknüpft. Diese soll eine – nach wie vor marktbasiertere und wachstumsorientierte – Antwort auf die ökologischen Auswirkungen des Wirtschaftssystems darstellen. Gleichzeitig ist die starke Zunahme des Lithium-Bergbaus ein anschauliches Beispiel für die Fortsetzung der imperialen Lebensweise. Vielerorts breitet sich Widerstand gegen die Bergbauprojekte aus. Am Beispiel der Fallstudien Salinas Grandes (Jujuy, Argentinien) und Covas do Barroso (Região Norte, Portugal) werden in diesem Beitrag die Auswirkungen hegemonialer Entwicklungsdiskurse entlang globaler Produktionsnetzwerke analysiert. Das Konzept der imperialen Lebensweise ermöglicht es, den Widerstand gegen Entwicklungsparadigmen jenseits einer etablierten Nord-Süd-Dichotomie zu verstehen. Die Fallstudien verdeutlichen nicht nur globale, sondern auch tiefgreifende innergesellschaftliche Ungleichheitsstrukturen.*

Felix Malte Dorn
 Department of Geography, Innsbruck University
felix.dorn@uibk.ac.at