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INVESTING FOR A SUSTAINABLE NATURAL ENVIRONMENT FOR FUTURE GENERATIONS OF HUMANS, ANIMALS AND PLANTS OF MADAGASCAR

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Madagascar Conservation & Development
Institute and Museum of Anthropology
University of Zurich
Winterthurerstrasse 190
CH-8057 Zurich, Switzerland

io@i

Indian Ocean e-Ink
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MISSOURI BOTANICAL GARDEN

Missouri Botanical Garden (MBG)
Madagascar Research and Conservation Program
BP 3391
Antananarivo, 101, Madagascar

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Acknowledging the gap between aspiration and achievement in improving social justice within Madagascar's conservation sector

This special issue grew out of the conference "Voices from Madagascar's Forests" that was held in Norwich in June 2010 (Ferguson, 2010). Some forty people from many different countries including Madagascar participated in the event, among them people working within conservation programmes and for NGOs that are active in Madagascar, academics from the social sciences as well as from disciplines like geography, agroforestry and conservation biology.

Almost three years have passed since the discussions which led to the organising of the conference and to the production of this special issue took place. Those years have been challenging ones for Madagascar and the Malagasy, due to the ongoing political situation and its broader impacts on the economy and donor cooperation. The original observations which led to the call for better representation and rights for Malagasy forest-dependent people were drawn from experiences in the field and in various policy arenas on the island and abroad. They were based on the following series of observations recognised through academic publications. Firstly, forest-dependent people in Madagascar have often seen their *de facto* resource and land access rights threatened when conservation organisations begin interventions. Secondly, there is often a considerable gap between the discourse of conservation organisations, on the one hand, and the real, lived experience of local people, on the other. Conservation organisations' discourse is often spot on in social justice terms, aspiring to seek sustainable solutions for people to make a living. The challenge comes when looking at the actual practice of conservation on the ground as experiences of conservation policies' impacts on local people are not nearly as positive as the institutional discourse would suggest, this is despite the fact that over the course of the NEAP policies have been developed and implemented which were intended to be more people friendly. The third observation is that, the voice of Malagasy forest-dependent peoples is not heard and not listened to in conservation policy discussions.

Dealing first with the issue of land and resource rights, there have been various somewhat nebulous statements in places such as REDD policy documents, NGO websites and the literature around Madagascar's conservation sector in recent years about initiatives striving to improve rural Malagasy's land tenure security. However, until we reach a broad acceptance amongst all those involved in decision making over Malagasy land that there are many different but equally rightful forms of land tenure (including in the "state owned forests") although not legally recognised by the Malagasy state, we are likely to end only with stalemate in the discussion. Currently conservation policy is based on the premise that the local people don't own the forest which is going into one form of protection regime or another and, furthermore, that they are not able to manage their land themselves without some sort of externally initiated management system being put in place. In such a situation it is unlikely that rural Malagasy people will be provided with any real power or voice in the decision making processes over Madagascar's forests as essentially their right to make decisions about their own land and resources is not recognised. Alternative livelihoods and income generating activities would be a form of compensation for stopping practices such as swidden agriculture and production of fuelwood and construction materials, which those providing such alternatives claim rural Malagasy had no right to do in the first place.

The five essays included in this special issue address these problems and document the gap between aspiration and achievement in improving social justice within Madagascar's Conservation Sector. Many more case studies could be added, one only has to peruse the extensive literature published on the subject.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank the authors whose hard work and patience has led to the production of this special issue. We would like to particularly thank Nadine Fritz-Vietta and Jacques Pollini for their important contributions to the process. Almost thirty anonymous reviewers provided insightful and helpful comments on the manuscripts submitted and the redrafts, we much appreciate their kindness. To Patrick, Lucienne, Christine and Arnaud we also must say a big thank you for providing the opportunity for serving as guest editors for this special issue, and for the substantial amount of time and effort they spent in helping us through the process and ensuring the final product was completed.

Barry Ferguson
University of East Anglia
U.K.
ferguson.barry@gmail.com

Eva Keller
University of Zurich
Switzerland
e.s.keller@bluewin.ch

REFERENCE

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ARTICLE

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Exploring discourses of indigeneity and rurality in Mikea Forest environmental governance

Amber R. Huff

The University of Georgia
250A Baldwin Hall, Jackson Street
Athens, Georgia, U.S.A 30602-1619
E-mail: amber.rosalyn@gmail.com

ABSTRACT

This article examines discourses of indigeneity and rurality that define and classify different categories of resource users in the context of Mikea Forest environmental governance. Many Malagasy peoples live in, have deep cultural ties with, and directly depend on the island's forests, but Mikea people are the only to be legally recognized as 'indigenous peoples' as defined by Operational Directive 4.20 of the World Bank. In policy documents, scholarship, and media productions, Mikea people are represented as a small, culturally distinct population of primitive forest foragers. In contrast, other subsistence producers living in the region are represented as invasive and harmful to Mikea people and the Mikea Forest environment. However, there are significant incongruities between these representations and local history, cultural norms, and social-environmental realities. While the intent of international norms for indigenous rights in conservation and development contexts is to mitigate risk of harm and improve democratic participation among historically underrepresented peoples, this case highlights how imposed notions of indigeneity can in some cases actually increase local vulnerabilities. Mikea Forest environmental policies should be amended to mitigate risk of insecurities faced by a broad range of forest residents, Mikea and non-Mikea, due to socio-political exclusions, restricted livelihoods, and reduced territorial rights.

RÉSUMÉ

L'objectif de cet article est d'examiner comment sont définies et classifiées les différentes catégories d'utilisateurs des ressources dans le cadre de la mise en place de politiques publiques à l'échelle de la forêt des Mikea et dans les discours sur l'indigénisme et la ruralité qui y sont associés. De nombreux Malgaches vivent, ont des attaches culturelles et dépendent directement des îlots forestiers pour leur subsistance ; néanmoins seuls les Mikea sont légalement reconnus comme des « peuples autochtones » tels que définis par la directive opérationnelle 4.20 de la Banque Mondiale et auraient dès lors des droits particuliers sur le territoire qu'ils occupent, y compris les forêts. Dans les textes des politiques environnementales ou dans les médias, les Mikea sont présentés comme membres d'un peuple autochtone doté d'une culture inédite et qui a adopté un mode de vie original alors que les populations voisines sont perçues comme des envahisseurs perturbant l'organisation sociale et les forêts des Mikea, Il existe toutefois des décalages importants entre ces représentations et les réalités du terrain : les fondements de l'identité locale ne correspondent pas aux définitions officielles de l'autochtonie présentée dans les documents du développement. Les Mikea et les populations voisines sont en fait largement interdépendants et tous pratiquent un éventail d'activités économiques qui varient en fonction des saisons, des compétences ou des demandes du marché. Contrairement aux représentations officielles présentant la culture des Mikea comme étant unique et autonome, les Mikea appartiennent aux mêmes clans et partagent les mêmes pratiques que leurs voisins jugés illégitimes quant à la gestion des territoires. L'histoire montre en outre une longue participation des peuples Mikea aux échanges commerciaux régionaux et mondiaux et des échanges réguliers avec les missionnaires. L'objectif des normes internationales pour les droits des peuples autochtones est de réduire la vulnérabilité des peuples sous-représentés dans les instances officielles et d'améliorer leur participation démocratique au sein de ces instances ; notre recherche montre que les notions imposées d'autochtonie peuvent accentuer la vulnérabilité des peuples à l'échelle locale dans certaines situations. Les politiques environnementales concernant la forêt des Mikea devraient être améliorées pour prendre en compte l'insécurité que rencontre une grande partie des résidents de la forêt, Mikea et non Mikea. Les acteurs de la conservation et du développement pourraient mettre en place des politiques plus justes et plus démocratiques, et devraient chercher à atténuer les conséquences négatives des politiques déjà en place.

INTRODUCTION

In Madagascar, protected forests are contested spaces where powerful discourses and material struggles meet. Madagascar's forests are presented by different powerful groups as global goods in crisis (Myers 1992, Ganzhorn et al. 2001, Harper et al. 2007), as wild natural spaces teeming with imperiled species of plants and animals (Myers et al. 2000, Mittermeier et al. 2008: 147), as threatened suppliers of valuable ecosystem services (Laurance 1999, Bodin et al. 2006) and as critical reserves of oil, titanium, and sequestered carbon that will facilitate national economic development and poverty alleviation if they can be managed sustainably (Norris 2006, Reyneke and Wallmach 2007, Ferguson 2009).

In narratives of general environmental crisis throughout Madagascar, such assertions of value are often juxtaposed with

statements of threat, attributing progressive environmental degradation and impending crisis to the behavior of rural people who produce for subsistence or who use extensive agricultural production strategies. In these narratives, Malagasy subsistence producers are represented in terms of a 'discourse of rurality' (Pratt 1996), as a relatively homogenous class of causal agents whose generalized poverty, patterns of migration, inefficient modes of subsistence, and high birth rates are contributing to a "tragedy of the commons" scenario (Hardin 1968, Durbin 1999: 276). According to these narratives, without significant environmental action the future will see progressive forest fragmentation, increased loss of habitats and endemic species, generalized ecosystem degradation, and ecological and economic collapse (Smith et al. 1997, Coe 1998, Hannah et al. 1998: 30–31, Styger et al. 1999: 258, Harper et al. 2007: 325–326).

Descriptions of deforestation in the Mikea Forest region of southwestern Madagascar feature representations of destructive rural subsistence producers as well. Since the late 1990s, a familiar crisis narrative has justified the development of environmental policies that criminalize some important livelihood activities, and have increasingly restricted smallholders' access to territory and forest resources. But the Mikea Forest environmental narrative is unique in Madagascar because of the additional legal categorization of Mikea people as 'indigenous peoples' (Ferguson 2009). Although a great many Malagasy peoples live in, have deep cultural ties with, and directly depend on the island's forests, Mikea are the only to be formally recognized as 'indigenous peoples' in Madagascar, as defined by Operational Directive 4.20 (OD 4.20) of the World Bank (World Bank 1991, Eaux et Forêts 2003:6, WWF 2003: 5, Ferguson 2009: 17, Repoblikan'i Madagasikara et al. 2010a).

While indigenous or 'true Mikea' are represented in idyllic terms as living in adaptive ecological balance as pristine foragers, other residents' attitudes, behaviors, histories of residency are glossed and presented in stark contrast to idealized Mikea. People who are variably referred to as non-Mikea, 'false Mikea', and 'migrants' are represented as encroaching on Mikea lands, negatively influencing Mikea culture and endangering traditional subsistence and spiritual practices by causing deforestation, by introducing farming, currency, commerce, and consumer goods, and by committing violent acts of theft against Mikea (WWF 2003: 8).

However, the discourse of Mikea indigeneity and antagonistic descriptions of Mikea vis-à-vis other residents of the region are at odds with local conceptions of history, sociality, and human-environment relationships, and they gloss significant diversity of lifestyle, livelihood, and personal experience among people who live in the Mikea Forest region. In the development of projects that receive funding from the World Bank, the presence of peoples classified as 'indigenous peoples' requires the establishment of protocols to ensure that peoples who self-identify as indigenous or who have been historically marginalized do not experience increased vulnerability (World Bank 1991). While the ethical intent of such guidelines is to ensure that people's rights, dignity, and interests are respected in the development of policies that affect them, this case highlights how preconceived notions of indigeneity, formalized in policy, can work to increase social and material risk among relatively disadvantaged peoples in particular contexts.

This article explores discourses of rurality and of Mikea indigeneity in Mikea Forest environmental protection policies and resource management practices from an anthropological perspective. Because of long-standing concerns with issues of power and inequality, with the contingency of socio-cultural forms and transformations, and with understanding human diversity and plurality in human experience, anthropologists are positioned to both critically and empirically examine claims that on the surface may appear "common sense" (Herzfeld 1998, 2001: 5). Compelling and widely accepted claims, or "received wisdoms" can generalize complex processes and obscure "a complex political economy of winners and losers" (Leach and Mearns 1996: 442, Adger et al. 2001: 687-688). By comparing local views and experience to the discourses that inform particular policies and practices, anthropological research can reveal problems with received wisdoms that simultaneously preclude more nuanced understandings of human social and environmental interactions and inhibit consideration of a variety of alternative viewpoints.

First, I provide background on the cultural geography of the Mikea Forest region and discuss the evolution of regional environmental governance since the 1990s. Next, I discuss the cultural origins of contemporary discourses of Mikea indigeneity, and discuss the ways in which discourses of rurality and indigeneity define and classify different categories of resource users in this context. Third, I evaluate these representations using information from secondary sources and ethnographic evidence regarding history, livelihoods, and norms of identity in the northern and central Mikea Forest region. Finally, I will discuss some of the challenges involved in applying international norms for indigenous rights in this context, and suggest ways that policy planners and conservation practitioners can address gaps between policy prescriptions, conservation and development practice, and local experience in the Mikea Forest region.

The information presented in this article is based on a review of relevant secondary sources, qualitative content analysis of policy documents, and information gained in focus groups and interviews over the course of eleven months of ethnographic fieldwork in southwestern Madagascar in 2007–2009 as part of a larger research project examining relationships among social change, livelihoods and human health in the Mikea Forest region. Focus groups were conducted in early 2009 in order to guide the development of a survey instrument for assessing exposure to social and environmental stressors (results not presented here), but, like interviews and other forms of data, results of these focus groups are helpful to understanding local perceptions and policy outcomes. Participants in semi-structured and unstructured interviews included self-identifying Mikea, Masikoro, and Vezo people living near protected area boundaries, regional security personnel and government administrators, and conservation and development practitioners working in the region.

THE MIKEA FOREST REGION: IDENTITY, LIVELIHOODS, AND THE EVOLUTION OF ENVIRONMENTAL GOVERNANCE

THE CULTURAL GEOGRAPHY OF THE MIKEA FOREST REGION.

The Mikea Forest region (Figure 1) lies east of the Mozambique Channel between the cities of Toliara and Morombe in southwestern Madagascar. City dwellers refer to this region,

along with most of rural Madagascar, as *Ambani'vohitse* (below the hills), a term without geographic specificity denoting isolation from city centers and state infrastructure. The Mikea Forest itself is an expanse of dry deciduous and spiny forest occurring on unconsolidated sands. The regional landscape is heterogeneous and anthropogenic, composed of coastal dunes and mudflats, limestone flats, mangroves, and spiny xerophytic scrub on the western coast; forested dunes, dense and viny dry deciduous forest, rain-fed wetlands, and dry, spiny scrubland in the Mikea Forest between the coast and the eastern savanna; and woodland, woody savanna, spring-fed irrigated rice fields (tanambary) and savanna grassland to the east of the Mikea Forest.

In the Masikoro and Vezo dialects of Malagasy, which are also spoken by Mikea, the word *karaza* means 'a type' (Astuti 1995b: 9). There are *karaza* of all sorts of things: fruits (mangoes, oranges), animals (species), crops (varieties), and peoples (ethnicities). When speaking of people locally, *karaza* most often refers to a primary cultural identity and a lifestyle associated with that identity. In the Mikea Forest region, three primary cultural identities are normatively associated with different ecological niches and primary livelihood activities. These primary identities include Mikea, Vezo, and Masikoro.

Mikea self-identify and are identified by their neighbors as people of the Mikea Forest (*Alamikea*). Vezo describe themselves as 'people of the sea' (*olo andriake*) who practice marine foraging on the rich reefs that hug the west coast of Madagascar. Masikoro describe themselves as people of the savanna and woodland to the east of the Mikea Forest, specializing in farming and raising cattle and other livestock. People self-identifying as Mahafaly, Tandroy, Tanosy, and Tesaka also live in the Mikea Forest region, practice similar livelihoods, and often live in settlements that are considered to be historically Mikea, Vezo, or Masikoro. These so-called 'immigrant' identities are associated with migration into the region in the colonial and post-colonial periods in response to political and ecological factors, and in response to market demand for specific wild or agricultural products.

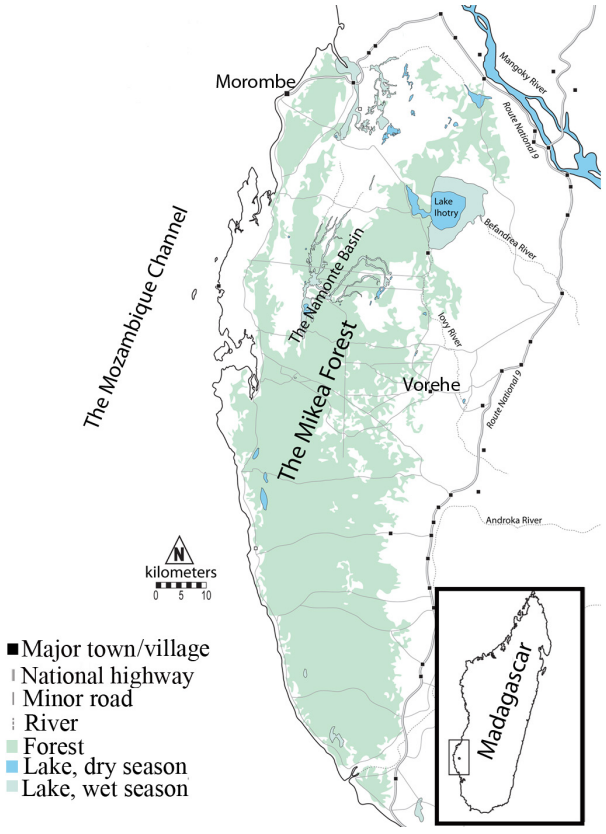

FIGURE 1. The Mikea Forest region, showing major geographical features, major towns and villages, and roads. Minor towns and hamlets are not shown. Adapted with permission from a map of the Mikea Forest region by Bram Tucker; forest extent from 1994 Landsat images processed by James Yount.

According to local oral historians, contemporary Mikea, Vezo, and Masikoro share common heritage (Tucker 2003: 199), and the emergence of Mikea, Vezo, and Masikoro identities was contemporaneous with the pre-colonial rise of the Maroseraña and Andrevola dynasties in southwest Madagascar in the seventeenth century (Yount et al. 2001, Tucker 2003). In the pre-colonial period, Masikoro identity became associated with "loyal, tribute-paying vassals to the kings" (Tucker et al. 2011: 293). Others sought to avoid political incorporation, risk of slave and cattle raids, frequent food shortages, and accusations of sorcery by resorting to mobile marine foraging, and to forest-based terrestrial foraging, herding, and farming (Tucker 2003: 199). Many Mikea oral historians describe their ancestors as farmers and semi-nomadic coastal pastoralists who sought refuge, security, and subsistence in the Mikea Forest, but who also maintained social ties and extensive trade relationships with people living outside of the forest. Astuti (1995a, b) discusses Vezo and, to a lesser extent, Masikoro identities as processual in nature; one's identity is not simply something that one 'is' because of birth or descent, but is a characteristic of one's self that develops in the context of what one knows and does and where one lives at a particular time. Some self-identifying Mikea people express identity in similar terms, on the basis of forest-based residence and/or sophisticated knowledge of forest and foraging. But, as Yount et al. (2001) explain, there are other ways in which people self-identify as Mikea. These explanations "situate the informant within a line of descent or a village of origin that itself has a Mikea history of life in the forest" (Yount et al. 2001: 262). Thus, self-identification as Mikea may be processual, as discussed by Astuti (1995a, b), but it may also be based in residential, historical, and/or genealogical explanations. In addition, most people who self-identify as Mikea also identify as Vezo or Masikoro, thereby alluding to personal histories, to livelihood diversification (discussed below), or historical migrations of particular groups of people. As Poyer and Kelly (2000: 168–169) observe, identities of self-identifying Mikea people may shift for various reasons, including avoidance of stigma or discrimination, as one moves between forest and villages.

Despite contemporary norms associating Mikea, Vezo, and Masikoro identities with ecologically specialized lifestyles, members of all three groups (and members of other groups as well) are highly mobile and practice "productive bricolage" livelihood strategies (Batterbury 2001: 483). Throughout the twentieth century, Mikea and their neighbors responded ambitiously to market booms for butterbeans (*kabaro*) in the interwar period and the 1960s, silk (*kohoke*) harvesting and processing in the 1920s and again in the early 2000s, cotton (*hasy*), and maize (*tsako*) from the 1970s to the early 2000s (Ottino 1963, Hoerner 1981, 1987, Tucker 2001, Blanc-Pamard 2009). Even so, for most people, the majority of production has remained very diversified and subsistence-oriented or oriented

toward regional markets. This is due to a combination of social, environmental, and economic factors, including seasonality, stochasticity of rainfall and markets, poor infrastructure resulting in high transport costs, dependency on relationships with brokers (often Malagasy Indo-Pakistani) who buy bulk produce at very low prices and sell high, the exploitive social relations of sharecropping, and the high debt-risk incurred by intensive agricultural production (see Ottino 1963 for early description). In any given village residents are likely to practice a shifting combination of horticulture, animal husbandry, freshwater fishing, forest foraging, marine foraging, manufacturing, market commerce, and wage labor (Tucker 2001).

THE EVOLUTION OF MIKEA FOREST ENVIRONMENTAL GOVERNANCE. In recent years, interest in converting the Mikea Forest into a protected area (PA) and later a national park has been stimulated by national goals to increase the amount of forest under protection in Madagascar (Raik 2007), and has been justified citing a significant reduction in regional forest cover since the 1970s due to forest cutting and burning for pasturage, charcoal production, and especially for hatsaky, swidden maize production, by subsistence farmers and agropastoralists (Seddon et al. 2000, Milleville et al. 2001, Aubry and Ramaromisy 2003, Blanc-Pamard 2009).

In order to slow deforestation, between 1998 and 2001 a blanket ban on hatsaky maize production was enforced by an intercommunal NGO called FiMaMi (F*ikambanana Miaro ny Ala Mikea*, or Society for the Protection of the Mikea Forest). Between 2001 and 2003, a *Commission mixte* (Joint commission), funded by the United Nations Development Programme (UNDP), and formed through collaboration among FiMaMi and representatives of various national agencies, the Worldwide Fund for Nature (WWF) and Conservation International (CI), members of the Malagasy military, the gendarmerie, and the courts system, oversaw enforcement of the *hatsaky* ban (WWF 2003).

By 2003, the Mikea Forest maize boom, which was fuelled primarily by export demand, had effectively ended in the northern and central Mikea Forest. Mikea and others living in the region had generally stopped clearing forest for new *hatsaky* or had resorted to clandestine smaller-scale maize cultivation.

In 2007 the Mikea Forest Protected Area agreement, a temporary order of protection, was formalized, establishing a large area of protection, *Complexe Mikea*, of over 370,000 hectares with a buffer zone surrounding it. Within the PA, zones of no use (*noyau dur*), controlled use (*zone d'utilisation contrôlée*, or ZUC), controlled habitation (*zone d'occupation contrôlée*, or ZOC), and ecotourism were created in preparation for the PA's transition to national park status (Repoblikan'i Madagasikara 2007).

Between 2007 and 2009, PA boundaries were under negotiation. In late 2008, I was told by the director of the Mikea Forest bureau of Madagascar National Parks (MNP) that no reliable map existed at that time because of ongoing negotiations regarding potential mining activities. On maps of the Mikea National Park created in early 2009 (Figure 2), the size of the PA had been decreased to just under 185,000 hectares, and a large mining concession was shown to adjoin the eastern buffer zone (FTM/Madagascar National Parks 2009).

Project planners estimate that approximately 130,000 Malagasy people will be affected by restrictions on resource use associated with the creation of the Mikea National Park and the surrounding PA (Repoblikan'i Madagasikara et al. 2010b: 12). Resource use restrictions affect important economic and health-related activities, including the cutting of vegetation for charcoal production; hunting bushpig (*lambo*; *Potamochoerus larvatus*), wild guinea fowl (*akanga*; *Numida meleagris*), and small mammals; collecting fuel wood; collecting medicinal plants; collecting potable water; collecting materials for house construction; fishing; pasturing livestock, and collection of natural materials used for weaving baskets and mats (Repoblikan'i Madagasikara et al. 2010b: 12). People whom planners refer to as the 'autochtonous Mikea population', are exempt from such restrictions because, according to policy documents, as hunter-gatherers "their traditional practices and exploitation of resources are in harmony with their natural habitat," and are considered compatible with the management objectives of the PA (Repoblikan'i Madagasikara et al. 2010b: 9).

REPRESENTING PEOPLE: LINKING HISTORICAL DISCOURSE, POPULAR CONVENTION, SCHOLARSHIP, AND POLICY

VAZIMBA ASSOCIATIONS AND MIKEA INDIGENEITY IN POPULAR CULTURE AND SCHOLARSHIP. The concept of Mikea indigeneity did not originate among Mikea people, but has been constructed at different socio-political scales, and also at different time scales (Yount et al. 2001, Tucker 2003). On a national level, the idea of Mikea indigeneity is linked to related streams of Malgachisant scholarship, as well as to widespread popular beliefs about ancient origins, primitivism, and cultural distinctiveness of foraging people in general and Mikea people in particular (see Moyoun and Francelle 1999a, b, Rarojo 1998). Notions that Mikea are an isolated and culturally primitive people, a relict population of elusive pygmies, or even mysterious semi-humans, are common conventions outside of the Mikea Forest region, and are relevant to popular ideas about Malagasy natural and cultural history, mythology, and nationalism (Tucker 2003).

In Madagascar, popular notions of Mikea indigeneity revolve around what Tucker (2003: 194) terms the "Vazimba[1] hypothesis" of Mikea origins. According to one stream of lore, Vazimba were a group of primordial inhabitants widely believed to have lived in the Malagasy highlands before being driven to peripheral areas of the island by later proto-Malagasy immigrants of "superior… intellect and ability" (Grandidier 1920: 209). While many Vazimba and their descendants purportedly assimilated into Malagasy society, those who remained in isolated areas came to be labeled 'owners of the land who came before', *tompontany taoloha*, implying direct descent from ancestral Vazimba.

In a fundamental sense, this stream of Vazimba lore originated simultaneously in Europe and Madagascar in the pre-colonial period, during a time when people all over the world were interacting through trade and transformative cultural exchange and synthesis. According to Berg (1977: 7–8) and Graeber (1999: 329–330), legends describing a race of bizarre pygmies living in isolation as well as stories of dark spirits lurking in the wilderness of Madagascar were reaching Europe by the end of the eighteenth century, even before the first European missionaries had reached Madagascar's interior regions and began transcribing oral histories. Such legends have become part of the national historical cannon. They have been institutionalized in state histories including in the *Tantara ny Andriana eto Madagascar*

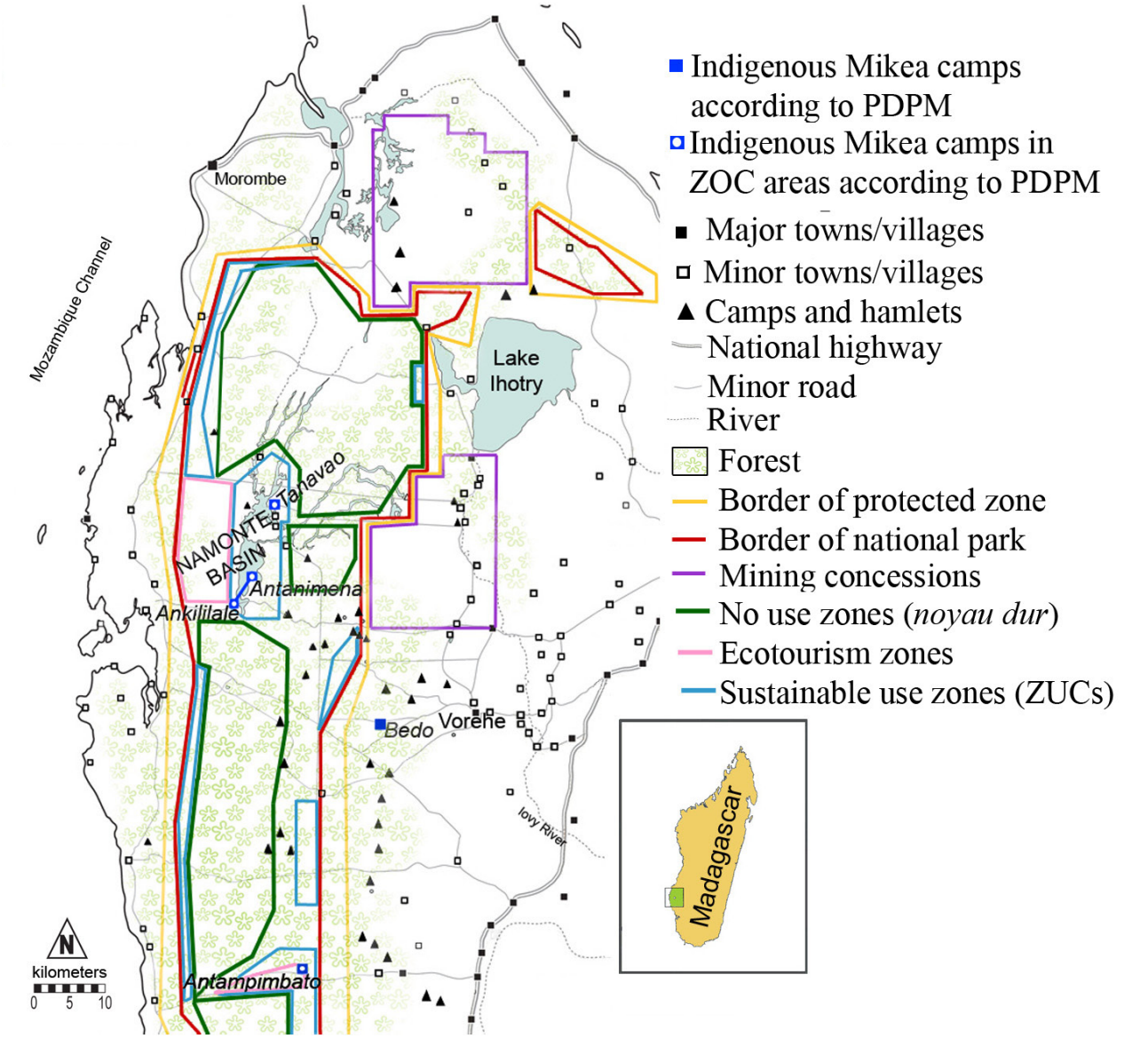

FIGURE 2. The north and central Mikea Forest Region, showing major geographic features, PA zoning, mining concessions, and major and minor settlement sites. Adapted from maps included in the *Plan de développement de la population autochtone Mikea* (Repoblikan'i Madagasikara et al. 2010a), from *Carte de zonage du Parc National Mikea* (FTM/Madagascar National Parks 2009), and from a map of the Mikea Forest region by Bram Tucker; forest extent from 1994 Landsat images processed by James Yount).

(Malzac and Callet 1908), and have been part of the formal history curriculum of Malagasy schoolchildren for generations (Berg 1977, Graeber 1999, Tucker 2003). According to Kelly and Poyer (1999) and to Tucker (2003), with a lack of alternate written historical sources and little archaeological evidence, the sometimes didactic, sometimes alternately verifiable, and sometimes fictional information contained in formal histories has been repeated and reinvigorated subsequent generations of foreign and Malagasy scholars, often without attribution. According to Sarah Dugal, whose doctoral thesis (2004) documents several versions of the 'Vazimba story' in historical documents and oral histories, the only logical connection between Mikea people and Vazimba is that both are purported to be or have been foragers (personal communication).

The institutionalization of ideas that link such legends to Mikea people is evidenced by the fact that scholars have continued to attribute assumed primitivism to the idea that Mikea people are relict descendants of Vazimba since at least the early twentieth century. Scholarly depictions of Mikea as relict or primitive take two basic forms, both of which are influenced by historical 'Vazimba' associations and notions of progressive social evolution. Some authors and journalists directly and literally attribute assumed primitivism to the idea that Mikea are descendants of Vazimba (Birkeli 1920, 1939, Koechlin 1975, Faroux and Rabedimy 1985: 2 [discussion of "*Les Mikea traditionnels*"], Stiles 1991, 1998, Godefroit 1998: 83, Rarojo 1998, Mouyon and Francelle 1999a, b, Blench 2008).

Other authors accept the relatively recent advent of Mikea as a cultural identity, and acknowledge the historical origin of this identity in refugeeism and resistance of authoritarian rule, as well as kinship with neighboring Vezo and Masikoro (Faroux and Rabedimy 1985: 2 [discussion of "*Les pseudo-Mikea*"], Blanc-Pamard 2002: 220, Blanc-Pamard et al. 2005: 9). Yet these authors also describe Mikea using classic essentialisms and language that evokes imagery of the relict primitive, describing Mikea in terms of wildness, primitivism, or mysticism, in terms

of indigeneity, or as living in ecological harmony in the mode of the "ecologically noble savage" (Redford 1991: 26). Popular conventions regarding Mikea primitivism as well as both of these streams of pro-primitivist scholarship have significantly influenced representations of the "*Mikea population autochtone*" vis-à-vis other residents of the Mikea Forest region in environmental policy narratives (see Eaux et Forêts 2003, WWF 2003, Repoblikan'i Madagasikara et al. 2010a, b).

REPRESENTATIONS OF INDIGENEITY AND RURALITY IN MIKEA FOREST ENVIRONMENTAL POLICY. Received wisdoms regarding Mikea became streamlined and formalized in policy as interest in establishing a Mikea Forest protected area began to coalesce concurrently with the planning of the third phase of Madagascar's National Environmental Action Plan. Contemporary international norms regarding indigenous peoples are embodied in the influential 1989 ILO Indigenous and Tribal Peoples Convention no. 169 (not ratified by Madagascar), which lays out basic principles for ensuring the rights of people who self-identify and are recognized by others as indigenous and tribal peoples. These principles include criteria for the identification of indigenous and tribal peoples, recognition of rights to non-discrimination, rights to special protection in order to safeguard culture, rights to consultation, and rights to free, prior and informed participation in political processes that affect them (Anaya 1991, 2004, Bowen 2000, Pelican 2009). Self-identification as indigenous is considered both a right of indigenous peoples and a fundamental criterion for the identification of peoples to whom these principles are meant to apply (World Bank 1991: 1, Hodgson 2002:1038, Sarafaty 2005: 1803).

International customary norms can 'steep into domestic law' in countries such as Madagascar that have not ratified international conventions. This happens when lenders such as the World Bank attach special conditions to aid, or incorporate operational policies into aid agreements to promote compliance with international customary law in countries receiving financial and technical assistance (Sarafaty 2005: 1795). The World Bank, a partial funder of the PA, maintains special operational guidelines for projects that affect people who are "indigenous peoples, tribes, ethnic minorities, or other people whose social and economic status restricts their capacity to assert interests and rights in land and other productive resources" (World Bank 1991: 1). In accordance with World Bank Operational Directive 4.20 (OD 4.20), national recognition of Mikea people as indigenous contractually necessitated the creation of a development framework by which the dignity, rights and 'informed participation' of Mikea in the development of policy would be ensured as plans to establish the Mikea Forest PA progressed (World Bank 1991). In practice, this meant that project planners would have to establish criteria for distinguishing between those who are Mikea and who are not, a difficult task considering the complexities of Malagasy systems of identity.

According to discussions with Madagascar National Parks personnell in 2007–2009 and project documents published by the World Bank, including *Plan de développement de la population autochtone Mikea* (PDPM) and the *Cadre fonctionnel de procédures de sauvegarde pour le projet de création du Parc National Mikea* (referred to as a 'resettlement plan'), rights of resource use and habitation within PA boundaries hinge on identity, particularly whether or not one's lifestyle and site of residence qualifiy one as a member of the "*Mikea population autochtone*" (Repoblikan'i Madagasikara et al. 2010a, b). The PDPM identifies the entire indigenous Mikea population as 923 individuals living in forest 'camps' of Ankililale, Antanimena, and Tanavao, located in two controlled habitation areas (ZOCs) in the north-central Mikea Forest, Antampimbato, in a ZOC to the south, and Bedo, located outside of the eastern boundary of the PA near the village of Vorehe (Repoblikan'i Madagasikara et al. 2010a: 75).

According to the PDPM, autochthonous Mikea are defined as unique and culturally different from other Malagasy, maintaining distinct customs and social institutions, subsisting primarily by foraging for wild foods with primitive tools, and depending on the forest for renewable resources, including medicinal plants (Repoblikan'i Madagasikara et al. 2010a: 33, 82–84). The authors of the 2010 resettlement plan likewise identify Mikea as "a local indigenous population living in precarious conditions and dependent only on gathering [natural resources of the forest] and hunting [game]" (Repoblikan'i Madagasikara et al. 2010b: 12, author's translation). Mikea are further identified as spiritually, culturally, socially, and economically dependent on land and forest resources and are explicitly discussed as separate from the broader national context of Malagasy society. This is illustrated by the key statement made by project planners that an individual or community will lose the protected status as a "*population autochtone*" when they choose to "emerge from the forest and adopt the way of life and civilization of the outside world" (Repoblikan'i Madagasikara et al. 2010b: 22, author's translation).

In policy, the category of the *Mikea population autochtone* and the true Mikea/false Mikea dichotomy are based on a highly selective process by which information and ideas that support the fictive notion of Mikea as a culturally distinct group of primitive, environmentally harmonious hunter-gatherers is highlighted and emphasized, while information that is contrary to this representation is de-emphasized or omitted. Highlighted characteristics include forest residence, natural resource dependency, selected foraging activities, sociopolitical marginalization, and material poverty. Information that is de-emphasized or omitted includes (but is not limited to) the extent of heterogeneity and diversification of livelihoods among Mikea; the extreme seasonality of foraging in the Mikea Forest; the importance of participation in markets for goods, sevices, and labor; the inaccessibility of state infrastructure and development projects, and the fact that most people who self-identify as Mikea simultaneously identify as Vezo or Masikoro. Furthermore, the *Plan de développement de la population autochtone Mikea* (PDPM) estimates the number of Mikea to be less than one thousand people living in a few scattered camps in and near the forest. On PA maps that include settlements, with the exception of a few villages in the Namonte Basin area and the southern Mikea Forest, all villages and hamlets within the park boundaries and buffer zones have been omitted, giving the impression that this area is either sparsely populated or unpopulated (Repoblikan'i Madagasikara et al. 2010a). In reality, thousands of self-identifying Mikea and others living in permanent villages, hamlets, and seasonal camps are omitted from policy consideration and rights to land and natural resources.

While members of the *Mikea population autochtone* are described as living in adaptive ecological balance as exclusive or nearly exclusive foragers, the attitudes, behaviors, histories

of residency of other people living in the region are glossed by a simplified narrative of rurality and presented in stark contrast to idealized indigenous Mikea. Non-Mikea, 'false Mikea,' and 'migrants' are represented as encroaching on Mikea lands, negatively influencing Mikea culture and endangering 'traditional' subsistence and spiritual practices by causing deforestation, introducing farming, currency, commerce, and consumer goods, and committing violent acts of theft against Mikea (WWF 2003: 8).

ETHNOGRAPHIC EVIDENCE AND THE GOVERNANCE GAP

MIKEA EXPERIENCES VIS-À-VIS THE IDEA OF THE MIKEA POPULATION AUTOCHTONE. The practice of representing Malagasy people through discourses of rurality and discourses of Mikea indigeneity developed apart from the lived experience of residents of the Mikea Forest region. As a result, there are significant incongruities between official representations of identity and lifestyle that have guided regional policy production on one hand, and local history, cultural norms, and social-environmental realities on the other. People who self-identify as Mikea do not self-identify with the category of the *Mikea population autochtone*. The highly selective presentation of information in regional environmental policy is accompanied by three particular types of imagery – imagery of primitivism, of traditionalism, and of vulnerability – in order to substantiate claims that members of the Mikea population autochtone are distinct from other Malagasy people, as well as culturally threatened by other Malagasy living in the region.

There is a great deal of variation among people who identify as Mikea in the accessibility of different technologies (hand tools, firearms, oxcarts, rice threshers, electric generators), in degrees of reliance on foraging as a component of subsistence portfolios (along with farming a number of varieties of food, rearing livestock, marketing, and wage labor), and the degree to which people engage in different forms of commerce (mobile retailing, market-day selling and buying, agricultural production or bulk foraging for sale to regional wholesalers). Barter, foraging, and other forms of dependence on forest resources are not locally considered to be indicators of cultural uniqueness or primitivism, but are ubiquitous among people who live in the Mikea Forest region, regardless of stated identity, as components of flexible and diversified livelihoods that must compensate for seasonality, stochasticity of rainfall, and unstable regional markets for goods, produce, and labor.

In addition to the imagery of primitivism, authors present imagery of traditionalism, citing veneration of ancestors and respect of clan elders, and the maintenance of particular social institutions and cultural practices as characteristics of indigenous Mikea (Repoblikan'i Madagasikara et al. 2010a: 21, 2010b: 22). The imagery of traditionalism reinforces the notion that members of the Mikea population autochtone are old-fashioned, lacking modern consciousness and worldviews. The inclusion of communication with ancestors, respect of elders, spirit posession (*tromba*) and various types of ceremonies for healing and to mark rites of passage (*bilo*, *savatse*, *soro*), as additional characteristics for identifying Mikea seems very odd considering that, although the names of particular ceremonies may vary by regional dialect, these are well-documented as common practices throughout the southwest, and throughout the whole of Madagascar (see Ottino 1963, Bloch 1971, Feeley-Harnik 1986, Campbell 1992, Astuti 1995a, 2000, Sharp 1995, Lambek and Walsh 1997, Lambek 1998, Middleton 1999, Cole 2001, Dina 2001, Emoff 2002, Sirven 2006, Graeber 2007, Astuti and Harris 2008, Tucker et al. 2011).

Authors of the PDPM and the resettlement plan describe Mikea as people as experiencing exceptional vulnerability due to social marginalization and material poverty caused or exacerbated by the purportedly invasive and culturally corrupting influences of non-Mikea people. While many Mikea do experience a high degree of socio-political marginalization and material poverty, the causes are complex and cannot be reduced to simple antagonism by their neighbors, who face a number of the same challenges as Mikea. Mikea often discuss the forest as a space of relative refuge from state violence and exploitation, as well as a source of diverse livelihoods. People who live in villages and camps within the forest often express pride in possessing knowledge of forest-based subsistence and the ability to survive periods of economic or environmental hardship through foraging. There have however been trade-offs; by continuing to live in relatively isolated areas to avoid violence and exploitation, Mikea are isolated from state and non-state infrastructure (public health services, schools, development projects) to which they may desire access, and experience a high degree of socio-political exclusion. Mikea are unlikely to speak French or the official dialect of Malagasy, and are less likely than others to be literate or bureaucratically competent.

Across the region, forest-based Mikea are stereotyped not as primitive or culturally distinct, but as very materially poor, as lacking basic education, as likely to possess only dirty or tattered clothing, and as likely to be dirty from a lifestyle that involves tuber digging or infrequent bathing (some forest villages and camps are located several kilometers from water sources). People identifying as Mikea experience frequent discrimination and discuss difficulty earning fair wages for labor, being cheated in marketplace transactions, and being harassed by civil defense personnel. Mikea people are considered easy targets for bandits and corrupt outsiders who demand bribes because Mikea live in the forest or on the social margins of villages, often lack up-to-date passports and licenses, and have relatively little access to legal protection (Tucker et al. 2011: 300).

The *hatsaky* maize ban has been particularly problematic for many Mikea living within the forest. Direct effects include the elimination for many of their largest source of cash income, and greatly reduced access to the most nutritious non-foraged staple food. People living across the region frequently attribute increased crime incidence with the crack-down on maize production, as some people (primarily young men from hard-strapped savanna villages) have sought alternative sources of income by resorting to banditry and cattle theft. Increased incidence of banditry and cattle theft since the advent of the *hatsaky* maize ban has led residents of some forest villages to abandon or hide cattle ownership as a means to protect themselves from the attention of criminals. For Mikea who have abandoned even very small cattle stocks, this has meant removing their most significant form of wealth storage for the sake of personal and household security.

At the same time, people dependent on subsistence production that live in the north and central Mikea Forest region

have few alternative livelihood options. Institutional capacity building for rural development efforts has primarily focused on more densely populated areas to the east and southeast of the Mikea Forest near *Route Nationale 9*, where transitions to intensive cotton, manioc, maize, rice, pulses, and sustainable biofuel and charcoal production are supported by a number of national and international NGOs. As a result, people who are the most dependent on forest resources and face the most potential difficulties due to livelihood restrictions face significant, and often absolute, barriers to accessing infrastructure that could in some cases smooth transitions. Such infrastructure might involve equitable financial institutions and credit markets; markets for seed, agricultural inputs, and agricultural outputs; reliable water sources for irrigation, and access to public services, including transportation, education, health services, and agricultural extensions (Zeller et al. 2000: 10, Dear and McCool 2010: 106–107).

In regional environmental policies, particular discourses of Mikea indigeneity, primitivism, traditionalism, and vulnerability conceptually alienate the Mikea from broader Malagasy society and from the cultural milieu of the Mikea Forest region. These policy representations deny Mikea people options, agency, and what Lambek (1998: 106) terms "historicity." The implication is that people who become foragers culturally devolve (Lee and Hitchcock 2001: 267), and step out of history into a more "authentic" (Wilmsen 1989: 8) social order that is less dynamic and more natural. The foraging mode of subsistence is presented as ahistorical, equated with isolation not only from cities, infrastructure or broader social institutions, but with "remoteness from the flow of history" itself (Wilmsen 1989: 8).

OPERATIONAL DIRECTIVE 4.20 AND THE MIKEA FOREST GOVERNANCE GAP. The philosophical underpinnings international customary law regarding indigenous peoples and rules like World Bank OD 4.20 relate to the cultural autonomy of historically underprivileged, mobile, or minority groups within a sovereign nation-state, either due to the idea of primordial occupation, cultural uniqueness, and/or vulnerability (Bowen 2000). The stated ethical intent of a rule like OD 4.20 is to ensure that particular groups of people, be they 'indigenous peoples', ethnic minorities, or other groups whose social or economic status has historically restricted their ability to assert their interests and rights to land and other productive resources, are afforded special protections to avoid increased vulnerability disadvantage in the development process (World Bank 1991).

In accordance with World Bank funding policies, Mikea Forest environmental policies at times include laudable assertions recognizing historical inequities and contemporary vulnerabilities, and propose a governance structure in which Mikea people can become the agents of their own development on their own terms. For example, the *Plan de gestion environnementale*, *Programme environnemental 3* clearly states that a Mikea Development Plan would be developed "by and for Mikea, who will define the plan and activities that they think are beneficial for their social, economic and cultural development," and pledges to not develop plans for a Mikea Forest PA until such a development plan is realized (Ministère de l'Environnement, des Eaux et Forêts 2003: 6–7), while the *Cadre Stratégique pour le Développement des Populations Autochtones Mikea* states that "Mikea people will ultimately decide on the opportunity to transform the forest into a PA" (WWF 2003: 8).

However, the development plan, the P*lan pour le développement des populations Mikea* (PDPM), was not published until 2010, after plans to establish the Mikea National Park had been underway for several years. According to the *Cadre Stratégique* (WWF 2003: 5), the formulation of the development plan was delayed due to conceptual and logistical challenges. The first challenge discussed related to the terms 'indigenous peoples' and 'development' as defined by Operational Directive 4.20. Specifically, this challenge related to uncertainty regarding the task of creating a development plan for an 'indigenous' group of people whilst ensuring that they could maintain cultural identity and lifestyle (WWF 2003). The second challenge was logistical. Because of a long historical memory of exploitation and violence, many Mikea are skeptical about the motives of state representatives and NGO employees and intentionally avoid outsiders who seek them out. Simply stated, the research team tasked with preparing the development plan did not actually have the opportunity to interact and discuss their tasks with a substantial number of self-identifying Mikea people because people ran away or otherwise avoided them. Therefore, the informed participation of Mikea people in the development of PA policies was not realized at the time.

Instead, informed participation was proposed as an ongoing process ultimately to be regulated by the intercommunal NGO, FiMaMi (*Fikambanana Miaro ny Ala Mikea*, or Society for the Protection of the Mikea Forest). The membership of FiMaMi comprises the elected mayors of 15 of 19 townships surrounding the Mikea Forest, and its official responsibilities include cooperative resource management and enforcement of environmental legislation, including a continued ban on *hatsaky* maize production, as well as monitoring environmental impact of economic activities in areas near *Route Nationale 9*. Since the inception of prohibition of *hatsaky* maize production, FiMaMi has been considered the de jure representative of Mikea (even though no members of FiMaMi self - identify as Mikea) and other resource users' interests in matters related to conservation and development policy and enforcement.

The authors of the PDPM claim that all categories of stakeholders, including the autochthonous population, participated in a public consultation process, that Mikea have contributed to the development of a system for monitoring social and environmental impacts of the PA and related development projects, that free, prior, and informed consent (FPIC) was sought, and that FiMaMi gave local consent for PA establishment (Repoblikan'i Madagasikara et al. 2010a).

However, this proposed governance framework is problematic, due in no small part to the fact that categories of stakeholders that are formalized in these policies do not reflect on-the-ground realities of cultural self-identification, nor of lifestyle in terms of subsistence and other economic activities. In fact, very little policy information is actually available to people who live in forest settlements. Many people who are affected by the new PA are aware of its existence in an abstract sense, but discussed frustration at the lack of specific policy information that is available to them, a perceived uneven enforcement of rules regarding resource use, and a lack of access to legal protection against banditry and corruption.

The distinctions drawn among essentialized categories of true Mikea, false Mikea, migrants and other residents may seem like common sense to employees of financial institutions,

policy planners, and conservation workers who are not native to nor familiar with the Mikea Forest region, and may thus be unfamiliar with local norms of identity and lifestyle. But local notions of what makes one Mikea do not make the distinction between true and false, nor do any people living in the region resemble the representations of primitivism and difference that have rendered idealized Mikea as unique primitives in popular Malagasy culture or in development funding proposals. Essentialized distinctions among ecologically noble members of the 'autochtonous Mikea population' and destructive 'false Mikea,' migrants, and others are not meaningful locally and are thus impossible to operationalize in the enforcement of policy.

CONCLUSIONS

Discourses of rurality and discourses of Mikea indigeneity define communities of local actors and their associated entitlements in the context of the gradual development of the Mikea National Park in order to define legitimate claims to land and resources (Neumann 1997: 561). Issues related to the representation of 'communities' are not just a matter of abstract or academic interest; they are inevitably linked to problems and questions in the domains of policy and practice (Brosius et al. 1998: 165). Discourses represent knowledge regimes from which policy prescriptions and action flow (Adger et al. 2001: 684), and they connect knowledge and actions of agents on multiple scales of interaction. Different actors employ compelling policy narratives and discourses for different purposes, and explanations of environmental, social, and demographic change that become integrated into policy are likely to be those put forward by relatively powerful stakeholders (Kull 2002).

Because Malagasy people living in rural localities may have limited means to counter dominant narratives or participate fully in policy discussions, stakeholders possessing greater social power shape the context in which discussions about environmental governance and rights take place, can specify who is qualified to make decisions about environmental management, and can frame problems so that certain courses of action are justified while a variety of alternative perspectives and courses of action are never considered (Brosius 1999: 278, Kull 2002: 63–64). These processes carry profound practical implications in terms of human well-being in the context of regional conservation and development projects, and for environmental futures in the Mikea Forest region and throughout Madagascar.

International norms for indigenous human rights claim universal applicability (Bowen 2000), but the concept of 'indigenous peoples' is highly politicized, and is subject to local and national particularities (Pelican 2009: 53). Identifying who qualifies as indigenous can be problematic, especially when these categories are not meaningful to the people who are objects of policy action. Such problems are exacerbated when procedures for achieving free, prior, and informed consent for conservation and development projects are conceptually and logistically challenging to practitioners on the ground (Bowen 2000, Colchester and Ferrari 2007, Pelican 2009). They contribute to significant gaps among prescribed policy, realized legislation and protocols, and micro-regional conservation and development practice. This risks widening gaps between anticipated results (in terms of social outcomes, and for landscape and biodiversity preservation) and realized local outcomes for particular projects.

Rather than empowering people to "negotiate on equal terms with project proponents" as is the intent of guidelines such as World Bank Operational Directive 4.20 (Goodland 2004: 66), the discourse of Mikea indigeneity mystifies Mikea identity, and naturalizes material poorness and social marginalization that self-identifying Mikea often experience in the broader social context. The imagery of the pristine forager is compelling because it adds to the force of the crisis narrative – not only is the Mikea Forest under threat, but so too is the unique and vulnerable human capital that inhabits it. At the same time, discourses of rurality mark non-Mikea as environmentally unworthy subjects, generalized as invasive, irrational, and criminally harmful to Mikea and the Mikea Forest, justifying their exclusion from policy discussions, livelihoods and territory as well.

When local experience runs counter to more generalized conceptions of social life and human-environment interactions, questioning dominant discourses and adjusting policy and practice accordingly can enhance knowledge about particular phenomena and local processes, and lead to improved practice and outcomes. Practitioners developing and administering environmental protection policies in the Mikea Forest region can achieve more just and democratic policies, and can work to mitigate the unintended negative consequences of policies that are already in place. But better practice cannot be based on received wisdoms about cultural difference or indigenous environmentalism. Rather than basing policies on cultural distinctions that do not reflect locally salient norms of identity and lifestyle, PA policies should be amended to substantively foster respect for residents' dignity and human rights, including consideration of a broad range of people, regardless of self-identity, who are socially and economically vulnerable because of restricted capacity to assert their interests in a democratic manner. Immediate attention should be paid to establishing substantive means of sharing information, and to building the institutional capacity to address the security concerns of people who are currently living within or otherwise depend on the territory under protection. This includes livelihoods security, as well as security from violence and exploitation, ensuring that all people have free and equitable access to legal institutions.

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ENDNOTES

1. In this discussion, the term 'Vazimba' refers specifically to the tradition claiming that an ancient race of African origin lived in Imerina before the arrival of proto-Malagasy settlers from the Malay peninsula, later driven from the central highlands by early Malagasy kings. There are a number of different Vazimba traditions in oral history and text, including those documented by Dugal (2004), Berg (1977), and countless amateur oral historians working and living in Imerina in the pre-colonial period. This discussion does not refer to members of Vazimba people of the Menabe described by Ruud (1960), members of the Vazimba clan of the northern Fihereña, nor to descendants of 'lost people', former slaves living in Imerina who used ritual ties with Vazimba spirits and claims of personal Vazimba ancestry to stake claim to burial in the historical landscape (Graeber 1999, 2007).

ARTICLE

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The forgotten resource: Community perspectives on conservation and well-being in Zahamena National Park, Madagascar

Cara M. Raboanarielina

Africa Rice Center (AfricaRice)
Benin
E-mail: c.raboanarielina@cgiar.org

ABSTRACT

This research examines local perceptions of social well-being in two forest-dependent communities near Zahamena National Park (ZNP), Madagascar. Key informant interviews were conducted to observe how local context, including community and ecological factors, influenced perceptions of social well-being. Overall, residents expressed a broad sense of decreased well-being as local forest resource access changed following the creation of ZNP. While one community was more dependent on forest and non-timber forest products for their livelihood, both communities believed lack of access to the park and its resources negatively affected local social well-being. Further, both communities felt ZNP provided few benefits to local residents. In addition, informants alluded to a sense of distrust of conservation managers and believed their needs and concerns were neither heard nor addressed by current conservation programs. Such data confirm people living in rural communities adjacent to protected areas have limited impact on conservation policies and initiatives on the island. Implications of this research suggest a reassessment of institutional conservation policy and practices to reflect locally held social traditions and community beliefs about conservation.

RÉSUMÉ

Cette étude examine les perceptions locales de la qualité de vie dans deux communautés dépendantes de la forêt et vivant à proximité du Parc National de Zahamena à Madagascar. Des entretiens ont été menés pour analyser comment le contexte local, tant au niveau des facteurs communautaires qu'écologiques, a influencé les perceptions portant sur la qualité de vie. En général, les résidents ont constaté une baisse de leur qualité de vie depuis la création du Parc à cause du changement d›accès aux ressources forestières locales. Une des communautés dépendait des produits forestiers ligneux et non ligneux pour sa subsistance et une autre communauté a estimé que le fait de ne pouvoir accéder au Parc et à ses ressources avait détérioré son niveau de vie. En outre, les deux communautés ont considéré que le Parc avait fourni peu d'avantages aux résidents. Les personnes interviewées ont également exprimé une certaine méfiance à l'égard des gestionnaires du programme de conservation qui, selon elles, n'ont répondu ni à leurs besoins ni à leurs préoccupations. Ces résultats confirment que les communautés rurales vivant à proximité des aires protégées ont une influence limitée sur la politique et les initiatives de conservation à Madagascar. Cette recherche suggère que la politique de conservation doit être réévaluée et qu'il y a lieu de rechercher de nouvelles pratiques permettant d'intégrer les traditions sociales locales et les croyances communautaires dans les actions de conservation.

INTRODUCTION

Madagascar is widely known for its unique environment and biodiversity. Environmental conservation through the establishment of protected areas has been the primary method to preserve the country's forests and exceptional biodiversity (Andriamampianina 1984, Kull 1996). Protecting Madagascar's environment has significant global ecological importance as more than eighty percent of the flora and fauna found there are endemic (Battistini and Richard-Vindard 1972, Guillaumet 1984). Conservation initiatives through the establishment of protected areas have the potential to significantly impact local Malagasy citizens. In Madagascar, forest-dependent communities' livelihoods are negatively affected as access to forests and natural resources become increasingly prohibited due to the creation of protected areas (Shyamsundar and Kramer 1997, Marcus 2001, Ferraro 2002, Harper 2002). Communities within and adjacent to Zahamena National Park (ZNP) in eastern Madagascar are especially vulnerable; they lost access to forest resources and land when ZNP was declared a protected area.

The history of ZNP is one of contestation over park boundaries and resource access and use between the government and local communities (Rabesahala et al. 1994). ZNP was first established as a strict nature reserve (*Réserve Naturelle Intégrale – RNI*) on 31 December 1927 by (French colonial) government decree (Andriamampianina 1984). In June 1966, governmental Decree Number 66-242 amended the boundaries of ZNP to conform to the system of conservation governance adopted by the new administration of recently independent Madagascar (Madagascar National Parks 2009). Over thirty years later in August 1997, the boundaries of ZNP were modified once more; the Decree Number 97-1044 officially designated the national park (Conservation International 1999). In 2001, ZNP achieved national park status (PNM and CI 2001). This status change made certain areas of the park accessible to tourists and researchers, but not to local communities living adjacent to ZNP.

This research examines how restricted access at the local level affects the social well-being of forest-dependent communities in ZNP in Madagascar. Drawing on key informant interviews conducted in two communities in ZNP, this article explores the processes and factors related to the establishment of protected areas that impact well-being. This study examines how people's perceptions of social well-being are based on social as well as ecological and community factors. In contrast to prior literature that focused broadly on social impacts of conservation policy and practices related to community livelihoods and well-being, this study applies an integrated approach to evaluate ZNP residents' well-being perceptions. This conceptual approach emphasizes the interconnectedness of ecological, social, cultural, and political processes in place that shape social well-being. As a result, this article contributes to a growing literature that calls for the realignment of institutional conservation discourse to reflect community-identified perceptions of well-being and concerns about conservation (Ghimire and Pimbert 1997, Zerner 2000, Brechin et al. 2003).

CONCEPTUAL BACKGROUND

The research on the social impacts of conservation in Madagascar broadly addresses how protected areas influence local culture, livelihoods, public health, and create conflicts resulting from lost access to natural resources (Gezon 1997, Hanson 1997, Shyamsundar and Kramer 1997, Peters 1999, Ferraro 2002, Harper 2002, Sodikoff 2007, Keller 2008). Although these approaches examine aspects of well-being, they fail to explicitly define or evaluate the concept. Much of this problem is due to the ambiguity in defining well-being in the literature on the social impacts of conservation (D. Brockington, pers. comm., 1 February 2011). While understanding the specific outcomes related to livelihoods and well-being is important, this analysis offers an integrated approach to understand social well-being from a community perspective.

The community concept is significant for studies of social well-being because it is where the individual and society interests converge (Wilkinson 1991). Social well-being entails evaluations of one's own life situation as well as an assessment of wellness among others in the community. How individuals perceive or interpret a situation is deemed an expression of reality. "What is perceived as real is real in its consequences" (Thomas and Thomas 1928: 572). Based on the fundamentals of sociological theory, people's perceptions are considered accurate representations of their situations and/or experiences. Fundamentally, social well-being refers to the subjective evaluation of life satisfaction and the appraisal of one's circumstance and functioning in society; this is developed through individual social interaction (Wilkinson 1979, Keyes 1998, Deiner et al. 1999). This means individual well-being is required for social well-being in any given community setting (Wilkinson 1991). Values for others and felt needs are of secondary importance to first order needs such as sustenance. Maslow ((1954) in Wilkinson 1979) argued the human potential for social well-being only occurs when motives for survival, security, and esteem are satisfied. Sustenance is the first requirement of social well-being; it describes the act of meeting primary needs and freeing human energy from tension-reduction motives (Wilkinson 1979). Once sustenance needs are met, human energy and attention can be liberated for other uses and movement towards well-being. How much is required for an individual to move toward well-being is partly affected by how access to resources for meeting primary needs is distributed within a population, a third dimension of social well-being which Wilkinson (1991) termed ecological well-being. To the extent that ecological well-being refers "explicitly to natural and other conditions that support and sustain human life" (Wilkinson 1991: 68), an interactional approach to evaluating social well-being is critical, as it takes into consideration not only individual, but community and ecological well-being.

Building on the interconnections of the social and ecological, political ecology enables an examination of how specific politics and power relations in place affect access to natural resources (Watts 2000). Robbins's (2004: 149) 'conservation and control thesis' examines how access and control of natural resources is taken from local producers or groups through conservation efforts. Overall, his approach examines how various extra-local (either state or non-governmental organization) interests and efforts in the name of preserving biodiversity disrupt local social, cultural, and livelihood systems. To incorporate the contestation over resource access and use, the conceptual framework of well-being is merged with political ecology to understand the various ecological, social, cultural, and political processes in space to evaluate social well-being. Such an integrated approach contributes to the social impacts of conservation literature by underscoring how power relations within a locality affect social well-being (Gezon 1997, 2006, Simsik 2002).

SETTING

The study took place in two communities adjacent to Zahamena National Park Madagascar. Zahamena is located in the Alaotra-Mangoro and Analanjirofo regions (Figure 1). Reflecting the uniqueness of Madagascar's natural environment, ZNP has high rates of biodiversity where over 8,000 species of plants and animals are found within its 42,300 hectares (Mittermeier et al. 2005). ZNP is very isolated and lacks any road infrastructure. With the park's establishment as a strict nature reserve in 1927 by governmental decree, no human occupancy was allowed within its boundaries and scientific research was limited to select zones (Andriamampianina 1984). Under colonial rule, notably the 1947 rebellion against French colonial power, the forest became a haven for villagers eager to evade taxes and other forms of state repression (Rabesahala et al. 1994). Political instability encouraged a form of land grab and human occupation throughout the park by people fleeing the conflict occurring in the urban areas of the region. However, human settlement of ZNP began much earlier during the late 1800s (Rabesahala et al. 1994).

As of 2008, a total population of about 36,000 live in eight rural communes (*komoina*), thirty-two municipalities (*fokontany*), and 117 villages within ZNP and its periphery; the population density was about 33 people per square kilometer (MNP 2009). Residents of these communities are of the *Sihanaka* and *Betsimisaraka* tribes. The *Sihanaka* are predominantly located in the western region closest to Lac Alaotra (Alaotra-Mangoro region) while the *Betsimisaraka* are found in the central and eastern areas of the park within the Analanjirofo region. Antanandava and Ambodivoahangy were selected as the primary study sites because they each represent the dominant tribes of the area and have important geographical and institutional relationships

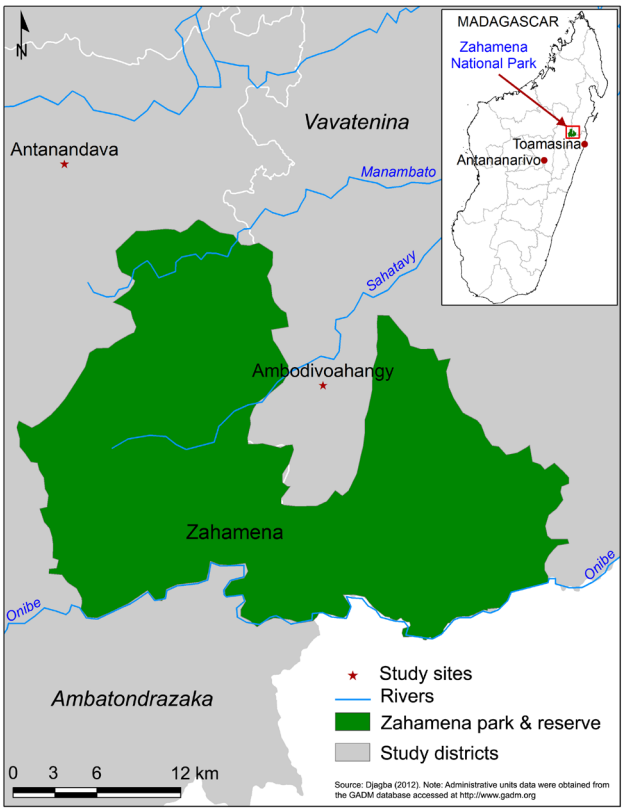

FIGURE 1. Study sites around Zahamena Protected Area

with ZNP (see Figure 1). Antanandava has unofficially served as the park entrance since it achieved national park status. Both communities have been recipients of several integrated conservation and development projects (ICDPs) implemented in the 1990s and 2000s. Also, the unique geographic location of Ambodivoahangy and its isolation within the enclave of the park were significant selecting factors. People there have used the park as a throughway for many years as they buy and sell goods in both the western and eastern regions of the park periphery.

The area is typical of much of Madagascar: rural communities dependent on subsistence agriculture and forest resources. Much of the population relies on subsistence farming, mainly rice as well as other crops, and forest resources for their livelihood. Antanandava is a larger town (*komoina*) and is more accessible to markets and road networks than Ambodivoahangy. Residents in Ambodivoahangy are very isolated; people must trek between 76 to 80 kilometers over hilly and steep terrain typical of the area to access any roads or formal markets. The only social infrastructure in Ambodivoahangy includes one elementary school and three churches. Social infrastructure as described here refers to the social institutions, including local government, social service institutions, and voluntary and civic organizations that exist within a locality (Swanson 1992).

METHODOLOGY

This research is part of a larger mixed-methods study combing multiple qualitative (key informant interviews, facilitated discussion groups, and participatory photography) and quantitative methods (household survey) to evaluate how changes in ZNP access impacted residents' social well-being. For the research reported here, forty-two key informant interviews were conducted with local ZNP residents, current and former park staff, and key government and non-government stakeholders (at local, regional, and national levels) involved in park management (see Table 1). In total, thirty-three ZNP residents (or community informants), five regional informants, and four national informants were interviewed from October to December 2009.

Interviewing enables researchers to observe aspects of social life and learn about specific social phenomena from participants' own words (Dutcher et al. 2004). Key informants are individuals with broad knowledge of their community, its history, and are recognized leaders in their community (Burdge 2004). Key informant interviews differ slightly from in-depth interviews as they provide an examination of social life in its context as opposed to individuals who have knowledge about a particular issue. The use of this methodology provided important individual- and community-level perspectives into the associated biophysical, social, and political processes related to social well-being. Because key informant interviews are conducted in context, so as to study phenomena in their natural setting, interpretations are rooted in participants' interpretations and observations, not derived from the researcher's perspective (Creswell 2007). Participants' views and perceptions are perceived as real (Thomas and Thomas 1928). By asking informants to report on their perceptions through interview questions enables the development of concepts from the participant's viewpoint and not that of the researcher (Creswell 2007). Due to informants' key position and familiarity with their community, they are more aware of local history, current issues, concerns, and power relations (Scott 1990) than other residents. Moreover, key informant interviews are an appropriate methodology when comparisons are made between communities as informants share similar positions within their respective communities.

Community informants included residents in elected and traditional leadership roles as well as local citizens and those with knowledge about ZNP, local conservation initiatives, and park management (see Table 1). Of these informants, sixteen were from Antanandava and seventeen were from Ambodivoahangy; all informants except one (park staff working in Ambodivoahangy) were residents of their respective community and not from surrounding villages. This included elected leaders (e.g., *maire, sefo ny fokontany*), traditional leaders (*tangalamena*), elders (*ray aman'dreny*), school administrators, religious leaders, representatives from various community associations, and representatives involved in park and conservation management at local, regional, and national levels. An initial list of informants identified by community occupation and position was compiled prior to data collection. Upon arrival in each study site, and reflective of Malagasy *fomba* (cultural norms), the research team requested a formal introduction with community representatives, e.g., the *tangalamena* (traditional leader) and/or *sefo ny fokontany* (elected leader). The purpose of these introductions was to gain permission to conduct the research and to obtain entrée into the community. Contact information for the initial list of community informants were obtained during these formal introductions with community leaders and individuals were recruited based on their knowledge and/or experience about conservation, their community, and ZNP. Using a snowball sampling procedure during the interviews, additional informants were selected by asking initial informants to identify other potential participants. By definition, key informant interviews are not meant to be representative of the population as it is not

a sample. However, extensive efforts were made to purposively sample to include viewpoints of underrepresented groups and minorities within the community through snowball sampling. Access to potential informants was granted through personal referrals from previous informants. Recruitment of additional informants ceased when potential contacts and information became redundant and it was believed a fairly comprehensive account of opinions and insights had been attained (Weiss 1994). Recognizing the patriarchal structure of community leadership, which is typical of most rural Malagasy communities, the research team attempted to recruit and include additional female informants for a more gender-balanced perspective.

The interview guide consisted of 14 open-ended questions (see Supplementary Material). Informants were encouraged to elaborate on new themes that emerged during the interview discussion. These topics included local history, accounts of the establishment of ZNP, land shortage, and the local ramifications of the political crisis. All interviews were conducted in the local Malagasy dialect. Each interview was digitally recorded upon receiving permission from the participant and accompanied by detailed field notes. Prior to coding and analysis, interviews were transcribed and translated into English. While translations were conducted by native Malagasy speakers fluent in English and attempted to record verbatim informants' responses, interpretive and stylistic nuances of the translator can affect translation. Using NVivo 8 software, transcripts were coded line-by-line and organized into major themes.

TABLE 1. Key informants by occupation and locality (N = 42)

Informant type	Number of informants	
Community (ZNP Residents)[a]		
Elected leader [b]	3	
Traditional leader (*Tangalamena*)	3	
Elder (*Ray aman'dreny*)	7	
School administrator	3	
Teacher	2	
Religious leader	1	
Doctor	1	
Midwife	2	
Women's association representative	2	
Farmer's association representative	1	
Porter's association representative	2	
Local conservation agent (park staff)	4	
Hotel operator	1	
Local nonprofit representative	1	
		33
Regional		
Regional forester	1	
Regional park manager	1	
Nonprofit (Malagasy organization) representative	3	
		5
National		
National conservation manager	2	
Nonprofit (International organization) representative	1	
Conservation donor (International organization representative	1	
		4

a Occupational data for community key informants are grouped across the two study sites to protect the anonymity of participants.

b Elected leaders refer to leaders including the mayor (of an incorporated village) and the president of the local municipality (*sefo ny fokontany*), which are elected leaders in unincorporated rural areas.

RESULTS

Socio-demographic data on key informants are described in Table 2. Ambodivoahangy had a greater population (over 1,100 residents in 145 households) than Antanandava where roughly 175 households contain a population of about 567 residents. Most of the informants in each study site were male, although a few more female leaders were interviewed in Ambodivoahangy than in Antanandava. Antanandava informants were older (mean age = 57) than those in Ambodivoahangy (mean age = 49) and had lived in their community somewhat longer (50 versus 43 years). Most residents in Antanandava were of the Sihanaka tribe and Betsimisaraka in Ambodivoahangy. On average, informants in Antanandava (38 %) were more likely to have either worked for the national park service or been directly employed by NGOs working on conservation projects with ZNP than those informants in Ambodivoahangy (29 %).

COMMUNITY PERSPECTIVES ON SOCIAL AND ECOLOGICAL WELL-BEING I – THE SOCIAL IMPACTS OF GROWING FOOD INSECURITY. An interactional approach to understanding social well-being emphasizes community context and the interconnectedness of social and ecological influences. For example, in describing their communities, informants focused on the relationships with the landscape and forest (their ecological well-being) that supported their social well-being. Many informants emphasized subsistence farming when describing their communities: "Farming... and breeding. Concerning farming... first and foremost is rice...then food crops" (community elder). While many residents cultivate cash crops to supplement household income, they mainly depend on rice farming for their livelihood: "As far as food is concerned, some grow cassava, sweet potatoes, bananas, and so forth. But those are merely complementary foods. The main thing is rice – our staple food is rice. Some sell rice. If we suppose that 100 or 200 inhabitants live in this village, only three or four of them would sell part of their rice [stock]. Coffee and cloves are not real sources of income. The prices are too low. So low that people are disheartened. Concerning coffee, for example, people harvest just what they need for their own consumption. There's no surplus to sell. As for vanilla, as the prices dropped so low, people can no longer afford to take care of [their] crop. That is to say, people are not willing to invest themselves in such [a] crop that requires weeding, artificial/hand pollination, etc.)" (porter).

Regional and national informants also focused on subsistence farming when describing ZNP communities, reinforcing the notion that rice is life for many Malagasy people: "Farming is the true basis of their livelihood...rice-farming. In fact, their rice-crops constitute their whole means of livelihood. Suppose they get their rice, that rice, in turn will be sold, so that they can buy clothing items, or house-building materials" (regional park manager).

Disruption to residents' ecological well-being (access to natural resources) subsequently affected their survival, security, and esteem (social well-being indicators). A major concern among informants in both communities, although a more salient issue in Ambodivoahangy, revolved around shortages of land for the practice of *tavy* (swidden agriculture). *Tavy* constitutes

TABLE 2. Sociodemographic characteristics of setting and informants

Description	Antanandava (N=16)	Ambodivoangy (N=17)
Population	567	1112
Total number of households	175	145
Gender (% male interviewed)	88%	82%
Age	57	49
Length of residence	50	43
Tribal origin	Sihanaka	Betsimisaraka
Park involvement	38%	29%

the primary method for practicing agriculture in this area and provides a means for insuring cultural heritage and connections to the ancestors (*fomban-drazana*) (Horning 2003). The consequence of land shortage is decreased yields from remaining available arable land (Antanandava, n=10; Ambodivoahangy, n=15). A community elder described these changes: "So, our former life and present life are now a long way apart, because in the past we had rice in plenty; but the people have grown in number and the lands haven't increased." In Ambodivoahangy, in particular, residents described how the amending of park boundaries and taking large tracts of *savoka* (degraded forest land used primarily for shifting cultivation) negatively impacted their livelihood: "The impact is that the *savoka* that were previously cleared by the people have been appended to the protected area. There aren't enough farm lands left" (women's group representative). Ambodivoahangy residents indicated "life is plagued by an unprecedented crisis, financially [and] food-wise." More importantly, what arable land was available to residents had continually decreased in fertility causing food crop yields to plummet. A community association representative described this crisis as leading to a sense of desperation among residents: "The soil no longer yields anything much, what the soil yields does not sell, and the little you reap, you derive nothing from it…no wonder poverty is rampant!"

A major concern among residents in both communities was how land shortages had brought about changes to their community in the form of theft, land disputes, and an overall decrease in life satisfaction and security. A community elder in Ambodivoahangy describes these changes: "There are changes in community life, due to food shortages. These are causing minor disputes, like land disputes…and also there is an increase in theft. This state of things started in 2001, approximately… that's when [it] really started proliferating… but [fortunately], they didn't happen every day, but every year. Food crops are what the thieves steal. The cause of land disputes is the growth of population, yet lands have been annexed into the Forest Reserve, and access to the Forest Reserve is prohibited. So the lands that used to ensure [our] livelihood have been taken. In community life…because of those minor disagreements… hate and distrust break out. In the past, however, people trusted one another."

Again, residents in both Antanandava (n=5) and Ambodivoahangy (n=14) noted their communities "had changed for the worse due to life's hardships," but this transformation had a far greater negative impact on Ambodivoahangy than in Antanandava. Undergirding this change was a sense of people not caring for one another like they had before; residents attributed this to "relationships becoming loose due to this excessive life adversity." An elder in Ambodivoahangy noted how such hardships had "shaken" their community: "The reason the people are not joyful is that poverty causes paralysis…And because of that they get, kind of…frustrated. They become annoyed because of that. Let's say… they grow crops. The income they derive from the little crops they get is far from enough and satisfactory. It also happens that the little they produce may get stolen. Whatever it is, anything they have may get stolen, land, produce, or raised animals alike. Peaceful living is kind of shaky here, at the moment."

Residents in Ambodivoahangy identified this change as occurring around the time of integrated conservation and development projects (ICDPs) involvement in ZNP in the 1990s. They linked the disruptions to community life and theft as resulting from lost access to land and decreased food security. A male resident noted: "Society was good before. But after 1990 through today, it was in trouble. The reason of this trouble is that according to a Malagasy proverb that "If the body is hungry, the soul is wandering." This means that hunger was reached deeply everyone; it appeared in 1990 until today – our community is in trouble. There is no rice, so he/she is forced to steal. The things that he/she could steal are rice, sweet potato, cassava…The anger had hit us hard in 2000 and still hit us until today because of land shortage, we don't have paddy rice fields here to use. As a result, robbery appeared."

Dissent by Ambodivoahangy residents regarding land loss and opposition to the gazetting of land during the establishment of ICDPs in the 1990s was also documented in past research on ZNP (Rabesahala 1995).

COMMUNITY PERSPECTIVES ON SOCIAL AND ECOLOGICAL WELL-BEING II – THE DEPENDENCE OF LOCAL LIVELIHOOD OVER FOREST RESOURCES: ZNP residents' livelihood is solely based on the forest and the natural resources within it notably the land (used for subsistence farming) and forest products; these represent the ecological well-being of ZNP communities. Forest resources, both timber and non-timber forest products (NTFPs) provided daily benefit to residents in both communities. Fuelwood was the main form of cooking energy for many residents in both communities. Few people used charcoal since residents complained it was more costly than harvesting dead or green wood from community forests. Residents in both communities identified the daily importance of certain medicinal plants for curing "minor illnesses." A community elder described the use of *volontsora* (*Eremolaena humblotiana*), a herbaceous shrub found in the area: "There are some leaves we boil to make herb tea used as medicine, like when you have a stomachache, in the form of colic or diarrhea." Harvesting timber for building construction and furniture was also a primary forest resource for residents in both places. Residents in Antanandava noted most building materials and furniture was made from eucalyptus species found in the nearby community forest. They noted furniture and homes were previously constructed from hardwood species including *voamboana* (rosewood, *Dalbergia baronii*), but today limited access to the forest caused changes in hardwood availability and use.

For residents in Ambodivoahangy, the forest provided for all major sustenance and daily needs including hardwood species for home construction, food, and materials for decorative mats. While residents in Antanandava used forest resources daily, their primary needs were not as centered on the forest as in

Ambodivoahangy. A teacher in Ambodivoahangy described how the change in access impacted their lives: "The drawbacks occur when it introduces problems because the old source of livelihood has been shut off by the government, so people cannot get in there anymore." More importantly, wild plants were a major source of food for Ambodivoahangy residents especially those collected on fallow land: "We pick things we use as *laoka* [all food that is served with rice], like the hearts of palm trees. Fishing, of course…like fishing with nets, fishing for crabs, [hunting] birds" (community elder). A regional NGO representative pointed out the differences in forest dependency between the two communities: "Ambodivoahangy inhabitants are those who really depend on the forests, because they are really close to the forest. The wood for house-building, for firewood, for *tavy* and so forth… all of that comes from the forests. They have rice-paddies out there, yet they practice *tavy*. As for Antanandava, they don't live off the forest all that much, because they are far away from the forests."

Additionally, the impact of lost access to land and forest resources within park boundaries was a major concern for Ambodivoahangy residents. Unlike Antanandava, many of the forest resources Ambodivoahangy residents required for their daily life could not be found in the community forest. A traditional leader in Ambodivoahangy outlined this dilemma: "All things that we could eat are inside the reserve, so we can't take them anymore. So we go to the community forest, but we can't find those things we could eat inside the community forest." During the rice shortage period, many Ambodivoahangy residents rely on cassava, *oviala* (a type of indigenous sweet potato) and various greens (e.g., *ravimbomanga*, sweet potato leaves and *ravintoto*, cassava leaves) to supplement their subsistence needs. Searching for laboring jobs is not a viable option for residents in Ambodivoahangy, as many families cannot afford to pay day laborers. A women's group representative described this dilemma: "You decide to take a laboring job, your wages will be about 600 Ariary per day. Yet, one cup of rice nearly costs 300–350 Ariary already. No wonder we are poor." As for timber resources in Ambodivoahangy, many residents reported they acquire fuelwood and timber for home construction from the community forest, yet note it no longer meets their resource needs and has degraded over time: "The nearby forest is now dramatically thinned out. The one in the distance is still replete with trees, but it's prohibited. The [community] forest no longer has enough timber for the taking, because of the number of people who help themselves there, though many trees still grow" (woman, Ambodivoahangy).

POLITICS OF CONSERVATION – RELATIONSHIPS BETWEEN ZNP COMMUNITIES AND PARK MANAGERS.

The establishment of ZNP by government decree not only impacted residents' livelihoods and well-being by imposing external control over local resource use and access, but also changed how residents viewed the park itself. ZNP residents recognized the importance of protecting the forest, but, overall, failed to see how the park provided any direct benefits to them. Many residents recognized the intrinsic natural resource benefit of ZNP, indicating the forest within the park boundaries brought them "rain to feed our fields and water in our rivers," but did not see how it benefitted them in their daily lives beyond these ecological benefits. They also felt the park didn't belong to them anymore, displaying a sense of dispossession (Kepe 2004) and deprivation (Blaustein 2007) due to creation of the park: "It's now government property." One community elder said: "As I've just said, Zahamena has always existed…but there was also the part that belonged to us…which ensured our livelihood. But now, it's gone."

Along with a sense of disconnect from the park, residents believed managers only cared about protecting the park at all costs and did not care about the welfare of local communities. One farmers' association representative said: "They will protect the lemurs, that's what they do, but who will protect us?!" Also, many informants describe how local conservation agents and managers distanced themselves from local residents. A community group representative stated: "They aren't even capable of getting together and speaking with the community. They enforce and tighten up their protection, but they don't suggest any solutions to us villagers."

At the same time, residents recognized past support ZNP managers had given through ICDPs like building schools, dams, and providing other social infrastructure. However, residents believed such support dwindled over the years and now was nonexistent. Moreover, residents reported that livelihood alternatives through ICDPs like tourism, did not improve their life situation. A women's group representative voiced her concern: "The changes I've seen they have brought are lies. I will not hide my thoughts – they have brought lies. I call it lies because the very moment the forest was closed they set up a series of projects, [saying] that the villagers should be provided with alternative solutions now that their source of livelihood was banned for protection. So they provided funds, they created different organizations… but it's now left unfinished. It's been a huge disappointment for us!"

Park managers believed ZNP communities did not see the utilitarian value of the park as a place that should be protected for the sake of conserving biodiversity and promoting tourism: "It's a good thing that the management has been put in place, because that's exactly what we aimed at, which is, to perpetuate [its existence], knowing that the protection of Zahamena National Park ensures many things around here. For example, it ensures the waters that flow into Alaotra, that [fills up] the dam of Andekaleka. Ecologically, upon the very existence [of Zahamena] depends the life of this region of Alaotra-Mangoro and Analanjirofo. Additionally, it is a recreational place for the tourists to visit" (local park staff).

Managers said infractions and degradation occurred in the reserve because people didn't see "the true value" of the park. Regional managers were especially adamant that ZNP residents "think the park belongs to them still and that is why they keep destroying it. They don't value it like we do." ZNP regional and national informants claimed there have been no changes in access to the park and forest reserve, stating it was always a protected area. They believed nothing had changed, except perhaps the official status change of integrated nature reserve to a national park. One regional representative said, "Zahamena is not 'closed off.' The people think it is closed off because of the presence of managers. They say it's shut off, but actually it has always been shut off." While there are no physical barriers around ZNP, the park managers are referring to the notion of the governmental policy declaring ZNP inaccessible to all residents. Their expression (*mihidy*) literally translates to 'closed.'

DISCUSSION AND IMPLICATIONS

This article explored how perceptions of social well-being were influenced by ecological, social, and political processes within a locality. These processes were based on the interrelationships between the social and ecological processes and notably how changes in the landscape induced changes in the community. Reflecting the tripartite interdependency of individual, community, and ecological well-being, disruptions in access to land and forest resources brought about distinct changes in residents' livelihoods, community (behavior, social norms, etc.), and individual well-being. As hardships emerged, especially in the form of the described food crisis, informants expressed a sense of discontent and loss of caring for one another among community members, which was not the case previously. A clear deterioration of the social fabric of both communities was described, yet these changes had a far greater negative impact on the residents in Ambodivoahangy than those in Antanandava. Informants believed crime, in the form of stealing food crops, existed prior to the park, but incidents increased over time especially as crop yields of both rice and cash crops continued to plummet. Although residents in Ambodivoahangy were more dependent on forest resources in their daily lives than those residents in Antanandava, informants in Antanandava still described a sense of disruption to community life. Toillier et al. (2011) noted similar negative impacts including an increase in individualism (lack of caring for others) and impoverishment resulting from community-based forest management in communities near Ranomafana National Park. Similar findings were noted with regard to how abrupt changes in resource access and availability created strains, albeit more extensively, on social life for the Ik people of Uganda (Turnbull 1972).

Underlying these changes in social well-being for ZNP communities were the political processes due to the creation of the park, or the 'conservation control' that affected changes in the landscape. Residents in both communities described how certain forest resources they once harvested were now off-limits since they were within park boundaries. For Ambodivoahangy residents, this change caused greater disruptions to their well-being due to the *Betsimisaraka* tradition of practicing *tavy*. While some residents in Ambodivoahangy practice paddy rice farming, the majority relied on *tavy* for their rice cultivation. Unlike residents in Antanandava, they did not have access to vast areas of flat land to practice rice-paddy farming; flat surfaces are rare and found predominantly in narrow strips along river and stream edges. The terrain within the enclave of ZNP surrounding Ambodivoahangy is very hilly as elevation varies between 550 and 1,300 meters with slopes at times greater than 30 percent (MNP 2009, Rabesahala et al. 1995). *Tavy* was the main form of subsistence farming available to residents, therefore access to *tavy* land was how they secured their livelihoods. The establishment of the park and continued amending of conservation policies affecting access to residents' *savoka* land removed much arable land from production; at the same time, it reduced residents' potential to provide for their daily needs. While no official record exists of how much land was acquired from the residents of Ambodivoahangy, two informants in Ambodivoahangy in particular indicated their families had lost between 500 to 1,000 hectares in total over the years since the park was established in 1927. A rigorous measurement of actual changes in park and farmed land (*tavy*) boundaries should now be conducted in order to assess more precisely the park's impact on people's livelihood.

Reinforcing the notion of control through conservation (Robbins 2004), the establishment of ZNP by state and/or government entities in the name of conservation changed local social and cultural habits, thereby disrupting local livelihoods of its residents. Informants in both communities acknowledged this political and social change, as they believed the park and its resources were no longer theirs and belonged to the state. This change in mentality from thinking the park was a source for collective resource use to now a restricted protected area was reflected in residents' perceptions about the park. They continued to value the park for its intrinsic ecological benefits (rain for their fields and water in their rivers), but indicated it did not provide any direct benefits to them.

There was a divergence between community and park service staff (regional and national) views about park values and benefits. Park service staff felt residents did not value the park nor recognize its benefits, which they believed was illustrated by residents' local *tavy* practices. However, similar to other research on the community values of protected areas (Keller 2008) residents did value the park, but felt the benefits offered through ICDPs did not improve their overall life situation or livelihood. According to informants, the expectation of tourism revenues and the creation of development projects fell through and many were left unfinished. However, the effectiveness of ICDPS in providing community benefits has been contested (Fortwangler 2003). In fact, research elsewhere on the social impact of conservation in Madagascar, reported that ecotourism programs inviting wealthy westerners to protected areas inflates local market prices of staple foods, medicine, and cost of living (Hanson 1997).

This study illustrated how changes in ecological, social, cultural, and political processes in place influenced social well-being. Findings were not representative of all ZNP communities nor identified the causal factors related to conservation, forest dependency, and social well-being. To determine if all park residents share similar perspectives, future research would focus on obtaining a larger and more representative sample from numerous communities within the park periphery. With a larger sampling frame, it is expected more significant linkages and causal explanations would emerge. Nonetheless, study results reflect similar concerns and issues facing many other populations living adjacent to protected areas and national parks, especially those in Madagascar. The case of ZNP further supports the body of literature on the social impacts of conservation by underscoring how changes in the landscape could disrupt community well-being. Rather than focusing on a specific outcome, for example conservation initiatives examining protected area impact, policymakers and managers could apply the integrated framework used here to evaluate well-being of locally affected communities. Applying such a framework in current protected area management policies, enables managers to merge conservation policies and outcomes with community livelihood needs. Such a framework explicitly considers processes at the community level, and how local and extra-local political factors affect social well-being. Using such an approach, a more holistic picture of impacts emerges, reflecting the multiple facets and interactions of subsistence strategies, social relations, power influences,

locally held traditions, and community beliefs about conservation. Essentially, this framework ensures the most valuable resource in national parks and reserves does not become a forgotten resource – like the residents of ZNP. This research confirms humans are just as necessary a resource to promote conservation and protected area management in Madagascar and across the globe. In order to create collaborations and partnerships with the people living near protected areas, their needs and concerns must be addressed.

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SUPPLEMENTARY MATERIAL

AVAILABLE ONLINE ONLY.

TABLE S1. Key informant interview guide.

ARTICLE

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Analyse cognitive d'une politique publique : justice environnementale et « marchés ruraux » de bois-énergie

Frank D. Muttenzer

Ethnologisches Seminar
University of Luzern
Switzerland
E-mail: fmuttenzer@gmail.com

RÉSUMÉ

Madagascar élabore depuis 1999 une politique publique relative à l'énergie domestique expérimentée d'abord dans le cadre d'un programme pilote financé par l'aide internationale. Les deux principaux objectifs de cette politique sont, d'une part, l'approvisionnement durable des populations urbaines à faible pouvoir d'achat en charbon de bois pour la cuisson et, d'autre part, de réduire la pauvreté des ménages ruraux par des activités génératrices de revenus telles que l'exploitation et le commerce du charbon de bois dans le cadre d'une gestion durable des forêts. L'article est fondé sur les enquêtes de terrain de l'auteur et présente une analyse cognitive (c'est-à-dire social-constructiviste) de ce programme pilote qui débouche sur quatre principales conclusions. (i) L'inefficacité écologique des marchés ruraux n'est pas perçue comme un problème public tant que l'approvisionnement des villes en charbon au moindre coût est socialement tenu pour résolu efficacement et avec justesse. (ii) Le relativisme culturel de cette conception de la justice environnementale est « universalisable » en ce que l'impératif surplombant d'approvisionner les villes africaines en énergie domestique au moindre coût est également invoqué par les organismes de développement. (iii) Le programme analysé est un cas typique d'inversion normative où les solutions disponibles ont déterminé les manières d'identifier le problème. (iv) Le concept de marché rural de bois-énergie est un « cadre d'interprétation du monde » qui justifie les mesures à prendre en démontrant le lien avec le diagnostic empirique même si les populations et administrations destinataires en font d'autres interprétations.

ABSTRACT

The article describes how the policy concept of 'rural charcoal markets' coined in the 1990s by French technical assistants in West Africa was implemented a decade later in Madagascar by a pilot project to experiment a nationwide policy of forest management for domestic energy. The main goals of this policy are to provide cheap and sustainable domestic energy sources to poor urban dwellers; and to reduce the poverty of rural households by promoting sustainable forest management including income generation through producing and marketing charcoal. The article is based on the author's personal fieldwork and presents a cognitive (i.e., social constructivist) analysis of this policy program which leads up to four main conclusions. (i) The ecological inefficiency of rural markets is not considered a public problem as long as the task of providing cheap charcoal to urban dwellers is socially perceived to be effectively and equitably solved by parallel product chains. (ii) The cultural relativity of this conception of environmental justice is universal insofar as the overriding goal of providing cheap charcoal to urban dwellers is shared and invoked by international aid donors. (iii) The pilot project under study is a case of normative inversion where previously existing policy solutions determined the ways in which the public problem came to be identified. (iv) The concept of rural fuel-wood market is a cognitive framework for viewing the world, which justifies policy measures to be adopted by invoking factual information even when this cultural representation is not widely shared by targeted populations and administrations.

INTRODUCTION

Les deux principaux modèles théoriques des politiques publiques, l'analyse séquentielle et l'analyse cognitive, voient le droit légal comme un ensemble de programmes de politique publique sanctionnés par les autorités. L'approche séquentielle étudie l'application de ces programmes à la résolution de problèmes, l'approche cognitive décrit leur construction discursive par les experts et les décideurs. Dans les deux cas la signification sociale du droit légal pour le vécu des applicateurs et des destinataires est une question qui doit être traitée à part (Muttenzer 2010). Elle sera abordée dans cet article sous l'angle de la justice environnementale et des significations sociales de la filière charbon de bois. La littérature spécialisée concernant le bois-énergie dans les pays en développement contient de nombreuses références aux marchés ruraux de charbon de bois, c'est-à-dire à circuits marchands reliant villes et campagnes comprenant la production, la transformation, la distribution et la consommation de bois à titre de combustible. L'observation de cette organisation sociale les amène à constater des inefficacités et des problèmes de coordination, et à se demander comment le dispositif administratif d'autorisation, de taxation et de contrôle du trafic pourrait être mis au service d'une réorganisation de la filière (ESMAP 1995, Peltier et al. 1995, Bertrand 1996, Weber 1998, Laoualy et al. 2003).

Selon cette conception de la justice environnementale, les inégalités distributives d'un marché rural se justifient du fait que tous les acteurs y gagnent en termes absolus, c'est-à-dire par

son efficacité. Le problème de coordination consiste à réduire la différence entre les coûts privés du charbonnage et son coût social et environnemental non comptabilisé. Mais les discours des charbonniers, collecteurs locaux et du service forestier s'écartent de cette définition monétaire et réglementaire du marché rural, en invoquant les significations sociales du charbon de bois comme produit de base. Le problème à résoudre n'est pas le même pour tous les acteurs parce que la justesse d'une distribution doit être relative à la signification sociale du bien à distribuer (Walzer 1994). L'aménagement de certaines parcelles forestières par des associations soumises à de nouvelles taxes, s'il peut modifier localement les allocations de ressources économiques ou pouvoirs de décision, n'est qu'un élément dans une logique d'approvisionnement au moindre coût. Celle-ci est généralement caractérisée par l'exploitation forestière sans aménagement et par le commerce non légalement autorisé.

Un consensus sur la définition du problème public n'est jamais indispensable pour pouvoir prendre une mesure publique. Certains acteurs sont porteurs de cadres d'interprétation du monde qu'ils vont essayer de placer à l'occasion de la construction collective de ce problème (Muller 2003). Ce n'est jamais la réalité en soi, mais toujours l'objectivation sinon la réification d'une représentation sociale, qui détermine le référentiel-programme d'une politique publique (Constantin 2000, Muller 2000). Il y a lieu de distinguer entre la réification d'un concept analytique et l'objectivation d'un fait constaté. Bien que la réification du concept de marché rural présuppose une objectivation des faits, l'objectivité de cette chose est remise en question par la découverte d'autres faits, ou par de nouvelles analyses des mêmes faits.

Dans cet article, je propose une nouvelle analyse des représentations sociales de l'ancienne problématique de gestion des ressources en bois énergie. L'analyse porte sur des faits constatés lors de travaux de terrain menés dans la région de Mahajanga et Marovoay (Ankarafantsika) dans le cadre d'une recherche doctorale déjà publiée (Muttenzer 2010). Cette étude multi-site de l'exploitation et la gestion des ressources charbonnières se fonde sur 74 entretiens transcrits avec de multiples acteurs de la région sur la problématique du charbon de bois. Le lecteur aurait donc tort de comprendre cette proposition comme une simple critique conceptuelle, même si le mode de présentation reste assez conceptuel dans le cadre de cet article. Je renvoie le lecteur à l'ouvrage précité pour des exemples et témoignages de première main.

La première section de l'article traite de l'identification du problème public à résoudre. Elle examine si l'inefficacité écologique des exploitations illicites manque d'être perçue comme un problème public parce que l'approvisionnement des villes en charbon au moindre coût est socialement tenu pour efficacement résolu par les marchés parallèles. Les relations distributives partout observables dans les marchés ruraux seraient alors considérées justes parce qu'elles se conforment aux significations sociales des biens à distribuer.

La deuxième section expose cette conclusion provisoire à l'objection du relativisme culturel. Le fait que la justesse d'une distribution est relative à des significations sociales n'interdit pas, et c'est la deuxième hypothèse, d'universaliser certaines significations au-delà de leur contexte culturel d'origine. La nécessité impérative d'approvisionner les villes africaines en énergie domestique au moindre coût est également invoquée par certains organismes internationaux (Bertrand et al. 2010, Karpe et al. 2010).

La troisième section traite des origines nigériennes du projet pilote malgache étudié. Nous examinerons si l'élaboration par des organismes internationaux de la politique nationale relative au bois-énergie ne serait pas un cas d'inversion normative où les solutions disponibles détermineraient les manières d'identifier le problème. Quoiqu'il en soit sur ce dernier point, nous verrons que les professionnels de la coopération internationale essaient de joindre éléments de diagnostic et bouts de solution sans pour autant répondre à une demande d'action spécifique des populations locales ou de l'administration forestière. Les fonctionnaires ne demandent pas une réforme de l'administration mais à être reconnus par l'octroi de financements extérieurs, ainsi que j'ai pu le vérifier à travers une analyse de la corruption dans le secteur forestier déjà publiée (Muttenzer 2006).

La dernière section examinera l'hypothèse cognitive selon laquelle les politiques publiques ne consistent pas, en tout cas pas seulement, à résoudre des problèmes publics mais avant tout à interpréter le monde (Muller 2000, 2003). Nous montrerons que le concept de « marché rural de bois-énergie » est un cadre d'interprétation du monde permettant aux intervenants de justifier les mesures à prendre (contrôle forestier, gestion communautaire, fiscalité décentralisée) en se fondant sur un diagnostic factuel (marchés imparfaits, coûts sociaux, mauvaise coordination) même si ce diagnostic est contredit par les conceptions du réel des destinataires de ces mesures.

LE PROBLÈME DU BOIS-ÉNERGIE À MADAGASCAR, VU À TRAVERS UN PROJET PILOTE

D'après une étude réalisée en 1994 par le Programme d'assistance à la gestion du secteur énergétique (ESMAP) de la Banque mondiale et du Programme des Nations Unies pour le Développement (PNUD), un taux d'urbanisation très élevé dans toutes les grandes villes malgaches excepté la capitale est à l'origine d'une hausse marquée de la consommation de charbon de bois, combustible préféré des populations urbaines. Selon cette étude, la population de ces villes augmentait de 7,5 % chaque année, par rapport à 3 % à Antananarivo et 1,7 % dans les zones rurales (ESMAP 1995). La consommation de charbon de bois avait presque doublé entre 1994 et 2002, passant de 260 000 tonnes à 445 000 tonnes selon les chiffres de la Banque mondiale (ibid.). Le taux d'augmentation annuel moyen de 6,9 % du charbon de bois consommé contraste avec un taux annuel de seulement 0,6 % pour le bois de chauffe, qui reste le principal combustible dans les zones rurales. Le charbon de bois est de loin la principale source d'énergie domestique utilisée dans les villes (ESMAP 1995).

En 1992, la quantité de charbon de bois consommé par la population d'une ville d'environ 130 000 personnes avait été estimée à 10 000 tonnes par la Banque mondiale (ESMAP 1995). L'important écart de prix entre le charbon et les énergies de substitution laissait supposer que le taux d'accroissement de la demande resterait stable dans les dix ou quinze ans à venir. Selon les études réalisées en 1999 par le Programme pilote intégré de Mahajanga (PPIM), 90 % des ménages utilisaient le charbon de bois comme combustible principal ou accessoire. Le rythme d'accroissement annuel de la consommation entre 1992 et 1999 était de 7,5 % , supérieur au taux d'accroissement de la population (5 % selon le diagnostic du PPIM). Ce chiffre

diverge du chiffre de l'étude ESMAP précitée, ce qui est dû au fait que les deux études ont été réalisées à des moments différents, par des équipes différentes et que les données démographiques officielles ne représentent pas la réalité. Selon Brondeau (1999), Mahajanga consommait entre 15 000 et 17 000 tonnes de charbon par an, soit plus de 40 tonnes par jour. Lors d'un entretien en 2003 avec un responsable du Ministère de l'énergie, ce dernier estimait la consommation annuelle de Mahajanga à 22 000 tonnes. Les lieux d'approvisionnement de Mahajanga étaient très concentrés géographiquement. En 1995 deux tiers du charbon consommé en zone urbaine étaient produits dans un rayon de 50 km autour de la ville, tandis que la zone périphérique du Parc national d'Ankarafantsika fournissait 17 % du charbon consommé à Mahajanga. Le rayon s'élargit à mesure que les forêts proches se dégradent, et les villes secondaires de Marovoay et Ambato-Boeni enregistrent également un accroissement significatif de la demande en charbon de bois. À cela s'ajoute le coût prohibitif du transport motorisé sur de longues distances, qui implique le cloisonnement des marchés ruraux, c'est-à-dire des rapports institutionnalisés entre l'offre et la demande de charbon de bois, et interdit de répartir les exploitations charbonnières sur une plus grande surface de forêts. La solution la moins coûteuse consiste à surexploiter les forêts secondaires ou primaires les plus proches pour approvisionner autant de marchés ruraux cloisonnés.

La Banque mondiale et le PNUD considéraient Mahajanga comme une région où il était urgent d'intervenir. Selon le rapport d'expertise, la zone de savane de la région ne pouvait produire plus, car 54 % du charbon consommé provenait alors des forêts denses sèches, le reste des mangroves et des savanes arborées de *Zizyphus*. S'il n'y avait pas encore eu de pénurie, ce n'était qu'une question de temps, à moins que des mesures correctives soient prises (ESMAP 1995). Selon la même source, les forêts non protégées subissaient une forte dégradation, tandis que les dernières forêts primaires dont le Parc national Ankarafantsika reculaient d'environ 10 % par an (ESMAP 1995). Quinze ans plus tard, la situation n'est guère plus favorable. Mahajanga compte aujourd'hui environ 250 000 habitants approvisionnés « à partir d'exploitation de forêts naturelles et de défrichements agricoles ou de jachères agricoles » (Bertrand et al. 2010 : 27). Le bois de plantation pourrait constituer une alternative viable, mais contrairement à la région de Diana où 7 000 ha de reboisement en eucalyptus auraient été mis en place par la coopération allemande (communication personnelle d'un lecteur anonyme), des actions de reboisement n'avaient pas été envisagées par le projet pilote.

Tandis qu'Antananarivo et les autres villes des Hautes Terres s'approvisionnent à 95 % à partir de reboisements paysans (Bertrand et al. 2010), le charbon de bois vendu à Mahajanga, Marovoay et Ambato-Boeni provient aujourd'hui de forêts denses sèches (44 %), mangroves (25 %), savanes arborées (21 %) et de forêts dégradées (10 %) (Rafransoa et al. 2010). Plutôt que de reboiser, le projet pilote avait pour objectifs d'aménager les forêts exploitées par les charbonniers, de diffuser de meilleures techniques de carbonisation, de décentraliser et renforcer le contrôle forestier pour enchérir le prix du charbon en zone urbaine, et de réorienter les pressions, trop concentrées sur les forêts proches de villes, en appliquant des taxes incitatives en fonction d'un schéma directeur régional (Rafransoa et al. 2010). Les expériences faites depuis 1999 attestent que les interventions réglementaires et fiscales incitatives sur le charbonnage et le commerce en zone rurale sont contournées tant par les producteurs clandestins que par les services forestiers locaux et régionaux, qui tolèrent les exploitations charbonnières illicites et le transport de la marchandise sur des circuits parallèles (Karpe et al. 2010). Les nouvelles interventions réglementaires et fiscales sur les marchés ruraux sont peu suivies parce que la volonté du plus grand nombre, y compris des autorités malgaches et intervenants étrangers, vise à maintenir une offre rurale de charbon de bois suffisante pour satisfaire la demande urbaine (Bertrand et al. 2010). Cette demande évolue en fonction des taux d'urbanisation et de croissance démographique, ainsi que du prix prohibitif du gaz butane. Le problème du bois-énergie, s'il existe pour les principaux intéressés, tient moins à l'impact écologique des marchés ruraux qu'au coût des énergies de substitution au bois. Dans les conditions économiques actuelles, le problème d'approvisionner la population urbaine en charbon est résolu « au moindre coût » par le charbonnage et le commerce non légalement autorisés (Muttenzer 2006, 2010).

UN DROIT UNIVERSEL À LA CUISSON AU MOINDRE COÛT ?

Le fait que la justesse d'une distribution est relative à la signification sociale des biens à distribuer n'exclut pas que certaines significations sociales peuvent avoir une validité transculturelle ou universelle (Walzer 1994). Les significations sociales à Madagascar du charbon de bois ne sont pas exceptionnelles en Afrique subsaharienne où le bois constitue la principale source d'énergie pour plus de 500 millions de personnes (Foley et al. 2002, Arnold et Persson 2003). Comparée à d'autres régions, l'Afrique tropicale enregistre le taux de consommation de bois-énergie le plus élevé par personne, représentant entre 90 % et 98 % des besoins en énergie ménagère. Rapportée à la consommation d'énergie primaire totale, la dépendance du bois comme source d'énergie atteint 60 % à 80 % dans cette région du monde (Peltier et al. 1995, Laoualy et al. 2003). À titre d'exemple, la ville de Niamey, capitale du Niger, dépend à 95 % du bois pour son approvisionnement en énergie domestique, ce qui représente environ 150 000 tonnes par an pour une population de 600 000 habitants (Peltier et al. 1995, Laoualy et al. 2003). La situation est similaire dans la plupart des villes africaines : la consommation annuelle de Garoua, ville de 140 000 habitants du Nord-Cameroun, était estimée à environ 100 000 tonnes par an (Peltier et al. 1995).

Le rôle central du bois comme source d'énergie a été accentué dans les trente dernières années par la forte augmentation du prix des énergies fossiles importées. Le développement industriel des pays du Nord s'est réalisé en substituant le charbon, puis le pétrole, au bois pour satisfaire les besoins domestiques (chauffage), produire davantage, voyager plus rapidement. Les pays du Sud sont assez largement restés en marge de ce processus, du moins dans la première moitié du XXe siècle (Doat et Girard 1997). La première crise pétrolière de 1973, qui a vu le prix du brut tripler, puis la crise de la dette suivie de l'ajustement structurel ont rendu irréversible cette inégalité. Dans les pays de la zone du franc CFA, le prix du pétrole a doublé suite à la dévaluation de 1994 (Peltier et al. 1995). Manquant de devises fortes, les économies africaines ne pouvaient faire face à cette augmentation des coûts. À

Madagascar, les combustibles ligneux étaient déjà nettement moins coûteux que les combustibles pétroliers importés ou l'électricité pour la cuisson depuis les dévaluations des années 1990 (ESMAP 1995). La disparité s'est accentuée au cours des années 2004 et 2005 durant lesquelles les prix du pétrole et du gaz butane ont quadruplé.

Le cas de Mahajanga est généralisable donc universalisable sous un autre aspect encore. Il n'est pas rare en Afrique subsaharienne qu'une part importante du bois utilisé pour la production de charbon soit prélevée dans les forêts naturelles. La moitié de l'approvisionnement en bois-énergie de Pointe-Noire (République du Congo), par exemple, a été assurée pendant longtemps par des coupes opérées dans les formations naturelles, le reste provenant de défrichages à des fins agricoles, du ramassage de bois mort forestier et des déchets d'usines de bois. Ce n'est que depuis peu que les résidus d'exploitation en provenance des plantations industrielles d'eucalyptus ont permis de créer une nouvelle filière bois-énergie (Hamel et Laclau 1995). Au Niger, les lieux de récolte de bois-énergie pour la capitale se répartissent sur quelques 2,4 millions d'hectares de brousse situés dans un rayon de 150 km autour de Niamey. Mais l'exploitation est concentrée sur le pourtour de Niamey et le long des axes routiers pour réduire les coûts de transport (Peltier et al. 1995).

Sur les sites d'enquête autour de Mahajanga, le charbonnage répondait aussi à une demande urbaine croissante en énergie domestique, tout en contribuant à la subsistance – et à l'appropriation de terres défrichées – des franges les plus défavorisées de la population paysanne constituée par des immigrants récents venus d'autres régions de l'île (Muttenzer 2010). Ces conclusions sont confirmées par une étude récente de l'offre et de la demande en énergie domestique de la ville de Toliara (Partage 2008, Rafransoa et al. 2010). Bien que la distribution des revenus entre charbonniers, intermédiaires, transporteurs et agents forestiers soit inégalitaire et la rémunération du travail faible, le bois-énergie représente un avantage économique pour une gamme très large d'acteurs. Par conséquent, tous les acteurs de la filière y compris les professionnels de l'aide internationale invoquent la nécessité impérative d'assurer un approvisionnement des villes en énergie domestique au moindre coût (Bertrand et al. 2010). Ainsi un projet de décret spécial préparé par le Centre international de recherche agricole pour le développement (CIRAD) et validé lors d'un atelier en 2008 va jusqu'à « institutionnaliser un régime du charbon non autorisé » (Karpe et al. 2010 : 46). Sachant qu'une substitution au bois est impossible au moindre coût, l'universalisation de cette norme fondamentale de justice environnementale interdit l'application stricte de la législation forestière, la réorganisation des marchés ruraux réellement existants et une exploitation charbonnière moins destructrice mais « plus coûteuse ».

DE NIAMEY À MAHAJANGA, LE RECYCLAGE D'UN DISPOSITIF D'ACTION PUBLIQUE

La consommation et l'approvisionnement en énergie domestique de Mahajanga avaient fait l'objet d'enquêtes en vue d'une intervention publique depuis 1989 par l'Unité de planification de l'énergie domestique (UPED) du Ministère de l'énergie et des mines. Pour illustrer un modèle d'approche régionale de la problématique des combustibles ligneux à Madagascar, la Banque mondiale et le Programme des Nations unies pour le développement (PNUD) avaient proposé de : (i) débattre du rôle de l'exploitation des combustibles ligneux dans la dégradation de l'environnement (…) ; (ii) placer la question de l'impact environnemental des combustibles ligneux dans une perspective régionale (…) ; (iii) présenter un plan d'action modèle conçu pour s'attaquer aux problèmes prioritaires dans le secteur des combustibles ligneux, illustré par un projet pilote en cours d'examen pour la région de Mahajanga (…) (ESMAP 1995 : i).

Les résultats ont débouché en 1999 sur le Programme pilote intégré de Mahajanga (PPIM) fonctionnant comme un volet du Projet de développement du secteur de l'énergie (PDSE-Energie II), financé sur crédit de la Banque mondiale, supervisé par le Ministère de l'énergie et des mines et mis en œuvre par un consortium franco-malgache regroupant le Centre international de recherche agricole pour le développement (CIRAD) et le *Foibe Fikarohana momban'ny Fambolena* (FOFIFA), Centre de recherche national en agronomie.

Le projet était conçu en deux étapes. La première comportait l'élaboration d'un schéma directeur d'approvisionnement urbain en bois-énergie ainsi que des tests de systèmes énergétiques plus durables tels que les foyers économes et les techniques de carbonisation améliorées. La deuxième phase mise en œuvre à partir de 2001 par le Programme énergie domestique de Mahajanga (PEDM) a permis de transférer la gestion d'une vingtaine de parcelles forestières à des associations villageoises, d'élaborer des plans d'aménagement, et d'expérimenter la décentralisation du contrôle et de la fiscalité forestiers (PEDM 2002). L'objectif était de mettre au point une démarche applicable à d'autres régions malgaches concernées par le problème du charbon de bois (Toliara, Toamasina, Fianarantsoa). La phase d'expérimentation reproduisait dans ses points essentiels un cadre d'analyse et d'intervention expérimenté par le CIRAD depuis le début des années 1990 au Niger, connu sous le nom de « marchés ruraux de bois d'énergie » et défini comme « … un site rural de vente de bois-énergie par une structure locale de gestion et agréé par l'administration de l'Environnement. Il est approvisionné par une zone d'exploitation délimitée d'un commun accord entre la population locale, la structure locale de gestion et l'administration. Les marchés ruraux sont d'abord des structures commerciales pour organiser et développer dans un cadre rural la production primaire de bois-énergie. » (Bertrand 1996 : 353).

À Madagascar, ces structures commerciales seront proposées comme alternative aux arrangements institutionnels existants qui organisent la production et la commercialisation du charbon, impliquant des marchés illicites et une exploitation peu respectueuse des forêts. En vue de résoudre ce problème de coordination, l'intervention du PEDM propose donc de supprimer progressivement la concurrence déloyale de l'exploitation et du commerce illicites afin de vendre le charbon à sa « juste valeur économique » et de rendre la répartition des bénéfices entre commerçants, charbonniers et services administratifs plus équitable. Des taxes et redevances devaient internaliser les coûts du renouvellement de la ressource en les reportant sur les différents acteurs de la filière. En outre, des délibérations publiques locales étaient prévues pour définir les procédures d'autorisation, de contrôle et fiscales applicables (Karpe et al. 2010, Rafransoa et al. 2010).

En 1991 à Niamey, il s'agissait de garantir un approvisionnement en combustibles domestiques qui soit à la fois durable, régulier, performant, adapté aux attentes des ménages et au meilleur coût pour le consommateur (Bertrand 1996). Le flux d'argent des villes vers la campagne devait financer un aménagement forestier qui concilie production du bois et conservation de la biodiversité, tout en s'insérant dans une gestion globale des terroirs villageois, y compris dans ses composantes agricoles et pastorales (Peltier et al. 1995). La stratégie énergétique du Niger s'était articulée, en 1991, autour de quatre axes d'intervention que l'on retrouve à quelques détails près dans les interventions du PPIM/PEDM depuis 1999 dans la région de Mahajanga. Un premier axe concernait la promotion par le secteur privé de combustibles de substitution au bois, notamment le pétrole lampant et le gaz butane, et de foyers et réchauds performants, compétitifs et adaptés aux habitudes culinaires et au pouvoir d'achat des ménages (Bertrand 1996). À son tour, le PEDM favorise « la diffusion des foyers économes à charbon et à bois, développe l'usage de briquettes à charbon de résidus, optimise les tendances de substitution au pétrole lampant et au gaz butane, grâce au montage avec la société VITOGAZ et les commerçants locaux d'une opération de diffusion de gaz populaire sur réchaud mono-feu et bouteille de 6 kg ». Selon les concepteurs du projet, ces activités auraient dû « permettre aux mesures d'amélioration de la gestion et de l'exploitation forestière de se mettre en place, en stabilisant la consommation de charbon de bois à son niveau actuel pendant environ cinq ans » (PEDM 2002 : 10).

Le deuxième axe de la stratégie énergétique du Niger concernait l'amélioration de la capacité d'orientation, de coordination et d'intervention des pouvoirs publics dans le domaine de l'énergie domestique, par la recherche d'un autofinancement progressif des actions, la formation et le renforcement institutionnel (Bertrand 1996 : 352). Dans le même ordre d'idées, le PEDM a mis en place à Mahajanga une Cellule énergie domestique (CED) chargée d'assurer « une mise en œuvre efficace de la stratégie et un suivi du secteur énergie domestique au niveau régional, en étroite collaboration et coordination avec les administrations en charge de la politique forestière et de celle de l'environnement, dans la mesure du possible que la CED soit autofinancée à la fin du projet » (PEDM 2002 : 3). Le système d'autofinancement de la CED et du contrôle forestier doit être réalisé à travers « un dispositif local de recouvrement des taxes (redevances et ristournes) forestières en collaboration avec les communes » (ibid. : 17–18).

Le troisième axe de la politique nigérienne de 1991 était l'établissement et la mise en application de schémas directeurs d'approvisionnement des villes en bois-énergie, destinés à orienter spatialement et quantitativement les prélèvements de bois-énergie. De tels schémas directeurs, basés sur un triple zonage de la ressource, de son exploitation et des dynamiques agricoles et pastorales, avaient défini pour les villes de Niamey, Maradi et Zinder, les zones propices à l'exploitation, les quantités de bois-énergie que l'on pouvait y prélever sans préjudice pour l'environnement, et les zones qu'il convenait de protéger en réduisant son exploitation ou en l'interdisant (Bertrand 1996). Comme au Niger, l'instrument retenu à Mahajanga pour réorganiser l'exploitation par les charbonniers des forêts domaniales non protégées est leur mise sous aménagement et la décentralisation de leur gestion (Brondeau 1999). Le Schéma directeur d'approvisionnement urbain en bois-énergie (SDAUBE) de Mahajanga s'applique à une superficie d'environ 30 000 km^2, soit l'ensemble du bassin d'approvisionnement en énergie domestique pour Mahajanga, ainsi que les villes secondaires de Marovoay et Ambato-Boeni (Duhem et al. 1999). Le schéma directeur vise à réduire les prélèvements dans les communes prioritaires les plus touchées par les charbonniers, à orienter l'exploitation forestière vers d'autres communes rurales où la pression sur les ressources est moins forte, et à accroître l'offre de bois-énergie dans ces communes par une gestion efficace et durable des ressources forestières (ibid., PEDM 2002).

La stratégie énergétique du Niger prévoyait enfin le transfert, de l'État au profit des populations rurales, de la responsabilité de la gestion et du contrôle de l'exploitation et du commerce primaire du bois-énergie. Le transfert du pouvoir devait suivre les schémas directeurs : d'abord par la création de « marchés ruraux » gérés par les populations, puis par la mise progressive sous aménagement forestier villageois des zones d'approvisionnement de chacun de ces marchés (Bertrand 1996, 352). Selon les prévisions du CIRAD, «(…) sur les 500 000 stères consommés par la ville de Niamey, environ 1300 francs CFA par stère devaient revenir aux marchés ruraux, soit plus de 600 millions de francs CFA dont 15 millions iraient à l'État, 40 aux collectivités locales, 60 seraient consacrés aux travaux de gestion de la forêt, 150 permettraient des actions de développement dans les villages, le solde de 400 millions [sic] étant partagé entre les bûcherons des villages. » (Peltier et al. 1995 : 74).

Pour autant que la représentation sociale du problème public et les solutions proposées correspondent à la réalité observable, le recyclage à Madagascar des « marchés ruraux » à dix ans d'intervalle semble judicieux. Différentes études menées sur la plupart des sites dans la région couverte par le PEDM donnent néanmoins à penser que les actions du projet pilote n'ont pas permis de transformer significativement les arrangements sociaux préexistants, qui caractérisent toujours dix ans après l'organisation de la filière charbon de bois (Brondeau 1999, Muttenzer 2008, 2010, Partage 2008). Le fonctionnement administratif et l'héritage de la science forestière coloniale à surmonter sont comparables au Niger et à Madagascar. Mais les explications de la résistance au changement planifié par les conditions sociales ou écologiques particulières des deux pays ne semblent pas suffisantes. L'intérêt de l'analyse cognitive est de proposer une interprétation valable plus généralement pour les projets et politiques publiques mises en place principalement en réponse à des offres provenant du secteur de l'aide internationale au développement.

LES « MARCHÉS RURAUX » COMME CADRE D'INTERPRÉTATION DU MONDE

Toute politique publique vise à transformer l'ordre des choses. Mais la réalité sur laquelle elle intervient est perçue à travers le prisme de représentations, d'images d'origines diverses que chaque acteur a intériorisées au cours des processus de socialisation dans lesquels il a été impliqué. Selon F. Constantin (2000) : « ces représentations de la réalité, autant que la réalité en soi, orientent les jugements, les évaluations qui président à la construction des demandes sociales aussi bien que des réponses ». L'identification de ces images est au cœur de l'analyse cognitive des politiques publiques parce qu'elles déterminent la manière dont les demandes sociales sont prises en

compte par les autorités, et la manière dont une administration sera chargée de la recherche d'une réponse en vue de l'action. L'analyse de ces cadres d'interprétation permet également d'observer pourquoi et comment les autorités réagissent ou non, face à des pratiques sociales fondées sur des descriptions alternatives de la même réalité, ou sur d'autres réifications (Muller 2000, 2003). Dans la section précédente nous avons évoqué que pour les intervenants européens, le mot « marché rural » pouvait signifier aussi bien un site de vente de charbon qu'un groupement associatif ou un dispositif administratif chargé du contrôle forestier. Le Projet Energie II au Niger avait débuté dans une période où l'échec des coopératives rurales de l'Afrique de l'Ouest faisait l'unanimité et où il fallait opter pour des structures villageoises plus souples, en l'occurrence des associations paysannes appelées « marchés ruraux ». Selon les forestiers du CIRAD, «(…) ces groupements n'ont été mis en place que sur demande explicite du village volontaire ; il n'y a donc pas eu de création technocratique imposée, ayant une faible chance de survie. Les marchés ruraux comprennent un président élu, un gestionnaire et des représentants des éleveurs, des agriculteurs et bien entendu des bûcherons. Les structures de gestion sont conçues « sur mesure » dans chaque village. » (Peltier et al. 1995 : 73).

Dans le cadre du PEDM, la répartition des recettes fiscales fait l'objet d'un protocole d'accord entre le Ministère de l'environnement et des Eaux et Forêts et le Ministère de l'énergie et des mines qui fixe une clé de répartition des taxes. Les redevances (forestières) et ristournes (communales) seraient perçues par les associations de charbonniers, ou par la commune en l'absence de telles associations, lesquelles gardent leur part et remettent le solde à l'État qui le distribue entre le service forestier, le service de l'énergie et des mines et les autres échelons de l'administration territoriale (PEDM 2002). Selon la logique du projet, la vente de charbon de bois deviendra le privilège des associations de charbonniers respectant un plan d'aménagement, puis celles-ci seront chargées par contrat administratif de contrôler les activités de leurs membres et d'en taxer le revenu pour supporter le coût de l'aménagement forestier. En faisant coïncider les marchés ruraux avec des associations volontaires de charbonniers, le projet réifie le mécanisme des prix, le transforme en acteur économique, puis lui attribue une volonté politique.

Étant donné que l'accès aux occasions de charbonner implique en général des relations personnalisées, en fonction de la division du travail social dans les communautés locales, les acteurs collectifs dans un marché rural de bois d'énergie sont naturellement perçus par les individus comme étant dotés d'intentionnalité. Pour autant les marchés ruraux de charbon de bois ne sont pas des acteurs collectifs. Ce sont des mécanismes non intentionnels qui combinent, ou intègrent dans une structure globale, plusieurs modes parallèles de production et de contrôle politique. En désignant le commerce du charbon, les associations de charbonniers, et le dispositif administratif pour recouvrir les taxes par une métaphore inventée pour la cause, les intervenants confondent trois phénomènes en réalité indépendants. La polysémie du terme « marché rural » protège le discours de justification du projet pilote de la falsification par les significations sociales issues de son environnement. Mais la simplification d'une réalité complexe est trompeuse lorsqu'elle n'est que métaphorique. Quels que soient les avantages d'une décentralisation fiscale dans le secteur forestier, ils ne feront pas d'un marché rural de bois-énergie une association de charbonniers mise au service du recouvrement fiscal. Et pourquoi devrait-on utiliser le mot « marché rural » pour parler d'une communauté locale, traditionnelle ou coutumière ? Parce que les exploitations charbonnières sont censées faire l'objet de contrats de transfert de gestion ?

Les contrats de transfert de gestion visent à intégrer la production et la commercialisation associatives du bois-énergie dans le « droit coutumier » des populations locales. Ils définissent ce droit coutumier comme un « droit non écrit qui règle le fonctionnement de la société rurale par l'adaptation permanente des règles coutumières issues de la tradition. Il se distingue du droit traditionnel qui exprime les règles de la tradition conçues comme intangibles et définitivement fixées » (Peltier et al. 1995 : 75). À la différence des coutumes ancestrales qui seraient fixées par la tradition, le droit coutumier est vu comme un ensemble de règles ou mécanismes adaptables en fonction du contexte et décidables par les concernés (Babin et Bertrand 1998). Les significations sociales constitutives des groupes de travail charbonniers, de la corruption dans le secteur forestier et des projets pilotes internationaux sont assimilés à des « choix constitutionnels » (Weber 1998 : 542) qui seraient négociables dans l'espace public du marché rural sans contraindre ni exclure personne du droit à la parole (Goedefroit 2006). La polysémie du mot « marché rural » pose un problème parce que d'autres mots existent pour désigner le phénomène observé, qui n'est pas un marché rural, mais un projet pilote. Les projets pilotes sont des dispositifs cérémoniels grâce auxquels les intervenants se donnent l'illusion de participer au monde des populations locales tout en reproduisant leur propre vision du monde (Muttenzer 2010).

Contrairement aux intervenants qui, en employant cette métaphore finissent par prendre leur cadre d'interprétation de la filière charbon pour la seule réalité observable, les acteurs locaux utilisent les mots selon leur définition naturelle et distinguent entre (i) un mécanisme de coordination de la production et du commerce du charbon de bois passant par le système des prix, (ii) un regroupement spontané de charbonniers se substituant à l'exploitation familiale ou par métayage, (iii) l'institutionnalisation de ce groupement par l'administration comme dispositif de collecte fiscale et de contrôle forestier et (iv) un groupe territorial coutumier par contraste avec une association gestionnaire d'une parcelle forestière. Les actions du projet pilote concernent seulement une faible proportion des parcelles forestières, celles qui doivent être gérées par les associations de charbonniers (Muttenzer 2008, 2010). Les associations de charbonniers deviennent l'équivalent fonctionnel d'une exploitation charbonnière avec métayages quasi-familiaux, qui subsistent sur d'autres parcelles forestières. Les villageois réinterprètent les interventions localisées du projet pilote comme un nouvel élément (comme une modalité) du fonctionnement observable des marchés ruraux réellement existants, qui est dominé par l'exploitation et le commerce non légalement autorisés. Malgré l'approche supra-locale du programme pilote, les principes spatiaux de gestion des forêts énoncés par son Schéma directeur régional ne se traduisent pas par un aménagement des ressources forestières à l'échelle des territoires coutumiers. Les plans d'aménagement forestier des associations, et les interventions du projet liées à la fiscalité et

le contrôle forestiers, interfèrent avec l'organisation du travail dans certaines des unités d'exploitation qui approvisionnent le marché rural d'une localité. Mais ils ne modifient pas la donne à l'échelle politiquement décisive pour sa régulation, qui est le territoire regroupant une ou plusieurs circonscriptions communales, dont chacune abrite de nombreuses exploitations charbonnières.

CONCLUSIONS

Malgré les spécificités des zones productrices de bois-énergie touchées par les actions du projet, on constate des caractéristiques communes. L'organisation de la filière varie en fonction de l'accès au marché et de la composition démographique des populations rurales. Mais les normes réglementaires et fiscales sont le plus souvent détournées par des charbonniers clandestins et par le service forestier qui autorisent officieusement le charbonnage et le transport de la marchandise. Pour l'autorité gouvernementale, le problème est de trouver un moyen de satisfaire la demande urbaine en charbon de bois. La solution la plus « efficiente » occasionnant les coûts les plus faibles est de tolérer les exploitations clandestines ou informelles mais contrôlées par le service forestier. Le problème est aussi de savoir comment reproduire le dispositif administratif existant dans le secteur forestier (Buttoud 1995 ; Muttenzer 2006). Sa solution consiste à considérer l'enrichissement potentiel des fonctionnaires participant au trafic des produits forestiers comme une norme socialement acceptable.

Le troisième problème, en partie lié au précédent, provient du fait de ne pas vouloir « trahir » les intervenants du développement pour ne pas être abandonné par les projets d'aide. Sa solution consiste à protéger le référentiel de politique publique (son interprétation métaphorique comme un problème de marchés ruraux) de la falsification empirique en mobilisant le cérémoniel des expériences pilotes, ateliers de validation participatifs, suivis-évaluations et auto-publications. En confondant les associations de charbonniers et le contrôle forestier avec un marché du charbon qui internalise parfaitement les externalités, les coopérants définissent un programme d'action d'autant plus incontestable que sa justice environnementale est évaluée uniquement au regard de « l'efficacité des marchés ruraux ».

Toutefois, l'analyse cognitive de ce programme d'action suggère que le diagnostic expert pourrait se rapprocher des résultats d'une observation ethnographique, et la conception dominante de la justice environnementale devenir plus universalisable. Dans un premier temps, il suffirait d'adopter un moratoire sur la politique nationale de régulation des marchés ruraux de charbon de bois et le valider éventuellement à travers des ateliers régionaux. Ensuite, il s'agirait de produire une interprétation officielle du problème public de l'énergie domestique qui ne fait pas seulement autorité mais repose en même temps sur des concepts analytiques plus sensibles aux conceptions réelles de la justice environnementale que ne l'est la métaphore des marchés ruraux. Le concept de « projet pilote » (Le Meur 2008) que nous avons utilisé plus haut montre comment des réseaux internationaux d'experts peuvent maintenir inchangées pendant des décennies les « interprétations autorisées » (Mosse 2004, 2006) d'un dispositif d'intervention prouvé inefficace, tout en l'expérimentant avec d'autres partenaires nationaux dans de nouveaux contextes empiriques. Un autre concept de l'analyse cognitive qui pourrait se substituer avec profit à la métaphore du marché rural, est le *garbage can model* (March et Olsen 1989). Suivant ce modèle, les systèmes de décision ressemblent à une poubelle : on y trouve sans ordre apparent des activités, stratégies, problèmes, procédures, conventions et solutions. Au milieu de cet enchevêtrement les coopérants et leurs partenaires tentent, avec plus ou moins de succès, de produire un minimum d'ordre et de cohérence.

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ARTICLE

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Whose forests, whose voices? Mining and community-based nature conservation in southeastern Madagascar

Antonie Kraemer

School of Oriental and African Studies (SOAS)
Department of Anthropology and Sociology
University of London, U.K.
E-mail: a.kraemer@soas.ac.uk

ABSTRACT

This paper explores local experiences of private-sector led community-based nature conservation near Fort Dauphin, southeastern Madagascar through the analysis of a conservation zone managed in partnership between the Rio Tinto mining corporation, local government and local communities. The article assesses how new forms of social inclusion and exclusion are generated through changes in land and resource access. The main findings are as follows: the community-based conservation programs near the Fort Dauphin mine were effective at mobilising local people but inadvertently favored certain members of society over others, as they involved a legitimization of resource access by established landowners. This granting of resource rights to some local users entailed the exclusion of already marginalised groups of landless migrants. Without land to cultivate, these migrants were more directly dependent on forest resources for their survival. Their livelihoods were based on selling forest products such as timber and handicrafts, in addition to working the land of others. This rendered their social status and ability to participate in development programs limited. Non-resident or recently settled resource users' voices had thereby not been adequately included in the conservation plans from the outset. Consequently, local landless migrants continued to break conservation rules, as they had no influence over the resource management process or realistic livelihoods alternatives. These circumstances reduced both the livelihood options of the poorest people near the mining site and the prospect of achieving equitable and sustainable natural resource management.

RÉSUMÉ

Nous proposons ici d'analyser des expériences locales intervenant lors du changement d'accès aux ressources naturelles dans le cadre d'un projet d'extraction minière et de conservation de la nature mené en partenariat entre une compagnie minière, le gouvernement local et les communautés riveraines d'un site minier près de Fort Dauphin, dans le Sud-est de Madagascar. Les informations ont été recueillies lors d'une année de recherches ethnographiques financées par le Conseil de Recherche Norvégien, aux alentours de la zone minière et de son site de conservation. Les changements d'accès à la terre et aux ressources naturelles induisent de nouveaux types d'inclusion et d'exclusion sociaux que nous avons étudiés ici. Nous montrons que les programmes communautaires de conservation de la nature et de développement local établis auprès du site minier ont permis de mobiliser les villageois riverains, mais ont par mégarde créé des disparités entre certains membres de la société locale. Nous avons ainsi noté une augmentation de la différentiation sociale des propriétaires terriens traditionnels qui pouvaient revendiquer la légitimation des accès aux ressources naturelles. Cette légitimation se déroulait au cours d'une approche participative de cogestion environnementale, qui supposait un rang social élevé des participants mais aussi leur disponibilité pour pouvoir participer à ces programmes communautaires. Certains groupes extrêmement vulnérables comme les migrants sans terres ont ainsi été involontairement exclus à cause de cet octroi du droit d'accès aux ressources naturelles en faveur de certains groupes d'utilisateurs. En outre, sans terre à cultiver, ces migrants dépendaient encore davantage des ressources forestières pour assurer leur survie quotidienne. Leurs moyens de subsistance se limitaient à la vente de produits forestiers tels que le bois d'œuvre ou encore les roseaux pour l'artisanat. Une autre stratégie de survie importante pour les migrants sans terre était d'assurer la culture des terrains des propriétaires existants, permettant ainsi ces derniers à participer plus activement aux nouveaux programmes de gestion et développement local. En outre, les personnes les plus marginalisées résidaient souvent à l'extérieur des communes qui hébergeaient la zone de conservation et d'extraction minière, dans la mesure où il n'y avait plus de terre disponible dans ces communes. Le programme de conservation communautaire mené par la corporation minière était basé sur la mise en relation du droit aux ressources naturelles et de la résidence dans la commune hébergeant ces ressources. Or les personnes résidant hors de ces communes ou les personnes récemment installées et de statut social bas, étaient ainsi exclues dans la planification et la mise en œuvre de la gestion communautaire des ressources locales. Par conséquent, les migrants sans terre ne respectaient pas les lois de conservation communautaire, car ils n'ont pas pu influencer la procédure d'établissement des règles de gestion conjointes, ni accéder aux programmes d'activités génératrices de revenus alternatifs. Ces circonstances ont ainsi fait ressortir les limites de l'approche de conservation communautaire destinée à atténuer les impacts environnementaux du projet minier et à résoudre les conflits sociaux y afférents.

INTRODUCTION

The Rio Tinto ilmenite mine in southeastern Madagascar represents the first of two of the largest multinational mining ventures in Madagascar's history to date. It thereby sets a precedent for natural resource management in the context of an increasing national reliance on export-oriented extraction of non-renewable resources (Randrianja 2012). With socio-environmental impacts justified through ambitious mitigation programmes, the effects of these interventions require close independent monitoring and analysis. This is consistent with recent calls by social scientists (White et al. 2012) to account for the new mechanisms of inclusion and exclusion that are generated by the rapidly growing phenomenon of large-scale corporate land and resource access in Africa. In this context, a recent analysis argues that the Rio Tinto mine is an example of a global trend of 'inverting the impacts' of resource extraction, concealing the corporation's biodiversity destruction by shifting the blame onto local people (Seagle 2012).

Taking a more local perspective, this paper instead focuses on new forms of socio-environmental inclusion and exclusion caused by the changes in land and resource access near the mining zone. This may help to address some of the challenges with establishing effective social impact monitoring of the mining site. This issue is particularly urgent as the mining company has acknowledged that the establishment of a permanent and effective dialogue with local communities remains a challenge, including the establishment of a well functioning community feedback and complaint management mechanism (Rio Tinto QMM 2010). Furthermore, the socio-environmental impact assessment of the mining project's initial phase lists as the first obstacle to effective project monitoring the 'refusal of villagers to collaborate in certain activities' (QMM 2010) showing the importance of understanding local social dynamics.

The establishment of an effective community dialogue and social impact monitoring is a fundamental challenge, with the mining corporation itself pointing out that it operates in an impoverished region where 'the survival of the rural majority depends on the forest resources' (Rio Tinto QMM 2010). Concurrently, in a social impact assessment of the Mandena mining zone, the main issues brought up by local residents related to loss of food security and primary revenue sources due to the new restrictions in accessing natural resources (Hai-Tsinjo Consulting et al. 2008). In contrast, the mining project's latest socio-environmental impact assessment, under the key indicator of 'use of territory', concludes that changes in access to land and resources in the mining zone had 'no significant impact' because 'no complaints about conflicting usage' of the land had been registered (QMM 2010). Given the corporation's acknowledgement of a lack of a functioning complaints mechanism, an indicator based on the number of complaints received seems insufficient. This article therefore seeks to contribute to the analysis of local social impacts of the Rio Tinto mine, in order to widen the debate around these complex issues and improve the prospect for social impact monitoring and mitigation. Findings are based on a year's ethnographic research near the Mandena conservation and mining zone in southeastern Madagascar. All names of informants have been changed to protect their privacy.

RAVAO'S STORY – SITTING STILL OR MOVING FORWARD?

Along the road going north from Fort Dauphin town, where the forest towards the coast on the right hand side becomes dense, one passes by wooden signposts indicating the Mandena conservation zone. Behind it, hidden from view by the dense forest, lies the Rio Tinto ilmenite mining area. The dirt road, although in poor condition, is busy with large white 4x4s and mini buses transporting mining, conservation and development staff. There are also clusters of simple *raty* (the leaf of *Ravenala madagascariensis*, traveller palm) roofed huts by the roadside. Inside one particular hut, there is an old *tsihy* (woven reed mat) covering the floor. In the light of the doorway, a small woman sits on the ground weaving a basket. Her fingers are rapidly moving in a complex pattern as she greets the stranger with a shy smile and a whispered "*Mandrosoa*! Come in!" Her name is Ravao, and she is a single mother *tavaratsy* (immigrant from the region's north). Her small hut was constructed with financial help from the nearby Catholic nuns on whom she depends to feed her daughter.

Ravao is weaving a basket made of long, sharp strips cut from *vakoa* (*Pandanus concretus*) leaves, which she hopes to sell by the road. She explains that she is not supposed to go into the forest to pick the leaves, due to the *dina* (community conservation agreement). However, if she follows these conservation rules, she will have no income at all. The *mahampy* (*Lepironia mucronata*, marsh based reeds) which are still allowed to be picked, and which Ravao also prefers to use as they make more popular handicrafts, are disappearing. Many have become off-limits as they are inside the guarded mining perimeter. The remainder, which are allowed to be picked, have all but disappeared. The marshlands they grow on are drying out and becoming invaded by the allochthonous *kininy bonaky* (*Melaleuca viridiflora*); Ravao is unaware of the cause.

Ravao explains that she wishes to obtain some land to cultivate crops. She laments that in spite of recent local development, "my life is not *mivohatsy* (progressing), with all the changes happening [in the mining zone], but *mizetsy avao* (it is only becoming more degraded). So now I am only sitting still, looking at the road, as even the *mahampy* reeds are gone."

There are new trial *mahampy* plantations established by the mining corporation in order to compensate for the loss of these reeds nearby. However, Ravao considers these areas as off-limits to immigrant women like herself. She does not have the social prestige to participate in the women's associations included in the new conservation management committee. Ravao complains that when there are work opportunities available, she and other *mpivahiny* (foreigners/immigrants) will not benefit because, according to her experiences, all the opportunities are awarded to "those with family members on the inside".

However, Ravao is also hopeful: "I hope that *kitefer* [local name for the mining corporation] will let us pick the *mahampy* next year, if it grows well for them. Because I believe that it is possible to cultivate it – why not?" As such, Ravao is not against the mining project and the new environmental regimes it has brought. She does, however, feel unable to access these schemes due to her inferior social status as a landless migrant. She has no option but to rely on forest resources, which are now forbidden to exploit.

THE ANOSY REGION HISTORY – STRUGGLES OVER NATURAL RESOURCES

In order to better understand why Ravao feels forced to break the conservation law and is unable to obtain a sustainable livelihood for herself and her daughter, it is helpful to briefly outline some of the regional history. The Anosy region of southeastern Madagascar has a long history of interaction with outsiders in struggles over land and resources. The region hosted the very first French settlement, establishing the Anosy capital of Fort Dauphin in the early 17th century. Funded by the *Compagnie Française de l'Orient*, the first boat was sent from France in 1642 to export ebony wood from the region (de Flacourt 2007 [1661]), illustrating the importance of forest exploitation to the French colonial endeavour in southeastern Madagascar. These first *colons* encountered a highly hierarchical society of Arab-origin rulers, middle classes and slaves (Rakotoarisoa 1998, de Flacourt 2007 [1661], Larson 2007), and conflicts over land and resources rapidly ensued. One of the first French Governors noted that 'there is no land in all the island that has no owner, and it is wrong to think that you can simply choose the land you want to cultivate. The masters and lords of the provinces [...] will not permit you to appropriate the smallest corner of their land' (de Flacourt 2007 [1661]), author's translation. Consequently, the first French instalment brought violent conflict and abruptly ended in 1674 with a massacre of the French settlers (Parker Pearson 1997).

Subsequent interactions with outsiders included traders seeking cattle, beeswax, sisal, mica and slaves (Parker Pearson 1997, Larson 2007, Campbell 2008). Slavery was officially abolished by the French in 1896, but continued in another guise for several decades under the name of engagisme, or plantation work contracts, with people departing from Anosy to work on the sugar plantations in La Réunion (Somda 2009). The region was also targeted by missionaries who aimed to convert and educate the population, and who took over substantial areas of land to establish their stations, with the region becoming a centre for the American-Norwegian Lutheran church, with competition from various Catholic denominations (Campbell 1988, Rakotoarisoa 1998, Somda 2009). The pre-colonial Merina invasion and garrison at Fort Dauphin in 1825 and resulting local resistance led to distress outward migration from the region (Rakotoarisoa 1998). Subsequently, ongoing cycles of famine in the neighboring Androy region as well as the need for finding salary-based work in order to pay taxes to the French colonial administration led to heavy flows of immigration (Middleton 1995, Campbell 2008). Following French colonization in 1896, French Governor-General Gallieni set out to build roads into the dense forests of Madagascar's eastern coast in order to facilitate the exporting of precious hardwoods such as rosewood and ebony (Gallieni 1908). French colonization of the Mascarene Islands (La Réunion and Mauritius) also created regular commercial links between these islands and Madagascar. Fort Dauphin was one of four strategic points for this trade, which concerned resources such as timber, rice, cattle and slaves (Deschamps 2012 [1976]). Local revolts against the new regime's land and resource capture, the suppression of *tavy* (swidden agriculture), as well as forced labor conscription and taxation culminated in a 1904 uprising which spread from Vangaindrano to Fort Dauphin (Somda 2009).

Due to the chaotic social changes of colonial days, including the imposition of land regulations benefiting large scale cultivation and resource extraction ventures of foreigners, conflicts over land use and land rights play an important part in present day social tensions (Rakotoarisoa 1998). The region's land use and social dynamics have thereby been marked by conflicts over natural resources and land access between foreign colonisers and Malagasy and among Malagasy people themselves. This has fuelled ongoing flows of in- and out-migration. Moreover, a history of strict social hierarchy based on local social divisions between royalty, commoners and slaves has generated inequitable patterns of local land and resource distribution, which still persist (Somda 2009).

According to local oral history, people settled near the Mandena mining zone during the French colonial period. During this time, all men over 18 had to pay taxes and participate in *corvée* (forced) labor and people were forced to settle near principal roads in order to facilitate this (Campbell 1988). Local men and boys were sent to clear the forest to make way for the main road going north from Fort Dauphin town and to plant eucalyptus trees for the colon timber plantations. People also sought paid employment with colonial enterprises such as the nearby sisal processing plant and sawmill in order to pay taxes. After independence, these people stayed on to cultivate rice in the fertile, wet areas west of the present mining zone.

During the colonization period, most of the land in and near the mining zone was used for colonial timber and mining concessions, in addition to a large, state-run agricultural station and substantial Catholic church grounds. Mandena forest has itself been the subject of botanical interest since the 1950s, when a forestry station was established. Botanists began collecting specimens as part of an effort to document the island's woody plants, with approximately 500 described taxa made over the following three decades, several of which were species new to science (Lowry II et al. 2008). The current Mandena mining site was originally established as a nature reserve (*station de reboisement*, the least strict of three colonial forest reserve classifications) as two separate parcels of land in 1943 and 1955 during the French colonial government (Parcel 1 under the *Arrêté de mise en réserve* N°485 of 19/05/43 and Parcel 2 under the *Arrêté* N° 160-F3/BOM of 23/12/55). The Malagasy state has maintained these classifications (Ministère de l'Intérieur et de la Réforme Administrative and Province autonome de Toliara 2001).

The colonial and Malagasy state had thereby managed forest regulation and introduced permit-based logging access for nearly half a century before the mining project began. However, according to local government officials, as state financial capacity dwindled during the economic austerity measures of the 1980s, enforcement of governmental resource management became non-existent. Local people accessed the forest for private use, in the context of a lack of clarity of both state and traditional management rules. The mining company's access to the Mandena forest for prospecting in the 1980s, including for building access roads, entailed a further disruption of resource management rules (Rakotoarisoa 1998, Ingram and Dawson 2006).

As we have seen, local land access and resource management have been shaped by a history of changes in user rights and regulations from pre-colonial times to the present. This included a lack of both state capacity and local community power in local resource management. Conservation and development challenges resulting from the mining corporation's

land access must therefore be understood in the context of this complex history.

PRESENT DAY – MINING AND CONSERVATION

Fort Dauphin has recently experienced a radical shift from isolated and impoverished backwater to a showcase of Rio Tinto's corporate socio-environmental responsibility policies (World Bank 2005, Sarrasin 2006, Harbinson 2007). After initial exploration started in the late 1980s, Tinto subsidiary QIT Madagascar Minerals (QMM) secured an environmental permit to extract ilmenite from the littoral sands in Mandena in 2001. The first shipment in May 2009 marked the beginning of mining, projected to last for 25 years (QMM 2008). During the 20-year preparatory period, multiple socio-environmental studies, impact assessments and consultations were undertaken in response to political and environmental concerns. A special law introduced in the Malagasy parliament officially established the mining surface area of 2,100 hectares in the Mandena zone, the first of a projected total of 6,000 hectares, with the sites of St. Luce to the north and Petriky to the south of the Mandena zone still to be mined (QMM 2008).

The high profile mining project has led to multiple studies about the region's biodiversity and development challenges (e.g., Ganzhorn et al. 2007, Harbinson 2007, Lowry II et al. 2008, ALT and Panos 2009). Some studies have focused on mining-related changes in land and natural resource access (Mulligan 1999, Sarrasin 2006, Harbinson 2007, ALT and Panos 2009) and others on challenges of local governance and transparency (Smith et al. 2012). The causes behind deforestation of the littoral forests in the mining zones have also been debated, including multiple studies on the adverse impacts of local people's resource use (Tecsult International 2005, Rarivoson 2007, Vincelette et al. 2007). Others have highlighted exogenous factors for local deforestation, including climate-related causes such as temperature change and cyclones (Ingram et al. 2005, Virah-Sawmy 2009). A key non-local cause contributing to deforestation is mining-related infrastructure development (Ingram and Dawson 2006, Dawson and Ingram 2008, Watson et al. 2010 , Seagle 2012).

The stakes involved in this debate have led to the mining corporation setting out an ambitious community-based biodiversity conservation program, in order to convincingly demonstrate its global environmental policy of having a 'net positive impact' on biodiversity and society (Rio Tinto 2004, 2008). In response to concerns over its environmental impact, the mining corporation has set aside about 10 % of the mining zone for conservation purposes (Rarivoson 2007, Vincelette et al. 2007). In the Mandena mining zone, 230 hectares were set aside in 2002 based on a tripartite agreement between the regional forest and water administration (CIREEF), the two host communes of Ampasy Nahampoa and Mandromodromotsy and QMM (Rarivoson 2007).

As outlined, the mining project and its socio-environmental program are a recent manifestation of the region's long history of struggles over access to land and natural resources. This history of rapidly shifting, unclear land tenure and resource access and ongoing flows of migration is important to bear in mind when seeking to analyze the mining project's social impacts and local people's related concerns and strategies.

THE MINING ZONE – CONFLICTS OVER NATURAL RESOURCES

This section seeks to highlight the differentiated dependence on forest resources among local communities near the Mandena mining zone. Such local, social diversity appears to have been neglected in other studies of local resource use, which tend to account for local people in terms of their impact on local biodiversity. However, it is an important aspect in understanding why the socio-environmental mitigation programs might inadvertently favor some groups of local people over others, with negative consequences for conservation, development and local livelihoods. A key paradox demonstrated in the present study is that the people who are most dependent on forest resources are precisely those who fail to qualify as the deserving 'local community' and are therefore less able to participate in the environmental community co-management programs.

A study by Ingram et al. (2005) demonstrated the important ecological services that the Mandena mining zone forest provides to local communities. Up to 84 % of the standing trees in the littoral forests are utilitarian and provide an important resource for local livelihoods (Ingram et al. 2005). The tree species identified were primarily used for energy provision, construction materials, handicrafts, medicine, spiritual purposes such as ancestral blessings and funerals, food and oil. However, the study does not provide a nuanced analysis of local people in terms of their differentiated dependence on forest resources.

Issues of land and natural resource access represent important elements in the daily life, livelihoods strategies and patterns of social differentiation among local people. In this context, the importance of an entrenched and unspoken social hierarchy, as described in Somda (2009), is confirmed in a 2008 impact assessment of the Mandena mining project. The report identified as a primary obstacle to local development the low consideration of the opinions and rights of 'certain categories of the population' (Hai-Tsinjo Consulting et al. 2008). The poorest households are shown to be landless people dependent on forest resources for their daily survival.

During a year's ethnographic fieldwork conducted near the Mandena zone in 2008–2009, it was found that local land use and dependency on forest products differed according to existing access to cultivable land. Importantly, people who most depend on forest resources, such as the woman Ravao, are among the poorest of the local population. These people are often migrants who arrived over the last two decades due to poverty and hunger in their regions of origin. They are less able to qualify as participating members of the 'local community' invited to be involved in the corporation's socio-environmental mitigation programs. The reasons for this are twofold. Firstly, poorer migrants have less time available to participate in community programs as most days are spent gathering forest products or toiling others' land. Secondly, they lack local social networks and prestige, which are linked to traditional land ownership or permanent burial tombs in the commune. A major and ongoing problem is that of determining land rights of recently installed occupants. The mining corporation's environmental team experienced land access disputes when establishing the administrative body of the new mining and conservation zone (QMM 2008). Some occupants, who represented a combination of recently arrived migrants and extra-local land users based

in Fort Dauphin town, were considered legitimate neither by existing, 'traditional' users nor by the administrative body. The corporation's environmental program thereby inadvertently participated in formalizing land and resource access rights to some groups of resource users to the exclusion of others. This further fueled local conflict over land and resources. A brief analysis of the socio-economic situation near the mining and conservation zone may serve to illustrate this point.

The Mandena mining zone, the first of three intended locations for ilmenite extraction, is situated within the two rural *communes* (municipalities) of Ampasy Nahampoa and Mandromodromotsy. This section focuses on the inhabitants of Ampasy Nahampoa *commune* living on the periphery of the Mandena mining site. According to the *commune's* 2003 *Plan Communal de Développement*, the *commune* covers an area of 87 km^2 and officially has a population of approximately 4,000 people living in three *fokontany* (lowest government circumscription). However, many migrants have not been registered with their *fokontany*, therefore actual population figures are likely to be considerably higher (Province autonome de Toliary 2003). Indeed, a second government report cites a population numbering 7,200, showing the difficulty in establishing a realistic population estimate and thereby of monitoring social change in a commune characterised by ongoing migration (Primature and SIRSA 2006). Near the Mandena mining zone, the 2008 social impact baseline study for the mining project identified chronic food insecurity, lack of arable land to improve food production and dependency on local forest resources as key concerns for the 80 % of local households which were considered to be very poor (Hai-Tsinjo Consulting et al. 2008).

The *commune*'s average plot of arable land is a modest 1.5 hectares per family, of which cassava is the most common crop, followed by *horaky* (irrigated field) rice (Province autonome de Toliary 2003). In the less productive season (October–March), the staple food is cassava and rice becomes a purchased luxury commodity. There is constant risk of starvation in this region and occasionally, people are forced to eat *via* (*Tiphonodorum lindleyanum*, a water-based plant with semi-edible seeds and roots) and *ovy ala* (*Dioscorea alata*, wild yam). Less than 5 % of inhabitants have certified land ownerships and less than half the population own a single cow, considered a buffer of household savings (Primature and SIRSA 2006). The lack of formal land tenure is characteristic of all of rural Madagascar and has facilitated the Rio Tinto mining corporation's land access as part of a wave of foreign large scale land acquisitions over the last decade (Andrianirina-Ratsialonana et al. 2011, Rakotondrainibe and TANY 2011).

The lack of legally recognized rights to land and natural resources on which local people depend is a fundamental social problem generating insecurity, poverty and food shortages. Of the commune's total land cover, 7 % is used for food production, a very modest proportion of the commune's potential cultivable surface area (Province autonome de Toliary 2003, Primature and SIRSA 2006). As previously mentioned, this is due to large areas of productive land that remain titled to colonial-era foreign settlers, as is the case in many other parts of Madagascar (Rakotondrainibe and TANY 2011). In addition to the Mandena forest reserve converted to a mining and conservation zone, much of the land consists of eucalyptus forest plantations owned by the descendants of colonial landlords, private tourist reserves, and Catholic church land, rendering it unavailable to local farmers (oral communications with local residents).

The commune's population originates from many different parts of Madagascar, resulting in unequal land access and resource use rights. Most of the locally acknowledged land owners who were interviewed consider themselves Tanosy ('of Anosy') – people originating from the 18th century Tanosy royal capital of Fanjahira in Ifarantsa commune to the west of the mining zone. The preferred male livelihood involves owning rice fields for practicing wet rice cultivation and raising cattle. Tanosy women typically generate independent income by gathering reeds and other weaving materials in the Mandena forest marshlands in order to make handicrafts such as mats, containers, baskets and hats. Household monetary income is generally not pooled and land and cattle belong to the men, making women an economically vulnerable group regardless of social status.

Local migrants are mostly Tavaratsy (from the northern part of the Anosy Region) or Tesaka (people originating from the Vangaindrano area to the north of Anosy). They reported that they had migrated from areas affected by famine and economic uncertainty and settled near Fort Dauphin town in order to improve their earning prospects. Another important social group accessing natural resources in the commune are Tandroy, people from the Androy Region to the southwest of Anosy. Older Tandroy settlers reported how their parents had fled from the *kere* (famine) in the 1930s (Middleton 1999) and found employment with French sawmilling and sisal industries established in and near Fort Dauphin town.

There is a division in land and resource use between long-established residents and more recently arrived migrants, with important consequences for both conservation and social development. People considering themselves to be 'true' Tanosy report that they do not access the forest to harvest wood for commercial gain such as for timber or making charcoal. Such activities are considered to be associated with low social status: an indication that one does not own rice fields nor live near one's ancestral tombs. These are key elements of identity in most parts of Madagascar (Bloch 1971). Land ownership and ancestral tombs also represent social capital in a hierarchical society where unclear familial origins and a lack of land ownership may raise suspicion as to criminal intentions, slave origins, witchcraft or bad luck (Evers 2002).

In contrast to the Tanosy, the Tavaratsy and Tesaka migrants living near the mining zone generally have little access to cultivable land, as it is already owned. Instead, men and women frequently work as *dabok'andro* (salaried day workers or sometimes sharecroppers) on landowners' rice and manioc-fields to the west of the mining zone. Migrant men who have settled near the littoral forest of Mandena generally rely on gathering and selling forest products for timber construction and charcoal making. These products have become increasingly profitable due to the growing construction market in the booming mining town of Fort Dauphin. Migrant women such as Ravao rely on picking forest products such as reeds for weaving in the Mandena forest zone and selling woven handicrafts, as well as gathering firewood, fruit and other products they can sell along the roadside.

As demonstrated, those most dependent on forest resources are among the commune's poorest. These people are often migrants who have arrived over the last two decades and therefore are less able to qualify as members of the 'local community' who could participate in the corporation's socio-environmental mitigation programs.

THE MANDENA *DINA* – INTENTIONS AND REALITIES OF RESOURCE CO-MANAGEMENT

The socio-environmental programs near the mining zone favored landowning residents over forest-dependent migrants. This resulted in the corporation's intentions of mitigating negative mining impacts through participative nature conservation and poverty reduction programmes being less effective than they could have been had their scope been more inclusive. Furthermore, local conflicts over land and resource access increased as the corporation's political and economic power was deployed in favor of one group.

The GELOSE (*GEstion LOcale SEcurisée*) legislation passed in 1996 (law 96-025) facilitated the transfer of natural resource management from national government to local communities. This was achieved through contracts between rural communities, the central government and local communes, giving 'exclusive rights' – although not ownership – to resources to the community that signed the contract (Kull 2002, 2004, Bertrand and Ratsimbarison 2004, Pollini and Lassoie 2011). Such contracts also included drawing up *dina*, 'local common law regulations' (Bertrand and Ratsimbarison 2004) regulating access to, and use of, the natural resources.

Such a *dina* has been used by QMM to justify corporate land access. In various publications, QMM states that local acceptance of the mining project had been ensured through a 'traditional legal agreement', and that as *dina* 'are anchored in custom and tradition, they render legal agreements culturally acceptable' (QMM 2007, QMM 2012). The Mandena *dina* follows this legal basis and specifies the boundaries of the mining and conservation zone, as well as user fee regulations for those parts of the area still accessible to local people.

It is worthwhile to briefly recall the recent reinvention of *dina* in Madagascar. These legal agreements have taken on particular significance in Madagascar since the 1990s, when conservation and development actors first used them as an expression of local culture. This was in response to demand for more participatory approaches in conservation programs, which had previously been managed in a top-down manner that had proven ineffective and inequitable (Kull 2002). However, as Pollini and Lassoie (2011) and Corson (2011) contend, the GELOSE approach, which sets the legal framework for such *dina*, has largely failed to fulfil its assurances of genuine local participation and of transferring land ownership rights. Rather, it has entailed a top-down creation of new local institutions imposing an external conservation agenda. This has resulted in appropriation of resources by local elites who tend to dominate in the new institutions. Primarily, these are the literate elite familiar with the language of conservation, who understand and match the objectives and rationale of conservation agencies. Similarly, Bérard (2009) demonstrates how the deployment of *dina* as an expression of local culture has been more discourse than a representation of reality, and has often failed to gain legitimacy among local farmers.

The Mandena conservation zone *dina* was implemented via a management committee, or *COmité de GEstion* (COGE). The COGE was intended to be the representative body of the local community residing within the two *communes* that host the mining project, in partnership with local government and the mining corporation (Rarivoson 2007). The *dina* stipulates that the local community consists of residents in the two *communes*.

However, many migrant users were not considered to be part of the local community listed in the COGE. Most were based outside the two mining host *communes*, where, as we have seen, little land was available for settlement. Some migrants were also living in poorer areas of Fort Dauphin town itself, walking the few kilometres to the Mandena forest on a daily basis.

As the mining corporation's environmental team identifies, the process of establishing the *dina* involves distinguishing 'the groups with pre-existing rights from those who seek access to rights, and to know what these rights are' (Rarivoson 2007). Those considered as having pre-existing rights, who therefore also qualified as members of the COGE management team, were represented by members of 'the user groups, formal village associations (e.g., associations of women, loggers, producers of different forest products and crafts), the communal development boards in charge of preparing the development plans, and the representatives of the elders and the lineage chiefs' (Rarivoson 2007). This process reflects Pollini's (2007) critique of the community-led resource management law of Madagascar, where 'community' is reduced to 'association' and traditional hierarchies, usually local male landowners, thereby excluding the most marginalised resource users.

The establishment of the Mandena *dina* involved a formalization of user rights to access natural resources based on residency in one of the two host *communes*. These rights were also based on membership in existing 'community associations' and a high standing position within the existing social hierarchy, which depended on the authority of local *lonkay* (lineage heads) and *toteny* (community spokespeople). The two latter groups usually consist of older men from dominant, land-owning lineages (Rakotoarisoa 1998, Rarivoson 2007, Somda 2009). As such, the corporate socio-environmental team's criteria for identifying rightful resource users favored existing landowners and elites who were less dependent on forest resources than other users.

The COGE (management committee) was the forum for establishing resource use rules and implementing these rules through community-run forest brigades. The committee was financed by the mining corporation and the two participating *communes* as well as through resource user fees. Ultimately, this management system was to become financially self-sufficient, based on revenue-generation from forest user fees and via projects such as eco-tourism, a plant nursery, research, honey production, and vegetable gardening (Rarivoson 2007). In order to achieve this, COGE members received training on 'upgrading' the conservation site in order to 'maximize revenues' (Rarivoson 2007). A key aspect of the corporation's socio-environmental programs included establishing alternative income generation channels based on local entrepreneurship via the 'Mandena Integrated Development Programme'. This program was intended to compensate for loss of land and natural resource access. However, as previously outlined, those most negatively impacted by restricted access to natural resources, the migrant

population, were less able to participate in these programs as they were not members of the recognised, official 'community'.

In theory, the Mandena *dina* envisaged that the mining corporation would transfer land access rights and establish compensation programs and management responsibilities for parts of its land concession to local communities. In reality, however, the transfer of access rights was limited. The relevant law requires that GELOSE contracts and resource management *dina* conform with existing legislation and rules (Kull 2002) including the Malagasy state's legal ownership of all land not individually titled (Sandron 2008). This ownership in practice ensures the state's ongoing ability to grant exclusive land and resource rights to international extractive industries in spite of the GELOSE legislation's intention of securing local traditional land ownership and resource use.

As such, in spite of the corporation's stated community co-management policy via the Mandena *dina*, the mining corporation ultimately still had official rights to the 2,100 hectares of land in the Mandena mining and conservation zone as set out in the 2001 mining permit. Indeed, in most GELOSE-based resource management transfers, the potential 'relative land tenure securization' in favour of local people is not implemented because it is costly, can reveal difficult land tenure conflicts and is not perceived as important by the implementers of management transfers, such as local state officials and conservation NGO personnel (Pollini and Lassoie 2011).

This was similarly the case for the Mandena mining zone, where land disputes between local land and resource users and the mining corporation were ongoing despite the *dina*. Such conflicts, which included roadblocks and local demonstrations, led to the corporation having to acknowledge the usufruct rights of non-resident land users, thereby questioning the basis for the community management structure. In an explanatory note issued on 9 February 2009 after ongoing roadblocks by local resource users had ended due to interventions by the army, the corporation stated that the mining zone's land when not being mined would be available for use by migrant users (QMM 2009). They would also be included in the Mandena *dina*. However, according to regional government officials, these new resource users had no right to build houses or register as theirs the land they were cultivating. Therefore, the Mandena *dina* shifted resource management responsibilities onto local people without a corresponding shift in land ownership rights. A sample of local stakeholder experiences of this new resource governance model, analyzed in terms of new forms of social inclusion and exclusion, are discussed next.

LAND AND RESOURCE PRIVATIZATION – CASES OF INCLUSION AND EXCLUSION

Participatory conservation programs engender a legalization of who is included in the community and who deserves to represent it. It can officialize certain people's land and natural resource access over others'. This may lead to unintended social changes when locally dominant actors are better placed to benefit as program participants relative to others (Kull 2002, Pollini 2007, Corson 2011). Conversely, this excludes the most marginalised local people, such as Ravao.

The following are brief descriptions of the people who came to represent the local community through membership of the Mandena conservation zone's COGE (management committee). 'Paoly', a prominent member of the COGE, was a young and dynamic man. He was literate and at ease speaking with the many *vazaha* (foreigners) who had arrived in connection with the mining, conservation and development projects near the Mandena zone. I was told by other COGE members that Paoly had been selected to have an important position because he was of the dominant lineage of the hamlet considered traditional owners of Mandena forest. As such, efforts had been made to respect local traditions when setting up the conservation zone.

Paoly's father was a *lonaky* (head of lineage) who allegedly owned 50 cattle, making him a considerably wealthy man within the region. He lived however in a simple, small traditional leaf-roofed house similar to other huts in the area. Flaunting wealth and ownership is poorly regarded and would engender jealousy and supposed ill fortune. As a result, an apparently homogenous hamlet of huts with a population subjected to the same conditions of poverty may in fact contain major disparities in wealth between households.

Paoly was an ideal project participant. He was educated and owned cattle and rice fields, which were tended by salaried day-workers. Paoly therefore had enough free time to participate in the many COGE-related meetings. He explained that the new resource management system was a positive initiative for the local community. Employing official conservation terminology with ease, Paoly stated frankly that "the COGE is for us, the landowners, to better manage the forest and generate income for the *fokonolo* (community). There are also *mpiavy* (derogatory word for immigrants) nearby who use the forest [...]. They are not part of the COGE, though we are considering inviting them, as their absence is creating problems, since they also use the forest. But the *mpiavy* are not trustworthy, as we do not know their origins [this phrasing implies that they are suspected by Paoly to be descendants of slaves]. They are sometimes exiled people, such as thieves and *mpamosavy* (witches). And they are the ones who *mandika dina* (break the conservation law)." There were indeed problems with the illicit cutting of timber to be sold in Fort Dauphin town, with certain people not paying the user fees in the limited access zone, or with charcoal making.

Landowners such as Paoly did not have to do such work, which in addition to being physically hard is considered to be socially degrading work of people with no cultivable land. As recognised 'community representatives' with the mining corporation's logo on their COGE uniforms, people such as Paoly were instead able to consolidate their position as rightful land and resource owners.

As part of field research in the region, the researcher accompanied some of the forest patrols near the Mandena forest user zone. This was the area outside of the Mandena conservation zone, but within the mining zone, where according to the *dina*, people were able to harvest certain forest products. User fees were gathered almost exclusively from migrants who accessed the forest daily either from nearby hamlets or from the poorer quarters of Fort Dauphin town.

Two COGE forest brigade members explained that they were hired because they were considered *tena tompontany* (real land-owners) of nearby Mangaiky village. One woman of the forest brigade declared, "now that the *vazaha* [foreigners] are here, we must follow their rules, we are forced to, as they are *vazaha*. We therefore set up a *fikambana* [community association] to fight against charcoal makers, especially people from

Amaroamalo [nearby hamlet of recently arrived migrants], who came to burn the trees here. There were at least 42 people who came here to make charcoal and burn the forest. They even burnt the trees by the tombs, and they also chopped down trees for selling timber. In contrast, people's livelihoods here, the real landowners, is cultivating rice and picking *mahampy* [reeds for weaving]. However, in the end *kitefer* [the mining company] listened to our complaints, and helped us get rid of them, by asking for help from the gendarmes."

The above statements demonstrate the struggles that were developing over increasingly scarce land and natural resources between existing landowners and migrants seeking immediate financial rewards. Such tensions made local conflict resolution based on *dina* difficult to achieve, with landowners instead getting assistance from government law enforcement, via the mining corporation. Issues of insufficient land and resource access could not be addressed through a community-based mechanism such as the Mandena *dina*, which was based on a presumed unitary group of self-organizing local users with unchanging land and resource needs. The *dina* thereby failed to successfully address the tensions generated by expanding local land and resource needs by impoverished migrants.

Forest brigade members' statements also illustrate how to local people, the mining corporation represented powerful outsiders, conceived of simply as *vazaha*, and was frequently conflated with the state. This perception appeared to be confirmed by the provision of local police in support of the corporation's conservation program. As a result, while in theory the *dina* was an instrument of community-based management, in practice it was not so. Conservation rules were implemented with the support of state law enforcement rather than community sanctions. Indeed, many forest brigade members reported that the *dina* itself was unenforceable due to the social tension such official community sanctioning would create. This included fear of retaliation through witchcraft and poisoning targeted at forest brigade members if they publicly accused individuals of contravening the *dina*.

Environmental issues were not at the forefront of the Mandena conservation program at a local level. Rather, it was conceived of in terms of relationships between local people and outside powers, whether foreign or the Malagasy state, similarly to the situation encountered by Keller (2009) near the Masoala National Park. Groups strategically sought to align themselves with these powers in order to gain benefits and power, including by becoming members of the COGE and forest brigade.

Local social categories are, however, not fixed, and some migrants did manage to become landowners. 'Angeline' was one of the COGE's female members of Tandroy origin who had grown up next to the Mandena mining and conservation zone. Her family had migrated there in the 1940s due to the *kere* (famine) in the Androy. The family established themselves by the main road on unclaimed land and planted lychee trees as a cash crop, which also served to indicate their land ownership. Angeline set up a women's association for needlework and other income-generating projects in the 1980s, supported by the local order of nuns. As an association president, she qualified for COGE membership, as the mining corporation had made use of existing community associations in order to facilitate the establishment of the Mandena *dina* (Rarivoson 2007). Individuals like Angeline, who managed to establish themselves as local residents with social capital and networks, were thus empowered by the *dina*.

In spite of immigrant origins, Angeline's family ascended to becoming *tompontany* and recognised community members by claiming land. This reflects the conflict between paper-based, legal notions of stable communities of 'users' with fixed rights, on the one hand, and the fluid realities of coping with rural poverty through migration in Madagascar, on the other (e.g., Comaroff and Comaroff 1987, Ferguson 1999, Evers 2002, Keller 2008), as elsewhere in Africa (Kopytoff 1987). Given its history, these dynamics are particularly pertinent to the Anosy region, where ongoing land privatization is causing further social differentiation between existing landowners and the many recently arrived migrants. As the latter are not able to access new land to clear for farming, they instead depend on accessing forest and other natural resources for their survival.

Local landowners also made use of the forest and therefore had to abide by *dina* regulations, including paying user fees. The forest was deemed particularly valuable for keeping cattle hidden from thieves, although that was no longer permitted. Landowners further made use of the forest for private housing materials, reeds and medicinal plants. When seeking forest access, these groups of people, usually interrelated, were able to negotiate the *dina* to their advantage, although many lamented the loss of access for grazing cattle.

A Tanosy landowner and lineage head was able to benefit from the *dina*, because according to him, "the COGE's management now, it is nothing compared to the Ministry's management! It is *tena maiva* [much lighter], at least that is what I think. In the past, if you were caught by the Ministry, they took your wood that you had cut, and forced you to plant new trees, if not they took you to the police and to jail. Now, with the COGE, we can *mifagnanatsy* [arrange things between ourselves], because we are all from the same area." Clearly, for the *tompon-tany*, the *dina* could be negotiated to one's advantage, and it entailed a welcome withdrawal of government monitoring of natural resources. Indeed, the institution did have local support, namely that of certain elites but not from the majority of the local community. As Pollini and Lassoie (2011) and Corson (2011) argue, this is a common weakness of the GELOSE legal framework in Madagascar.

'Rajean', a landless immigrant from Manantenina *commune* 150 km to the north of the mining zone worked as a land guardian and sharecropper for the above-cited landowner. Rajean revealed that he could no longer enter the Mandena forest to obtain construction wood due to the forest brigade patrols and user fees. Rajean rarely had adequate funds to spend on the fees, as his salary was paid in crops. He obtained cash revenue from selling forest products. Rajean was afraid to enter the zone to fish in the lakes, which had been permitted previously, because he had been accused by forest guards for damaging wood with his fish-gutting knife.

The exclusion of Rajean from forest access prevented their household from obtaining fish, an important source of nutrition for his family. Additionally, without income from selling construction wood, Rajean could not afford to adequately feed his four children, who suffered from malnutrition. Rajean admitted, however, that if he received orders from town to collect wood for construction then he would covertly steal the order of wood. His main source of monetary revenue had

been criminalized. Concurrently, as a landowner's guard and sharecropper, Rajean did not possess either the social status or time to partake in the alternative livelihoods projects established by the mining corporation. Had he been able to, Rajean would have opted to plant crops on his own land. He instead hoped to save enough money to return to his home village in Manantenina. This *commune* often generates outmigration due to chronic hunger. However, to Rajean, his home *commune* was becoming more attractive than the Fort Dauphin area despite mining-related development. In spite of the stated intentions of corporate responsibility and community conservation programs, the above stories show how some of the mining zone's most marginalised people bore the brunt of land and resource loss through mining and conservation.

CONCLUSION

This article has analyzed social effects of community-based forest management in the context of mining-led conservation and development efforts. It is apparent that new local mechanisms of inclusion and exclusion have appeared as certain groups have been better able to position themselves as participants in the new, community-based management structures. These groups have had existing resource access rights confirmed by being recognized as rightful local landowners and resource users in the new nature management regimes, as well as by influencing the enforcement of forest access rules. This dominance by one group led to more marginalised people being even more excluded. These people were mostly landless migrants and therefore particularly dependent on forest resources for their modest livelihood.

Consequently, the people who represented the community in negotiations about forest management were not those who most depended on forest resources for their survival. This had negative consequences both for conservation and development objectives. Long-term residents in the mining zone *communes* whose livelihoods were based on wet rice cultivation outside the forest had employees to work their land and were better placed to access the new, participatory conservation schemes.

The mining corporation's support of one group, despite intending to allow for local participation in conservation and development, thereby inadvertently furthered local resource conflicts. New land and resource access regimes tended to exclude the poorest component of the population. Ultimately, the conservation agreement was supported by governmental law enforcement rather than community-based solutions. In a context of conflicts over increasingly scarce land and natural resources near the mining zone, the social tensions generated by peer sanctioning were too high to allow for effective automonitoring by community members.

Finally, the community management model failed to address the fundamental issue of marginalised people's lack of access to arable land. In addition to the mining and conservation zone, other large areas of potentially cultivable land were still titled to colonial era owners and used for eucalyptus plantations, private nature reserves and church grounds. With the mining corporation's alternative livelihoods programs being inaccessible to many local migrant people, they had no alternative but to keep accessing forest resources beyond what was permitted. Because the voices and concerns of the most marginalised, forest-dependent people were excluded from the start, they became more likely to break the conservation rules. Apart from furthering social inequity, this inevitably led to conservation objectives being compromised.

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

Sandra J.T.M. Evers[I] and Caroline Seagle[I]

Correspondence:
Sandra J.T.M. Evers
Department of Social and Cultural Anthropology, VU University Amsterdam, Amsterdam, Netherlands.
E-mail: s.j.t.m.evers@vu.nl

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

[I] Department of Social and Cultural Anthropology, VU University Amsterdam, Amsterdam, Netherlands.

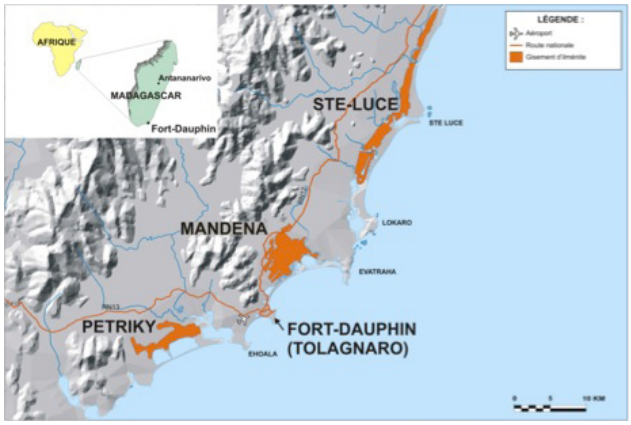

FIGURE 1. Overview of three mining sites: Petriky, Mandena, St. Luce. Mining data provided in 2007 by Martin Theberg of QIT. Satellite imagery by Google Earth (copyright 2009) image date: 2004-2005.

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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