



Resource warfare, pacification and the spectacle of 'green' development: Logics of violence in engineering extraction in southern Madagascar

Amber Huff^{a,*}, Yvonne Orengo^b

^a The Institute of Development Studies, The University of Sussex, Library Road, Brighton, BN1 9RE, United Kingdom

^b The Andrew Lees Trust, 204 Brecknock Road, London, N19 5BG, United Kingdom

ARTICLE INFO

Keywords:

Pacification
Mining
Extraction
Racism
Offsetting
Conservation
Violence
Counterinsurgency
Rio Tinto
Madagascar

ABSTRACT

Bringing political ecology's concern with the critical politics of nature and resource violence into dialogue with key debates in political geography, critical security studies and research on the geographies and phenomenology of violence and warfare, this paper explores strategies 'from above' in relation to the establishment and operation of the Rio Tinto QIT-Madagascar Minerals (QMM) ilmenite mine in southeast Madagascar. While QMM claims to be a responsible 'green' self-regulator and sustainable development actor, it has triggered serious social, environmental and legal conflicts since its inception, including allegations of a 'double land grab' to accommodate mining activities and compensatory biodiversity offsetting. We argue that 'pacification', theorised as a productive form of violence that works through the re-ordering of socio-nature, underwrites the forms of 'security', 'stability' and even 'sustainability' that facilitate multiple and overlapping strategies of value extraction in the territorial and extra-territorial spaces occupied by the QMM mine partnership. By situating these dynamics historically, we identify ways in which pacification draws upon sedimented and evolving logics of racialised violence to facilitate operations and silence opposition.

1. Introduction

Contemporary dynamics of land and resource grabbing are neither 'wholly new, nor simply a replay of the past' (Gilberthorpe & Rajak, 2017, p. 188). The so-called 'new scramble for Africa' (Carmody, 2011) has clear precedents cycles of resource appropriation in the colonial period and in the 1980s and 1990s with structural adjustment and economic liberalisation (Scoones, Smalley, Hall, & Tsikata, 2018). As today, these cycles transformed landscapes, instituted models of primitive accumulation and established patterns of dispossession and 'wealth outflow' (Bond, 2018, p. 89) alongside the continued existence of smallholder production regimes in different places. But in the early 21st century, there are new dynamics of resource control, strategies of accumulation and responses at play as a result of neoliberal globalisation.

Recent work in political geography, political ecology, critical agrarian studies and related disciplines has highlighted ways in which shifting discourses and practices related to global environmental crisis, economic risk, security and sustainable development are associated with current waves of land reform, high rates of foreign direct investment and the securitization of natural resources (Borras, Hall, Scoones, White, &

Wolford, 2011; Hall, 2011; Peluso & Lund, 2011; Scoones et al., 2018; Zoomers, 2010). The idea of a global 'green economy' has emerged as a powerful driver as well, re-framing a variety of overlapping economic and environmental crises associated with capitalism as opportunities for achieving 'sustainable' globalization and development based on 'green' growth (Cavanagh & Benjaminsen, 2017; Dunlap & Fairhead, 2014; McAfee, 2016). The green economy discourse on the low-cost economic 'fix' for crises associated with environmental degradation, climate change and problems of resource efficiency has reshaped networks of power and authority around natural resource governance on a global scale (Dempsey & Suarez, 2016, p. 3; Fletcher, 2014; Mehta, Huff, & Allouche, 2019).

These new drivers and politics of resource investment have given rise to new patterns and manifestations of resource acquisition alongside 'traditional' forms of investment for agribusiness and extraction (Zoomers, 2010). New manifestations range from large-scale developments for food crop and biofuel production, market-driven nature conservation, large-scale infrastructure development and financial speculation (Benjaminsen & Bryceson, 2012; Borras et al., 2011; Hall, 2011). These developments include so-called 'green grabs', which involve territorial acquisition by governments and private investors that

* Corresponding author.

E-mail addresses: a.huff@ids.ac.uk (A. Huff), yvonne@orengo.co.uk (Y. Orengo).

<https://doi.org/10.1016/j.polgeo.2020.102195>

Received 15 April 2019; Received in revised form 30 March 2020; Accepted 30 March 2020

Available online 20 April 2020

0962-6298/© 2020 The Authors.

Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

are legitimized and operate in the name of addressing, mitigating or 'repairing' environmental problems such as global warming, land degradation and biodiversity loss (Corson & MacDonald, 2012; Dunlap & Fairhead, 2014; Fairhead, Leach, & Scoones, 2012; Lunstrum, 2014). In the name of 'sustainability', private conservation and environmental offsetting are increasingly used to 'green-wash' large-scale and environmentally destructive resource investments (Bond, 2018; Castree, 2008; Freslon & Cooney, 2018).

A significant amount of scholarship has focused on these macro-scale drivers of resource grabs by states and corporate investors and their association with increasing inequalities in resource control at different scales (Borras & Franco, 2012; Burnod, Gingembre, & Andrianirina Ratsialonana, 2013). Likewise, an important body of work has highlighted diverse responses of people on the ground to these dynamics – contestation and resistance to dispossession and exclusion, but also reactions like acquiescence and incorporation in marginal or frontier resource geographies 'where authorities, sovereignties, and hegemonies of the recent past have been or are currently being challenged by new enclosures, territorializations, and property regimes' (Hall et al., 2015; Murray Li, 2014; Peluso & Lund, 2011, p. 668).

However, in order to understand linkages between global drivers and the diverse mobilizations, movements and reactions 'from below', important questions remain about how new and intersecting politics of security and 'green' accumulation have shaped or altered reactions and strategies 'from above' – strategies and tactics that are used to achieve legitimacy, render responsibility, engineer consent and suppress dissent – in the context of both traditional and new resource development settings (Brock & Dunlap, 2018; Geenen & Verweijen, 2017). How do elements and technologies of 'past orders', including logics and continuities of racism, ecological domination and war, travel through time, evolve, and get 'refitted' in contemporary institutions and practices (Rasmussen & Lund, 2018)?

In this article, we explore these questions in relation to the establishment and operation of the QIT-Madagascar Minerals (QMM) ilmenite mine in southeast Madagascar. QMM is a unique public-private partnership between Rio Tinto subsidiary *QIT-Fer et Titaine* and the Malagasy government, one of the largest development projects in Madagascar and one of the largest and most controversial mining operations in the world (Gerety, 2009). Despite QMM's official claims of careful effort to attain 'social license to operate' through an extensive 'social engagement strategy' (Rio Tinto, 2016), the mine has triggered a number of social, labour, livelihood-related, environmental and legal conflicts since its inception. While undeniably benefiting some, the operation has been condemned by many locals and international activists as socially and environmentally unjust. QMM has been harshly criticized by Malagasy and international environmentalists and human rights activists for basic rights violations, exclusions and violence, and of executing a 'double land grab' – one for mining activities and one for spatially separate biodiversity offsetting – causing economic and physical displacement of Malagasy farmers, pastoralists and fishers (Kill & Franchi, 2016). Meanwhile researchers critique QMM for 'green-washing', facilitated through Rio Tinto's evolving corporate 'net positive impact' (NPI) strategy, as a means to achieve 'managed dispossession' (Kraemer, 2012, p. 266) whilst positioning the company as a responsible effective 'green' self-regulator and sustainable development actor (see Seagle, 2012).

Our analysis brings political ecology's concern with the critical politics of nature and resource violence (cf. Brock & Dunlap, 2018; Le Billon, 2001; LeBillon & Duffy, 2018; Massé, Lunstrum, & Holterman, 2017; Neumann, 2004; Peluso & Vandergeest, 2011; Watts & Peluso, 2014) into dialogue with key debates in political geography, critical security studies and research on geographies of violence and war (Belcher, 2012; Gregory & Pred, 2013; Laurie & Shaw, 2018; Springer, 2011; Springer & Le Billon, 2016; Tyler & Inwood, 2014; Tyler & Rice, 2016). Using results of policy analysis, review of primary and secondary literature, and evidence from interviews and oral testimonies collected

over nearly a decade of field research and local and international advocacy work in and on southern Madagascar, we argue for a re-formulated approach to 'resource warfare' that moves beyond and against dominant discourses on environmental security and 'resource wars'. In particular, we explore how 'pacification', reconceptualised as a productive form of violence that works through the re-ordering of socio-nature, underwrites the forms of 'security', 'stability' and even 'sustainability' that facilitate multiple and overlapping strategies of value extraction in the territorial and extra-territorial spaces occupied by the QMM mine partnership.

We present this argument in five main sections. We begin the paper by highlighting contributions of political ecology in relation to key debates in political geography, critical security studies and the political economy of resources, particularly in relation to resource conflict and how violence and technologies of security manifest through conservation and development initiatives. We also introduce a critical reconceptualization of 'pacification', rooted in anti-security politics (Neocleous & Rigakos, 2011; Rigakos, 2011, 2016) and the phenomenology of violence (Baron et al., 2019), that frames our analysis. Next, we discuss historical trends and recent changes in Madagascar's policy environment that have opened up the country to extractive investment and the liberalisation of nature. We then introduce the complicated spatiality and governance schemes of QMM in terms of overlapping 'zones of exclusion' and explore tactics 'from above' through which the mine partnership obtains access to territory, political power and legitimacy to operate amidst local resistance and international criticism. Some strategies and tactics 'from above' have long histories, drawing on sedimented logics and practices of warfare. Thus, in order to understand what is 'new' about these dynamics, we then delve deeper to explore historical continuities and discontinuities in the ways value extraction has been engineered in Madagascar. We emphasize the significance of a racialised historical narrative of ecological insurgency that justifies political marginalization in linking past and present processes of enclosure and violence associated with engineering forms of value extraction. In conclusion, we reflect on the usefulness of a critical reconceptualization of 'resource warfare', and the need for ongoing research into the coloniality and immanence of relational forms of violence in processes for securing and remaking the margins as frontiers of value accumulation.

2. A note on the authors

The co-authors of this article include a social anthropologist/political ecologist with experience researching the contentious politics of environmental change in Madagascar and its local manifestations and effects in the south of the country (Huff) and the director of a small international NGO who has been deeply involved in international activism and community advocacy around the QMM case (Orengo). Each of us has over a decade of experience in our respective areas, with some important overlaps in terms of participation in campaigns advocating for recognition of local claims. The analysis that we present in this article is based on sources of evidence and documentation that reflect and draw together our different backgrounds and expertise. In addition, because of our respective ethical commitments, professional and personal experiences in Madagascar and internationally, we are not neutral observers and we do not claim 'distance' in relation to the case at hand.

3. Political ecology, critical geography and security

With close ties to critical geography, development studies and social anthropology, political ecology emerged from a radical critique of apolitical approaches to environmental and development research and practice (Adger et al., 2001; Le Billon, 2001, p. 563). Over time, through increasing focus on questions around the construction of, access to and control of natural resources, its research scope has differentiated and broadened to engage with the intertwined structural, social and

environmental dimensions of power relations, processes of environmental change, nature-based accumulation and justice struggles at different scales. Because of this, research in political ecology often intersects in important ways with debates in political geography, critical geopolitics, security studies and the political economy of natural resources. Political ecologists have used fine-grained critical analyses that combine tools of ethnography, policy analysis, institutional, historical and archival research to demonstrate ways in which ostensibly 'local' dynamics of environmental change, conflict and people's struggles articulate and enmesh with 'global' politics and material processes. Particular attention has focused on questions around the reconfiguration of socio-natural relationships and socio-spatial power, involving changing discourses, technical and material processes and institutional practices and relations (Le Billon, 2007, p. 170).

A hallmark of political ecology – shared with other critical social sciences – is its attention to the role of power relations in historical processes of social construction and, consequently, epistemological scepticism toward universalist, reductive and 'categorical' approaches to knowledge (Castree & Braun, 1998; Cronon, 1996). Whose interests, values and worldviews are reflected in authoritative discourses and representations of 'nature', 'resources', 'development' and 'sustainability'? Who is silenced, excluded, marginalized, or harmed (Death, 2014, p. 9)? This orientation has guided a great deal of critical engagement with work on environmental security and resource conflicts, challenging neo-Malthusian narratives around resource conflict and so-called 'resource wars', and moving beyond questions of the 'resource curse' and causal relationships between conflict and resource scarcity or abundance (Bond, 2014; Collier & Hoeffler, 2005; Grossman & Mendoza, 2000; Homer-Dixon, 1994; Humphreys, Sachs, & Stiglitz, 2007; Ross, 2013).

Rather, political ecology's approach can open up these broader debates to questions about how resources are made regulatable objects of accumulation, how governance is shaped by evolving constellations of power and authority and how power is expressed, exercised and challenged in efforts to stabilize and sustain what Watts and Peluso (2014) describe as the 'resource complex'. As a result, political ecology can contribute to a clearer understanding of the social and scalar complexity of resource conflicts, as not only rooted in changing resource access due to contemporary processes of privatisation and enclosure but also as emerging from historical struggles and changing regimes of truth and accumulation that shape colonial and capitalist imaginaries of nature, society, resource users and development (LeBillon & Duffy, 2018; Watts & Peluso, 2014, p. 196).

3.1. Environmental security, resource warfare and counterinsurgency

Through the 1990s, the post-Cold War 'broadening of the security agenda' extended and normalized security logics across a number of domains by linking these issues to military concerns and framing them as 'equivalent to military problems' (Floyd, 2008, p. 54). In environmental policy, it extended to issues around control of people's relationships with the environment and natural resources (Dalby, 1992, 2002; 2003; Eriksson, 1999; Homer-Dixon & Levy, 1995; Ney, 1999; Wæver, 1993). Issues around wildlife, land, water, forests, mineral resources and processes of environmental change were reconceptualised in terms of 'environmental security', as threats to national, international or even global peace and social, political and economic stability (Barnett, 2001; Eriksson, 1999; Huff, 2017; Rothschild, 1995, pp. 53–98; Trombetta, 2006, 2010). In the words of Duffield (2011: 7–8), '... war, economy and nature collapse into a single problematic of security, whether natural or man-made they become one and the same thing; a threat now likened to a military attack'. The contested notion of environmental security has evolved to encompass a range of positions that draw on neo-Malthusian assumptions about human-environment relationships and view resource scarcity and degradation as a driver 'environmental conflict' (Barnett, 2001, 2003; Barnett & Adger, 2007;

Duffy, 2016; Floyd, 2008; Matthew, 1995; Ney, 1999).

The rise of environmental security discourse is associated with the turn toward explicit incorporation of the language and operational logics of warfare in conservation and resource development (Duffy, 2016; Neumann, 2004). By the early 2000s, researchers had begun to recognize how the material demands and practices associated with so-called 'new' modalities of warfare and securitization were influencing patterns and intensity of resource exploitation and the state of the environment (Kaldor, 2013; Le Billon, 2001; Peluso & Watts, 2001). On the flip side, war was becoming a 'common model and metaphor' associated with environmental conservation and natural resource claims, particularly in the global south (Neumann, 2004). Tapping in to a deep seated fear of 'the poor' and their claims on resources and space, early work on this new dimension of 'resource war' associated its normalisation with an emerging 'moral geography' wherein force, in the forms of coercion, dispossession and other forms of violence, was justified and expressed through techniques of territorial and social control and in the subjugation of people's rights and livelihoods to concerns of 'security' (Neumann, 2004, p. 813).

More recently, researchers have proposed new frameworks for thinking through how the language, logics and rationalities of warfare have entered into conservation and development practice. Work on 'green militarization' (Lombard, 2016; Lunstrum, 2014), 'green security' (Kelly & Ybarra, 2016) and 'war by conservation' (Duffy, 2016) has explored 'hard', 'direct' or 'kinetic' forms of militarization and violence associated with intensifying securitization of protected areas, anti-poaching campaigns (Massé, Gardiner et al., 2017) as well as conservation in war zones (Marijnen & Verweijen, 2016). Others have emphasized the importance of considering the spatial and temporal dynamics of forms of slow or 'attritional' violence and neglect that can underlie 'explosive and spectacular' episodes in conservation and extractive settings (Cliggett, 2014; Huff, 2017; Nixon, 2011, p. 2; Witter & Satterfield, 2018). Taking into account long histories of struggle around cycles of penetration, violence and neglect that can characterise 'marginal' places, Huff (2017: 3) has suggested that new trends in resource grabs for biodiversity conservation and industrial value extraction can in some instances be likened a 'siege phase' in a prolonged war of attrition for control of resource frontiers.

Bringing insights from this work into dialogue with critical military studies has introduced considerations of the environment and environmental governance more fully into debates around the 'security-development nexus' (Duffield, 2010, 2011). It has also given broader insight into the ways in which the logics of security, war and capital accumulation are co-instituted in everyday life and inscribed in landscape through violent and militarized conservation and development practices (Masse, 2017; Massé, Lunstrum, et al., 2017). To these ends, the political ecology of (corporate) counterinsurgency (COIN) in particular has emerged as an important analytic lens that broadens the notions of conflict and war-making and deepens methodological approaches to understanding the manufacturing of consent and coercion around conservation and extractive developments (Brock & Dunlap, 2018; Dunlap, 2019; Anderson, 2011; Parenti, 2011).

So-called 'conventional' warfare seeks to control territory and destroy the military power of an opponent (Parenti, 2011). Drawing on French and US military theory (there are varied national counterinsurgency 'traditions'), counterinsurgency, or COIN is a varied and adaptive form of 'internal', 'asymmetrical' or 'irregular' warfare in which political, economic and psychological tactics of waging a 'population-centric' war are preferred, but deployed alongside, military violence (Anderson, 2011; Belcher, 2012; FM3-24, 2014; Galula, 2002). Prior work in the political ecology of COIN has explored the historical roles of insurgency and counterinsurgency warfare in the construction of state territories and 'national natures' (Peluso & Vandergeest, 2011; Ybarra, 2012). Brock and Dunlap (2018: 34) identify *corporate* COIN as comprising the actions taken by firms 'to mitigate violence and promote stability through social development and security measures with a primary

objective to “win hearts and minds” of local populations’. COIN – as a tactical constellation – is deployed to legitimise extractive operations, achieve tacit political control over populations and resources and undermine capacity for resistance to enclosure and corporate penetration.

Whether the objective is military or corporate control of space, COIN is intended to work at the ‘capillary’ level of social relations within a population (Parenti, 2015, p. 47). It creates ‘ruptures’ and tears in the social fabric that separate ‘friend’ from ‘enemy’ and allow society to be controlled through these divisions (Belcher, 2012). As such, COIN prioritizes practices such as the creation of territorial security, provision of physical infrastructure, and establishment of social and economic development programs, distribution of aid, establishment of schools, and other tactics meant to win loyalty whilst propaganda campaigns and fostering networks of trust and patronage seek to isolate or undermine political opposition and co-opt members of the political class. At the same time, surveillance, military measures and threat of force are important means of disciplining populations, coercing cooperation and enforcing social divides (see Brigham, 1968 quoted in Dunlap, this issue; FM 3–24, 2014).

3.2. Pacification and geographies of violence in ‘engineering’ extraction

This growing body of work has particular resonance with the unfolding research agenda on geographies of violence that calls for greater sensitivity to forms, expressions, relationality and processual dimensions of violence and the mutual constitution of violence and space (Blomley, 2003; Gregory & Pred, 2013; Laurie & Shaw, 2018; Springer & Le Billon, 2016; Tyler & Inwood, 2014). It has contributed to a clearer conceptual understanding of how different forms of violence and technologies of security manifest through development initiatives (Tyler & Rice, 2016; Verweijen & Marijnen, 2018; Ybarra, 2012). In turn, this offers insight into how ‘imaginative geographies’ (Springer, 2011, p. 90) and technologies of neoliberalism associated with development, sustainability and warfare gain traction and can interact to co-construct legitimacy and validity in the context of emplaced and often violent struggles for territory and resources.

Attempts to control land and people are often violent and the use of military tactics to secure elite and foreign claims to control of territory, wildlife and other resources has a long and bloody history in sub-Saharan Africa, even when it has not been framed in terms of ‘war’ (Duffy, 2016; Gregory & Pred, 2013; Ybarra, 2012). As Rasmussen and Lund (2018) contend, ‘[c]onfrontations, ranging from evictions to genocide, have signposted the deployment of overwhelming political power to open up frontiers, from colonial conquests that destroyed and transformed indigenous rights systems, to the contemporary expropriation of genomes’. The instruments, and, by extension, the manifestations and effects of violence, are shaped by the forms of power that operate them. Violent geographies are ‘disparate, protean and variegated’ as its manifestations can be ‘exceptional’ and spectacular or invisible and insidious (Springer, 2012, p. 136).

In military doctrine and in much research on COIN, the terms ‘pacification’ and ‘counterinsurgency’ are often used interchangeably (see for example Belcher, 2012; Brock & Dunlap, 2018; Dunlap, 2019; FM3–24, 2006, 2014; Galliéni, 1900a, 1900b; Galula, 2002, 2006). But work in Anti-security politics (Manolov & Rigakos, 2014; Neocleous, 2011, 2013), critical pacification theory (Rigakos, McMullan, Johnson, & Özcan, 2009; 2016) and the phenomenology of violence (Baron et al., 2019) offer intriguing and radical re-conceptualizations of pacification that set it apart from common usage and from COIN. Anti-security and critical pacification theorists consider pacification, defined as the need to ‘secure insecurity’, as fundamental to the social – and, we argue, socio-natural – relations of capitalist modernity, and aim to enact a radical, critical and transdisciplinary politics to ‘displace the ubiquity and reach’ of the liberal security discourse (Neocleous, Rigakos, & Wall, 2013; Neocleous & Rigakos, 2011; Rigakos, 2011, p. 63).

Drawing on anarchist and postcolonial thought, Baron et al. (2019:

5), see pacification as an invisible security architecture that operates as a naturalized and internalized regime of compulsion or domination. While direct forms of violence correspond to ‘compulsory power’ and indirect violence to ‘institutional and structural power’, pacification, though ‘backed’ through the exercise of other forms of violence, operates primarily through ‘productive power’ and produces the elements of liberal ‘peace’ and ‘stability’ – securing the insecurity – that is so necessary to the contemporary world order. It follows that structures of order create and expand spaces and sites of pacification, not limited to spaces of ‘liberal capitalism, colonialism and the postcolonial aftermath’ (Baron et al., 2019, p. 6). Resonating with anti-security’s notion of ‘securing insecurity’ discussed above, they suggest that ‘the hallmark of pacification is that the structures of domination ensure that resistance in the form of direct violence against this order is less frequent’. In other words, episodes of ‘spectacular’ violence reveal breakdowns or weaknesses in pacification’s security architecture, or situations in which pacification operates on a terrain that may always exceed its capacity.

This foregrounding of pacification is particularly important to our analysis because it emphasises the centrality of histories of domination – of both nature and of society – in shaping contemporary security architectures as well as terrains of struggle (Neocleous & Rigakos, 2011, p. 18). Rigakos (2016: 27) theorizes pacification as a stratified and historical process, involving dispossession, exploitation and commodification, that reflects capital’s need to create productive territories and to ‘permanently discipline’ people into their role as labourers and subjects conducive to exploitation. This is important for three main reasons.

First, relevant to questions of territorialisation and dispossession associated with conservation and extractive development, this calls for bringing in consideration of the geographic and political margins, not as empty or ungoverned spaces in need of taming, civilization or ‘development’, but as they have been historically produced. This requires recognition that margins are spaces that comprise both complex socio-natural relationships involving diverse actors and also ‘stacked claims’ (Hunsberger et al., 2017, p. 314), which exist in a state of institutional superposition which can lend a tense ambiguity to state-society relations (Graeber, 2007), and which are produced ‘in between’ and also in relation to the enclaves that have been secured through globalization (Ferguson, 2005, p. 379).

Second, centring history means centring logics of domination that justify and naturalize exploitation and violence. This includes the ways that racism figures in the construction of the ‘other’ – the production and projection of ‘insurgency’ – that creates and normalizes the risk, fear, danger and urgency – the sense of insecurity – by which ‘securitization’ is made to appear socially necessary. Othering isolates those whose rights, dignity or lives are inconvenient or who refuse the forms of development, *sensibilisation* or modernization offered to them, justifying disregard and neglect (Andreucci & Kallis, 2017, p. 96; Springer, 2011).

Third, turning to ‘nature’, we introduced the idea above that pacification is fundamental to enabling the socio-natural relations of capitalist modernity. Because of the evolution of environmental security and pacification’s objective of creating ‘productive territories’ as well as subjects, pacification should not just be relevant to understanding the role of violence in re-ordering relationships between individuals and social institutions. It should also be relevant to understanding technologies that re-order ‘nature’ – the material, biological, political, socio-cultural and affective relationships among people and things that are not people. This is an area where bringing political ecologists’ work on conservation and the neoliberalization and marketization of nature into dialogue with work on the phenomenology and geographies of violence is particularly insightful and relevant.

In recent years, policy responses to mounting crises of climate change, ecological degradation, economic volatility and growing inequality based in neoclassical economics and market environmentalism have involved coordinated action to create a global ‘green economy’ based on ‘green’ growth, in part involving the use of market-based instruments to economically value, account for and trade ‘natural

capital' and 'ecosystem services' (Sullivan, 2009). The logic behind 'nature marketization' is that making nature 'visible' in GDP will incentivise private resource management, and ultimately fund the conservation and 'repair' of biodiversity, the atmosphere and other life-supporting aspects of nature (Fairhead et al., 2012; Fletcher, Dressler, Anderson, & Büscher, 2018).

Offsetting is a sub-set of techniques, practices and assumptions that mirror broader trends in the marketization and commodification of nature. Following the ideas of Baron et al. (2019) and Rigakos (2016) introduced above, offsetting can be seen as a technology of pacification that capitalizes on rupture and disruption – both environmental disruption caused by industrialization and forms of dispossession – and acts through the productive re-working of relationships between people, institutions and non-human nature in order to transform damaged, threatened or unproductive nature into economically productive territory. Rather than producing commodities by growing crops or extracting minerals, offsetting introduces forms of surveillance and accounting, metrological regimes and commercial principles, into the management, valuation and social life of a landscape. Just as pacification 'secures the insecurity' in ways that can maintain or strengthen structures of social domination, offsetting 'secures the insecurity' of environmental changes by producing and performing the forms of 'sustainability' that facilitate continued industrial growth.

As with traditional protected areas, advocates of offsetting rely on the moral authority of mainstream Northern environmentalism to invisibilize violence, and particularly violent dispossession of rural populations. Backed by the institutional and structural power of states, international organizations and private sector partners, land-based offsetting likewise involves the transfer and formalization of property and/or resource management rights to investors, NGOs, environmental agencies or other recognized beneficiaries. In conventional conservation settings, dispossession is often justified through narratives of threat, degradation and the need for outside intervention for the sake of preservation (Huff, 2011; Huff, 2017, p. 6; Kull, 2002a, 2002b). Offsetting is different in that it operates on the productive principles of 'repair' and 'restoration' of nature rather than that of preservation. For offsetting to occur there must be the assumption from the outset that, within a delineated area, environmental degradation has occurred or will occur or progress without external intervention to prevent it. As an environmental mitigation technique, creating an offset involves undertaking 'additional environmentally beneficial activity' in one place 'in order to compensate for known environmental damage elsewhere' (Lovell, 2018, p. 223; Mahanty, Milne, Dressler, & Filer, 2012; Lohmann, 2012).

Political ecologists and critical geographers have pinpointed a variety of social and technical 'hazards' arising around the changes associated environmental offsetting (Awung & Marchant, 2017; Bennett & Dearden, 2014; Dooley & Gupta, 2017; MacKenzie, 2009; McAfee, 2012, 2014; Pelletier, Gélinas, & Skutsch, 2016; Peluso & Lund, 2011). Demonstrating additionality requires that some sort of quantifiable environmental benefit must be demonstrated above an assessed 'baseline' level of degradation. This is often done through restricting the use of resources at the local level or removing politically marginalized people from an area of protection, restoration or rehabilitation. Because of the changes in law and local resource governance required in offset-producing conservation or restoration projects, offsetting can permanently reconfigure forms of resource access, gender roles and labour institutions, customary governance institutions and the distribution of wealth and property within a population in complex, and often detrimental ways (Awung & Marchant, 2017; Pelletier et al., 2016). As in other forms of exclusionary conservation, these restrictions are frequently enforced through militarized measures, including fencing, surveillance and direct force, and by the criminalization of livelihoods.

Private conservation and offsetting are increasingly intertwined with the expansion and intensification of extractive activities in resource-rich countries in sub-Saharan Africa and are associated with contestation, resistance and conflict in local resource settings (Bond, 2018; Castree,

2008; Freslon & Cooney, 2018). Through policy initiatives, industry standards, corporate directives and marketing strategies, offsetting allows even the most polluting or ecologically destructive industries to 'greenwash' operations, or claim that they have 'neutralised' or even reversed forms environmental harm, such as carbon emissions, land degradation or biodiversity loss (Chiapello, 2015; Lohmann, 2012; Lovell, 2018; Mahanty et al., 2012). This allows industrial actors to appear responsive to, and thus less in need of, environmental critique, or even position themselves as industry leaders in 'sustainability' (Huff & Brock, 2017; Mol & Spaargaren, 2000).

4. From contested margins to green investment frontier

Since at least the pre-colonial dynastic period in the 16th century, and through successive regimes of rule, forests have occupied an ambiguous space in the elite imaginary of Madagascar, as simultaneous value reserves and as potential threats to order. Forest residence and shifting cultivation were rightly seen by pre-colonial elites not only as integral to peasant autonomy and livelihoods, but also as means of resisting authority and extra-local control (Kull, 2002b; Raik, 2007). Mirroring processes of enclosure of the commons in Europe in the early nineteenth century (Perelman, 2001, 2007), Merina King Andrianampoinimerina (1745–1810) banned the cutting of live firewood, declared all of Madagascar's forests to be royal property and allegedly forbade people from congregating in forests to 'forge clandestinely arms' lest they 'prepare a rebellion' (Raik, 2007, pp. 5–6).

This act of enclosure rendered forests as 'national space' and established the foundation for the systematic marginalization of forest-based communities in Madagascar by 'the state' in various iterations (Watts and Peluso, 2014). This was followed by increasingly exclusionary legislation in the mid-nineteenth century that criminalized forest settlement, forest-based cultivation and landscape burning, which is used to this day by smallholders to manage woodlands, prepare fields, control pests, and manage wildfires, but also in acts of protest and resistance (Kull, 2002b; Raik, 2007).

These policies are important as they strengthened and drew legitimacy from a set of powerful narratives that drew linkages between ideas about race, political legitimacy and environmental change in the pre-colonial period in Madagascar and are written into the founding justification of the Malagasy state itself.¹ In regard to race and political legitimacy, these are associated with the intertwining of territorial struggles between competing pre-colonial dynasties, endogenous caste divisions and hierarchical notions of racial difference that travelled with European intellectuals and missionaries to the royal halls of Imerina in the pre-colonial period. The London Missionary Society (LMS) in particular played a pivotal role in cementing the power base of the ostensibly 'racially' superior Merina monarchy based in the central highlands in the pre-colonial period, and in heightening tensions between Merina and others (often simply called *cotiers*) between the 1860s through the 1890s. Significantly, these dynamics shaped the lens through which Malagasy society and political hierarchies were

¹ The sixteenth through nineteenth centuries comprised a period of cultural, political, and economic transformation on Madagascar as polities across the island vied for territory, control of resources and trade with English, French, Arab, Dutch and Portuguese interests. State formation in Madagascar can be traced to a period of roughly fifty years between 1780 and 1830 when the political structure of Imerina in the central highlands region (currently Antananarivo Province) shifted from relatively small, lineage-governed polities to become centralized under a single ruling lineage that controlled a formal army, trade, agricultural production, and institutions governing labor conscription over large swaths of the island. These particular historical developments were intimately linked to imperialist competition, especially between the British and French, as well as to the ability of favored Merina bureaucrats to manipulate both foreign policy and local political symbols and institutions to their advantage.

interpreted and presented in the first transcribed and translated oral histories of the highlands (Corson, 2016, p. 35). These later became the basis for hegemonic 'official' histories of Madagascar as a whole.

The linkage of ideas of race and state legitimacy to understandings of environmental change relates to a parallel set of ideas shaping 'official' histories and intersecting with the governance trends described above. These include an emerging, flawed, yet powerful understanding of the social-natural history of Madagascar popularized by traveling European naturalists in the nineteenth and early twentieth centuries. According to this story, prior to recent² human settlement, dense forests filled with fantastic creatures covered the entire island of Madagascar, but have been subsequently lost to cutting, burning and erosion driven by an impoverished, irrational, destructive and rapidly growing peasantry (Huff, 2012, 2017; Salmona et al., 2017; also see; Humbert, 1927; Perrier de la Bâthie, 1921; Raik, 2007). In the French colonial period, this 'degradation myth' (Kull, 2002a) led to the institutionalisation of an authoritative narrative of environmental insecurity in which race, class, gender and environment-society relations intersect. This narrative in part legitimized continuing forest enclosure, forced labor, biological warfare and other brutalities under French rule (Jarosz, 2003; Kaufmann, 2001; Middleton, 1999). Rakotondrabe (1993) associates these dynamics with dominant political discourses in Madagascar that continue to justify vast disparities in power and wealth across Malagasy peoples and geographic regions today.

In this 'ecological *sitzkrieg*' ('slow war') narrative, which continues to be a strong influence in contemporary environmental and development policy, elite forms of value embodied in Malagasy forests, lands and soils are framed as under progressive assault from rural subsistence farmers and mobile pastoralists (Diamond, 1989; Huff, 2017). Malagasy peasants are represented as latecomers to the island, often in terms of invoking the language and imagery of invasive species, imposing themselves on fragile ecologies, resistant to rule, armed with primitive and dangerous productive technologies like fire, swidden horticulture and arguably more dangerous capacities for biological reproduction (Huff, 2017, p. 6; Kull, 2002a). Malagasy *cotiers*, whose livelihoods variably involve transhumant cattle grazing and forest browsing, small-scale forest extraction, shifting cultivation and periodic burning to clear small fields for subsistence production and to prepare pasture for livestock, are presented as a primary threat to forests, soils and by extension national economic development.

As in many parts of the world, the 'undeveloped' rural margins of Madagascar have become re-fashioned as frontiers of economic growth and 'sustainable' development in recent decades. This has happened through the restructuring of the Malagasy state in relation to economic production since the 1980s, and the institutionalisation of mechanisms of economic liberalisation – privatisation, deregulation and decentralisation – formalised in a series of synergistic legislative reform processes implemented since the 1990s. These included key sectoral reforms that pinned national aspirations of economic growth firmly to investor-driven natural resource exploitation through any means.

Sectoral reforms included the National Environmental Action Plan (NEAP), revisions to the Malagasy Mining Code, and implementation of the National Land Tenure Programme (see Huff, 2016). The reform process also involved cross-sectoral legislation such as the Framework for Environmentally Compatible Investments (*Mise en Compatibilité des Investissements avec l'Environnement*, or MECIE Decree) and the Investment Law. While the former is an environmental mainstreaming mechanism to align investments with conservation priorities, the latter opened up foreign investors' access to land through purchase or perpetual lease (Huff, 2016). These and other reforms have had profound

² Even though the timing of permanent human settlement of Madagascar remains debated by researchers, Madagascar has long been acknowledged as among the last major landmasses on Earth to be permanently settled by humans (Hansford et al., 2018).

implications for opening up Malagasy lands and resources to foreign investors whilst complicating governance in three primary ways.

First, multi-sector reforms have accelerated liberalisation, which decentralised and extended state bureaucracy through the proliferation of new quasi-private agencies. This has exacerbated jurisdictional confusion resulting from legal pluralism in the Malagasy land sector (Evers, 2013; Pronk & Evers, 2007) and the mining sector (Huff, 2016). Paradoxically, despite bureaucratic growth, waves of structural adjustment have been so successful in hollowing out state institutions that the government is often unable to implement even liberal legislation without substantial external funding and technical support (Sarrasin, 2006, p. 395). Second, and in parallel, since the early 2000s there has been an intensification of interest and investment in land and mineral resources by multinational corporations. The extractive sector has become the largest driver of national economic growth and in recent years multinational mining companies have made the largest foreign investments in Madagascar's history.

Third, through the implementation of the NEAP and establishment of the System of Protected Areas of Madagascar (*Système d'Aires Protégées de Madagascar*, or SAPM), Madagascar essentially created a new sector, 'the environment', and liberalized 'nature' (defined in terms of forests and biodiversity) by opening it to investors interested in revenue from activities like private conservation, ecotourism or pharmaceutical research (Huff, 2016). Madagascar's goal to expand extent of its terrestrial protected areas, a project at first referred to as President Mark Ravalomanana's 'Durban Vision' and that later became the SAPM, was meant to align Madagascar's national protected area strategy with the International Union for the Conservation of Nature (IUCN) target that a country needs to protect 10% of each of its major biomes (Corson, 2012). The spatial extent of Madagascar's protected areas (PAs) quadrupled rapidly, from 47 sites covering about 1.7 million hectares (ha) in 2003 to 122 sites covering 7.1 million ha in 2016 (Gardner et al., 2018). Due to poor capacity, the government resorted to promoting private and NGO management of PAs in addition to direct management and co-management.

Along with liberalizing policy reforms, a strong rhetoric on democracy, sustainable development, community-led conservation, and protecting the rights of poor and forest-dependent communities has infused high-level policy discourse in Madagascar in recent years. Even though up to eighty per cent of Malagasy people live in rural areas and are engaged in self-subsistence farming and pastoralism, rural Malagasy continue to have little power to influence forest and land policy, control resources and have little legal protection in the face of large-scale investment (Neimark & Schroeder, 2009). Likewise, micro-lending, agricultural commercialization programs and 'alternative' livelihood projects promise development to people who, often abruptly, find livelihoods criminalized or lose access to land and forest resources when a protected area is established, or when a mining or agricultural lease is granted.

Conservation and extraction are considered as complementary and cognate pathways for economic development in Madagascar. In fact, there is notable spatial and strategic overlap between the two, as new mining concessions are often granted near or contiguous to the boundaries and buffer zones of national parks and reserves or are accommodated by redrawing protected area boundaries (Cardiff & Andriamanalina, 2007; Huff, 2012). The implementation of the SAPM in particular involved the accommodation of mining interests in the boundary mapping and zoning on new protected areas (Corson, 2011).

Malagasy law does not mandate that environmentally destructive mining operations establish biodiversity offsetting programs, but biodiversity offsetting is required for Madagascar's inclusion in the Extractive Industry Trade Initiative (EITI) and has thus been adopted in the past few years by operators across the country to varying degrees, including Rio Tinto/QMM, Base Resources, World Titanium Resources, Ambatovy, Wisco, Guanomad, Exxonmobil and others (USAID, 2014). This results in the creation of new private conservation areas under

corporate social and environmental responsibility (CSR) directives or the transfer of funds to support the enforcement of PAs that already existed on paper but were not effectively enforced due to capacity constraints. These processes have thus ‘opened up’ natural resource governance to new powerful and often overlapping alliances and claims. This means that large-scale resource investments have unprecedented power to shape politics and life.

5. The socio-industrial geography of QMM

We now turn to the QMM case, which we present in a way that emphasises the complicated territorial and extra-territorial spatiality of the mining operation. To do this, we conceptualize the ‘resource environment’ (Fig. 1) in which QMM operates in terms of three primary but ‘overlapping zones of exclusion’ (Davidov, 2014, p. 33; Käkönen & Thuon, 2018, p. 2). We do this in order to highlight how forms of tactical violence and technologies of pacification work across the landscape of the operation. As we will explore in detail below, QMM’s concessions comprise what we describe as ‘territorially fixed’ spaces for mining, conservation and environmental rehabilitation, ‘non-territorial regulatory spaces’ formed by technical practices (Käkönen & Thuon, 2018, p. 2) associated with compensatory biodiversity offsetting, and what we introduce as non-territorial pacified development spaces formed through corporate social technologies (Rogers, 2012) operating through the institution of so-called ‘development gifts’.

QIT Madagascar Minerals (QMM) is a large-scale mineral sands project in one of the materially poorest and most ecologically sensitive parts of Madagascar. Since the mid-eighties QMM has been jointly owned as part of a public-private partnership (PPP) between the Malagasy government, which owns twenty per cent of the company, and *QIT Fer et Titane*, a Canadian subsidiary of Rio Tinto, which owns eighty per

cent (Rio Tinto, 2015). Starting in 1986, QMM undertook exploration along the east coast of Madagascar searching for heavy mineral sands. Following nearly twenty years of research and exploration, large, viable ore deposits were found in the Anosy region of Madagascar near Fort Dauphin at the sites of Mandena, Sainte Luce, and Petriky. Locally called *fasy mainty* (‘black sands’), they contain naturally occurring titanium dioxide in the form of ilmenite and rutile which is mined, exported and refined into a stark white pigment used to colour consumer goods from paint to toothpaste (Vincelette, Dean, & Ganzhorn, 2007).

5.1. Territorially fixed spaces of extraction, conservation and exclusion

QMM completed an environmental and social impact assessment (ESIA) in 2001 and received legal license to begin operations in 2005. In this same year, the Malagasy Government agreed to contribute US \$35 million from a World Bank Integrated Growth Poles project for the construction of urban infrastructure in Fort Dauphin and the new Ehoala Port to facilitate QMM’s local operations and exports (Seagle, 2013). The three mine sites, located at Mandena, Sainte Luce, and Petriky, are set to be mined sequentially using active dredge mining under a 100-year lease from the Malagasy government (Gerety, 2009; Rio Tinto, 2014; Seagle, 2009, 2012, 2013).

Located just north-east of Fort Dauphin on one of the most well-maintained roads in the country, the fenced and guarded Mandena extraction site comprises approximately 2000 ha. Of this, 230 ha are set aside for the Mandena conservation area, promoted as a ‘biodiversity gene bank’ for future restoration activities in the area and further advertised by QMM as a destination for ecotourism (Seagle, 2009). Similar conservation areas were allocated at the not-yet-active Sainte Luce and Petriky mine sites, and conservation areas at all three sites have since been designated as IUCN Category 5 Protected Areas by the Government of Madagascar and incorporated into the SAPM (Rio Tinto, 2016).

Against the backdrop of a spectacular public relations strategy oriented around claims of social, environmental and development benefits for the region, QMM began operations in 2005 with infrastructure development, securing leases and, backed by the government’s threat of force, removing local smallholders from approximately 6000 ha (23 square miles) of territory in rural southeast Madagascar for mining, port construction and private conservation areas. During the port construction phase alone, hundreds of villagers were displaced from their homes, their land forcibly taken under the government’s land acquisition process called Declaration of Public Utility (*Déclaration d’Utilité Publique*, or DUP) to make way for the mine. QMM documented that 498 ‘Project Affected Persons’, or PAPs, lost land, housing, fishing and agricultural production due to expropriation for the mining project (International Advisory Panel, 2011). They were rehoused without land of equal value, against World Bank regulations (Harbinson, 2007a; Seagle, 2013). Many reported receiving a fraction of the compensation promised to them, in a process that lacked transparency and that did not reflect the current or intergenerational value of the land lost. Uncompensated people were instead invited to participate in new livelihoods projects that have been driven by ‘sustainability’ and public relations agendas directed by QMM (Seagle, 2012). All of this has caused serious tension in the region and widespread resentment against the mining company.

Active extraction at the first site, Mandena, began in 2009, and mine managers contend that at peak capacity it could produce as much as two million tonnes of unrefined ilmenite ore, worth about USD 200 million per year, to be exported for processing abroad (Seagle, 2013). Despite QMM claims that they have paid out almost USD 4 million in compensation to people who were negatively impacted by the Mandena mine, by December 2009 there were reportedly 563 outstanding complaints about compensation lodged with QMM (International Advisory Panel, 2011). People complained of inadequate or zero compensation for loss of land, crops and fishing, accompanied by allegations of fraudulent accounting. Resettled families complained about the very poor quality of

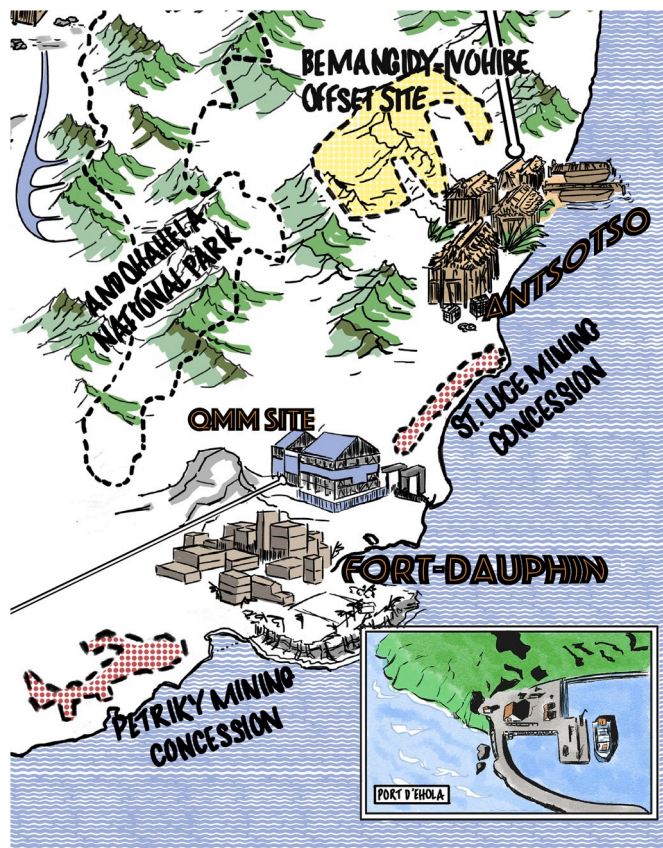


Fig. 1. The QMM resource environment in south-eastern Madagascar. Illustration by Tim Zocco, 2019.

the housing, which needed frequent repair. Unfulfilled demands resulted in continuing protests in January 2010, including roadblocks on access roads to the mine. The then Provincial Governor (*Chef de Région*) was keen for the failed compensation process to be investigated but this was impossible as the paper trail of payments and receipts had disappeared.

In addition to the direct effects of mine establishment, including forced evictions and exclusions through DUP processes, 344 Antanosy fishermen had their livelihoods and safety affected due to construction of a breakwater for the new port. These fishermen were not consulted when QMM selected the port location and were displaced from traditional boat launching sites. The new site that they were expected to use was unacceptable because it was very dangerous. Boats were destroyed and significant income was lost since fishers could not launch boats in bad weather from the new site. The fishermen fell outside the formal Malagasy DUP process that was applied to compensate displaced and resettled families classified as PAPS, so they were initially overlooked and excluded from recompense for their livelihood losses; their case was regarded subsequently only after disruptive public protests.

The imposition of a '*dina*', an ostensibly 'customary' form of contract that has been redesigned and set up to control locals' access to the Mandena conservation area, resulted in criminalization and fines for forest-dependent people faced with the choice between prohibited extraction of forest resources or going without food. Some locals say they have lost out to conservation areas, not only due to loss of access but also because these ostensibly 'community-based' arrangements place an additional management demand on them with insufficient remuneration (Harbinson, 2007b, p. 14).

QMM has seen a succession of protests and general strikes since mining at the Mandena site went live in 2009. Hundreds of Malagasy people from around the region have been involved in resisting evictions and involuntary relocation; seeking compensation and reparations for lost lands and livelihoods; protesting environmental despoliation; opposing the destruction of sacred forests and unauthorized removal of ancestral tombs; mobilizing against exclusion from ancestral forestlands and denouncing loss of forest access.

In 2010, inspired by oral testimonies collected through a collaboration between the UK-based NGO Andrew Lees Trust (ALT-UK)³ and Panos London, UK-based human rights lawyer Leigh Day assisted one thousand villagers to bring a class action lawsuit against Rio Tinto (Curtis, 2016). However, the company capitalized on legal delays and the fragility of the situation and made quick cash offers directly to over half the Malagasy claimants. Villagers who were offered payments were understandably more ready to have money in hand than await outcomes of an uncertain process happening thousands of miles away that was difficult for them to see, follow and understand. QMM thus managed to neutralize the class action lawsuit; with under half of the claimants remaining, Leigh Day was forced to suspend it. As in the initial compensation process, there was a lack of transparency about how these sums were calculated and a lack of a payment accounting trail.

From 2011 through 2013, a variety of domestic and international NGOs and researchers offered recommendations to rectify QMM's flawed compensation and communications activities, but this advice was ignored. A particularly large protest occurred in January of 2013, in which hundreds of lightly armed protestors, many of whom had experienced eviction from lands now controlled by the mines, blocked roads and trapped employees (including the chief of Malagasy operations) in

the mining site. After the company threatened to withdraw from all operations in Madagascar, the protest was eventually put down through military force (Seagle, 2013).

New protests have erupted since 2016 following additional land acquisitions in Mandena. Locals report that leases were once again sold below their value, at just 500 Malagasy Ariary per square metre (about USD 0.15 at the time), against the State Commission approved 3000 Malagasy Ariary per square metre (about USD 0.88). The sales were coupled with the enticement of secure land tenure in the future, when the plots would be formally titled and returned by QMM to the prior owners after mining. However, in addition to inadequate compensation, no consideration was given to short- and medium-term livelihoods and food security issues, despite the obvious dependence on natural resources for subsistence by rural people in this region. In 2018, locals took to the streets to protest and blocked access roads to the mine site. QMM's response was to take legal action resulting in the imprisonment of protestors (CRAAD-OI & TANY, 2018).

5.2. *Extra-territorial regulatory spaces: compensatory biodiversity offsetting and exclusionary control of liberalized nature*

The QMM operation is not simply a mine; among its many activities it involves areas set aside as private conservation areas, ecological rehabilitation areas and biodiversity offsetting sites. QMM uses a compensatory offsetting model in which damage to biodiversity caused by the mining activities is ostensibly neutralised through technical measures that link spatially distant conservation and mining areas, but also enmesh local, national and international actors and organizations, public and private spheres and governance across economic sectors.

At the International Union for the Conservation of Nature's (IUCN) World Conservation Congress in Bangkok in 2004, representatives of Rio Tinto historically announced that it 'aims to have a net positive impact on biodiversity by minimising the negative impacts of its activities and by making appropriate contributions to conservation in the regions in which it operates' (Turner, 2014). This is the central selling point behind Rio Tinto's claims to be a pioneer of so-called 'sustainable mining' (Seagle, 2012). Rio Tinto's cumulative global strategy, which has since been scaled back from a 'corporate-wide commitment' to 'allowing sites to tackle their own contexts on a case-by-case basis' (Rio Tinto, 2017), uses the 'Net-Positive Impact', or NPI, offsetting methodology for demonstrating additionality, which the company claims involves a number of methods meant to ensure that the company's activities result in a higher degree of positive than negative environmental impact in the places where their mines are located.

Acquired through an agreement with the National Office of the Environment (*Office national pour l'environnement*, or ONE) and geographically separate from the mine sites, the company created, biodiversity offsetting sites totaling an approximately 6000 additional ha at Sainte Luce, Mahabo and Bemangidy (part of the Tsitongambarika Forest Complex, or TGK III). These sites are likewise designated as protected areas. While financially supported by QMM to realize its corporate 'Net-Positive Impact' biodiversity strategy, they are administered by the government and NGO partners under a variety of arrangements (Kill & Franchi, 2016; Rio Tinto, 2016). They are also supported by the International Union for the Conservation of Nature (IUCN), which entered a formal partnership with Rio Tinto in 2010 after nearly ten years of less formal cooperation (IUCN, 2019).

Local and broader concerns about environmental impacts of extraction and the loss of biodiversity in this fragile setting have been countered with erroneous or misleading claims that the nearly 6000 ha of littoral rainforest facing clearcutting in mining zones would vanish anyway within twenty years due to 'tavy' (slash and burn agriculture) and unsustainable use of forest products (Seagle, 2013, p. 1). Company literature and scientific articles (authored by paid consultants of QMM) on the environmental impacts of the operation and the importance of its conservation activities reproduce a generalized degradation narrative

³ This extensive collection of oral testimonies, collected among people who have been directly and indirectly impacted by the establishment of the QMM mine, by the mine itself or through loss of land or forest access, is titled *Madagascar Voices of Change: Oral testimony of the Antanosy people* (published by the Andrew Lees Trust & PANOS London, 2009). It is free and available for download at: <http://andrewleestrust.org/Reports/Voices%20of%20Change.pdf>.

(see Huff, 2012, 2017) that attributes loss of forests, biodiversity, and agricultural productivity to the poverty, population growth and irrational subsistence practices of rural Malagasy peasants. For example, according to Rio Tinto (2014), 'the Anosy region has experienced significant deforestation since at least the 1950s due to charcoal production and unsustainable slash-and-burn-cultivation'. Vincelette et al. (2007: 3) write that '[m]ost of the rural population ... relies on forest resources during times of food shortage but also year-round for fire- and construction wood. This led to the destruction of a substantial proportion of the littoral forest ecosystems over the last 50 years'.

According to Seagle (2013: 2), this historically produced discourse of alterity positions 'local land users as the "environmental Other" – ecologically destructive, trapped in the past, isolated from markets, and in need of being trained (through Rio Tinto/QMM's development apparatus) to be more sustainable'. This literature suggests that 'background rates' of forest loss and general degradation eclipse the mine's impacts and can, in fact, be reversed through its NPI offsetting approach. In addition to conservation and rehabilitation activities at mining sites, QMM claims to be 'investing in biodiversity offsets at several forest sites in the region, with the aim of reducing high background rates of deforestation' (Rio Tinto, 2014).

Methods for achieving NPI can be controversial due to the risk of social, ethical, and technical hazards, even among advocates of market-based conservation (Bull, Lloyd, & Strange, 2017; Gardner et al., 2013). NPI methods often involve a combination of strategies of compensatory offsetting and conservation in the 'repair' mode (Huff & Brock, 2017). In extractive settings, NPI methods can involve creating protected areas in one place to compensate, through substitution, for biodiversity that has been destroyed in a separate mining site. This is carried out through a form of marketization in which target areas undergo a quantified process of abstraction to create standardized units that can be 'substituted' across time and space on balance sheets (Bakker, 2005). The rendering of substitutability is combined with methods that 'demonstrate' prevention of 'future losses', usually through a combination, as in this case, of eviction of human residents, restricting access to resources, or Payments for Ecosystem Services (PES) schemes that pay members of local communities to forego use of particular resources or to carry out particular conservation and/or restoration activities. Spatial offsetting, through ostensibly preventing assumed future loss in one area at a calculated rate that exceeds destruction in another area beyond a set cumulative 'baseline', allows a company to claim that their activities enhance biodiversity or other ecosystem services – thus achieving 'Net-Positive Impact' – regardless of the actual destruction wrought at the mining site (Anstee, 2008; WBCSD, 2015).

QMM's claims to NPI are highly problematic. Not only do offsetting sites involve different types of forest than have been destroyed by the mine ('out-of-kind' offsetting), but they draw conclusions about 'background rates' of deforestation based on a flawed methodology that treats rates of forest cover change as uniform or constant over time and space when in reality 'rates' of forest cover change are very specific in both time and space. By Rio Tinto's own admission, the Tsitongambarika Forest Complex (the focal area for offsetting, comprising three forest sections called TGK I, TGK II and TGK III):

... does not experience some of the same pressures as other forests in Madagascar; there is almost no charcoal making and little exploitation for timber (at least not in the east). In general, fuelwood is harvested around the villages and charcoal is produced mainly from the dry forests and plantation stands. As a result, there is little degradation—forest is either pristine or has been cleared entirely for tavy.

Olsen, Bishop, & Antsee, 2011, p. 9

High 'baseline' calculations for the TGK presented by QMM are in fact generalizations based on averages of deforestation rates assessed in different places, at different time spans and across a very large and differentiated region in terms of actual drivers and amounts of forest

cover change (Olsen et al., 2011). Alarmingly, the Bemangidy biodiversity offset area (TGK III) discussed below was described in a report by QMM's own researchers (Olsen et al., 2011, p. 5) as in 'very good condition', showing 'few signs of human disturbance except for small areas of clearing along the edges,' at the time that the protected area was established. This would indicate that, at the time of the assessment, it was not under threat of deforestation by the people who depended on it for food and other forest products.

Despite company claims to equity, consultation and concern for locally suitable alternative livelihoods, the implementation of QMM's biodiversity-offset programme has been plagued with massive failures and has exacerbated suffering among affected populations living far from the mining activities being offset. These failures are particularly related to how achieving NPI has been approached in QMM's biodiversity offsetting strategy, which has been implemented with the support of Asity, a local NGO operating as a subsidiary of Birdlife International.

For example, villagers living in Antsotso and impacted by biodiversity offsetting at Bemangidy in the Tsitongambarika Forest Complex (TGK III) report that QMM did not explain to them that they were involved in a corporate offsetting program when they were asked to participate in tree planting and were excluded from accessing the forest, measures intended to mitigate for biodiversity loss where Rio Tinto are actively dredging for ilmenite (Kill & Franchi, 2016). Constrained resource access due to the biodiversity offsetting measures has seriously impacted food security among Antsotso's residents, forcing them to abandon rich fields near forest areas and instead grow manioc in inferior sandy soil next to the sea at great distance from their village.

These changes have reduced locals' production capacity to a level insufficient to maintain subsistence, and people are suffering from hunger. At a public meeting convened by the National Office of the Environment (ONE) in the village in 2017,⁴ concerned residents were told by ONE that they could expect no compensation for their losses because the offset was part of a national conservation programme, a state driven initiative in which QMM were only partners. In other words, ONE's expressed position (echoed in conversations with QMM employees as in mid-2018) was that residents' claims to compensation had no basis because their livelihood activities were illegal in the first place, and further, regardless of company actions or profits resulting from offsetting, QMM had no responsibility nor culpability in the situation.

At the same time, ONE, in separating out its conservation responsibilities from the impacts of the offsetting program, told villagers they would have to talk to QMM about their problems, directing them towards co-operation with the company and away from contestation about land and forest rights. Taking advantage of jurisdictional confusion associated with the public-private partnership, QMM has thus been able to advance projects for residents on its own terms, such as bee keeping and pepper growing, that do not adequately replace the community's subsistence losses, while villagers' actual demands to QMM for assistance (submitted formally to QMM in January 2018) (ALT-UK, 2018) have been ignored.

5.3. Pacified development spaces: Rio Tinto's 'development gifts'

QMM has gained and maintained an extremely high level of political control in Anosy, despite resistance, with the promise of the gifts of development. QMM claims that it has a careful consultation process involving members of local populations, and has aimed at building what they call 'community ownership' on the basis of the idea that 'benefits and tangible results will influence more significantly the trust between

⁴ From transcripts of a meeting between ONE convened and members of the Antsotso community on 6 October 2017, which was recorded by local NGO *Trano Aro Zo* (TAZ) at the request of Antsotso residents. For further information, see <http://www.andrewleestrust.org/blog/?p=530>.

QMM and its host communities' (Rio Tinto, 2016, p. 26). Along these lines, QMM claims to have worked to address poverty in the Anosy region by promoting sustainable fisheries, distributing seeds and advocating for the local production of rice, manioc, yams, livestock and handicrafts. The company claims local development gains through infrastructure improvement and through partnering with civil society organizations on projects focused on job creation and community-based health programmes.

The Social Engagement Program has also involved educational initiatives, including the launch of the Rio Tinto Scholarship Program for Education (RISE) in partnership with NGO Pact Madagascar, development of 'support courses' in partnership with local schools and a youth leadership training program (Centre for Social Responsibility in Mining, 2015). Partnerships with other service providers such as the health service of the District (SDD), WaterAid Madagascar, ASOS, and several UN agencies including UNICEF, UNFPA, WHO have provided trainings in health and sanitation (Mining Health Initiative, 2013). With the Office of the High Commissioner Human Rights, QMM claims to have delivered trainings on international humanitarian principles and human rights to Malagasy police and military (Rio Tinto, 2018). It claims the successful and equitable resettlement of households and replacement of livelihoods unavoidably disrupted by mine-related activities (Rio Tinto, 2016).

A number of international research, environmental and development organizations support QMM's biodiversity offsetting approach. Other partners include Malagasy and international universities, research institutes, civil society organizations, and high-profile organizations such as Bird Life International, the Wildlife Conservation Society (WCS), Conservation International (CI), Flora and Fauna International, Kew Botanical Gardens, Missouri Botanical Gardens and USAID (Kill & Franchi, 2016; Rio Tinto, 2016). Rio Tinto's partner organizations praise the company's scientific approach to biodiversity offsetting and portray the company as an ethical, 'model' mining company that goes above and beyond legal requirements for addressing social and environmental issues (Seagle, 2009, p. 15).

QMM's claims of 'social license to operate' gained through diligent local consultation, local development benefits, the empowerment of local populations and ecological improvement, reported to media or in glossy brochures, seem to issue from and resonate primarily with outsiders, unfamiliar with the local context and with little comprehension or attention to local perspectives, histories, desires, experiences and politics. QMM's Social Engagement Program has proved not to be in good faith, as evidenced by the fact that consultation and compensation processes are woefully insufficient to address losses to livelihoods and resource access. Communication has been 'flawed' (even by the company's own admission⁵), and the company has failed to include marginalized members of local populations or those with specific livelihood interests (e.g. coastal fishermen) when making strategic social and technical decisions (Andrew Lees Trust & PANOS, 2009; Kraemer, 2012; Seagle, 2012; Smith, Shepherd, & Dorward, 2012).

While promises of local jobs and enhanced economic opportunities held much opposition at bay ahead of mining permissions being granted, early promises of local skills training and employment have gone unfulfilled, with the majority of jobs going to educated and already skilled outsiders from the national capital or to foreign contractors. Widely perceived unfairness in QMM's hiring practices led Antanosy workers to join a campaign against Rio Tinto through an international union movement (Industrial, 2015). Furthermore, from the start-up phase in 2005, the cost of living increased in the regional capital, Fort Dauphin, and food and house rental prices spiked with the arrival of mine workers from other regions and abroad (Harbinson, 2007a). Coupled with

⁵ A Rio Tinto executive conceded this in 2012 during a discussion on QMM communications during meetings with the 2011–2013 NGO Liaison Committee to Rio Tinto, UK.

increased cost of living, the failure to provide promised, long-term local employment over the following decade has created a profound sense of frustration and disappointment and has been central to repeated complaints and protest actions and has been the cause of deep resentment towards QMM and a loss of initial trust in the company.

In July of 2018, a high level QMM staff member was overheard in public by one of the co-authors of this article dismissing local grievances with the company by complaining that Antanosy people 'just don't want the gifts of development we can offer'. But QMM's development 'gifts' to the region are self-serving. For example, the RISE program's scholarships have provided bursaries for 800 students but resulted in the closure of an important grassroots educational training centre, *Centre Ecologique Libanona*, developed by Malagasy academics and administrators over more than two decades to deliver higher education opportunities and university accredited programmes in the region. The centre had historical associations with international groups and researchers who had contested the mine and its disappearance. Its closing is representative of wider suppression of local symbols, linkages or networks of independent enquiry and resistance.

QMM claims to have improved regional health services, promoted HIV/AIDS awareness and to have promoted respect for human rights and children. However, it has never clarified whether funding for these trainings was actually provided by QMM or the agencies involved (although services 'in kind' rather than direct funding have long been a preferred approach by QMM). The company claims responsibility for electrification, infrastructure improvement, water and sanitation, and urban beautification but much of the cost of this has been supported by government development funding from the World Bank's Integrated Growth Poles programme. Moreover, these services and infrastructural improvements are only widely accessible within the small city of Fort Dauphin. The city itself has become a sort of international development enclave town, full of educational programs, social clubs, amenities and luxuries enjoyed by social elites, government employees, aid workers, company contractors, international NGO volunteers and foreign holiday makers but bears little resemblance to the surrounding region or most of the country.

6. Historical continuities in engineering extraction

It makes sense to view QMM through the lens of landscape as it is not simply 'a mine' in practice. A landscape is always changing, and at any moment can represent a mixture of geological and ecological processes, land uses, institutions and 'stacked claims' in superposition (Hunsberger et al., 2017, p. 314). The *terroir* of extraction in southeast Madagascar has come about due to a number of intersecting circumstances: historical violence and class-based exclusions; regional geology and the distribution of sub-surface minerals; regional biogeography; deep histories of landscape use that have patterned the extent and location of forest areas, PAs and rural settlements and livelihoods; liberal policy reforms; modalities of imperialism, including the rise in prominence of the 'green economy' discourse; the territorial expansion of Madagascar's system of protected areas (SAPM) and QMM's conscious decision to integrate its operation into the 'long-term regional development plan' rather than establishing 'an enclave industry' (Rio Tinto, 2016, p. 11). QMM's spatiality is characterised by the intersection of different, socially exclusionary control schemes and conflicts. This spatiality – the dynamics, or production, of this landscape – can be more fully understood in terms of pacification lens than through conventional sectoral approaches to governance or critical engagements with counterinsurgency theory alone.

'Official' history has been an incredibly powerful instrument of governance since its formalization in the nineteenth century and continues to play a major role and in policy discussions today. The creation of the 'nation' cannot be separated from the normalisation of racial and class-based hierarchy, nor from the historical construction of the 'political forest' outlined by Peluso and Vandergeest (2011), where – real or

imagined – members of a subversive and dangerous sub-class were seen as both threats to the property of the state and insurgents against the civilizing project associated with state-making. Influenced by degradation myths and the deep Euro-American cultural salience of neo-Malthusian ideas, the framing of materially poor, rural Malagasy people as intruders and environmental destroyers has become institutionalized and continues to be reinforced in scientific and popular narratives of environmental change in Madagascar. These range from Diamond's (1989) highly problematic use of the 'sitzkrieg' metaphor equating human settlement of Madagascar to both a violent invasion and a war of attrition accomplished through 'massive destruction of habitat' and species extinction (see critique Huff, 2017) to popular media depictions of the country with 'a pierced heart' (Draper, 2010), its 'red earth bleeding into the sea' (Morrell, 1999, p. 63), a 'microcosm for the end of times' (Allen, 2015).

Under French colonial rule (1896–1960) these representations legitimized the establishment of the first generation of restrictive protected areas in Madagascar and a series of decrees that placed strict restrictions on forest-based livelihoods. As Kull (2002b: 2) observes, resistance to domination in rural Madagascar has hardly been a simple matter of peasant mobilization and protest, but instead is often a much more subtle praxis and 'multifaceted livelihood-oriented strategy that grows out of the political-ecological context as well as out of the contradictions inherent in state domination'. Rural populations, lifeways and even landscapes resistant to rule were thus viewed by colonial authorities as undisciplined and ungovernable and inherently threatening to the primary goal of value extraction, tangled into a state of 'conjoined human and ecological disposability' warranting suppression through any means (Nixon, 2011, p. 4).

In recent years, many researchers and journalists have taken up the discourse that the past thirty years or so represents an era of 'new' wars involving 'low-intensity conflicts' and 'irregular' or 'asymmetric' warfare, including counterinsurgency (Kaldor, 2013; see discussion in; Winter 2011, p. 489). However, while there have been important changes, particularly in battlefield and surveillance tech, so-called 'new' forms of warfare have deep roots in European and American colonial and post-colonial projects of post-conquest pacification, 'consolidation' and territorialisation (Cassidy, 2006; Dunlap & Fairhead, 2014; Ferguson, 2014; Lackman, 2006; Peluso & Vandergeest, 2011; Ybarra, 2012). The apparent doctrinal renaissance of counterinsurgency in the US, for example, has drawn heavily on the particular work of David Galula (2002; 2006), a French officer and writer who served in Algeria in the late 1950s and conceptualized COIN primarily as a form of counter-revolutionary warfare. Galula's works, however, took many 'theoretical lessons for granted that had been distilled from more than a century of practice' in the context of French colonization (Rid, 2010, p. 728). This glossing obscures the histories of experimentation with forms of environmental and biological warfare alongside social technologies and 'pacification' tactics used in broader colonial campaigns aimed at consolidation of control over people and territory. This includes refinement of tactics that, by the end of nineteenth century French colonial operations in Madagascar, gave rise to a mature, multifaceted and transformative French counterinsurgency doctrine (Rid, 2010, p. 731).

In Madagascar, producing the colony involved deployment of social technologies to establish inclusionary control, but also force to subdue and exclude both active and tacit resistance to colonial territorial expansion, labour exploitation and value extraction. Pioneered in the French colonization of Madagascar, the *Tache d'huile* ('oil-spot') or Gallieni-Lyautey Method, was implemented and refined under Military Governor, and later Governor General Joseph Gallieni (1896–1905) and his protégée Hubert Lyautey (1897–1902). *Tache d'huile* favored a 'light-handed' 'psychological' approach that privileged political action over direct military intervention to isolate opposition and achieve progressive territorial control (Betts, 2005, pp. 115–116; Venier, 1991). Under this policy, the French adapted colonial administration to local

institutions thus fostering indirect rule and instituting a characteristic colonial bureaucracy. French forces selectively armed frontier villages to divide rural populations and used 'creeping' progressive occupation through establishing successive frontier military outposts. Using local collaboration and development 'gifts' alongside an ever-present threat of forced labor, imprisonment or worse were all important means of establishing dominance and politically neutralizing 'unusable' local elements at the ground level (Griffin, 2009).

As well as justifying such social rupture in the service of producing and reproducing colonial authority during progressing occupation, the othering narrative of *cotier* 'insurgency', broadly applied to Malagasy peasants and their social ecologies, was taken up and weaponized in efforts to transform the island into productive territory. In this process, 'exceptional' violence – violence that would normally be viewed by society as an abhorrent violation of the rules – was transformed into 'exemplary' violence – the violence that makes the rule (Springer, 2012). For people who declined the 'gifts' of colonization, this legitimized a brutal regime of suppression through police and military force – the criminalization of livelihoods, property seizure, razing of villages, forced labor, forced settlement and worse. This resonates with the reflection of, following Mbembé's (2003: 40) reflection on the colony itself as a frontier space 'where the violence of the state of exception is deemed to operate in the service of "civilization"' (see also Cavanagh & Himmelfarb, 2014, p. 3).

In a stunning example of this sort of brutality, in 1899 then-Governor General Gallieni, became concerned that the vast unconquered south of the country risked becoming a center of rebellion. The south was inhabited by mobile pastoralists who generally expressed little desire to be part of the colony and had created an extensive pastoral ecology and independent economy based around prickly pear cactus (various species of the genus *Opuntia*, introduced in the 1700s, and called *Raketa* in Malagasy). At Gallieni's order, cochineal insects, a cactus parasite, were shipped to the south and released. The parasite devoured *raketa* at great speed, ushering in a killing famine as they spread across the country destroying pastoralists' preferred species that were the basis of the indigenous cattle complex, used for fencing, cattle fodder and human food. The famine devastated whole regions, causing demographic displacement and killing tens of thousands – if not millions – of Malagasy people and their livestock (Kaufmann, 2000, 2001). During the anticolonial rebellion of 1947, an estimated 100,000 Malagasy were executed, tortured, starved, or driven into the forest to later die of starvation or at the hands of French forces and collaborators (Cole, 2001).

Through 'official' history, the logics of exemplary violence and resource warfare have travelled and co-evolved with Malagasy state institutions from the pre-colonial period to the present day. This has normalized the exercise of forms of exemplary violence that are widely associated today with engineering value extraction, securing the margins and producing frontiers 'from above' – dispossession through large-scale resource enclosure, the criminalization of livelihoods, property seizure, forced settlement and resettlement, exploitation through denial of human rights and forced labor, as acceptable for the 'greater good'. In the QMM case, pacification operates as and through means of securing the insecurity of the margins. Corporate counterinsurgency tactics have created ruptures in society and socio-natural relationships, meant to achieve 'inclusionary' control over populations and resources and undermine capacity for resistance by consensually integrating people into a hierarchical power system in which conflicts could be efficiently managed and pathways of resistance could be better hidden or disincentivized (Cohen, 1991, p. 221; Dunlap & Fairhead, 2014).

But pacification remakes the development space, re-ordering social life and nature to align with the preferences and expectations of policymakers, market actors and shareholders. It brings acceptable and more manageable forms of order to what, from above, are viewed or framed as otherwise insecure, undeveloped, ungoverned and unproductive spaces of threatening self-reliance (Duffield, 2010; Hanssen, Rouwette, & van Katwijk, 2009). QMM has capitalized on existing forms

of discrimination and stereotypes associated with the historical narrative of environmental insurgency to create a justification for green grabbing and, at the same time, has capitalized on having a useful foil, a vast category of underpowered people to blame when company strategies do not work or go wrong.

QMM has used this 'othering', working with and through local and national partners, to close down political space for public contestation and de-legitimise claims to damages or compensation. This is pacification working, through time, through the depoliticization of contestation and conflict. When a 'gift' is rejected or resisted, it is not because it was inappropriate, poorly considered or detrimental to people's wellbeing, but because Malagasy peasants are variably ignorant, ungrateful, greedy, unreasonable or stubborn. When depoliticization is not sufficient and dissent cannot be ignored, QMM resorts to the use of state police and military forces, legal manoeuvring, strategic pay-outs and blocking speech against the mine. Crucially, as in the example of economically dispossessed residents of Antsotso, QMM blurs the lines between the public and private spheres embodied in the partnership itself in order to create jurisdictional confusion among claimants around ruined livelihoods and poor compensation. While not all of these maneuvers are always mutually beneficial or agreed upon among parties to partnership, territorial control, social control and revenue generation create a constellation shared interest. Consequently, the alliance – the 'real' QMM – is much stronger than the sum of its parts.

Multinational mining companies, including Rio Tinto subsidiaries (see for example Kapelus, 2002; O'Connor & Montoya, 2010), often rely on social technologies like community engagement, environmental projects, social programs, and infrastructure development under CSR directives as the proverbial 'carrot' to subdue opposition alongside more visible and direct forms of 'hard' violence (Lasslett, 2014; Rosenau, Chalk, McPherson, Parker, & Long, 2009). While these are part of corporate counterinsurgency tactics, the broadened approach to pacification helps account for the fact that the violence of enacting security and order often defies the 'soft' and 'hard' dichotomy. Rather, the range of social technologies, policing powers, social violence and military force involved in pacification, now as in the past, are better considered as aspects or dimensions of the unity of imperialist class violence or 'social war' (Baron et al., 2019; Dunlap, this issue; Neocleous & Rigakos, 2011, p. 16).

Making the 'order' of the world more visible, as we have said, reveals that the violence of the 'state of exception' is in fact unexceptional, normal and permanent in relation to the operation of power (Agamben, 2005; Foucault, 2003, pp. 61–62; Neocleous & Rigakos, 2011, 2013; Mbembé, 2003; Neocleous, 2006; Springer, 2012). This idea helps to underscore the fact that violence is not natural, senseless or inevitable. It is, rather, political, relational and contextual. Its instruments can be conventional weapons or the invisible weapons of coercion, representation and exclusion that operate through vast disparities in power. In the QMM case, these involve promises unfulfilled, disinformation, inducement of hunger, political exclusion, neglect, threat, gaslighting, dispossession and social disarticulation that shape the challenges people encounter, the choices people can make and the forms that 'reactions from below' such as resistance and refusal can take.

7. Conclusions

'Security', and likewise 'development' and 'sustainability' are powerful constructs, fundamental to the logics, interests and imaginaries that make up the 'high politics' of natural resource policy and governance. Each of these terms is normatively associated with liberal social values, assumptions about relationships between formal institutions and society, and universalized 'positive' policy aspirations. Yet, all three are 'slippery' and contested. Much of the 'slipperiness' and contestation around them is a consequence of contradictions between the way in which they can be depoliticized in high-level discourse and instrumentalized in policy on one hand, and the ways in which they

shape everyday politics and manifest in practice 'on the ground' on the other. As the QMM case demonstrates, it cannot be taken for granted that what is 'secured', 'developed' or 'sustained' is a stable nor a socially, economically and environmentally just, political order (Dalby, 1992).

In this paper, we have shown how re-thinking 'resource warfare' through an expanded conceptualization of pacification can bring political ecology's approach to the politics of nature, resources and development more firmly into dialogue with central concerns in political geography, critical security studies and research on geographies of violence. This approach can open up understandings of emerging geographies of resource control, violence and conflict in ways that move beyond and against the depoliticization and hegemony of the dominant security discourse. Rather, they can facilitate a deeper understanding how global drivers of investment and enclosure enmesh complex, situated and intersecting politics of violence, space and place in the engineering of extractive landscapes.

Pacification is violence that, when it operates effectively, appears as the absence of violence. This is because it is productive of the things we recognize not just as security, order or peace, but also as forms of sustainability, development or progress that appeal to liberal social values but that are nonetheless laden with contradiction. As an analytic tool, the conceptualization of pacification that we present can help us see how moments of 'violent rupture' are not simply aberrations in a world of order (Baron et al., 2019, p. 10), but rather are moments in which the violence of the order of the world can become more visible. This includes security and development architectures that are built on the sedimented logics and technologies of past regimes of value extraction, including racism, ecological domination and techniques of social warfare. Logics of pacification work as means of connection, 'threads' that connect places, actors, ideas and social technologies through time and space and make 'engineering extraction' possible. To paraphrase Butler (2009: 29), when considering historical circumstances, there is no way to separate the materiality of violence and domination from the representational and productive regimes that give rise to it, through which it operates, and which give it legitimacy.

Declaration of competing interest

None.

Acknowledgements

This work was supported by the Economic and Social Research Council of the United Kingdom as part of the Partnership for Conflict, Crime & Security Research (PaCCS) [grant reference AH/P005330/1], the ESRC STEPS Centre [grant reference ES/I021620/1] and the Emancipatory Rural Politics Initiative (ERPI). A version of this paper was presented at the conference 'Authoritarian Populism and the Rural World', 17–18 March 2018, at the International Institute of Social Studies (ISS), The Hague, Netherlands. We would like to thank Xander Dunlap and Judith Verweijen their encouragement and editorial suggestions, as well as to the anonymous reviewers for their detailed feedback on the manuscript. We would also like to express our gratitude to people in Anosy region of Madagascar who have shared their time, personal stories and experiences over many years.

References

- Adger, W. N., Benjaminsen, T. A., Brown, K., & Svarstad, H. (2001). Advancing a political ecology of global environmental discourses. *Development and Change*, 32, 681–715.
- Agamben, G. (2005). *State of exception* (Vol. 2). University of Chicago Press.
- Allen, J. (2015). Madagascar. In *Anthony Bourdain: Parts unknown*. USA: Cable News Network (CNN).
- ALT-UK. (2018). *Antsotso community demands*. Andrew Lees Trust. Retrieved from <http://www.andrewleestrust.org/blog/wp-content/uploads/2018/03/Antsotso-demands.pdf>.
- Anderson, B. (2011). Population and affective perception: Biopolitics and anticipatory action in US counterinsurgency doctrine. *Antipode*, 43(2), 205–236.

- Andreucci, D., & Kallis, G. (2017). Governmentality, development and the violence of natural resource extraction in Peru. *Ecological Economics*, 134(C), 95–103.
- Andrew Lees Trust, & PANOS. (2009). *Madagascar Voices of change: Oral testimony of the Antanosy people*. London: PANOS London.
- Anstee, S. (2008). Biodiversity & ecosystem services: Opportunities and risks for Rio Tinto. In *Paper presented at the aboriginal enterprises in mining exploration and energy conference Darwin*.
- Awung, N. S., & Marchant, R. (2017). Quantifying local community voices in the decision-making process: Insights from the mount Cameroon national park REDD+ project. *Environmental Sociology*, 1–18.
- Bakker, K. (2005). Neoliberalizing nature? Market environmentalism in water supply in england and wales. *Annals of the Association of American Geographers*, 95(3), 542–565.
- Barnett, J. (2001). *The meaning of environmental security: Ecological politics and policy in the new security era*. Zed Books.
- Barnett, J. (2003). Security and climate change. *Global Environmental Change*, 13(1), 7–17.
- Barnett, J., & Adger, W. N. (2007). Climate change, human security and violent conflict. *Political Geography*, 26(6), 639–655.
- Baron, L. Z., Havercroft, J., Kamola, I., Koomen, J., Murphy, J., & Prichard, A. (2019). Liberal pacification and the phenomenology of violence. *International Studies Quarterly*.
- Belcher, O. (2012). The best-laid schemes: Postcolonialism, military social science, and the making of US counterinsurgency doctrine, 1947–2009. *Antipode*, 44(1), 258–263.
- Benjaminsen, T. A., & Bryceson, I. (2012). Conservation, green/blue grabbing and accumulation by dispossession in Tanzania. *Journal of Peasant Studies*, 39(2), 335–355.
- Bennett, N. J., & Dearden, P. (2014). Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy*, 44, 107–116.
- Betts, R. F. (2005). *Assimilation and association in French colonial theory, 1890-1914*. U of Nebraska Press.
- Blomley, N. (2003). Law, property, and the geography of violence: The frontier, the survey, and the grid. *Annals of the Association of American Geographers*, 93(1), 121–141.
- Bond, J. (2014). A holistic approach to natural resource conflict: The case of Laikipia County, Kenya. *Journal of Rural Studies*, 34, 117–127.
- Bond, P. (2018). Ecological-economic narratives for resisting extractive industries in Africa. In P. Cooney, & W. S. Freslon (Eds.), *Environmental impacts of transnational corporations in the global south* (pp. 73–110). Emerald Publishing Limited. Online.
- Borras, S. M., Hall, R., Scoones, I., White, B., & Wolford, W. (2011). Towards a better understanding of global land grabbing: An editorial introduction. *Journal of Peasant Studies*, 38(2), 209–216.
- Borras, S. M., Jr., & Franco, J. C. (2012). Global land grabbing and trajectories of agrarian change: A preliminary analysis. *Journal of Agrarian Change*, 12(1), 34–59.
- Brock, A., & Dunlap, A. (2018). Normalising corporate counterinsurgency. *The everyday operations of RWE in the Hambacher Forest and beyond Political Geography*, 62(1), 33–47.
- Bull, J. W., Lloyd, S. P., & Strange, N. (2017). Implementation gap between the theory and practice of biodiversity offset multipliers. *Conservation Letters*, 10(6), 656–669.
- Burnod, P., Gingembre, M., & Andrianirina Ratsialonana, R. (2013). Competition over authority and access: International land deals in Madagascar. *Development and Change*, 44(2), 357–379.
- Butler, J. (2009). *Frames of war: When is life grievable?* New York: Verso.
- Cardiff, S. G., & Andriamanalina, A. (2007). Contested spatial coincidence of conservation and mining efforts in Madagascar. *Madagascar Conservation & Development*, 2(1).
- Carmody, P. (2011). *The new scramble for Africa*. Cambridge: Polity Press.
- Cassidy, R. M. (2006). *The long small war: Indigenous forces for counterinsurgency*. *Parameters*, summer, 2006(00).
- Castree, N. (2008). Neoliberalising nature: The logics of deregulation and reregulation. *Environment & Planning A*, 40(1), 131–152.
- Castree, N., & Braun, B. (1998). The construction of nature and the nature of construction. *Remaking reality: Nature at the millenium*, 3–42.
- Cavanagh, C. J., & Benjaminsen, T. A. (2017). Political ecology, variegated green economies, and the foreclosure of alternative sustainabilities. *Journal of Political Ecology*, 24, 200–341.
- Centre for Social Responsibility in Mining. (2015). *Economic contributions from industrial mining in Madagascar* (Retrieved from Antananarivo).
- Cavanagh, C. J., & Himmelfarb, D. (2014). “Much in blood and money”: Necropolitical ecology on the margins of the Uganda protectorate. *Antipode*, 47(1), 55–73.
- Chiapello, E. (2015). Financialisation of valuation. *Human Studies*, 38(1), 13–35.
- Cliggett, L. (2014). Access, alienation, and the production of chronic liminality: Sixty years of frontier settlement in a Zambian park buffer zone. *Human Organization*, 73(2), 128–140.
- Cohen, S. (1991). *Visions of social control: Crime, punishment and classification*. Cambridge: Polity Press.
- Cole, J. (2001). *Forget colonialism? Sacrifice and the art of memory in Madagascar*. Berkeley: University of California Press.
- Collier, P., & Hoeffler, A. (2005). Resource rents, governance, and conflict. *Journal of Conflict Resolution*, 49(4), 625–633.
- Corson, C. (2011). Territorialization, enclosure and neoliberalism: Non-state influence in struggles over Madagascar's forests. *Journal of Peasant Studies*, 38(4), 703–726.
- Corson, C. (2012). From rhetoric to practice: How high-profile politics impeded community consultation in Madagascar's new protected areas. *Society & Natural Resources*, 25(4), 336–351.
- Corson, C. A. (2016). *Corridors of power: The politics of environmental aid to Madagascar*. Yale University Press.
- Corson, C., & MacDonald, K. I. (2012). Enclosing the global commons: The convention on biological diversity and green grabbing. *Journal of Peasant Studies*, 39(2), 263–283.
- CRAAD-OI, & TANY. (2018). *The legitimate fight of communities surrounding QMM-Rio Tinto's mining project to claim compensation for their land is repressed again*. Antananarivo: Centre de Recherches et d'Appui pour les Alternatives de Développement - Océan Indien & Collectif pour la défense des terres malgaches.
- Cronon, W. (1996). The trouble with wilderness: Or, getting back to the wrong nature. *Environmental History*, 1(1), 7–28.
- Curtis, M. (2016). *The new colonialism: Britain's scramble for Africa's energy and mineral resources* (Retrieved from London).
- Dalby, S. (1992). Ecopolitical discourse: 'environmental security' and political geography. *Progress in Human Geography*, 16(4), 503–522.
- Dalby, S. (2002). *Environmental security*. Minneapolis: University of Minnesota Press.
- Dalby, S. (2003). Environmental insecurities: Geopolitics, resources and conflict. *Economic and Political Weekly*, 5073–5079.
- Davidov, V. (2014). Land, copper, Flora: Dominant materialities and the making of Ecuadorian resource environments. *Anthropological Quarterly*, 87(1), 31–58.
- Death, C. (2014). Critical, environmental, political. In *Critical environmental politics*. New York: Routledge.
- Dempsey, J., & Suarez, D. C. (2016). Arrested development? The promises and paradoxes of “selling nature to save it”. *Annals of the Association of American Geographers*, 106(3), 653–671.
- Diamond, J. M. (1989). Quaternary megafaunal extinctions: Variations on a theme by paganini. *Journal of Archaeological Science*, 16(2), 167–175.
- Dooley, K., & Gupta, A. (2017). Governing by expertise: The contested politics of (accounting for) land-based mitigation in a new climate agreement. *International Environmental Agreements: Politics, Law and Economics*, 17(4), 483–500.
- Draper, R. (2010). *Madagascar's pierced heart*. National Geographic.
- Duffield, M. (2010). The liberal way of development and the development—security impasse: Exploring the global life-chance divide. *Security Dialogue*, 41(1), 53–76.
- Duffield, M. (2011). *Environmental terror: Uncertainty, resilience and the bunker*. Working paper no. 06-11. Global Insecurities Centre, University of Bristol.
- Duffy, R. (2016). War, by conservation. *Geoforum*, 69, 238–248.
- Dunlap, A. (2019). ‘Agro sí, mina NO!’ the Tía Maria copper mine, state terrorism and social war by every means in the Tambo Valley, Peru. *Political Geography*, 71, 10–25.
- Dunlap, A., & Fairhead, J. (2014). The militarisation and marketisation of nature: An alternative lens to ‘climate-conflict’. *Geopolitics*, 19(4), 937–961.
- Eriksson, J. (1999). Observers or advocates? On the political role of security analysts. *Cooperation and Conflict*, 34(3), 311–330.
- Evers, S. (2013). Lex loci meets lex fori: Merging customary law and national land legislation in Madagascar. In *Contest for land in Madagascar. Environment, ancestors and development* (pp. 119–140). Boston: Brill Academic Publishers.
- Fairhead, J., Leach, M., & Scoones, I. (2012). Green grabbing: A new appropriation of nature? *Journal of Peasant Studies*, 39(2), 237–261.
- Ferguson, J. (2005). Seeing like an oil company: Space, security, and global capital in neoliberal Africa. *American Anthropologist*, 377–382.
- Ferguson, J. M. (2014). The scramble for the Waste Lands: Tracking colonial legacies, counterinsurgency and international investment through the lens of land laws in Burma/Myanmar. *Singapore Journal of Tropical Geography*, 35(3), 295–311.
- Fletcher, R. (2014). Taking the chocolate laxative: Why neoliberal conservation fails forward. In *Nature inc.: Environmental conservation in the neoliberal age* (pp. 87–107). Tucson: The University of Arizona Press.
- Fletcher, R., Dressler, W. H., Anderson, Z. R., & Büscher, B. (2018). Natural capital must be defended: Green growth as neoliberal biopolitics. *Journal of Peasant Studies*, 1–28.
- Floyd, R. (2008). The environmental security debate and its significance for climate change. *The International Spectator*, 43(3), 51–65.
- FM3-24. (2006). *Counterinsurgency*. Washington DC: Retrieved from.
- FM3-24. (2014). *Insurgencies and countering insurgencies*. Washington DC: Retrieved from.
- Foucault. (2003). st Be Defended”: Lectures at the Collège de France, 1975-1976. In *Society mu*. New York: Macmillan.
- Freslon, W. S., & Cooney, P. (2018). Transnational mining and accumulation by dispossession. In *Environmental impacts of transnational corporations in the global south* (pp. 11–34). Online: Emerald Publishing Limited.
- Galliéni, J.-S. (1900a). *La Pacification de Madagascar*. Paris: Librairie Militaire R. Chapelot et Ce.
- Galliéni, J.-S. (1900b). *Rapport d'ensemble sur la pacification, l'organisation et la colonisation de Madagascar (octobre 1896 à mars 1899)*. Paris: Imprimerie Librairie Militaire.
- Galula, D. (2002). *Pacification in Algeria* (Vol. 478, pp. 1956–1958). Washington, DC: Rand Corporation.
- Galula, D. (2006). *Counterinsurgency warfare: Theory and practice*. Westport: Praeger Security International.
- Gardner, C. J., Nicoll, M. E., Birkinshaw, C., Harris, A., Lewis, R. E., Rakotomalala, D., et al. (2018). The rapid expansion of Madagascar's protected area system. *Biological Conservation*, 220, 29–36.
- Gardner, T. A., Von Hase, A., Brownlie, S., Ekstrom, J. M., Pilgrim, J. D., Savy, C. E., ... Ward, G. (2013). Biodiversity offsets and the challenge of achieving no net loss. *Conservation Biology*, 27(6), 1254–1264.
- Geenen, S., & Verweijen, J. (2017). Explaining fragmented and fluid mobilization in gold mining concessions in eastern Democratic Republic of the Congo. *The Extractive Industries and Society*, 4(4), 758–765.
- Gerety, R. M. (2009). *Mining and biodiversity offsets in Madagascar: Conservation or 'conservation opportunities?'*. Retrieved from http://news.mongabay.com/2009/0830-rowan_rio_tinto_madagascar.html#E0IwZQWSg4wJVwAu.99.

- Gilberthorpe, E., & Rajak, D. (2017). The anthropology of extraction: Critical perspectives on the resource curse. *Journal of Development Studies*, 53(2), 186–204.
- Graeber, D. (2007). Provisional autonomous zone: Or, the ghost-state in Madagascar. *Possibilities*, 157–180.
- Gregory, D., & Pred, A. (2013). *Violent geographies: Fear, terror, and political violence*. Routledge.
- Griffin, C. (2009). A revolution in colonial military affairs: Gallieni, Lyautey, and the 'Tache d'huile'. In *Paper presented at the British international studies association conference, Leicester*.
- Grossman, H. I., & Mendoza, J. (2000). *Scarcity and conflict*. <https://doi.org/10.2139/ssrn.229567>. Retrieved from New York.
- Hall, D. (2011). Land grabs, land control, and Southeast Asian crop booms. *Journal of Peasant Studies*, 38(4), 837–857.
- Hall, R., Edelman, M., Borrás, S. M., Jr., Scoones, I., White, B., & Wolford, W. (2015). Resistance, acquiescence or incorporation? An introduction to land grabbing and political reactions 'from below'. *Journal of Peasant Studies*, 42(3–4), 467–488.
- Hansford, J., Wright, P. C., Rasoamiamanana, A., Pérez, V. R., Godfrey, L. R., Errickson, D., et al. (2018). Early Holocene human presence in Madagascar evidenced by exploitation of avian megafauna. *Science Advances*, 4(9), eaat6925.
- Hanssen, L., Rouwette, E., & van Katwijk, M. M. (2009). The role of ecological science in environmental policy making: From a pacification toward a facilitation strategy. *Ecology and Society*, 14(1).
- Harbinson, R. (2007a). *Development recast: A review of the impact of the Rio Tinto ilmenite mine in southern Madagascar*. London: Panos.
- Harbinson, R. (2007b). *A mine of information? Improving communication around the Rio Tinto ilmenite mine in Madagascar*. London: Panos.
- Homer-Dixon, T. F. (1994). Environmental scarcities and violent conflict: Evidence from cases. *International Security*, 5–40.
- Homer-Dixon, T. F., & Levy, M. A. (1995). Environment and security. *International Security*, 20(3), 189–198.
- Huff, A. (2011). *Vulnerability and wellbeing in the baintao lava, 'the long wounded year': Environmental policy, livelihoods, and human health among Mikea of southwest Madagascar* (PhD). Athens, Georgia: The University of Georgia.
- Huff, A. (2012). Exploring discourses of indigeneity and rurality in Mikea Forest environmental governance. *Madagascar Conservation and Development*, 7(2S), 58–69.
- Huff, A. (2016). *Black sands, green plans and conflict: Structural adjustment, sectoral reforms and the mining-conservation-conflict nexus in southern Madagascar* (Retrieved from).
- Huff, A. (2017). Black sands, green plans and vernacular (in) securities in the contested margins of south-western Madagascar. *Peacebuilding*, 1–17.
- Huff, A., & Brock, A. (2017). Accumulation by restoration: Degradation neutrality and the faustian bargain of conservation finance. *Antipode Interventions*.
- Humbert, H. (1927). La destruction d'une flore insulaire par le feu principal aspects de la végétation à Madagascar. *Memoires de l'Academie Malgache*, 5(1), 1–78.
- Humphreys, M., Sachs, J., & Stiglitz, J. E. (2007). *Escaping the resource curse*. Cambridge Univ Press.
- Hunsberger, C., Corbera, E., Borrás, S. M., Jr., Franco, J. C., Woods, K., Work, C., ... Kham, S. S. (2017). Climate change mitigation, land grabbing and conflict: Towards a landscape-based and collaborative action research agenda. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 38(3), 305–324.
- Industriall. (2015). *Strike win just first step for Rio Tinto contract workers*. Retrieved from <http://www.industriall-union.org/strike-win-just-first-step-for-rio-tinto-contract-workers>.
- International Advisory Panel. (2011). *Report of the international advisory panel integrated growth Poles project (IGP2) projet Po'les Intégrés de Croissance (PIC)* (Retrieved from Antananarivo).
- IUCN. (2019). *IUCN-rio Tinto collaboration agreement*. Retrieved from <https://www.iucn.org/theme/business-and-biodiversity/our-work/business-partnerships/rio-tinto/iucn-rio-tinto-collaboration-agreement>.
- Jaros, L. (2003). A human geographer's response to *guns, germs, and steel*: The case of agrarian development and change in Madagascar. *Antipode*, 35(4), 823–827.
- Käkönen, M., & Thuon, T. (2018). Overlapping zones of exclusion: Carbon markets, corporate hydropower enclaves and timber extraction in Cambodia. *Journal of Peasant Studies*, 1–27.
- Kaldor, M. (2013). Defence of new wars. *Stability: International Journal of Security and Development*, 2(1).
- Kapelus, P. (2002). Mining, corporate social responsibility and the "community": The case of Rio Tinto, richards bay minerals and the mbonambi. *Journal of Business Ethics*, 39(3), 275–296.
- Kaufmann, J. (2000). Forget the numbers: The case of a Madagascar famine. *History in Africa*, 27(1), 143–157.
- Kaufmann, J. (2001). *La question des raketa*: Colonial struggles with prickly pear cactus in southern Madagascar, 1900–1923. *Ethnohistory*, 48(1–2), 87–121.
- Kelly, A. B., & Ybarra, M. (2016). Introduction to themed issue: "Green security in protected areas". *Geoforum*, 69(1), 171–175.
- Kill, J., & Franchi, G. (2016). *RioTinto's biodiversity offset in Madagascar: Double landgrab in the name of biodiversity* (Retrieved from Germany).
- Kraemer, A. (2012). Whose forests, whose voices? Mining and community-based nature conservation in southeastern Madagascar. *Madagascar Conservation & Development*, 7(2S), 87–96.
- Kull, C. (2002a). Empowering pyromaniacs in Madagascar: Ideology and legitimacy in community-based natural resource management. *Development and Change*, 33(1), 57–78.
- Kull, C. (2002b). Madagascar aflame: Landscape burning as peasant protest, resistance, or a resource management tool? *Political Geography*, 21(7), 927–953.
- Lackman, M. J. (2006). *British boer War and the French Algerian conflict: Counterinsurgency for today* (Master of Military Arts and Science). Fort Leavenworth: US Army Command and General Staff College.
- Lasslett, K. (2014). *State crime on the margins of empire: Rio Tinto, the war on Bougainville and resistance to mining*. Pluto Press.
- Laurie, E. W., & Shaw, I. G. (2018). Violent conditions: The injustices of being. *Political Geography*, 65, 8–16.
- Le Billon, P. (2001). The political ecology of war: Natural resources and armed conflicts. *Political Geography*, 20(5), 561–584.
- Le Billon, P. (2007). Geographies of war: Perspectives on 'resource wars'. *Geography Compass*, 1(2), 163–182.
- LeBillon, P., & Duffy, R. (2018). Conflict ecologies: Connecting political ecology and peace and conflict studies. *Journal of Political Ecology*, 25(1), 239–260.
- Lohmann, L. (2012). Financialization, commodification and carbon: The contradictions of neoliberal climate policy. *Socialist Register*, 48, 85–107.
- Lombard, L. (2016). Threat economies and armed conservation in northeastern Central African Republic. *Geoforum*, 69, 218–226.
- Lovell, H. (2018). Offsetting. In *Companion to environmental studies* (pp. 223–227). London: Routledge.
- Lunstrum, E. (2014). Green militarization: Anti-poaching efforts and the spatial contours of kruger national park. *Annals of the Association of American Geographers*, 104(4), 816–832.
- MacKenzie, D. (2009). Making things the same: Gases, emission rights and the politics of carbon markets. *Accounting, Organizations and Society*, 34(3), 440–455.
- Mahanty, S., Milne, S., Dressler, W., & Filer, C. (2012). The social life of forest carbon: Property and politics in the production of a new commodity. *Human Ecology*, 40(5), 661–664.
- Manolov, M. V., & Rigakos, G. S. (2014). *Anti-security. The wiley-blackwell Encyclopedia of globalization* (pp. 1–3). Blackwell Publishing Ltd.
- Marijnen, E., & Verweijen, J. (2016). Selling green militarization: The discursive (re) production of militarized conservation in the Virunga National Park, Democratic Republic of the Congo. *Geoforum*, 75, 274–285.
- Masse, F. D. (2017). *Securing conservation: The politics of anti-poaching and conservation law enforcement in Mozambique*.
- Massé, F., Gardiner, A., Lubilo, R., & Themba, M. N. (2017). Inclusive anti-poaching? Exploring the potential and challenges of community-based anti-poaching. *South African Crime Quarterly*, 60, 19–27.
- Massé, F., Lunstrum, E., & Holterman, D. (2017). Linking green militarization and critical military studies. *Critical Military Studies*, 4(2), 201–221.
- Matthew, R. A. (1995). Environmental security: Demystifying the concept, clarifying the stakes. In *Each issue* (p. 14).
- Mbembé, J.-A. (2003). *Necropolitics. Public Culture*, 15(1), 11–40.
- McAfee, K. (2012). Nature in the market-world: Ecosystem services and inequality. *Development*, 55(1), 25–33.
- McAfee, K. (2014). The post-and future politics of green economy and REDD. In B. Stephan, & R. Lane (Eds.), *The politics of carbon markets* (pp. 237–260). New York: Routledge.
- McAfee, K. (2016). Green economy and carbon markets for conservation and development: A critical view. *International Environmental Agreements: Politics, Law and Economics*, 1–21.
- Mehta, L., Huff, A., & Allouche, J. (2019). The new politics and geographies of scarcity. *Geoforum*, 101, 222–230.
- Middleton, K. (1999). Who killed 'Malagasy cactus'? Science, environment and colonialism in southern Madagascar. *Journal of Southern African Studies*, 25(2), 215–248.
- Mining Health Initiative. (2013). *A mining health initiative case study: Rio Tinto QMM and its health programme in Madagascar: Lessons in partnership and process* (London).
- Mol, A. P., & Spaargaren, G. (2000). Ecological modernisation theory in debate: A review. *Environmental Politics*, 9(1), 17–49.
- Morrell, V. (1999). *Restoring Madagascar*. National Geographic.
- Murray Li, T. (2014). What is land? Assembling a resource for global investment. *Transactions of the Institute of British Geographers*, 39(4), 589–602.
- Neimark, B. D., & Schroeder, R. A. (2009). Hotspot discourse in Africa: Making space for bioprospecting in Madagascar. *African Geographical Review*, 28(1), 43–69.
- Neocleous, M. (2006). The problem with normality: Taking exception to "permanent emergency". *Alternatives*, 31(2), 191–213.
- Neocleous, M. (2011). Security as pacification. *Anti-security*, 23–56.
- Neocleous, M. (2013). The dream of pacification: Accumulation, class war, and the hunt. *Socialist Studies/Études Socialistes*, 9(2).
- Neocleous, M., & Rigakos, G. S. (2011). *Anti-security*. Red Quill Books.
- Neocleous, M., Rigakos, G., & Wall, T. (2013). On pacification: Introduction to the special issue. *Socialist Studies/Études Socialistes*, 9(2).
- Neumann, R. P. (2004). Moral and discursive geographies in the war for biodiversity in Africa. *Political Geography*, 23(7), 813–837.
- Ney, S. (1999). Environmental security: A critical overview. *Innovation: The European Journal of Social Science Research*, 12(1), 7–30.
- Nixon, R. (2011). *Slow violence and the environmentalism of the poor*. Harvard University Press.
- O'Connor, D., & Montoya, J. P. B. (2010). Neoliberal transformation in Colombia's goldfields: Development strategy or capitalist imperialism? *Labour. Capital and Society/Travail, capital et société*, 85–118.
- Olsen, N., Bishop, J., & Antsee, S. (2011). *Exploring ecosystem valuation to move towards net positive impact on biodiversity in the mining sector*. Gland: IUCN.
- Parenti, C. (2011). *Tropic of chaos: Climate change and the new geography of violence*. Bold Type Books.

- Parenti, C. (2015). The environment making state: Territory, nature, and value (the 2013 antipode AAG lecture). *Antipode*, 47(4), 829–848.
- Pelletier, J., Gélinas, N., & Skutsch, M. (2016). The place of community forest management in the REDD+ landscape. *Forests*, 7(8), 170.
- Peluso, N. L., & Lund, C. (2011). New frontiers of land control: Introduction. *Journal of Peasant Studies*, 38(4), 667–681.
- Peluso, N. L., & Vandergeest, P. (2011). Political ecologies of war and forests: Counterinsurgencies and the making of national natures. *Annals of the Association of American Geographers*, 101(3), 587–608. <https://doi.org/10.1080/00045608.2011.560064>.
- Peluso, N. L., & Watts, M. (2001). *Violent environments*. Cornell University Press.
- Perelman, M. (2001). The secret history of primitive accumulation and classical political economy. *The Commoner*, 2(September).
- Perelman, M. (2007). Primitive accumulation from feudalism to neoliberalism. *Capitalism Nature Socialism*, 18(2), 44–61.
- Perrier de la Bâthie, M. H. (1921). La végétation malgache. *Annales de Musée Colonial de Marseille*, 3(9), 1–29.
- Pronk, C., & Evers, S. J. (2007). The complexities of land access in Southeast Madagascar. *Taloha. revue scientifique internationale des civilisations*, 43(18).
- Raik, D. (2007). Forest management in Madagascar: An historical overview. *Madagascar Conservation & Development*, 2(1).
- Rakotondrabe, D. T. (1993). Beyond the ethnic group: Ethnic groups, nation-state and democracy in Madagascar. *Transformation*, (22).
- Rasmussen, M., & Lund, C. (2018). Reconfiguring Frontier Spaces: The territorialization of resource control. *World Development*, 101, 388–399.
- Rid, T. (2010). The nineteenth century origins of counterinsurgency doctrine. *Journal of Strategic Studies*, 33(5), 727–758.
- Rigakos, G. S. (2011). *To extend the scope of productive labour: Pacification as a police project*. Anti-Security. Ottawa: RQB.
- Rigakos, G. S. (2016). *Security/capital: A general theory of pacification*. Edinburgh: Edinburgh University Press.
- Rigakos, G. S., McMullan, J. L., Johnson, J., & Özcan, G. (2009). *A general police system: Political economy and security in the age of enlightenment*. Red Quill Books.
- Rio Tinto. (2014). *Madagascar: A pilot site for testing NPI tools* (Retrieved from London).
- Rio Tinto. (2015). *QIT Madagascar minerals*. Retrieved from <http://www.riotintomadagascar.com/>.
- Rio Tinto. (2016). *QMM. Biodiversity, communities and social performance multi year plan 2016 - 2021*.
- Rio Tinto. (2017). *Our evolving approach to biodiversity*. Retrieved from https://www.riotinto.com/ourcommitment/spotlight-18130_21621.aspx.
- Rio Tinto. (2018). *At the frontline: Security and human rights*. Retrieved from https://www.riotinto.com/ourcommitment/spotlight-18130_20742.aspx.
- Rogers, D. (2012). The materiality of the corporation: Oil, gas, and corporate social technologies in the remaking of a Russian region. *American Ethnologist*, 39(2), 284–296.
- Rosenau, W., Chalk, P., McPherson, R., Parker, M., & Long, A. (2009). *Corporations and counterinsurgency* (Vol. 259). Rand Corporation.
- Ross, M. (2013). The politics of the resource curse: A review. In *Handbook on the politics of development*. Oxford University Press.
- Rothschild, E. (1995). *What is security?* *Daedalus*.
- Sarrasin, B. (2006). The mining industry and the regulatory framework in Madagascar: Some developmental and environmental issues. *Journal of Cleaner Production*, 14(3), 388–396.
- Scoones, I., Smalley, R., Hall, R., & Tsikata, D. (2018). Narratives of scarcity: Framing the global land rush. *Geoforum*.
- Seagle, C. (2009). *Biodiversity for whom? Local experiences and global strategies of land use and access near the Rio Tinto/QMM ilmenite mine in Fort Dauphin, southeast Madagascar* (Unpubl. Unpublished MSc. Dissertation).
- Seagle, C. (2012). Inverting the impacts: Mining, conservation and sustainability claims near the Rio Tinto/QMM ilmenite mine in Southeast Madagascar. *Journal of Peasant Studies*, 39(2), 447–477.
- Seagle, C. (2013). *The mining-conservation nexus: Rio Tinto, "development gifts" and contested compensation in Madagascar* (Retrieved from).
- Smith, S. M., Shepherd, D. D., & Dorward, P. T. (2012). Perspectives on community representation within the extractive industries transparency initiative: Experiences from south-east Madagascar. *Resources Policy*, 37(2), 241–250.
- Springer, S. (2011). Violence sits in places? Cultural practice, neoliberal rationalism, and virulent imaginative geographies. *Political Geography*, 30(2), 90–98.
- Springer, S. (2012). Neoliberalising violence: Of the exceptional and the exemplary in coalescing moments. *Area*, 44(2), 136–143.
- Springer, S., & Le Billon, P. (2016). Violence and space: An introduction to the geographies of violence. *Political Geography*, 52, 1–3.
- Sullivan, S. (2009). Green capitalism, and the cultural poverty of constructing nature as service provider. *Radical Anthropology*, 3(1), 18–27.
- Trombetta, M. J. (2006). The securitization of the environment and the transformation of security. In *Paper presented at the standing group on international relations conference, turin*.
- Trombetta, M. J. (2010). Rethinking the securitization of the environment: Old beliefs, new insights. In *Securitization theory* (pp. 149–163). Routledge.
- Tyner, J., & Inwood, J. (2014). Violence as fetish: Geography, marxism, and dialectics. *Progress in Human Geography*, 38(6), 771–784.
- Tyner, J. A., & Rice, S. (2016). To live and let die: Food, famine, and administrative violence in Democratic Kampuchea, 1975–1979. *Political Geography*, 52, 47–56.
- USAID. (2014). *Madagascar environmental threats and opportunities assessment 2014 update* (Retrieved from Washington DC).
- Venier, P. (1991). Lyautey et l'idée de protectorat de 1894 à 1902: Genèse d'une doctrine coloniale. *Ouvre-mers. Revue d'histoire*, 78(293), 499–517.
- Verweijen, J., & Marijnen, E. (2018). The counterinsurgency/conservation nexus: Guerrilla livelihoods and the dynamics of conflict and violence in the virunga national park, democratic republic of the Congo. *Journal of Peasant Studies*, 1–21.
- Vincelette, M., Dean, L., & Ganzhorn, J. (2007). The QMM/Rio Tinto project history in tolnarno and its social and environmental concepts. In J. Ganzhorn, S. Goodman, & M. Vincelette (Eds.), *Biodiversity, ecology and conservation center for conservation education and sustainability of littoral ecosystems in southeastern Madagascar, tolnarno (Fort Dauphin)* (pp. 1–8). Washington DC: Smithsonian Institution.
- Watts, M., & Peluso, N. (2014). Resource violence. In C. Death (Ed.), *Critical environmental politics* (pp. 184–197). New York: Routledge.
- Wæver, O. (1993). *Securitization and desecuritization*. Centre for Peace and Conflict Research Copenhagen.
- WBCSD. (2015). *Rio Tinto: Corporate ecosystem valuation (CEV) road test summary*. <http://www.wbcsd.org/pages/adm/download.aspx?id=5911&objectypeid=7>.
- Winter, Y. (2011). The asymmetric war discourse and its moral economies: A critique. *International Theory*, 3(3), 488–514.
- Witter, R., & Satterfield, T. (2018). Rhino poaching and the "slow violence" of conservation-related resettlement in Mozambique's Limpopo National Park. *Geoforum*.
- Ybarra, M. (2012). Taming the jungle, saving the maya forest: Sedimented counterinsurgency practices in contemporary Guatemalan conservation. *Journal of Peasant Studies*, 39(2), 479–502.
- Zoomers, A. (2010). Globalisation and the foreignisation of space: Seven processes driving the current global land grab. *Journal of Peasant Studies*, 37(2), 429–447.