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Stealing the sacred: Why 'global heritage' discourse is perceived as a frontal attack on local heritage-making in Madagascar

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ABSTRACT

This article analyses Malagasy notions of land as heritage through the concept of *fomba gasy*, known as 'Malagasy customs', within the context of foreign land acquisitions for mineral extraction. *Fomba gasy* is a concept intimately tied to land – as it provides a social, economic, existential, cultural, and ontological web, which ties past, present and future generations. Global or 'western' conceptualizations of heritage generally adopt a more static definition of land as their point of departure, wherein biodiversity or clearly demarcated 'heritage sites' become objects of frontier conservation. This vision directly conflicts with Malagasy conceptions and ontologies of *fomba gasy* – a concept inherently anchored in dynamic, material and intangible uses of land. The model of heritage as universal patrimony does not sit easily with beliefs held by local (land-based) groups within Madagascar. On the contrary, it challenges a core tenet of Malagasy power and belief: their sovereign right to define *fomba gasy* and heritage through land, and to harness the powers of the sacred. The contested nature of heritage claims in Madagascar is discussed using a case study concerning a mining/biodiversity protection project where international and local stakeholders are vying for the same land.

RÉSUMÉ

Cet article analyse la notion des terres malgaches en tant que patrimoine à travers le concept de *fomba gasy* ('coutumes malgaches'), dans le cadre de l'acquisition de terres par des compagnies étrangères pour les extractions de minéraux. *Fomba gasy* est un concept étroitement lié à la terre car il fournit une toile environnementale, sociale, économique, existentielle, culturelle et ontologique, qui relie les générations passées, présentes et futures. Les conceptualisations globales ou occidentales du patrimoine tendent généralement à adopter une définition plus statique de la terre comme point de départ. Cette vision se heurte nécessairement à celle de *fomba gasy* : un concept fondamentalement ancré dans la dynamique matérielle et immatérielle d'exploitation des terres. Au contraire, il remet en cause un principe fondamental et sacré du pouvoir malgache : le droit souverain de définir le *fomba gasy* et le patrimoine à travers la terre. Cet article discute un différend foncier à Madagascar où un projet minier et de protection de la biodiversité locale met en opposition divers intervenants revendiquant tous des intérêts dans les mêmes terres.

INTRODUCTION

How do global definitions of land as heritage affect local communities reliant upon forests and land for subsistence purposes? Why do some heritage claims override others? Who determines this and on the basis of which criteria? These questions will be explored within the analytical framework of a multi-billion dollar ilmenite mine in Fort Dauphin (Figure 1), where the multinational mining company, Rio Tinto, plc., in cooperation with their Québec subsidiary, QIT (*Québec Fer et Titane*) and QMM (QIT Madagascar Minerals) has leased 6,000 hectares of territory encompassing a rare littoral forest prized for its biodiversity, in addition to areas referred to as ancestral land (*tanin-drazana*) by local groups and up to 30,000 additional hectares of land held in 'tenements' designated as biodiversity offsets (Rio Tinto/QMM 2008). Fieldwork was carried out in 2009 near the first of three mineral exploitation sites, called Mandena, located about 12-15km outside of the urban centre of Fort Dauphin in southeast Madagascar (Figure 1). Methods included participant observation in one of the villages located nearby Mandena as well as structured and semi-structured interviews in various parts of the region, including a newly constructed port built to ship minerals (Port d'Ehoala). The region is considered to be the ancestral land of the Antanosy (Anosy region) although other groups, such as the Antesaka, have tombs in the locality, some of which were reportedly displaced by the Rio Tinto/QMM mining project (Seagle 2009). People commonly cultivate rice, manioc and sweet potatoes for subsistence. Fewer inhabitants, for the most part young men, work as *bûcherons* and use the forest for selective tree felling (making wood boards) or producing charcoal, which is often sold in Fort Dauphin. Women are engaged in both rice cultivation as well as the weaving of *mahampy* (wetland reed found in the littoral forest) into baskets

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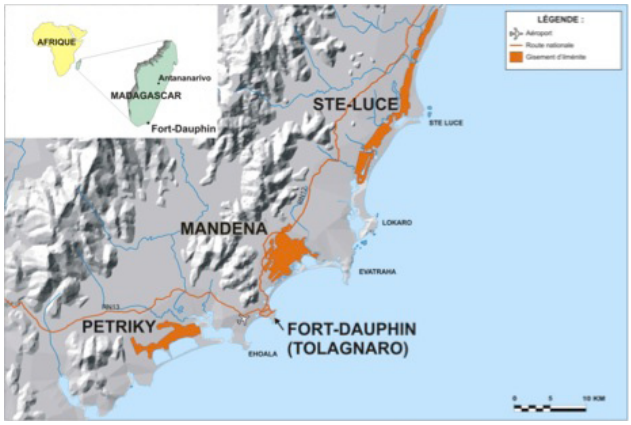

FIGURE 1. Overview of three mining sites: Petriky, Mandena, St. Luce. Mining data provided in 2007 by Martin Theberg of QIT. Satellite imagery by Google Earth (copyright 2009) image date: 2004-2005.

and mats. This activity is seen as an additional source of income as well as ancestral practice.

COUNTRY CONTEXT

Considered both a top 'biodiversity hotspot' (Myers 1988) and economically impoverished country (World Bank 2012), Madagascar's current development trajectory has two main goals: sustainable protection of the environment and poverty alleviation through economic growth (Sarrasin 2006). While the World Bank and international conservation NGOs have had a strong influence on governance in Madagascar over the past 20 years (Duffy 2006, Horning 2008), the advent of mining mega-projects has brought together two unlikely partners – multinationals (the corporate sector) and the advocates of sustainable development – a phenomenon directly tied to recent increases in Foreign Direct Investment (FDI) and international policy frameworks such as Corporate Social Responsibility (CSR) (Harbinson 2007, Uellenberg 2009). The adoption of a new mining law (1999), which opens Madagascar to large-scale mineral investment whilst withdrawing state interventions, has put mining companies at the core of both regional development and conservation activities (Sarrasin 2006).

FOREIGN ACQUISITIONS OF LAND IN MADAGASCAR. The unprecedented scope of 'land grabs' in Africa – long-term exploitation of mega-tracts of land and resources by foreign bodies – has changed development realities on the ground (Cotula et al. 2009, Vidal 2010, Zoomers 2010). During 2005–2009 period, foreign direct investment (FDI) in Madagascar's arable land rose to three million hectares (Uellenberg 2009). Varun Industries recently announced the discovery of 266.8 million tons of minerals (titanium) covering ten blocks of exploration territory in the southeast of Madagascar (The Economic Times 2011). And the gargantuan Ambatovy nickel-mining project, let by Canadian miner Sherritt International, has recently begun operation though with reports of vast local displacement and social-environmental impacts (MiningWatch 2012). The highly controversial Daewoo land deal in Madagascar envisaged the conversion of 1.3 million hectares to maize and palm oil plantations, sparking massive protests in Antananarivo; popular protests to the deal significantly contributed to the ousting of former President, Marc Ravalomanana. Discourses of *mivarotra tanindrazana* ("selling off the land of the ancestors") were used by Andry Rajoelina to fuel public dissent against Ravalomanana, and despite Rajoelina's success in defeating Ravalomanana, recent changes to the Malagasy government have not decreased the number of high-impact land projects ongoing in the country – particularly mining. The complexities of such deals have attracted the attention of scholars and actors engaged in the development arena for the past decade (GRAIN 2008, Borras and Franco 2010, Borras et al. 2011, Hall 2011, Anseeuw et al. 2012). However, the links between various types of acquisitions (e.g., large-scale mining and biodiversity conservation) have yet to be fully analysed and understood.

Paralleling the rise of foreign investment in Madagascar, conservation zones have grown in size and in scope following Ravalomanana's 2003 pledge to triple the size of protected areas to six million hectares. Conservation funding has also increased the political power of conservation NGOs; for instance, a record-breaking 20 million $US debt-for-nature (DfN) swap was brokered between the WWF, France and Madagascar (WWF 2008). The money is expected to be reallocated in local currency towards biodiversity conservation projects (managed by WWF). Simultaneously, climate mitigation in the form of averted deforestation (referred to as REDD: Reducing Emissions from Deforestation and Degradation of Forests) has been on the rise in Madagascar (Ferguson 2009).

LAND AS MATERIAL AND INTANGIBLE HERITAGE IN MADAGASCAR. Within this context, climate change mitigation, discourses of biodiversity protection and multinational corporate interests have created new claims to land and forests in the global South. These claims also reflect the way in which universalisms and global systems of valuation (e.g., imperatives of biodiversity conservation) increasingly become embedded in local contexts and contestations (Tsing 2005). An emerging zone of contention concerns 'culture' and heritage (Eriksen 2001, Keller 2009) particularly in relation to land. This article looks at the case of Madagascar, and how global 'heritage' designations neglect the processual realities of heritage making in Madagascar, which are anchored in non-static ontologies of land use. Biodiversity and forests are often represented by conservation NGOs as repositories of 'world heritage' – and the universal entitlement of humankind. Mining companies prominent in Madagascar have been quick to recognize the power of using global 'sustainability' concerns to remove local claims to ancestral rights from the moral high ground. The 1999 Global Mining Initiative (GMI), which ultimately led to a make-over of the extractive industry, aimed to identify how multinational mining companies could contribute to the "global transition to sustainable development" (McNeilly 2000: 7). Since then the adoption of sustainability discourses, CSR and biodiversity conservation practices in multinational mining projects has increased remarkably. The following cases will detail how neoliberal alliances between conservation NGOs and multinational mining companies impact upon local uses and valuations of land (herein referred to as local heritage and interpreted in terms of Malagasy customs, *fomba gasy*) in Madagascar. These case studies, however, require a brief summary of what 'world heritage' entails, and how it contrasts with notions of *fomba gasy*.

UNESCO's definition of cultural heritage is broad, explicitly providing that heritage is not limited to material manifestations, such as monuments and objects that have been preserved over time – but also encompasses "living expressions and the tradi-

tions that countless groups and communities worldwide have inherited from their ancestors and transmit to their descendants, in most cases orally" (see UNESCO 2009). UNESCO officially labelled this "intangible cultural heritage" (ICH), which, whilst enveloping "traditions that countless groups (...) have inherited from their ancestors and transmit to their descendants," must also comply with international norms of 'sustainable development' (UNESCO 2005: 3).

Specifically, UNESCO defines intangible cultural heritage as containing six components: transmitted from generation to generation; constantly recreated in response to environment, interaction with nature and history; provides sense of identity and continuity; promotes cultural diversity and creativity; is compatible with human rights instruments; achieves mutual respect and sustainable development.

Interestingly, both local and outside stakeholders invoke land as heritage – it is the semantic field of heritage where the great schism appears. While the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage defines ICH as: "(…) the practices, representations, expressions, knowledge, skills as well as instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their heritage." (UNESCO 2003: article 2), this definition neglects the political necessity of reconciling global needs with those of local communities engaged in land use, and the power relations involved in such classifications.

Moreover, there are inherent tensions between the first and last three elements of ICH as applied to land use. The first three points of the ICH definition mirror the cultural/historical components embodied in local populations, whereas the latter three would appear to represent the values of various actors, international organisations and stakeholders who purport to advance 'universal' values (e.g., requiring that intangible cultural heritage be compliant with international norms of 'sustainable development' or multiculturalism). In short, several components of the UNESCO definition of ICH are "constituents of a wider cultural environment," and interact as part of particular communicative strategies (for example, conservation NGOs who define land containing biodiversity as "world heritage"). Through invoking the component of 'sustainable development' (or a particular interpretation thereof), which is advanced as a universal imperative, both conservation NGOs and mining companies legitimise their claims to land as heritage.

In light of these tensions, we suggest that the very notion of 'heritage' is inherently problematic. In sites where various cultural paradigms of land and heritage confront each other, representations and realities can differ substantially. The UNESCO definitions imply that 'heritage' must be designated by certain global actors and satisfy both local valuations (e.g., inheritance, identity and place) and global values (e.g., human rights and sustainable development). As such, the concept is loaded, deeply political and open to multiple interpretations. In line with studies that have explored the role of land as contested heritage (or *patrimoine*) in the sphere of development and conservation (Cormier-Salem and Bassett 2007), we suggest that notions of heritage in Malagasy rural communities are not limited to specific objects, items or places but rather infused with meaning through human uses of the land. This is inferred, for example, in the Malagasy term for 'nature' (or the 'environment'): *tontolo iainana* (the world in which we live). Human-environment interactions combine both intangible (e.g., portal to the ancestors, ritual, existential) and material (e.g., food security, income, medicinal) aspects. We see heritage as an embodied process (Scheper-Hughes and Lock 1987, Csordas 1990) integrating these two dimensions. As heritage, land inevitably mediates cultural meanings, knowledge complexes, symbols and ontologies, but also involves the embodiment of labour, human health and survival strategies. The question then is how such dimensions of land as heritage, which speak more to the first three components defined by UNESCO, relate to the latter three aspects listed above particularly the universalism of sustainable development.

MALAGASY CONCEPTIONS OF *FOMBA GASY* AND LAND AS HERITAGE. In rural Madagascar, where daily human-environment interactions structure the moral economy (which is not solely based on economic rationality (Scott 1977)), land is equated with heritage in the broad sense. While land secures livelihoods and the provision of food, it is also vested with (non-economic) socio-cultural meaning. Land is where ancestors are buried, where knowledge is transmitted, and where social relations are formed (Dubois 1938, Bloch 1971, Graeber 2007). Land is thus a medium for the transmission of ancestral and environmental knowledge and a crucial source of livelihood sustainability. In rural communities, land is often referred to as a type of ancestral inheritance; lacking access to biodiversity and natural resources therefore presents considerable risks to people, who depend on land access for both livelihood and ontological reasons. Dynamic land use patterns linked to kinship, conceptions of past, present and future security, and subsistence (including labour) may all be seen to represent local forms of heritage. These land-use practices constitute one of the pillars of the Malagasy notion of *fomba gasy*: a concept encompassing Malagasy ontology, practices and beliefs. Such beliefs are intimately tied to the ancestors, and in most parts of Madagascar people speak about *fomban-drazana* (*razana* meaning "ancestors, dead person or corpse") or *fomba* (Malagasy customs) more generally.

It is a truism oft-repeated in Madagascar that land binds people in time and place and connects the living and the dead. Furthermore, one needs land in order to build a permanent tomb; the tomb is the portal to the hereafter and the entering point to the process of 'ancestralization', a ritual sequence to make deceased into ancestors. Malagasy take great care in retaining positive relations with their ancestors; this translates into the daily practice of maintaining rich ritual and ceremonial lives. Losing one's land jeopardises these relations and can have serious repercussions on the living. Even Malagasy law recognises the primacy of the tomb which "*restent soumis aux règles spéciales de propriété les concernant et conservent leur caractère d'inaliénabilité et d'insaisissabilité* (remain governed by the special property rules which govern them and which at all times, by their nature, can neither be sold, transferred, assigned and are exempt from execution or attachment (*Loi N° 2005-O19 du 17 octobre 2005, fixant les principes régissant les statuts des terres*)). Often Malagasy people define 'development' (*fivoarana* or *fandrosoana*) as "being in harmony with your ancestors." For example, in various regions of Madagascar the phrase "*Ny fivoarana dia ny fiaraha-mirindra amin'ny fanajana ny razana*" (development is being in harmony with the ances-

tors) is used in relation to development activities. Losing land presents very real economic and existential threats to people and potential conflicts with the ancestors. Many Malagasy even believe that, by losing land, people can become *olona very* (lost people), a notion rooted in the country's history (Evers 2002, Graeber 2007).

Historically, dislocation from land has triggered violent conflicts between the state and local communities. During the pre-colonial Merina kingdom, when domestic slavery was implemented on the island to meet specific political and economic objectives (Campbell 1991), land was forcibly denied as a means of control, de-historicization and pacification, breaking links between Malagasy people and their ancestors and eventually making them *andevo* (slaves). *Andevo* were 'lost people', lacking links to ancestral lands and permanent tombs and thus precluded from becoming ancestors themselves – the essence of the Malagasy identity (Bloch 1971, 1989, Feeley-Harnik 1982, 1991, Graeber 1997, 2007, Evers 2002, 2006). Colonial-era policies aimed at export production (Sodikoff 2005) and forced labour regimes continued to break local links with the land, as many forests were appropriated for logging concessions (Fremigacci 1978, Jarosz 1993). Today, the term *andevo* still implies someone who lacks anchoring in land through tombs, land and history (Evers 2006).

Relations with the ancestors are the essence of *fomba gasy*, engrained in land practices and *fady* (taboos) concerning inappropriate land management behaviour (including the sale of ancestral land to outsiders). On a daily basis, people work the land and renew their links with the ancestors who in turn regenerate both people and land. This vital relation with the ancestors is reflected in the concept of *hasina* described by Delivré (1967: 167–84) as a form of energy innate to existence. References to *hasina* have been encountered by many scholars conducting research in Madagascar (Dubois 1938, Delivré 1967, Edholm 1971, Bloch 1989). Southall (1986: 414) translates *hasina* as "sacred ritual potency" and considers it to be a central concept for all groups in Madagascar: "Here is one of those pervasive themes which justify emphasis on the essential unity of all Malagasy culture, despite its apparent regional contrasts." Bloch (1989: 65) also writes that the notion of *hasina* is the "kernel of Malagasy thought." Fertility, successful harvests and good health are all ascribed to *hasina*. The belief that ancestors can activate destructive aspects of *hasina* (which is then referred to as *hery* in the southern highlands (Evers 2002)) causing, for example, infertility, illness and death, when people do not conform to envisaged ancestral expectations (Cole 2001) is widespread in Madagascar.

Relations with the ancestors even govern property ownership perceptions. Land is 'owned' by the ancestors and while heirs and assigns may derive the fruits from this land during their short time on the mortal coil, upon their demise, it passes onto the children, and this immanent process repeats itself. As one woman put it (during Seagle's fieldwork in 2009): "Land is inheritance; it is the *donneur de vie* (giver of life)." Deceased family members will be buried in land passed down through generations; this land – where family tombs are located and cultivation takes place (e.g., wet rice fields) – is literally referred to as *tanin-drazana* (land of the ancestors). It is a place of familial communality and a perpetual construction site of *fomba gasy*. These customs are constantly evolving through shifting social relations and environmental changes. Malagasy people position themselves within dynamic cultural and environmental configurations, and as such, *fomba gasy* does not contain something that exists in isolation, but is rather constantly 'made' and 'becoming'. It should also be stressed that, although most Malagasy view relations to land, kin and ancestors as the tripartite core of *fomba gasy*, there are regional variations governing how this ontological perception materialises in, for example, burial sites and practices or social life.

In short, the notion of *fomba gasy* is inherently dynamic, animate, processual, and connected to the Malagasy notion of 'rooting' oneself in land and moving forward (Keller 2008). This approach contrasts sharply with international translations of 'heritage', which are rooted in abstract philosophical systems and in the idea that heritage can be captured in a defined, bounded piece of land. The last three components of intangible heritage are testament to this dilemma; heritage here is moved away from local cultural paradigms to fit global conceptions of human rights and sustainability, wherein only some aspects of local heritage may be permitted. This point is illustrated in the recent UNESCO designation of the Atsinanana eastern rainforests (totally nearly 500,000 hectares) in Madagascar as a 'World Heritage Site' (UNEP 2007, UNESCO 2009). Here, the material heritage compatible with international paradigms of biodiversity protection is achieved potentially at the cost of local heritage valuations (e.g., accessing forests). While UNEP (2007: 7) mentions "(…) past exclusion from protected areas without consultation has left surrounding populations suspicious of their benefits," it concedes that "there are so far no figures for the populations living in the 2.5 km-wide multiple-use buffer zones" surrounding the protected area. Conversely, scholars of Madagascar have documented the widespread poverty and economic disadvantages local communities experience as a result of living on park peripheries (Harper 2002, Walsh 2005, Ferguson 2010). Disputed access to land thus lies at the core of global-local heritage contestations.

In sum, in light of the importance of *fomba gasy* and land in shaping everyday lives, we argue that one cannot speak of livelihoods as the only 'stakes' to lose in the context of foreign large-scale land acquisitions; local environmental knowledge, cultural ontologies, kinship and ancestral ties, social relations, and dynamics of cultural heritage and identity formed around land may also be dispossessed.

CONTESTING HERITAGE – EXAMPLES FROM THE RIO TINTO/QMM ILMENITE MINE IN FORT DAUPHIN, SOUTHEAST MADAGASCAR

This section details how Rio Tinto/QMM draw upon two discourses of global heritage in relation to their exploitation of 6,000 hectares of littoral forest for ilmenite (titanium dioxide) in southeast Madagascar: (i) biodiversity as 'global heritage', and (ii) cultural sites as 'local heritage'. We highlight how both claims to heritage protection come into inherent conflict with local notions of *fomba gasy* and heritage-making embedded in dynamic, temporal land use.

GLOBAL HERITAGE – ADVOCATING THE COMMODIFICATION OF BIODIVERSITY. Concerns over biodiversity loss, which is seen to be linked to increased deforestation caused by local populations (UNEP 2007), have dominated multinational discourses of sustainability and forged alliances between mining

companies and the various conservation NGOs (e.g., WWF, CI, IUCN, and WCS). WWF, for example, is assisting in the implementation of Rio Tinto's biodiversity strategy (Rio Tinto 2009). Joining the chorus, mining companies deploy the language and resources of 'sustainable development' and biodiversity conservation to bolster land claims in Madagascar. Working with the Malagasy Government on a multi-billion dollar ilmenite mine in Fort Dauphin, Rio Tinto/QMM make use of powerful discourses which highlight Madagascar's ecological degradation; these discourses identify Malagasy shifting cultivators as the main agents of environmental destruction (Seagle 2012). Bounded by 'tradition' and motivated solely by poverty, Malagasy people reliant on subsistence livelihoods are often portrayed as the main culprits of deforestation, though these narratives of degradation have been questioned by various researchers of Madagascar (Jarosz 1993, Kaufmann 2000, Kull 2000, Simsik 2002, Klein 2004, Pollini 2007). As evidenced in *fomba gasy* conceptions, local uses of land by Malagasy people are not solely economically motivated; rather, they are connected to the various conceptions of livelihood security and local heritage making.

But such realities contrast sharply with representations mobilized by Rio Tinto/QMM. As a leading official for the company stated in 2006, "Madagascar is a fascinating country in terms of its biodiversity. Its people, however, are not wealthy. In an effort to find food, fuel and building materials, they are changing their island's unique ecological heritage" (Senapati 2006). Subsistence activities are often presented as anathema to 'sustainable development' purported to be offered by the company. Vincelette et al. (2007: 4) state in Rio Tinto/QMM's 'Biodiversity Book', a publication resulting from years of research carried out in the littoral forests targeted for both strip mining and (selective) conservation, and in collaboration with Kew Botanical Gardens and the Smithsonian Institute, "(...) for the most part these are rural people engaged in subsistence production, which provides limited opportunities for development or economic growth. These villagers both endure and participate in a process of progressive deforestation and degradation of the environment in which they live." This statement underlines Rio Tinto/QMM's representation of local land users as trapped in a vicious cycle of poverty and heavily in need of (economic) development being offered by the company. In contrast to actively 'making' local heritage through non-static uses of land, Malagasy people are described as destroyers of the 'ecological heritage' of the island itself.

However, the Rio Tinto/QMM portrait of environmental degradation neglects the historical, physical, cultural, political-economic, and discursive context in which environmental change occurs (Blaikie and Brookfield 1987, Peet and Watts 1996). Moreover, it omits present and future impacts of mineral extraction on littoral forest and forest users; despite levelling amounts of deforestation expected to result from mineral extraction, Rio Tinto argues that 6,000 hectares of littoral forest set to be stripped by the mining company was already severely 'degraded' by local people, and would have disappeared anyway, in the absence of mining (Mines and Communities 2009). However, while the company represents that forest as already heavily degraded by locals, Virah-Sawmy (2009) has shown that conservationist discourses linking local pressures to littoral forest degradation – a narrative widely reiterated by Rio Tinto/QMM – are based on false assumptions about forest cover change over time.

Nevertheless, such claims are backed by Rio Tinto's use of discourse and media (scientific publications, reports, websites, images). This 'legitimizing media' is designed to defeat the standpoint of local groups that land dispossession or alternate access regimes threaten livelihood activities such as the cultivation of rice, medicinal plant use, selective tree felling, fishing, cattle grazing, and fruit collection. For example, a wetland reed (*mahampy*) used for weaving baskets and wrapping the deceased, was decimated by Rio Tinto/QMM and replaced with exotic stands of eucalyptus – a contradiction of Rio Tinto/QMM's claims to be protecting biodiversity. Indeed, much of the littoral forest will be rehabilitated with eucalyptus, an act, which Rio Tinto/QMM refer to as veritable 'reforestation'. While the eucalyptus plantations are designed to meet local needs for fuel wood, charcoal production and building material, there appears to be a lack of meaningful consideration of local uses of biodiversity and the reality that, within the mine's vicinity, access to land for cultivation (rather than charcoal) and other purposes (e.g., weaving and grazing cattle) is crucial (see also figures in SIRSA 2006). In turn, the company does not elaborate on local perceptions of eucalyptus itself as a species for meeting daily needs (Harbinson 2007).

Moreover, much of Rio Tinto/QMM's claim to conserve biodiversity from perceived local destruction is legitimized through 'biodiversity offsets': The financial backing of, or land allocation for, conservation zones 'outside' of the mining concession. This type of remediation is described by Rio Tinto/QMM as compensation for in situ damage to biodiversity caused by mining operations (specifically the loss of 6,000 hectares of biodiverse littoral forest). The company thus pledges to "offset unavoidable adverse impacts" of ilmenite extraction through off-site compensation (Ten Kate et al. 2004). Again, biodiversity offsets imply the global valuation of biodiversity as 'world heritage' and universal entitlement instead of something valued by local communities as part of heritage-making and *fomba gasy*. While littoral forest stretching 25 km long and seven kilometres wide will be stripped for ilmenite mining (QMM 2001, in Sarrasin 2006), with the exception of small 'conservation zones' set aside within each of the three exploitation sites (e.g., 230 ha out of 2,000 ha in Mandena), Rio Tinto/QMM claim to have a "net positive impact" (NPI) on biological diversity (Ten Kate et al. 2004). Precisely by drawing upon a global narrative relating the world's biodiversity to a type of 'universal heritage' and insisting on its commitment to protecting it, Rio Tinto legitimises its claims to land in southeast Madagascar for large-scale mineral extraction.

As part of this commitment, Rio Tinto/QMM regularly send shipments of endemic seeds found within the littoral forest to Kew Botanical Gardens in the United Kingdom, a reputable environmental research centre. The biodiverse seeds will be preserved as part of Kew's Millennium Seed Bank project – a storage-house for millions of varieties of plant genes and akin to a biological 'Noah's Ark'. Corporate partners, Rio Tinto/QMM and Kew aim to create "a domestication programme of forest species for the house plant market," thereby hinting at an underlying interest in commodification of the seed lots. Kew (2011) states: "Our partner QMM hopes to raise local incomes and reduce exploitation of the few remaining patches of forest, which it is actively conserving. The Threatened Plants Project focused on

propagating and marketing threatened orchid species through PBZT to take pressure off wild populations."

Conversely, Virah-Sawmy and Ebeling (2010: 1) note that Rio Tinto's measurements of "near-total forest loss on its mining sites in the absence of mining activities" are not correct. Using paleoecological evidence, Virah-Sawmy (2009) shows that the patchy make-up of the littoral forest is the result of complex climatic factors rather than only a history of human interference, and that much of the deforestation in the littoral zone was carried out over the past twenty years during the exploration and infrastructural phases of the Rio Tinto/QMM project itself. Kew makes no mention of the various impacts of the ilmenite mine, which will include vast losses of biodiversity. Nor is any mention made of local dependencies on biodiversity in the extraction zone. Research conducted by Seagle (2009) clearly demonstrated the importance of accessing biodiversity for food, building material and, most importantly, medicine. Kew's interest in propagation and 'marketing' Malagasy plants with Rio Tinto/QMM, their project of *ex situ* conservation of seeds (Millennium Seed Bank), should be further studied. Not the least because one of the top financers of the seed bank project is the Wellcome Trust, an organization that primarily funds biomedical research and has interest in the 'medical qualities' of Kew's seed reserves (Wellcome Trust 2012).

While the mining company is praised for 'actively conserving' and indeed 'saving' species from the littoral forest, the Kew-Rio Tinto partnership aims to curb local "exploitation" of remaining "wild populations." It is thereby suggested that the mining company is protecting the biodiversity from Malagasy people themselves: "Independent studies have demonstrated that these forests are rapidly deteriorating due to pressure from the local people. (...) It is generally accepted that the remaining littoral forest fragments will be essentially destroyed within the next two or three decades unless an effective protection strategy is defined and the resources of the mining company properly harnessed to promote biodiversity conservation" (Kew 2010a).

It seems paradoxical that a mining company planning to destroy most of the littoral forest is praised for conserving biodiversity, which is equated with 'global heritage'. The official slogan of the Millennium Seed Bank is: "Saving plants for our future", thus suggesting that the biodiversity of the forests makes up the inheritance of humankind (Ibid). In fact, Rio Tinto/QMM are, in many ways, producing new types of 'world heritage' within these conservation zones lying adjacent to vast dredge mining operations. By 'creating' scarcity of biodiversity, Rio Tinto/QMM are 'saving' biodiversity; global heritage becomes innate to genetic material sent to a high-profile 'research institute' for foreign 'protection' (Seagle 2012). In turn, the commodification of seed species stored in Kew's reserves is of interest. An advertisement on Kew's website asks viewers if they would like to "adopt a seed" and financially support the Millennium Seed Bank project; for just 25 GBP, one can adopt a seed, and for 1,000 GBP, one can 'save' a seed from extinction. Kew writes, "we will recognise your support with an adoption pack containing a certificate and a picture of the plant species you're supporting" (Kew 2010b). The 'adopt the seed' campaign appears to be based upon underlying tenets, which not only challenge the Malagasy definition of heritage but also allow for the exclusion of the Malagasy from their ancestral lands in order to meet the presumably higher prerogatives of global 'heritage'.

LOCAL HERITAGE – INADEQUATE ASSESSMENTS OF *FOMBA GASY* MAKING. While Rio Tinto/QMM is exporting some aspects of the ecological heritage out of the local setting, discursively transforming it into global heritage available to consumers and the international market, other aspects of local heritage appear to be essentialized, neatly demarcated to particular places and capable of being 'moved' elsewhere to make way for mineral extraction. It is important to note that Rio Tinto/QMM claim to protect local heritage of local people (Rio Tinto 2011b). But what if the very land acquired by the mining company is seen as the anchor to local cultural heritage? In 2010, Rio Tinto formed a partnership with IUCN, an organisation in charge of managing World Heritage Sites (both natural and cultural) designated by UNESCO (IUCN 2012). With regard to "cultural heritage", Rio Tinto/QMM state: "We recognise and respect the cultural heritage of all communities in which we operate, particularly that of indigenous traditional owners who have customary connections to land. We closely consult with local people to ensure the protection of their cultural heritage sites as we manage our businesses. (…) From the earliest stages of exploration we conduct cultural heritage assessments with communities to understand the location and significance of heritage sites. We design our activities to avoid to the greatest extent any damage to these sites. If disturbance is unavoidable, we seek approval from those to whom the site or feature has significance, and we work with them to mitigate the disturbance" (Rio Tinto 2012).

While Rio Tinto (2011a) defines 'heritage' as "places that have cultural, spiritual, aesthetic, historic, scientific, research or social significance to past, present and future generations and pledges to avoid such 'heritage sites', our research revealed various contradictions to the company's manifesto. Reports of tomb displacement, the destruction of ancestral monuments and loss of ancestral land – all undeniably part and parcel of local conceptions of 'heritage' – were widespread (Harbinson 2007, Seagle 2009). Rio Tinto plays down the importance of tombs, describing the issue as having "medium importance" (FOE Critique date n/a: 16). Although Harbinson (2007) notes that, according to the Malagasy mining code, mining on gravesites is forbidden, Rio Tinto/QMM have removed and/or damaged tombs within the Mandena exploitation zone and along an access road leading to the processing plant. In turn, some tombs of the Antesaka group were reportedly displaced (Seagle 2009). Families were 'compensated' with two sacks of rice, 30 zebu (Malagasy cows) and twenty bottles of *tokagasy* (Malagasy rum) per household affected. However, many respondents expressed deep-seated disapproval of the displacement as they mentioned that it is considered strictly *fady* (taboo) to move a tomb. Thus, while tombs occupy sites of top heritage priority to local people and are thus irreplaceable, damages to such sites can, from the point of view of the mining company, be compensated for.

However, it is crucial to point to the fact that local heritage is not only about particular sites; tombs are material manifestations of the process of *fomba gasy* making. The above Rio Tinto/QMM website quote reveals a fundamental misunderstanding of what 'heritage' and indeed *fomba gasy* entail on a local level; in fact, heritage is processual and regenerated by people through working with the natural and supernatural environment. In this process, *hasina* (vital energy innate to life) flows between time (the dead and the living) and place (tombs, agricultural land,

houses, forest, etc.) and cannot be pinned down to certain 'cultural heritage sites'. Disruption of the flow of *hasina* and *fomba gasy* processes through dispossession from land, be it the tomb area, agricultural plots or a widely used, biodiverse forest, are potential threats to livelihoods and ontologies of heritage. Conversely, Rio Tinto/QMM perceive cultural heritage sites to be areas of clear demarcation, often referring to an object (as opposed to a temporal practice) with religious or sacred importance; for example, such sites "might include archaeological or fossil remains, or places of sacred significance to local and indigenous communities such as natural springs, mountains, burials, rock art, and ceremonial grounds" (Rio Tinto 2011a). In turn, Rio Tinto (2011b: 57) notes that lost cultural heritage can be compensated for through 'cultural heritage offsets', which, nearly identical in approach and rhetoric as 'biodiversity offsets' (see above), include documentation of oral histories, research and publications on tangible cultural sites, construction of museums, and conservation of culturally important landscape features 'outside' of the mining sites, to be used by local populations. Together, these 'cultural offsets' are designed to have a "net positive impact on cultural heritage" (Rio Tinto 2011b: 74).

In the field site of Mandena, a mountain considered the ancestral territory of some 300 people, where villagers cultivated rice, manioc and sweet potatoes for subsistence purposes, was blown up (with dynamite) by Rio Tinto/QMM in order to create a rock quarry which would supply stones for a break-water for a new international port, Ehoala (Figure 2). This led to both loss of land access as well as displacement and resettlement (Kraemer 2010, ALT/PANOS 2011).

With regard to compensation to the families displaced by the quarry, it was found that 'negotiations' with Rio Tinto/QMM degenerated, with the company first offering 13 million Ariary per family, then 10 million Ariary, and then finally only four million Ariary per family (roughly $US 1,900 (exchange rate 2011)). However, while a struggle over financial compensation was evident, some villagers revealed the deeper impacts of land loss, which could not adequately be captured through monetary remediation. As Soa (40 years old) put it, "The money given to us was not the same value as the land that was taken from us. *Tsy mitovy!* (not the same)". The land acquired for the quarry remains seen as the ancestral land of the people there; it was referred to as the land of the 'twelve ancestors'. Another woman, named Lova (32 years old), explained this point further, "*Roambifolo*: Twelve men are the ancestors and the real, legal owners of this land. QMM didn't give us equal land in compensation for this."

FIGURE 2. Ancestral land of individuals displaced by a rock quarry built by Rio Tinto/QMM (photo taken by Seagle, February 2009).

Furthermore, to create the rock quarry, Rio Tinto/QMM's removal of *anorombato* – ancestral stones/pillars erected to honour the ancestors and located some distance away from actual tomb sites (which are often hidden from view) – was seen to strike at the core of villagers' existential security. Soa stated, "(…) they removed the *anorombato* without telling us." In short, the notion of compensation should be problematized within the context of land dispossession, as natural resources have both material and intangible significance and are connected to a deeper system of meaning in Madagascar. Thus we can observe two problematic issues for local groups: the dispossession of land that is seen as irreplaceable, and the 'gift' of compensation that does not represent the long-term economic and non-economic value of the land in question.

Just as material manifestations of local heritage can be moved elsewhere (in the case of displaced tombs), so, too, can the people who embody this heritage. The Andrew Lees Trust (No date) notes that nearly 500 people were resettled by the project. In addition to the replacement land being of poor quality, many were concerned about the resettlement houses provided by Rio Tinto/QMM (Figure 3), which were purportedly of poor quality, leaked and had cracks in the ground. In many parts in Madagascar including in our research site, the house may be seen both as a chronotope of local uses of and needs for biodiversity (seen in the various species used in its construction) and as a benchmark of ontological meaning, a type of 'cognitive map' wherein each cardinal direction plays an important role in structuring social-ancestral relations (Fox 1990).

What these examples illustrate is that the narrow way in which Rio Tinto defines 'cultural heritage' – limiting it to seemingly very visible, historically relevant and 'static' places, monuments or archaeological remains (e.g., objects) that can be compensated for with money and/or be moved elsewhere – had serious repercussions for local people, who valued land and dynamic land-use as their ancestral rights of heritage. Land to them is more than an economic asset, and this made compensation such a complicated issue. There was simply no way to adequately compensate for the loss of ancestral and arable land passed down by the ancestors and reserved for future generations. Land thus has both material (e.g., food security, income) and intangible (ancestral significance, inheritance, existential security) value that was poorly considered by

FIGURE 3. Resettlement houses built by Rio Tinto/QMM (photo taken by Seagle, March 2009).

the mining company. In view of the perspective of *fomba gasy* making, which is embodied in people and directs what they do when they wake up in the morning, one can understand that money is indeed not conceptualized in the same way as by the mining company (e.g., as Soa above explains) and that this process of heritage-making cannot just be transported to another geographical setting.

CONCLUSION

Within the context of foreign land deals it is crucial that a thorough understanding of how heritage is locally constructed (the anatomy of heritage) and embedded in land, and how land-use anchors the existential and sacred dimensions of people (the ontology of heritage), is achieved prior to the extra-local valuation and sale (or lease) of territory. The examples discussed in this article show that land is an arena of contested uses and valuations. These dynamics are particularly intense within the context of foreign land deals, where the promise of schools, health care, economic benefits, proper housing etc. is potentially meaningless to people if it is achieved at the cost of ontological meaning entrenched in land and active land use.

To return to our initial queries: How do global definitions of land as heritage affect local communities reliant upon forests and land for subsistence purposes? Why do some heritage claims override others? Who determines this hierarchy and on the basis of which criteria? While UNESCO's criteria of (intangible) cultural heritage discursively recognizes "countless traditions" which are "passed down through generations", the imposition of global values, such as biodiversity conservation, presents heritage as a self-evident and universally agreed upon concept excluding the possibility of understanding heritage in terms of a processual, site-specific, temporal practice embedded in dynamic land use patterns. In other words, heritage in Madagascar is a process and constantly 'made' over time; it encompasses a relative system of valuation that is experienced through the body (via land-labour relations). Moreover, the imperative of 'sustainable development' makes the very notion of heritage accessible to corporate actors vying for land use; through media campaigns, the selective invocation of key words like sustainability, degradation or biodiversity conservation, as well as the transfer of financial capital, mining companies can make claims to preserve 'global heritage' whilst simultaneously destroying it. Sustainable development discourses containing underlying valorisations of 'right' and 'wrong' uses of the environment (Luke 2005) overshadow local claims to heritage, which would otherwise be captured in the first three components of the UNESCO definition of intangible cultural heritage: transmitted from generation to generation; constantly recreated in response to environment, interaction with nature and history; provides sense of identity and continuity – but which are inherently conflicting with the latter three components, which focus on 'global' systems and metanarratives. However, as this article attempts to demonstrate, global heritage claims fuelled with pervasive discourses of 'sustainable development' may overpower local considerations of what heritage entails.

Three aspects of the characterization of land/nature as global heritage are deserving of attention. First, while many actors narrowly interpret UNESCO's definition of heritage as extant in particular 'cultural heritage sites', *fomba gasy* (or 'heritage-making') in Madagascar is deeply processual, dynamic or constantly 'made' and renewed over a vast time-space continuum. Accessing natural resources is a natural and necessary part of *fomba gasy*. Second, global heritage designations too often exclude humans from the overall picture; natural or cultural heritage is set aside to be 'preserved' over time, isolated from 'wrong' human interferences (such as land-based labour for subsistence) and maintained through 'correct' uses of the environment (such as ecotourism or aesthetic appreciation). Contrarily, the very cornerstones of concepts such as *fomba gasy* and *hasina* are about sustaining people, both dead and alive, and environments; it is through processes of land use that these ontologies of heritage are perpetuated. Finally, and crucially, through their 'global heritage' discourses, international actors attempt to occupy terrain deemed to be sacred and at the discretion of local groups and taboos (*fady*). As we have argued, by determining what is taboo in these local settings (trespassing in rain forests, etc.), Rio Tinto/QMM have placed themselves on a direct collision course with locals, which undoubtedly will produce numerous future points of tension and misunderstandings.

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REFERENCES

ALT/PANOS (Andrew Lees Trust and PANOS London). 2011. Oral Testimonies Project. <http://panos.org.uk/oral-testimonies/pushed-to-the-edge/the-project-and-partners/> accessed 10 June 2011.

Andrew Lees Trust. No date. A Scoping of Impacts: Rio Tinto in Madagascar. <http://www.andrewleestrust.org/Reports/Scoping%20of%20Impacts_Rio%20Tinto%20in%20Madagascar.pdf> accessed 26 October 2011.

Anseeuw, W., Wily, L. A., Cotula, L. and Taylor, M. 2012. Land rights and the rush for land: findings of the global commercial pressures on land research project. ILC (International Land Coalition), Rome.

Borras, S. Jr. and Franco, J. C. 2010. From threat to opportunity? Problems with the idea of a 'code of conduct' for land-grabbing. Yale Human Rights and Development Law Journal 13, 2: 507–23.

Borras, S. Jr., Hall, R., Scoones, I., White, B. and Wolford, W. 2011. Towards a better understanding of global land grabbing: An editorial introduction. Journal of Peasant Studies 38, 2: 209–216. (doi:10.1080/03066150.2011.559005)

Blaikie, P. and Brookfield, H. 1987. Land Degradation and Society. Routledge Kegan and Paul, London.

Bloch, M. 1971. Placing the Dead: Tombs, Ancestral Villages, and Kinship Organisation in Madagascar. Seminar Press, London.

Bloch, M. 1989. The disconnection between power and rank as a process: An outline of the development of Kingdoms in central Madagascar. In: Ritual, History and Power, Selected Papers in Anthropology. M. Bloch, (ed.), pp 46–88. The Athlone Press, London.

Campbell, G. 1991. The state and pre-colonial demographic history: the case of nineteenth-century Madagascar. The Journal of African History 32, 3: 415–445.

Cole, J. 2001. Forget Colonialism? Sacrifice and the Art of Memory in Madagascar. University of California Press, Berkeley and Los Angeles.

Cotula, L., Vermeulen, S., Leonard, R. and Keeley, J. 2009. Land grab or development opportunity? Agricultural investment and international land deals in Africa. IIED/FAO/IFAD, London and Rome.

Cormier Salem, M.-C. and Bassett, T. 2007. Introduction: Nature as local heritage in Africa: Longstanding concerns, new challenges. Africa 7, 1: 1–17.

Csordas, T. 1990. Embodiment as a paradigm for anthropology. Ethos 18: 5–47.

Delivré, A. 1974. L'Histoire des Rois d'Imerina: Interprétation D'une Tradition Orale. Klincksieck, Paris.

Dubois, H. M. 1938. Monographie des Betsileo. Institut d'Ethnologie, Paris.

Duffy, R. 2006. Non-governmental organisations and governance states: the impact of transnational environmental management networks in Madagascar. Environmental Politics 15, 5: 731–749.

Edholm, F. 1971. Royal Funerary Rituals among the Betsileo of Madagascar. Unpubl. Ph.D. thesis, London School of Economics, London.

Eriksen, T. H. 2001. Between universalism and relativism: A critique of the UNESCO concept of culture. In: Culture and Rights: Anthropological Perspectives. J. K. Cowan, M.-B. Dembour and R. A. Wilson (eds.), pp 127–149. Cambridge University Press, Cambridge.

Evers, S. J. T. M. 2002. Constructing History, Culture and Inequality. The Betsileo in the Extreme Southern Highlands of Madagascar. Brill Academic Publishers, Leiden.

Evers, S. J. T. M. 2006. Expropriated from the hereafter: The fate of the landless in the Southern Highlands of Madagascar. Journal of Peasant Studies 33, 3: 413–444. (doi:10.1080/03066150601062928)

Feeley-Harnik, G. 1982. The King's men in Madagascar: Slavery, citizenship and Sakalava Monarchy. Africa 52, 2: 31–50.

Feeley-Harnik, G. 1991. Cloth and the creation of ancestors in Madagascar. In: Cloth and Human Experience. A. B. Weiner and J. Schneider (eds.), pp 73–116. Smithsonian Institution Press, Washington D.C.

Ferguson, B. 2009. REDD comes into fashion in Madagascar. Madagascar Conservation & Development 4, 2: 132–137.

Ferguson H. B. 2010. Voices from Madagascar's Forests: Improving Representation and Rights for Malagasy Forest Peoples, Final Report of the Conference held on the 5–6 June 2010 at the School of International Development, University of East Anglia, Norwich, UK.

Fox, L. 1990. Hainteny: The Traditional Poetry of Madagascar. Associated University Presses, Inc., Cranbery, New Jersey and London, UK.

Fremigacci, J. 1978. L'administration coloniale: les aspects oppressifs. Omaly sy Anio (Hier et Aujourd'hui). Revue d'Etudes Historiques Antananarivo 7–8: 209–237.

Graeber, D. 1997. Manners, deference and private property: the generalization of avoidance in early modern Europe. Comparative Studies in Society and History 39, 4: 694–728. (doi:10.1017/S0010417500020867)

Graeber, D. 2007. Lost People. Magic and the Legacy of Slavery in Madagascar. Indiana University Press, Bloomington.

GRAIN. 2008. SEIZED! The 2008 land grab for food and financial security. <http://www.grain.org/article/entries/93-seized-the-2008-landgrab-for-food-and-financial-security> accessed 8 August 2012.

Harbinson, R. 2007. Development recast? A review of the Rio Tinto ilmenite mine in Southern Madagascar. Research report for 'Friends of the Earth', PANOS London: 1–70. <http://www.foe.co.uk/resource/reports/development_recast.pdf> accessed 17 October 2012.

Harper, J. 2002. Endangered Species: Health, Illness, and Death Among Madagascar's People of the Forest. Carolina Academic Press, Durham.

Horning, N. R. 2008. Strong support for weak performance: Donor competition in Madagascar. African Affairs 107, 428: 405–431. (doi:10.1093/afraf/adn036)

IUCN (International Union for Conservation of Nature). 2012. "IUCN-Rio Tinto Relationship" <http://www.iucn.org/about/work/programmes/business/our_engagements/rio_tinto/> accessed 4 October 2012.

Jarosz, L. 1993. Defining and explaining tropical deforestation: Shifting cultivation and population growth in colonial Madagascar (1896–1940). Economic Geography 69, 4: 366–379.

Kaufmann, J. C. 2000. Forest the numbers: The case of a Madagascar famine. History in Africa 27: 143–157.

Keller, E. 2008. The banana plant and the moon: Conservation and the Malagasy ethos of life in Masoala, Madagascar. American Ethnologist 35, 4: 650–664. (doi:10.1111/j.1548-1425.2008.00103.x)

Keller, E. 2009. The danger of misunderstanding "culture". Madagascar Conservation & Development 4, 2: 82–85.

Kew Botanical Gardens 2010a. "Kew-Rio Tinto Partnership: Collecting and Conserving Wild Species from Madagascar and Building Seed Conservation Capacity" < http://www.kew.org/conservation/riotinto/SeedConservationMadagascar.html> accessed 3 November 2010.

Kew Botanical Gardens. 2010b. "Adopt a Seed." <http://www.kew.org/support-kew/adopt-a-seed/index.htm> accessed 3 November 2010.

Kew Botanical Gardens. 2011. Madagascar: Recent Achievements (2001–2005). <http://www.kew.org/science//directory/teams/Madagascar/completetext.html> accessed 17 October 2012.

Luke, T. W. 2005. Neither sustainable nor development: Reconsidering sustainability in development. Sustainable Development 13: 228–238.

McNeilly, R. J. 2000. The Global Mining Initiative: changing expectations – meeting human needs and aspirations. Minerals Industry Seminar, Minerals Council of Australia (7 June 2000). <http://www.icmm.com/document/105> accessed 25 March 2012.

Myers, N. 1988. Threatened biotas: "hot spots" in tropical forests. Environmentalist 8, 3: 187–208. (doi:10.1007/BF02240252)

Mines and Communities. 2009. <http://www.minesandcommunities.org/article.php?a=1477> accessed 6 June 2009.

MiningWatch. 2012. "Another Mining Horror Story? Sherritt International." <http://www.miningwatch.ca/article/another-mining-horror-story-sherritt-international-corporation-s-ambatovy-project-madagascar> accessed 25 September 2012.

Peet, R. and Watts, M. 1996. Liberation Ecologies: Environment, Development, Social Movements. Routledge, London.

Pollini, J. 2007. Slash and Burn Cultivation and Deforestation in the Malagasy Rain Forests: Representations and Realities. Unpubl. Ph.D. thesis, Cornell University, USA.

Rio Tinto/QMM. 2008. Our contribution to biodiversity (PPT, 3 November 2008). <http://www.riotinto.com/documents/Media-Speeches/QMM_presentation_-_Manon_Vincelette.pdf> accessed 19 February 2012.

Rio Tinto. 2009. A promise fulfilled. Rio Tinto Review (March 2009, words by David Bannister). <http://www.riotinto.com/documents/Library/Review89_March09_A_promise_fulfilled.pdf> accessed 19 February 2012.

Rio Tinto. 2011a. Cultural Heritage. <http://www.riotinto.com/ourapproach/7227_cultural_heritage.asp> accessed 20 October 2011.

Rio Tinto 2011b. Why cultural heritage matters: a resource guide for integrating cultural heritage management into communities work at Rio Tinto. Available at <https://www.csrm.uq.edu.au/Portals/0/cultural-heritage-guide.pdf>.

Rio Tinto. 2012. Communities. <http://www.riotinto.com/ourapproach/17215_communities_17355.asp> accessed 4 October 2012.

Sarrasin, B. 2006. The mining industry and the regulatory framework in Madagascar: Some developmental and environmental issues. Journal of Cleaner Production 14: 388–396.

Scheper-Hughes, N. and Lock, M. 1987. The mindful body: A prolegomen to future work in medical anthropology. Medical Anthropology Quarterly 1, 1: 6–41.

Scott, J. 1977. The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia. Haven: Yale University Press, New Haven.

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. M.Sc. thesis, Vrije University Amsterdam.

Seagle, C. 2012. Inverting the impacts: mining, conservation and sustainability claims near the Rio Tinto/QMM ilmenite mine in Fort Dauphin, southeast Madagascar. Journal of Peasant Studies 39, 2: 447–477. (doi: 10.1080/03066150.2012.671769)

Senapati, N. (Regional Vice President of Rio Tinto). 2006. Sustainable Mining, the Rio Tinto Approach – Madagascar (19 December 2006). Speech given at the Sustainability Summit Asia 2006, of the World Business Council for Sustainable Development (WBCSD).

Simsik, M. J. 2002. The political ecology of biodiversity conservation in the Malagasy Highlands. GeoJournal 58, 4: 232–242. (doi:10.1023/B:GEJO.0000017954.58269.69)

SIRSA. 2006. Atlas des données structurelles concernant la sécurité alimentaire dans la région de Anosy Madagascar (Mars 2006), pp. 1–177. < http://bit.ly/PVURBz> accessed 9 October 2012.

Sodikoff, G. 2005. Forced and forest labor regimes in colonial Madagascar, 1926–1936. Ethnohistory, 52, 2: 407–435. (doi:10.1215/00141801-52-2-407)

Sodikoff, G. 2008. An exceptional strike: A micro-history of 'people versus park' in Madagascar. Journal of Political Ecology 14: 10–33.

Southall, A. 1986. Common themes in Malagasy culture. In: Madagascar Society and History. C. P. Kottak, J.-A. Rakotoarisoa, A. Southall, P. Vérin (eds.), pp 411–426. Carolina Academic Press, Durham.

Ten Kate, K., Bishop, J. and Bayon, R. 2004. Biodiversity offsets: Views, experience, and the business case. IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment, London, UK.

The Economic Times. 2011. "Varun Group discovers rare earth, minerals in Madagascar. <http://articles.economictimes.indiatimes.com/2011-07-06/news/29743539_1_rare-earth-rutile-and-leucoxene-minerals> accessed 26 October 2011.

Tsing, A. L. 2005. Friction: An Ethnography of Global Connection. Princeton University Press, Princeton, New Jersey.

Uellenberg, A. 2009. Foreign Direct Investment (FDI) in Land in Madagascar. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit (Work of Division 45 – Agriculture, fisheries and food, GTZ, Eschborn).

Vidal, J. 2010. How food and water are driving a 21st Century Land Grab. Guardian Observer (March 7 2010) <http://www.guardian.co.uk/environment/2010/mar/07/food-water-africa-land-grab> accessed 6 August 2010.

Vincelette, M., Dean, L. and Ganzhorn, J. U. 2007. The QMM project history in Tolagnaro and its social and environmental concepts. In: Biodiversity, Ecology, and Conservation of Littoral Ecosystems in Southeastern Madagascar, Tolagnaro (Fort Dauphin). J. U. Ganzhorn, S. M. Goodman and M. Vincelette (eds.), pp 1–8. Smithsonian Institution, Washington D.C.

Virah-Sawmy, M. 2009. Ecosystem management in Madagascar during global change. Conservation Letters 2, 4: 163–170. (doi:10.1111/j.1755-263X.2009.00066.x)

Virah-Sawmy, M. and Ebeling, J. The difficult road towards real-world engagement: Conservation science and mining in southern Madagascar. Conservation Letters 3, 4: 288–289. (doi:10.1111/j.1755-263X.2010.00126.x)

Walsh, A. 2005. The obvious aspects of ecological underprivileged in Ankarana, northern Madagascar. American Anthropologist 107, 4: 654–665. (doi:10.1525/aa.2005.107.4.654)

Wellcome Trust. "Millennium Seed Bank" <http://www.wellcome.ac.uk/Funding/Biomedical-science/Funded-projects/Major-initiatives/Millennium-Seed-Bank/index.htm> accessed 4 October 2012.

World Bank. 2012. Madagascar at a glance. <http://devdata.worldbank.org/AAG/mdg_aag.pdf> accessed 17 October 2012.

World Wildlife Fund (WWF). 2008. "Monumental Debt-for-Nature Swap Provides $US 20 Million to Protect Biodiversity in Madagascar, WWF Announces." <http://www.worldwildlife.org/who/media/press/2008/WWFPresitem9271.html> accessed 9 October 2010.

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. (doi: 10.1080/03066151003595325)