MOZAMBIQUE'S COAL IMPLOSION AMIDST GLOBAL CLIMATE CATASTROPHE

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The arrival of Vale and other mining companies, causing massive local displacement and ecological damage, has driven a debate over Mozambique's development model, as an exporter of unprocessed raw material. Different schools of thought have weighed-in on the costs and benefits, from neoliberal 'economist's to heterodox and radical political economists and environmentalists. Using dependency theory as the core analytical framework, augmented by David Harvey's theory of accumulation by dispossession, this article critically reviews the debate surrounding Tete coal, Vale's operations, the grassroots movement of the resettled population in local villages, and the Government's responses. The analysis focuses on the last five years of Vale's operations in Tete, 2016-20, and concludes by considering how to ensure a greater understanding of the international division of labour in extractive projects and a potential future beyond extractivism.

The question of how natural wealth can be transformed into peoples' wellbeing is as old as the history of natural resources exploitation itself. The attempts to answer it and formulate policy recommendations have varied according to the schools of thought among classical economists such as Adam Smith, David Ricardo, Thomas Malthus and Karl Marx who focused on macroeconomic conditions for the creation and multiplication of capital in market economies (Amin 1974; Weeks 2011). As posited by British political economist, Ben Fine (Fine 2000), in his widely cited journal article 'Economics, imperialism and intellectual progress: The present as history of economic thought?', the neoclassical school of

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thought addressed the same question by looking at micro-economic factors given its methodological approach based on individual rationality – *homo economicus.*

This article discusses the theoretical grounds of coal exploration and extraction from the perspective of heterodox economics, in contrast to the orthodox approach. The focus is on subnational analysis in line with studies like *Coal and Energy in South Africa: Considering a Just Transition,* edited by Lochner Marais and colleagues (Marais *et al.* 2021). The reason for the abovementioned choice is that the orthodox framework of resource curse is growth-centred and neglects structural inequalities and the political economy of land and territory as demonstrated by, *inter alia,* Franklin Obeng-Odoom in his 2020 book '*Property, Institutions, and Social Stratification in Africa*' (Obeng-Odoom 2020).

The article is structured as follows. Following this introduction, the second section discusses the dominant theoretical models on resource dependent economies – the Dutch disease and the resource curse. The third section develops an alternative theoretical model to the Dutch disease and the resource curse – Karl Marx's primitive capital accumulation augmented by David Harvey's accumulation by dispossession within the broad dependency theory. The fourth section analyses the Mozambican coal industry, focusing on the conflicting relationship between multinationals and local communities. The last section summarises the debate with concluding remarks.

Dutch disease, resource curse and their fragilities

The designation 'Dutch disease' originated from the phenomenon that occurred in the 1960s, following the Netherlands discovery of natural gas in the North Sea. The Dutch found that their manufacturing sector suddenly started performing more poorly than anticipated. There was a de-industrialisation in output and employment following the resource boom. Put differently, Dutch disease is the condition whereby a resource boom leads to appreciation of the real exchange rate and in turn damages manufacturing and other trade sectors (Heal 2007; Hujo 2012a, 2012b, 2012c; Sachs and Warner 1995). As Poteete (2009) puts it, the Dutch disease is considered as the product of rentier politics that undermine long-term economic performance in resource dependent economies resulting in a resource curse.

Dutch disease is the condition whereby a resource boom leads to appreciation of the real exchange rate and, in turn, damages manufacturing and other tradable sectors (Auty 2001; Rosser 2006; Ross 2013). Institutions and state development during resource booms are locked into development trajectories. What results from such processes are negative development outcomes such as poor economic performance, growth collapses, and a high degree of corruption, ineffective governance and greater political instability (Collier and Hoeffler 2004; Olanya 2012; Ross 2013).

The resource curse is also known as 'the paradox of plenty'. It refers to the contradiction between natural resources typically, a mineral, oil or gas abundance in a certain economy (a country) and their correspondingly poor economic performance. More precisely, the lack of acceptable development outcomes resulting from the extractive activities is explained as a result of their very dependence on extracting natural resources (Hujo 2012a, 2012b; Poteete 2009; Sachs and Warner 1995).

According to the mainstream development literature, *e.g.* Collier and Hoeffler (2004), and Sachs and Warner (1995), the existence of abundant mineral resources is expected to generate high levels of well-being, employment or more broadly development. The contrary is said to be a paradox of plenty widely known as 'resource curse' (Sachs and Warner 1995; Ross 2013). Following that rationale, Mozambique faces a paradox of co-existence of massive coal exploitation and exports and persistent levels of poverty and unemployment. However, for progressive economists such as Patrick Bond (Bond 2006; 2019), Carlos Castel-Branco (2014), Alfredo Saad-Filho and John Weeks (Saad-Filho and Weeks, 2013), the paradox is only apparent in the sense that it is part of the construct – it is an essential characteristic of the accumulation model and not a failure.

The proponents of the Dutch disease and resource curse models continue to be debunked by some researchers (Dietsche 2014; Saad-Filho and Weeks 2013) who stress that these two analytical frameworks not only fail to demonstrate convincingly that their explanations are reflected by the econometric proxies they use, but have also failed to present valid and consistent solutions for the diagnosed problems.

Mozambican political economist Carlos Castel-Branco (Castel-Branco 2017) notes that the so-called 'curse' in the resource curse debate is in the

approach. Using the Mozambican case, he posits that clear specification of resource abundance creates contradictory results:

> (i) If abundance is defined as the weight of natural resource exports on exports and on GDP, the curse is likely to be confirmed, because the definition introduces bias in sample selection, by choosing countries that are more resource-dependent (which includes those that have failed to diversify) and countries that are less developed (which tend to have less diversified economies);
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> (ii) But, defining resource abundance by total output, total reserves, reserves per capita or exports per worker is likely to reject the curse and confirm the blessing, because the bias now tends to favour countries that may have succeeded in expanding production and retaining the gains from natural resources. The hypothesis claims that adverse effects, the curse, are the result of rents generated by primary exports, but rent-based measures have failed to support the curse and may have supported the blessing instead.

Castel-Branco (2017) has also noted that the studies on causality sought to demonstrate that resource abundance is not only correlated with, but is the cause of, poor growth and poor export diversification. He contends that even if this correlation could be demonstrated, there are some challenges to the definition of resource abundance, which makes it difficult to decide what correlates to what, as there is no proof of causality. Instead, poor growth could be the cause of reliance on natural resources (rather than the other way around, as predicted by the curse hypothesis), or could be the effect of other problems such as a Washington Consensus style of structural adjustment programme.

According to Dietsche (2014), the initial research was framed in a very simplistic manner, juxtaposing a hypothetical economic-rational explanation against an equally hypothetical socio-political explanation, which found that 'greed' rather than 'grievance' leads rational individuals to fight over resources. To test these propositions, Collier and Hoeffler (2004) and Dietsche (2014) assigned proxies to these two dichotomously framed hypotheses and subjected them to a statistical analysis. Both authors found 'greed' to be of greater statistical significance.

While the popular publication *Greed and Grievance in Civil War* (Collier and Hoeffler 2004) was discredited by Marxist economist critics of the neoclassical approach, more unexpectedly perhaps, one of the initial attacks came from a Pretoria-based political science professor Laurie Nathan (2003) in a laudable publication entitled: *The frightful inadequacy of most of the statistics: A critique of Collier and Hoeffler on causes of Civil War.* Here he metaphorically accuses these authors of 'having mixed apples with oranges' by inferring causality with inappropriate proxies:

'Collier and Hoeffler view ethnic and religious hatreds as grievance variables. Yet their proxies measure heterogeneity and do not capture hatred or the kind of ethnic and religious discrimination and propaganda that might generate hatred' (Nathan, 2003: 7-9).

Another comprehensive critique is the seminal work by two political economists from the School of Oriental and African Studies (SOAS), Alfredo Saad-Filho and John Weeks: *Curses, diseases and other resource confusions* (Saad-Filho and Weeks 2013). These authors looked at the data available between 1980 and 2010 from a sample of 29 countries to analyse the curse. The oil and gas share of total exports of these countries varied from 54 percent (Cameroon) to 100 percent (Brunei). The sample excludes developed countries (as not cursed), large producers that are not exporters (export channels not in operation), and countries with recent discoveries of oil, gas or other minerals riches (Saad-Filho and Weeks 2013, as cited in Castel-Branco 2017).

Saad-Filho and Weeks (2013) note that the critique of both models does not dismiss the evidence that many so-called resource-rich countries have not fared well with respect to economic, social and political performance over long periods. However, it does change the question of inquiry from 'Why natural resource wealth has fostered different political pathologies?' to 'What political and social factors enable some [so called] resource abundant countries to utilise their resources for development [however defined] and prevent others from doing the same?' (Saad-Filho and Weeks 2013, as cited in Castel-Branco 2017).

The fragilities of the Dutch disease and resource curse models discussed above take me to a more nuanced theoretical and conceptual framework – the Marxist primitive accumulation model, augmented by David Harvey's accumulation by dispossession in line with dependency theory.

Primitive capital accumulation, accumulation by dispossession and dependency theory

At the core of Karl Marx's political economy is the notion of primitive capital accumulation, which is essentially the characterisation of the historical capitalist process consisting of the separation between producers and production (Marx 1991; Sassen 2010). The separation leads to a situation where the producers possess neither the means of production – for example, land – nor any other means of subsistence, besides their

labour. At this stage, according Marx, the only way forward for the ex-producers to survive is to sell their labour to the capitalist who turns them into remunerated workers.

Karl Marx's notion of capital accumulation (Marx 1991) was recast as 'accumulation by dispossession' by David Harvey in his widely cited book *The new imperialism*: *Accumulation by dispossession* (Harvey, 2003). As described by Sassen (2010), Harvey considers Marx's use of 'primitive' or 'original' accumulation as misleading since the history of capitalism contains repeated instances of this kind of accumulation. Harvey (2003), therefore, recasts the term as 'accumulation by dispossession', defining it as a core mode of capitalism that is omnipresent. Harvey argued it can occur in a variety of ways (whatever the historical period) and which can pick-up strongly when crises of over-accumulation occur in expanded reproduction, when there seems to be no other exit except devaluation.

Dependency Theory is the analysis of a country's economic development in terms of its political, historical, economic and cultural external influences (Ferraro 1996; Poteete 2009). To use Ferraro's (1996: 1) description:

> Dependency Theory developed in the late 1950s under the guidance of the Director of the United Nations Economic Commission for Latin America, Raúl Prebisch. Prebisch and his colleagues were troubled by the fact that economic growth in the advanced industrialized countries did not necessarily lead to growth in the poorer countries. Indeed, their studies suggested that economic activity in the richer countries often led to serious economic problems in the poorer countries. Such a possibility was not predicted by neoclassical theory, which had assumed that economic growth was beneficial to all (Pareto optimal), even if the benefits were not always equally shared.

Dependency Theory, also known as 'the centre-periphery thesis', was originally used in the 1940s in Latin America by an Argentine economist, Raúl Prebisch (Love 1980). The notion of 'unequal exchange' was at the centre of the theory as developed by Latin American economists like Raúl Prebisch and Celso Furtado within the UN Commission for Latin America and the Caribbean from the 1950s. The theory emerged from the disconnection between the continuing development of Western countries (specifically the members of the Organisation of Economic Cooperation and Development – OECD) and the continuing underdevelopment of the southern countries (Latin America, Asia and Africa). Prebisch's prescription to overcome the underdevelopment of the global south was

so-called import-substitution: developing countries should embark on locally producing those goods they used to import, and so replace the imported with locally produced ones (Ferraro, 1996).

Contemporary scholars associated with this school include Patrick Bond, who dedicates some of his analyses to South-South relations, which he calls 'sub-imperialism.' In a recent paper 'Western Imperialism and the Role of Sub-imperialism in the Global South', co-authored with two Brazilian colleagues, Bond questions whether the bloc known as BRICS (Brazil, Russia, China and South Africa) is capable of reversing historical, unequal relations of trade and investment between the 'core' and 'peripheries,' in an uncomfortable middle ground of 'sub-imperialism' (Garcia *et al*. 2021).

Dependency Theory is being updated with new awareness of 'unequal ecological exchange' (Raqa *et al.* 2011). The concept builds on the work of scholars such as Arghiri Emmanuel (1972) and Samir Amin (1976), and latterly that of Alf Hornborg (Hornborg 2011). It recasts 'unequal echange' to encompass ecological impacts such as the climate catastrophe affecting poor countries, the five hardest hit from 2000-19 being Puerto Rico, Myanmar, Haiti and the Philippines and Mozambique, and the impacts of non-renewable resource depletion. Natural Capital Accounting (NCA) developed in part by the World Bank has been developed to measure the latter.

Patrick Bond (Bond 2018) highlights the fact that the 2018 World Bank report 'Changing Wealth of Nations 2018' is 'only the most recent reminder of how much poorer Africa is becoming by losing more than $100 billion annually from minerals, oil and gas extraction.' This is uncompensated by capital reinvestment, profit sharing to local investors, job creation, new infrastructure, royalties and taxes, and new backward and forward economic linkages. This has been as true for coal extraction in Mozambique as for other non-renewable minerals and fossil fuels, leading to a conservatively estimated net annual drawdown of wealth equivalent to around 3 percent of GDP during the 2010s. The Bank does not include Platinum and diamond wealth depletion and if it were, would push the 3 percent net drain even lower.

Resource extraction and coal implosion in Mozambique

Mozambique's extractive industry consists of two major components: hydrocarbons (oil and gas) and solid minerals. According to the National Petroleum Institute (INP, *Instituto Nacional de Petróleos*), there were 61 wells, 24 appraisals and 12 production wells in operation in Mozambique in 2019-21; another four wells were located offshore the Zambezi Delta in Sofala province, and one well had been drilled in the Rovuma Basin onshore in Cabo Delgado province (INP 2021).

Mozambique has been extracting natural gas from the Southern province of Inhambane since 2004. The concession belongs to the South African energy company Sasol. Huge reserves of natural gas were expected from the Northern province of Cabo Delgado. A concession was granted to a consortium of big oil and gas multinationals including the French Total, the Italian ENI, the Portuguese GALP, worth $ 23 billion. However, since 2017, the gas rich province is under attack by Islamist insurgents who have forced more than 900,000 people to flee their homes, and more than 300 have died. In this context the leading company Total Energies declared 'force majeure' and left Cabo Delgado, stating it would only return to Mozambique when Cabo Delgado province is at peace (Hanlon 2021). This coincided with the publication of a dramatic International Energy Agency (IEA) report that declared the end of the fossil fuel gas industry: as recounted by journalist Joseph Hanlon, a specialist in Mozambican development affairs, the IEA had stated 'Mozambique's gas fields cannot be developed if global warming is to be kept to 1.5º above pre-industrial levels' (Hanlon 2021).

As Figure 1 below indicates, Tete province has the biggest reserves of coal in Mozambique. The giant Brazilian company Vale with its subsidiary, Vale Mozambique, quickly became the biggest producer in the coal sector in Mozambique. The second biggest is Indian Coal Ventures Limited (ICVL), which operates in the coal mines located in Benga village. Benga coalmines were first granted to Riversdale, which sold the concession to Rio Tinto, which then later sold it to the Indian ICVL. ICVL is a joint venture between five Indian State-owned concerns set up to guarantee safe supplies of coking coal for the Indian steel industry, demonstrating how Mozambique's coal industry has been drawn into the Indian economic growth dynamic during the 2010s that depended on coal-fired electricity generation (Club of Mozambique 2017).

Figure 1: Mineral Resources Present in Mozambique

Source: Deloitte and EITI Mozambique (2018)

In 2004, Brazil's Vale became the first major international mining company to be granted a concession in Mozambique, with its coal mine in Moatize officially opening in mid-2011 (Ali and Miclea 2013). The initial $1.7 billion investment by Vale was the largest single investment in Mozambique's history (Selemane 2009; 2010). It surpassed the investment cost of a BHP Billiton owned aluminium smelter at Mozal in Maputo, the first mega-project to be set up by foreign direct investment after the 16-year civil war. According to Castel-Branco and Cavadias (2009), Mozal was conceived as part of SA's Eskom's energy expansion strategy – during the 1990s when the South African parastatal had a major energy surplus as a result of overbuilding coal-fired power plants. As described by Fine and Rustomjee (1996), the motivation for Mozal's establishment in

Mozambique, particularly in the south of the country, involved integrating Mozambican energy into Eskom's grid in the South African energy structure, a strategic move that combined the capabilities, interests and strategies of Eskom, BHP-Billiton, the financial system and the mineral energy complex (MEC). Ironically, the core power source in Mozambique, the Cahora Bassa dam, sends electricity first to South Africa, and then it is rerouted back to Maputo and is mainly consumed by the aluminum smelter Mozal to the detriment of millions of Mozambican households with no electricity

The strategies of international capital and how they exploit and exacerbate national-level vulnerabilities is critical. Mozambican political economist Carlos Castel-Branco (Castel-Branco 2014) posits that the accumulation system (production, appropriation, distribution, usage and cumulative reproduction of the surplus) in Mozambique is predominantly articulated around the connection between national and international capital, which, for objective historical reasons, generates an internationally traded extractive economy (structurally 'extroverted', in Samir Amin's terms).

The dominance of international capital closely relates to the three long-standing problems of resource extractivism (Bond 2018b; Grove 2017), of (i) economically-uncompensated resource depletion; (ii) political corruption; and (iii) vulnerability to extreme weather events under climate change, such as floods, cyclones and drought. These three long-standing problems are intrinsically linked to the process of wealth generation based upon coal extraction, which contains a problem of sustainability. In Mozambique these are now sharply posed, both in terms of local impacts and in terms of accelerating climate disruption. In 2019 Cyclone Idai devastated the central region mainly Beira city and Cyclone Kenneth affected the northern province of Cabo Delgado. In addition, there were droughts in the southern provinces of Inhambane, Gaza and Maputo due to climate change. As noted by Raqa *et al.* (2011), environmental problems are significantly socially distributed and the problem of how human societies distribute ecological risks among societies should not be separated from the problem of how they distribute resources among people in a society.

Tete's coal mining

Vale Mozambique, a subsidiary of the Brazilian Vale, arrived in Mozambique in 2004 having won a concession of 23,780 hectares under a 30-year contract, (renewable) to dig coal in a project worth $1.3 billion. The company is reported to have paid $123 million for the coal mining rights but the money was never registered with State agents (Kabemba and Nhancale, 2012). There were also tax incentives. Castel-Branco and Cavadias (2009) exposed the fiscal benefits the government of Mozambique gave to the mining companies. In the case of Vale, the fiscal incentives consisted of a reduction in Corporate Tax from 32 percent to 15 percent during the first 10 years of exploration, freedom to repatriate 100 percent of the profits and dividends and exemption of custom duties and VAT.

Coal extraction started in 2007 with production and exports of 11 million tons per annum. According to Selemane (2012), in the process of setting up, the company displaced 1,313 families (equivalent to over 5,000 people) from arable land in Moatize, near Tete to Cateme village, 40km away. In 2014, the company expanded its project by opening a new mine, 'Moatize Mine II', aimed at doubling the coal production to 22 million tons per annum. However, the plans did not go ahead due to water, soil and air pollution that subsequently motivated several communities to resist the mine's development. This impeded the company's progress as the mine was closed for 19 days. However, on 23 October 2018, Vale Mozambique decided to reopen Mine II without the community's consent and there were threats by community members to continue protests including sabotage of the mines' facilities and machinery. These protests then followed as warned (Maolela 2018).

Vale divided to rule

Large-scale mining (and other) projects often require the displacement of people from their land and houses, a process that is referred to as 'involuntarily resettlement'. It is involuntary because decisions over land use lie with the government, as in Mozambique all land is owned by the state (Wiegink 2020). The displacements result in a situation where vulnerable communities are resettled in new areas, they usually lose their fertile land, they struggle to get access to potable water and more generally,

their living conditions deteriorate. Displacement is part of what David Harvey calls 'accumulation by dispossession' (Harvey 2003) – the mining company aims to accumulate more capital through its extractive project by dispossessing local communities its large areas of land (Lesutis 2019).

The implantation of Vale's coal mega-project in Moatize in 2009 caused the displacement of 1,313 families – around 5,000 people who were split into two different groups: 717 families were considered 'rural' and resettled in Cateme, which is 37km from their original locality of Moatize. The remaining 596 families, considered 'urban', were transferred to Bairro 25 de Setembro in the Municipality of Moatize, in the urban area of the city (Selemane 2010; Mosca and Selemane 2011, 2012).

The resettlement of Cateme became famous and appeared in various media reports (*e.g.*, AIM 2021; SEKELEKANI 2021; Maolela 2018) due to the large number of irregularities in the process: lack of dialogue between the company and the government, compensation considered unfair by the resettled, poor quality houses, no access to arable land, nor transportation to and from the city. The resettlement simply impoverished already vulnerable communities and the government responded to their contestations with armed repression (Wiegink 2020).

The Indian-based company of ICVL was the third beneficiary of the Benga coal mine concessions. The mine's concession was first granted to Australian Riversdale Mining in 2010 with projections to produce 20 million tons of coal per annum in a concession of 127,900 hectares (the initial phase explored being only 4,560 hectares). A year later the concession was taken over by the mining giant Rio Tinto at US$4 billion. Mozambican authorities also never taxed the deal: as Caste-Branco (2014: 14) puts it, 'the transaction between Riversdale and Rio Tinto was not taxed because the government had not prepared for this, having no institutions in place to check, monitor and control'. In 2014, the India-based company took over the concession for US$50 million, which had previously cost Rio Tinto $4 billion just three years earlier. The installation of Benga's coalmines under Rio Tinto resulted in the displacement of another 600 families from Benga to Mwaladzi village some 44km away from Tete town (Selemane 2012).

The above scenarios raise the question of *who benefits and who loses* from Mozambique's coalmines. Mosca and Selemane (2012) have summarised the answer to this question in Table 1 on the following page.

Table 1: Winners and Losers from Coal Extraction in Tete

BENEFICIARIES AND WINNERS		
Foreigners	**National/Capital Maputo**	**National/Tete Province**
Construction (ports, rail road, housing)	Highly qualified technicians	Speculation of mining licenses
Transportation (miners, workers of contractors)	Specialised technicians	Construction and property maintenance
Logistics (food, technical assistance, etc.)	Big and small speculation of mining licenses	Hotels and catering
Consultancy businesses	Consultancy businesses	Local transportation
Highly qualified technicians		Rentals and property speculation
Specialised professionals		Small businesses resulting from demographic increase
		Benefits to public servants
		Non qualified jobs
		Illicit businesses

LOSERS
• Resettled population • Unemployed migrants • Population in general due to environmental damages – climate change victims • Low income population due to inflation • Public servants and unemployed due to inflation

As Table 1 shows, the main beneficiaries of the coal mining mega-projects are the sub-contractors, usually the branch offices of foreign capital, that are awarded contracts to develop the mines and associated infrastructure, such as railways, ports, housing and hostels.

The Mozambican economy is less developed than that of South Africa hence most of the goods and services required by the coal mining companies are imported from South Africa. The importation of goods or the hiring of foreign companies (mostly South Africans) to provide goods and services to mining companies in Mozambique is often criticized by the Mozambicans.

However, as noted by Mosca and Selemane (2012) the main critique has been that the Mozambican government is making little effort to favour its own national businesses in the development of the industry (Mozambican providers are often incapable of providing the required goods and services in the quantities, quality and regularity demanded by the mining companies).

Community resistance

The existence of winners and losers in the development process can be understood as uneven development (Bond 1998). This set of factors often motivates the losers to pursue community resistance. Mozambique's history contains various episodes of community resistance by grassroots and social movements. The causes range from the displacement or loss of arable land by peasants, for example led by members of the National Union of Peasants (*União Nacional dos Camponeses, UNAC)* and the Rural Women's Assembly. Environmental justice advocates, for instance Academic Actions for the Development of Rural Communities (ADECRU) and Justiça Ambiental (JA), are active in raising issues of pollution, of soil, air or water.

According to Marshall (2017), the first popular resistance episodes centred on the new coal mines began in late January 1990 when health and construction workers in Beira, bus drivers in Nampula and coal miners in Moatize, Tete went on strike. Of interest here will be those cases of community resistance involving political activists resisted extractivism by hijacking Vale's train line for a week, or community members who blocked access to the coal mines in Tete (Johansson and Sambo 2014; Marshall 2017; Mosca and Selemane 2012). Based upon a wide range of

sources, Table 3 below shows the frequency of protests around Tete coalmines in the last decade.

Table 3: Protests Around Tete Coal Mines from 2009 to 2021

Year	Type of action	Protagonists	Targets	Issues raised
2009	Wildcat strike	1200 construction workers	Odebrecht/Vale	Salaries, working conditions, severance
	Work stoppage	Construction workers	Odebrecht/Vale	Working hours, ex-pat salaries and benefits
2011	Official letter of protest	Community displaced by Vale from Moatize to Cateme	Vale and the Government of Mozambique	Access to arable land, houses, water, livelihoods
	Rail road blockade	700 resettled families in Cateme	Vale and the Government of Mozambique	Broken promises and silence from Vale and government
	Strike notice	Kenmare bargaining committee	Kenmare	Wages, health care, foreign workers
2012	Wildcat strike	Kentz construction workers	Kentz	Severance, Labour law implementation
	work stoppage, attacks on ex-pats	Jindal workers and affected community	Jindal and the Government of Mozambique	Lack of environmental study, insults, no resettlement plan

	Mine blockade	800 block makers	Vale and the Government of Mozambique	Loss of livelihoods
	Railway blockade	Cateme brick makers	Vale	Compensation for loss of small business
2013	Demonstration at Vale offices	Brick makers	Vale	Response to new compensation proposal
	Mine blockade	Community resettled at *25 de September* village	Vale	Compensation for lost livelihoods
2014	Blockade threats	bricks makers	Vale	Loss of livelihoods and land grabs
	Coal mine blockade	Resettled community and bricks makers	Vale	Land grabs, dispossession
2015	Work stoppage	ICVL mine workers	Jindal (ICVL) and the Government of Mozambique	'Slave labour' conditions, racism
	Mine blockade	500 families of four affected villages	Jindal (ICVL) and the Government of Mozambique	False promises of land, resettlement, jobs and better living conditions
2016	Work stoppage	1400 mine workers	Vale	Better salaries and bonuses
2017	Work stoppage	More than 1000 mine workers	Vale	Better salaries and bonuses

2018	Mine blockade	Residents of Nhancere village	Vale	Pollution of air, water and soil
	Mine blockade	Around 300 residents of Cassoca village	ICVL	Resettlement conditions
2019	Roads and mine blockade	Around 500 residents of *25 de Setembro* village	Vale	Fair compensation and jobs
2020	Roads blockade	Around 300 residents	Vale	Resettlement conditions
2021	Mine blockade	Around 500 residents	Vale	Better living conditions, fair compensation
2022	Work stoppage and mine blockade	Around 1000 mineworkers	Vulcan	Continuation of contracts signed with Vale and better salaries

Source: Adapted from Marshall (2017) and updated by the author based upon Machava (2018); Maolela (2018); Lesutis (2019); SEKELEKANI (2021); and Mosse (2022).

In its announcement of withdrawal from Mozambique Vale stressed that it wanted to disinvest from all coal production (Hanlon 2021a). Yet Vale's departure will not lead to the closure of its coal operations, which have been sold on to a new owner, Vulcan for $270 million. As part of Vale's exit, its project partner Mitsui transferred its share of operations to Vale for $1 and Vale itself wrote-off $2.5 billion in accumulated losses (AIM 2021). Vulcan hopes to mine 15 million tonnes in 2022 and 18 million tonnes in 2023.

Since May 2021, Moatize coal town has seen community protests against the deterioration of living conditions. Vale had occupied huge areas of land that was previously used by the local peasants for several economic

activities such as brick fabrication, farming and cattle feeding. Local artisans prior to Vale's entry into activity in Moatize were engaged in the manufacture of bricks for the local market and for Malawi. The start of mining led to the closure of its small factories, which were followed by promises of fair compensation from Vale, which were never satisfactorily delivered. Information recently released by Vale about its upcoming withdrawal from Tete province has rekindled the claims of victims in Moatize, fearful of being left behind. Not surprisingly, the company supplanting Vale – Vulcan - has not improved on its predecessor in terms of work conditions, remuneration and community relations. Within six months of the takeover mineworkers had laid down tools and protested for a week against poor salaries and unstable contracts and poor working conditions (Mosse 2022).

Governmental responses

The boom of coal industry in Mozambique has brought not only community protests but also a debate around the local benefits to be gained by the inhabitants in the areas where mineral or hydrocarbon resources are exploited. The Government had responded to these protests by passing legislation to ensure some benefit for local development. The *Mining Law 11/2007* and *Petroleum Law 12/2007*, both of June 2007, provided for the allocation of a percentage of mining and oil revenues for 'development of communities in the areas where the respective petroleum projects are located' (under Article 11).

Nevertheless, the percentage of revenue to be allocated locally was not determined until after six years of advocacy work by Mozambican civil society organisations. In 2013, the Government proposed that 2.75 percent of revenues would revert to benefit of local communities. The decision was made in light of a parallel mechanism in logging operations that requires 20 percent of the revenues to revert to the local communities. The commitment for mining operations is significantly lower, and much delayed. Even with the new laws in place, affected communities are still protesting against the loss of their livelihoods.

The relationship between the coal companies and peasants has always been tense and conflictual. In turn, government policy responses to the grievances have not been sufficient and often its actions have been repressive. The government has responded to protests with police riots and

the detention of activists who questioned the practices of the coal companies. Such an approach is not only unsuccessful but also has deepened divides in society, especially in mining sites where capital is seen as acting against peasants, and the government is understood to be favouring capital to the detriment of its own people.

Concluding remarks

Tete coalmines have become an epicentre for accumulation by dispossession, where multinational capital has displaced poor peasants in favour of coal extraction, as David Harvey has posited (Harvey 2003).

Amidst the climate catastrophe, the Brazilian Vale left Mozambique, announcing it would divest from fossil fuels, but the damage created by its operations remains. Millions of tons of coal have left Mozambique to Chinese, Indian and Japanese markets but the loss of livelihood for Mozambicans has not been resolved. Mozambican citizens affected by coal and other resource extraction operations continue to contest the deterioration in their already vulnerable living conditions. The coal boom may have passed but its consequences remain, raising the question of alternative post-extractivist development trajectories.

The extractive economic model embraced by the Mozambican government at the height of the search for energy in the years 1990-2000, made Tete the epicentre of the country's new coal industry. It meant both the province and city of Tete became an imaginary place in the dreams of policy-makers – believed to be a place of riches, immense opportunities and wellbeing of companies, civil servants, small and medium-sized entrepreneurs, an El Dorado Tete. This happened thanks to the presence of some of the world's biggest mining companies such as the Brazilian Vale and the Indian ICVL, which succeeded Rio Tinto in the Benga coal mines concessions (Mosca and Selemane 2011).

However, the 2008-09 global financial crisis and demise of the commodity price super-cycle in 2015, combined with the rise of environmental awareness and disputes over the role of coal as an energy source, caused the El Dorado Tete mirage to evaporate. Already, the arrival of Vale and other mining companies, causing massive local displacement and ecological damage, had created a national debate over Mozambique's development model, as an exporter of unprocessed raw material. At the same time, the disruption to climate from fossil fuel emissions has

dramatically politicised coal production, both nationally and internationally, pointing to coal phase-out, and a potential future beyond extractivism.

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