

Seeing the forest, Naming the Trees: Visuality and Knowledge Production About “Nature” in Madagascar

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This paper explores representations of “nature” in the context of struggles over natural resources in Madagascar. I focus on the visually-informed representations of this concept and how it has been used to legitimate specific claims to land and natural resources. In particular, I argue that these representations contributed to a neo-liberal partnership around natural resource extraction and conservation as the only solution to solving poverty and environmental degradation in south eastern Madagascar. This rendered the resulting displacement and loss of livelihoods of over 1,000 local people, as well as the destruction of 2,000 hectares of endemic littoral rainforest, a technical matter to be addressed by socio-environmental “experts”, rather than open for contestation and alternative visions for natural resource management.

In making this argument I seek to highlight the need to go beyond the focus on “discourse” and “narrative” in analyzing power, by highlighting the particular ways of visualizing the world which both underpin and are generated by linguistic categories, and in particular the Western scientific tendency to focused on visual aspects of “nature” and its physical classification. This sidelines other, embodied aspects of experiencing nature, such as nutritional and medicinal aspects of ecologic resources. The visual bias also evokes a notion of nature as a static system, with the aim of resource management to preserve this stasis in particular sites of pure “nature”, separated from human “culture”, and functioning as an “offset” to sites of corporate resource extraction.

Accounting for the historical and particular context of Western scientific notions of nature helps both explain their universalist aspirations and remind us how their apparent universal validity is dependent on particular, ethnocentric linguistic and visual tropes. This is particularly helpful when analyzing sites of struggle over resources in Africa, where images of “nature” have come to influence the rights to accessing these resources by particular groups. An added point is therefore the need to bring a notion of embodied experience of nature beyond the visual into the debates as a contrast to discourses of nature which



focuses on visually-informed knowledge creation and particular spatial tropes.¹ This paper will establish the genealogy of visually-based knowledge production, explore the effects through the example of a mining project in Madagascar, and briefly discuss alternative forms of knowledge production about nature through local perspectives from people near the mining site.

Nature and the “spatialization “of knowledge

In his study of spatial metaphors as objects of inquiry, Foucault (1984 [1991]: 254) proposes that the spatialization of knowledge in Western Europe in the 17th century was one of the factors leading to the constitution of knowledge as “science”. The Western “natural sciences”, he suggests, are based more on the visual than other sensory organs. “Natural history” emerged as an individual science and precursor to modern conservation biology, based on a spatialization of the objects of analysis, in particular the studying and classifying of plants on the basis of what is *visible*. Concurrently, other elements of knowledge of that object, such as its medical or spiritual functions, fell away as the object was spatialized. This, Foucault argues, is based on a form of radical empiricism particular to Western scientific knowledge production, and linked to the development of the printing press: The “natural” world became divided into particular classifications, considered as universal categories, according to quantifiable, visual characteristics, and presented as illustrations in books. Books themselves can here be considered as spatial entities reproducing this spatio-visual aspect of knowledge. Texts become *spatial techniques*, not merely metaphors, as they become “natural entities” (i.e. empirical objects) in their own right (Foucault *ibid.*), with the authority attached to such objects in Western knowledge production over and above e.g. orally or bodily transferred forms of knowledge.

Drawing on Foucault, Escobar (1999: 6) points out that a regime of “capitalist nature” emerged in post-Renaissance Europe, culminating in capitalism and the advent of the “modern epistemic order” in the late 18th century. Aspects of this new order involved “new

¹ Critiques of discourse theory, such as Sahlins (2002: 60-61) have argued that the anthropological analysis of “discourse” has merely replace the “reified” character of the old culture concept. However, by pointing out that discourses with hegemonic tendencies such as those on “deforestation” are situated in time and linked to particular, visually-based tropes with universalistic aspirations, they are not analyzed as a new, functionalist “superorganic”, which is Sahlins’ point of critique. Rather, these discourses are linked to particular people and institutions, leading to the marginalization of those not able to partake in the discourse. This has particular effects on the environment which is physically shaped by the policies emanating from these discourses – in my case study, allowing for new sites of both corporate mineral extraction and bio-diversity conservation.

ways of seeing” and the commodification² of nature linked to capitalist modernity, with other novel aspects including rationality and governmentality. Escobar (ibid.) argues that the development of these new ways of seeing has been directly linked to the emergence of capitalist, commodified nature: the invention of a linear perspective, linked to realist painting which seeks to freeze place from a particular point of view; the objectification of landscape as vista with a concomitant “politics of vision”. As Foucault (1975: xii) argues, this new form of vision was instrumental in the birth of the modern sciences, establishing an alliance “between words and things, enabling one to see and to say”. This set the conditions for a presumed universal “nature” to be observed, classified and managed, and, I would add, placed visual descriptions of nature above other sensory experiences in terms of valid knowledge production.

This focus on the visual and written word has thereby been given authority over other forms of knowledge production within conservation biology, marginalizing oral and illiterate cultures and conceptions of the world based on embodied experience not framed by a seemingly detached vision. When these two forms of knowledge production meet, it can have negative impacts on the well-being of those not able to participate fully in the hegemonic forms of knowledge production about nature (c.f. Fairhead and Leach 1996).

Thus, as Escobar (1999) also points out, from the analysis of tissues through the microscope and the camera in the 19th century to satellite surveillance and GIS, the importance of *vision* in dominant forms of ecological management is only increasing. Aerial photographs used to trace deforestation, visual mapping of biodiversity “hotspots” (including all of Madagascar, with this knowledge used for the purpose of bioprospecting by pharmaceutical corporations, c.f. Neimark and Schroeder 2009) are all visual strategies used for generating knowledge about “nature”, in addition to existing textual-based documentation which frequently uses visual metaphors in their “scientific” knowledge production. Escobar (1999: 7) suggests a partial definition of the political ecology of capitalist nature as “the study of the progressive incorporation of nature into the twin domains of governmentality and the commodity”³, with

² By commodification I make use of Corson’s (2010: 581) definition of valuing nature based on its potential market price.

³ In this vein, Brockington (2002) argues that conservation in neoliberal sub-Saharan Africa rests on a narrative based on local people harming the environment, conceived of as an “original Eden”, and that Western science has the knowledge and the means to restore it. This includes a combination of nature conservation as “biodiversity” and the need for “community development” to accompany it. This is a “powerful, persistent, and popular *vision*” (ibid: 3, my emphasis) supported by millions of dollars in development aid and scientific research, propagated through the popular media. In contrast, Bloch (1995) has argued that in the south eastern highlands of Madagascar, people consider open landscape rather than forest as visually more pleasing, as it represents ease of access and fertile land fit for human use.

biological, cultural, and social consequences that need to be examined more carefully. This paper aims to contribute to the study of these consequences.

This analytical approach helps illustrate how Western-trained ecologists break down their visual consideration of vegetation into “natural” forms and processes uninfluenced by people and society, which are separated out as “anthropic” factors (Fairhead and Leach 1996: 6). Ecologists who seek out “untouched nature – “pristine forests” against which to assess human impact – are drawing on and reaffirming this divide. “Nature” becomes an essential reference point against which to discuss human impact. This conception of “nature” has led to conservation policies which have usually deemed the exclusion of people as necessary for its reestablishment. In this context, my paper compares the primarily visual quality of Western ecology to the more phenomenological, embodied account of the environment of farmers and fishers I spoke to during my field research around the mining sites. I will assess their perspectives in contrast to the dominating forms of knowledge about the landscape towards the end of the paper.

Visualising nature: Mining as conservation in Madagascar

In 2005, Anglo-Australian mining corporation Rio Tinto officially announced an investment in a \$775 million titanium dioxide (ilmenite) mining project in Tolagnaro,⁴ south east Madagascar (Rio Tinto 2005).⁵ It took almost 20 years from the 1986 signature of a joint mining venture between Rio Tinto and the Malagasy state until the project was announced to go ahead in 2005. This period was filled with multiple studies, negotiations and media campaigns related to the role of the mining project, considered either as an irreversible degradation of the already endangered local bio-diversity, or the “motor” of development which would solve the region’s poverty (Revéret 2007: 213). Key to the mining company’s strategy was a discourse of alarming rates of deforestation based on visual tropes presented as scientific fact, as set out in the World Bank-funded social and environmental impact assessment of the mining project:

This forest probably constituted a continuous stretch along the Eastern littoral of Madagascar. However, presently only more or less isolated fragments remain [...] according to [the mining company]’s data, the littoral forests used to occupy 7151 hectares in 1950 only to be reduced to 3280 hectares in 1998, and then 2839 in

⁴ Better known under the colonial name of Fort Dauphin.

⁵ The total cost of the investment in Madagascar and Canada to get the project to completion is US\$1.1 billion, with about US\$940 million invested in Madagascar (<http://www.riotintomadagascar.com/english/aboutQMM.asp>, accessed 12.11.2010).

2000 and under constant threat from the pressure of charcoal-makers, swidden agriculture and fires (Tecsult_International 2005: 4-18). (My translation).

Such spatially-based text seems to fit within the Foucauldian notion of the visual aspects of scientific knowledge production. It is accompanied by striking bird's-eye illustration of deforestation over time, as well as a graph, an even more "scientific" form of representing authoritative knowledge (Figures 1 and 2). It is therefore important to understand why the natural scientific knowledge production, with its visual basis, has become the dominant way of producing knowledge about resource rich places and people.

Figure 1: "Littoral forest degradation between 1950 and 2000" (QMM 2001)

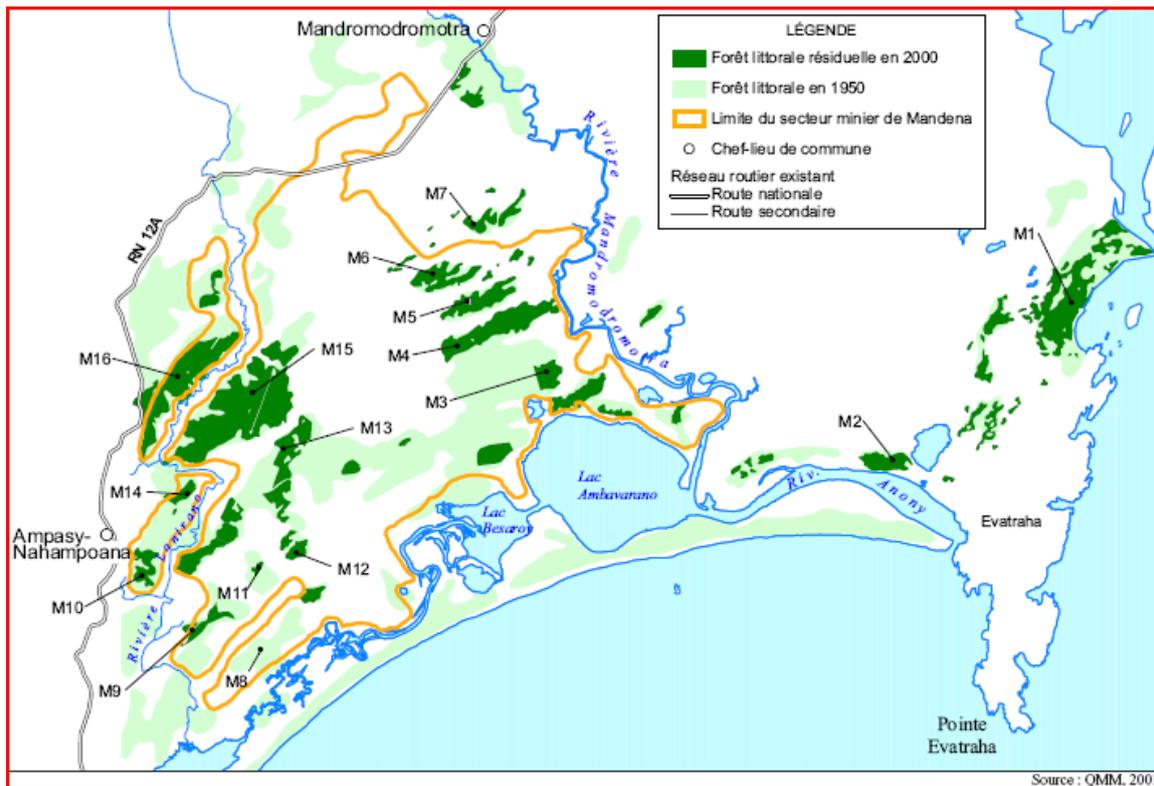
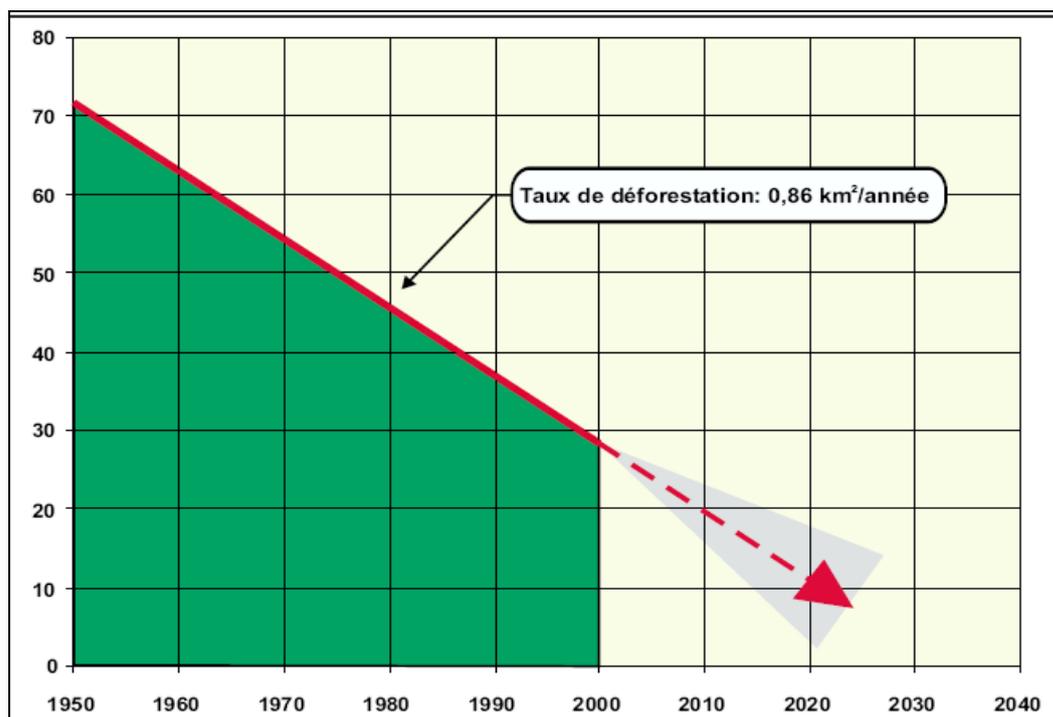


Figure 2: “Deforestation rate: 0.86 square kilometres per year” (QMM 2001)



The company actively uses scientific knowledge production in order to argue that it is having a “net positive impact” on biodiversity in the region, and has even co-published a monographic volume entitled “Biodiversity, Ecology and Conservation of Littoral Ecosystems in Southeastern Madagascar, Tolagnaro (Fort Dauphin)” (Ganzhorn, Goodman, and Vincelette 2007).⁶

In the company’s press kit issued in 2009, entitled “*A mine at the rescue of the unique biodiversity of the littoral zone of Fort Dauphin*”, the mining project as conservation agent is spelled out in explicit contrast to the mismanagement of local people:

Since the arrival in Madagascar about twenty years ago, [the company] was immediately conscient of the existence of the forest’s deterioration in the littoral zone of Fort-Dauphin due to the irrational [sic] pressure exercised by the local population who is very dependent on natural resources. With the knowledge that these exploitations are situated in exceptional sites in terms of biodiversity (i.e. 65 tree species only exist on exploitation sites), the company immediately took note of environmental [...]. In her [sic] missions, [the company goes] beyond the rehabilitations and remediation’s of the disrupted sites by these activities. She [sic] also intends to protect the biodiversity in the sites where she [sic]

⁶ Available on the mining company website: <http://www.riotintomadagascar.com/english/biodiversityBook.asp> (accessed 14.06.10)

intervenes and get a *net positive impact on the environment* with the active participation of the communities. (QMM 2009, my emphasis)⁷

This portrayal of the mining company as the only guarantor of biodiversity conservation through the creation of “offset” biodiversity conservation areas is reflected in governmental documents and reports.⁸ In Madagascar’s 2009 report on its adherence to the Convention on Biological Diversity, there is a section specifically dedicated to the mining project, where the situation is presented as follows:

The deforestation was happening even without the mining project and, based on the current tendencies (27 hectares per year of loss in Mandena [the first mining site]), the forest might have completely disappeared by 2020. Supposing that the different sources of aggression [sic] on the littoral forests and the intensity of removal were the same over the next few years, we can estimate that the major part of the residual forest in 2001 (203 hectares) would have already disappeared when the operation reached the first forest blocs, and if there were a few hectares of left, it would be strongly degraded (Razanatsimba et al. 2009: 106). (My translation).

The mining project appears to be one of an increasing tendency for neoliberal conservation models, in the sense of the creation of new, commoditized visions and spatialities of linking corporate extraction and “fortress conservation” (Brockington 2002). These new ways of envisioning the landscape are, I argue, based on moral visions of landscapes both of corporate resource extraction and of exclusion and preservation of islands of “conserved” nature, frozen in time for the visual enjoyment of biodiversity researchers and wealthy tourists.

Such partnerships between capitalist resource extraction and environmentalism represent novel form of alliances between capitalism and conservation characterised by an aggressive faith in market solutions to environmental problems (Brockington and Duffy 2010: 470). These new alliances are “actively remaking economies, landscapes, livelihoods and conservation policy and practice” (ibid.), with international biodiversity conservation creating “new symbolic and material spaces for global capital expansion” (Corson 2010: 579).

⁷ Available on the company website:

http://www.riotintomadagascar.com/english/pdfs/media/01.03.09_Press%20kit.%20A%20mine%20at%20the%20rescue%20of%20the%20unique%20biodiversity%20of%20the%20littoral%20zone%20of%20Fort-Dauphin.pdf (accessed 14.06.2010).

⁸ As Sullivan (2009: 20-21) points out, the notion of environmental “offsetting” relates to utopian win-win scenario of both mitigating environmental degradation and facilitating economic growth through pricing the ecological services provided by nature. This assumes that environments, emissions and effects in very different locations somehow are equivalent and therefore substitutable, allowing negative impacts in one location to be offset against environmental investments in another (ibid: 22).

Similarly, Igoe and Brockington (2007: 442) argue that that current neoliberal conservation regimes entail the need for these people to be brought out of “nature” and into the “market” so that they can return to nature as “competent conservationists”.

In this process, visually-constructed notions of “nature” has led to forms of dominant knowledge production both facilitating the creation of such alliances and leading to new ways of seeing and producing knowledge about “nature” and landscape, based on a combination of corporate resource extraction and conservation, and neo-liberal forms of “government through community” (c.f. Li 2006). Thus, in my field site, the new conservation areas were to be managed by “local communities”, with able to access certain areas of the forest for certain activities such as collecting firewood, reeds, housing materials and medicinal plants by paying user fees, and both user and strict conservation areas being monitored by community forest guards through a Management Committee.⁹

Fragments or islands? Alternative knowledge of landscape history

In addition to drawing attention away from the detrimental environmental impact of surface-mining itself, the corporate and governmental textual and visual representations of nature and deforestation discussed above serve to negate the complex socio-economic and political processes which underpin present day deforestation. This includes colonial and post-colonial forest resource extraction in the Anosy region, based on large scale logging, sawmilling, mining, clearing of forest for coffee and other cash crops, and for sisal and eucalyptus plantations (Jolly 2004: 92; 133, Rakotoarisoa 1998: 30-31).

Further, in contrast to the discourse of forest mismanagement by local people around the new mining and conservation sites, two studies have provided alternative findings about long-term changes in littoral forest coverage around the mining sites. An Oxford University study of forest coverage in the mining area shows that the basis for the mining corporations’s claim rests on the interpretations of just a few aerial photographs of the region

⁹ See Rarivoson (2007) for an account from the perspective of the corporate environmental team of the establishment of the Mandena forest Management Committee (COGE). The GELOSE (Gestion Locale Sécurisé) legislation from 1996 (Law 96-025) opened up for the transfer management of natural resources from central government to local communities via contracts between rural communities, the central government and commune, giving “exclusive rights” to the resources to the community that signs the contract, including “relative” land ownership (Bertrand and Ratsimbarison 2004: 85-86, Kull 2004). This includes drawing up *dina*, or “local common law regulations”, on access to and use of natural resources (Bertrand and Ratsimbarison 2004: *ibid.*)

(Ingram and Dawson 2006: 216).¹⁰ In direct opposition to the “extraction/conservation”-discourse, the study found two main factors behind the deforestation in the area set aside for mining: First, the construction by the mining company of a major access road bisecting the area, and second, the arrival of migrant charcoal makers in the context of the establishment by the company of pre-mining environmental research field stations which upset customary land rights (ibid: 216-217).¹¹

Concurrently, a recent study at the Oxford Centre for the Environment, based on pollen-analysis of longer term change in the littoral forests, found evidence that the mosaic vegetation in southeastern Madagascar, including the littoral forest in and around the mining sites, represents a natural distribution of forest “islands”, with littoral forest spatially constrained by soil moisture, rather than principally fragmented by human activity (Virah-Sawmy 2009). As Virah-Sawmy (ibid: 165) points out in her study, “whether the eastern coast of Madagascar was entirely forested by littoral forests is not merely of interest for environmental historians, it also has real implications in the way we perceive and manage landscapes, for instance the decision to allow for mining of most of this forest. And these results therefore contradict estimates of 90% littoral forest loss”. The latter had been the claim by the mining company, the Malagasy government and international conservation NGOs partnering with the company for biodiversity conservation projects.

In a response to Virah-Sawmy’s article, Watson et al. (2010 : 1-2) point out that it is surprising that her recommendations do not call for an end to or reassessment of mining activity, suggesting that “it is imperative that conservation policy recommendations do not unintentionally condone proposed habitat destruction by treating it as a *fait accompli*.” Watson et al. (ibid: : 1-2, citing Vincelette et al.) argue that the appropriateness of the proposed environmental “offsetting” or “restoration activity” has not been substantiated, with research showing that littoral forest plants grow more slowly in de-mineralized soils in comparison with normal soils and grow poorly away from standing forest fragments. However, Virah-Sawmy and Ebeling’s (2010) overall response to the criticism by Watson et al. (2010) is a call for what might be termed conservation pragmatism over idealism: They argue that whereas mining activities in forests at the two future mining sites, where mining permits have not yet been gained, need to be reassessed in the light on alternative findings

¹⁰ Feeley-Harnik (cited in Harper 2002: 66-67), similarly to Fairhead & Leach (1996), emphasizes the importance of historical research in understanding processes of landscape change, finding that the forest coverage in eastern Madagascar has been analyzed by remote-sensing analyses that did not address problems related to a lack of baseline data.

¹¹ This second reason for forest loss in the mining area is validated in another study of the Anosy region which points to deforestation being caused by increasing land tenure insecurity in the proposed QMM mining areas of Mandena and Petriky, a direct result of the company gaining access to these areas which were supposed to be off limits to local people due to their status as forest reserves (Rakotoarisoa 1998: 33).

on deforestation and the role of forest fragments, “conservation of threatened habitat in a desperately poor country like Madagascar needs to be negotiated in a complex framework of national development and environmental objectives”. As such, they argue for the need by conservation scientists to engage with “real-world development processes”, lending their expertise towards managing “unavoidable” impacts for economic development in order to be heard. Whereas this might be true, an explicit effort to integrate visually focused conservation research with cultural and historical elements of landscape would arguably help better understand the other elements to such impacts.

Environmental degradation is a “root assumption” in Western cosmology, based on Enlightenment notions of humans as separate from and negatively impacting nature (Fairhead and Leach 1996: 13, citing Collingwood). In the context of the visual basis for such knowledge production, forests are visually closer to “nature” than, for example the savanna landscapes of Guinea, or indeed the grasslands of south eastern Madagascar. In this context, the role of power and representation of landscape and its history becomes crucial, as local landscape readings are marginalized, with policies based on the specific, situated discourses of nature which may have tangible, negative impacts on people’s livelihoods and identities (ibid). In the context of Madagascar, Kull (2002, 2004) terms such discourses “received wisdoms”, as he critically investigating the crisis-oriented deforestation discourse on Madagascar, referred to as fact in most conservation and development policies. Similarly to Fairhead & Leach (1996), Kull (ibid.) argues that these “received wisdoms” about pre-settlement forest extent in Madagascar are based on faulty presumptions about original forest coverage and grasslands considered as degraded, often analyzed by visual means such as aerial maps and graphs.

Blame is placed on the Malagasy people, whose land management strategies such as swidden agriculture are considered primitive practices symptomatic of ignorance and poverty, therefore needing development interventions (Kull 2002: 63). This view is accompanied by neo-Malthusian concerns with population growth and excessive use of resources (Fairhead and Leach 1996: 13). In comparison, Jarosz (1993: 367-368), in a historical analysis of deforestation, found that in colonial Madagascar, rapid deforestation happened at a time when population growth was slow and shifting cultivation banned, emphasizing how representations of responsibility for deforestation function as political constructions by groups seeking to establish the “reality” most conducive to their interests.

“Nature” and local perspectives

A universal nature/culture dualism is frequently postulated not only in the natural sciences, but also in the social sciences when trying to emulate the former’s universalist forms of knowledge creation, including anthropology (c.f. Lévi-Strauss 1969). However, following theories in the field of political ecology theory, by focusing on the reciprocal impacts of nature and culture, we discover how the concept of “*nature*” is a by-product of human conceptualization, activities, and regulations (Biersack 2006: 3-4, Escobar 1999).¹² Fairhead and Leach (1996) in their book aptly entitled “*misreading*” the African landscape, contrast official donor narratives of landscape “degradation” with local farmers’ concepts and explanations of vegetation, soil, water and plant health issues. The latter are represented as embedded in everyday experiences of landscape in farming, collecting, hunting and making a living, as well as local political and social struggles.

In contrast, my research in south eastern Madagascar found “nature,” such as forests, conceived of as profoundly social spaces, and not as bounded but linked with other natural bodies such as freshwater sources, marshlands, manioc and rice-fields, and areas for cattle-grazing. Hamlets surrounding the forest were remembered as having been organized around usage of natural resources. In this forest-human landscape, every place had its toponym, and access rights had used to be clearly defined by those considered the land-owners. However, insecure land tenure over the last two decades due to mining corporation land access had upset these access rules, leading to town-based charcoal makers getting easier access and large areas getting destroyed for the purpose of feeding the nearby town of Fort Dauphin’s fuel consumption.¹³

As I was learning the local dialect, I found that farmers and fishers around Fort Dauphin conceive of nature as “*raha voa-zagnahary*”, which translates as “living things made by the Creator”, a category which includes human beings. The concept of nature as a “pure domain” away from human experience did not exist as a verbal category. The farmers and fishers I lived with and spoke to conceived of the world in an overtly phenomenological sense, by going beyond a narrow, visually based knowledge production which I have argued

¹² While arguing for pluralistic accounts of nature, Fairhead and Leach (1996: 15-16) remind us that there is no neutral language when analysing contested landscape history, as we are inevitably forced to enter into the assumptions of a given discourse to some extent. Concepts and categories of ecological science inevitably become part of our language – even as we attempt to show their inadequacy –especially if limited to the presumed readers of international academic texts. I agree with them that it is particularly problematic when describing landscape history, where representation of landscape and its empirical “reality” both contribute as data for investigation, with relations of power linked to alternative histories, requiring an inevitable positionality which must be acknowledged, with social and environmental history needing to be considered as both event and representation.

¹³ As also observed by Ingram and Dawson (2006: 216-217) and Rakotoarisoa (1998: 33).

is the basis of the Western natural sciences and still permeate landscape policies linked to nature conservation. Rather, rural people's linguistic conceptions of the world seemed to acknowledge a necessary embodied experience of the world and the situated character of human experience (c.f. Csordas 1990). For instance, people told me of the "environment" such as forest and water bodies primarily in relation to "*fiveloma-tegna*", or livelihoods, directly translated as "what keeps the body alive". This concept, often their first referential category when I asked rural women and men about local and personal histories, was usually related to everyday activities such as fishing, gathering forest products and reeds, and various types of farming, such as planting cassava, rice and sweet potato, providing collective identities. "*We Tanôsy mostly eat cassava*", I would be told, "*whereas highland people mostly eat rice*", and happy memories of the past would include memories of good harvests, with food abundant enough to sell the surplus.

Conversely, access to land was also profoundly linked to status, social ascendancy and exclusion. There were profound disparities between *tompon-tany*, landowners, and *mpiavy*, immigrants, with the latter often obliged to work the land of the former in order to make a living. These categories were dynamic, as most of the landowners were descendants of migrants who had arrived and cleared the land, and thereby claimed it as owners, becoming *tompon-tany*.¹⁴ However, with the new pressure on land resulting from mining-related infrastructure development and "offset" nature conservation, land was becoming a scarce resource, and little land was available for newly arrived migrants to claim in order to themselves become *tompon-tany*. These people were therefore the most dependent on natural resources as a common good, as they did not have cultivable land to rely on for food security or income generation. With the new resource regimes based on user fees and other income-generating schemes from the new conservation zones, the "community" allowed to manage these sites in practice turned out to be people with social capital, assets and free time enough to participate in the many committee meetings. These people were mostly of land-owning lineages. As such, the people most dependent on the natural resources were the ones who were less able to participate in the new nature management regimes, and therefore became even more excluded (c.f. Kull 2002: 66-67). As Cruz (2010) points out in the context of struggles over land in Mexico, people's territory constitutes the natural space of life and is conceived as the ecological base for the construction of various expressions and political practices.

¹⁴ This social dynamic is similar to other places in Madagascar, such as among the southern Betsileo, as analysed by Evers (2002).

Knowledge production and cultural diversity

Fairhead and Leach (1996: 8) remind us that words about the environment are not mere metaphors, but represent specific epistemologies which stipulate how the world works, and are tied to moral conceptions of human life and well being. Along this vein, Igoe (2005) argues that the protection of biodiversity should be considered as inseparable from the protection of “cultural diversity”, i.e. a diversity of ways of perceiving of and interacting with the environment. To this I would add that the visual and embodied experience of the environment profoundly shape how we conceive of it. As western forms of scientific knowledge production about nature privilege a visually-based and static “capturing” of reality, other aspects of the environment experienced through other human senses become less valid as a basis for scientific knowledge.¹⁵ In this way, embodied elements of nature beyond the visual and classificatory/statistical, such as its necessarily dynamic character in interaction with human and other forces, and its value to livelihoods as space for cultivation or grazing cattle, providing medicinal plants and emergency foods such as fruit, weeds for weaving, tombs and shelter for ancestral spirits, and potential space for future generations to expand their land, are considered less scientifically relevant.

As an alternative to the empirically focused, vision-based model for knowledge production, Hobart (1993: 17) argues that knowledge can be considered as a “practical, situated activity, constituted by a past, but changing, history of practices”. In this vein, Escobar (1999: 9) argues for the need for a practice-oriented view of different forms of knowledge, inspired by Bourdieu’s (1990 [1977]) notion of embodied practice, phenomenological theories of the embodied aspects of knowledge, as well as Ingold’s (1995) notions of dwelling in the world and knowledge as a process of practical engagement with this surrounding environment. This approach considers humans as embedded in the world and engaged in situated practical acts. In this context, I would argue that taking into account our individual, embodied experience of landscape as both visualizing it, and interacting with it through daily, bodily practice, can contribute to a more nuanced and engaged knowledge production that accounts for the researchers’ own embodied relations with distant sites of resource struggles, such as through the use of extracted resources such as the titanium dioxide from the mining project in Madagascar (used as an industrial whitener-pigment in toothpaste, sunscreen and the paint that coats the airplanes we board to conduct research in distant sites).

¹⁵ As Fairhead & Leach (1996) point out, lived historical experience is a key feature differentiating villagers’ representations of landscape history from the discourses of scientists and policy-makers, who have tended to “read backwards” such history. In contrast, they argue that such landscape readings, and the power that goes with it, must be reversed.

Conclusion

Visual aspects of representations play an important part in society, and in particular tend to underpin scientific knowledge production about “nature”. As anthropologists’ subject matter consists in large part of conflicting representations of actions and events, directly affecting future action, we must take into account how representations, verbal, textual and visual, play an important part in social action (Hobart 1993: 13). It is therefore important to analyze how knowledge, power and agency are represented, and responsibility attributed in different situations. In the case of the mining project analyzed in this paper, responsibility for environmental degradation plays a key part in the symbolic struggles over representation of the world, with direct effects on successful claims to land and natural resources.

As social scientists we need to study the social and environmental effects of visually-based and thereby powerful discursive categories such as “nature”. With Fairhead and Leach (1996) I argue that we need to recover the landscape readings of local inhabitants and put them in wider circulation. In support of my argument I have evaluated the role of the visual in the Western empirical sciences and how this approach has come to frame natural resource access and extraction in south Eastern Madagascar. This, I argue, led to new types of commodified landscape, based on certain visual tropes: *Landscapes of extraction* of mineral resources from nature as a representation of development, and *landscapes of exclusion* of local people from land as a representation of nature conservation, re-introduced as paying consumers and “competent conservationists”. I also suggest that in addition to the discursive/textual focus, we must take into account the visual tropes/genres that are linked to the discursive genres of Western ecologists, and in particular how they tend to have an explicitly visual bias in describing and classifying “nature”.

This focus on the visual, which I have argued is linked to the “empirical” sciences, excludes other embodied experiences of the environment, and contribute to upholding the separation of “nature” as a stable empirical object of investigation to be separated from human consciousness and embodied consumption. In contrast, I have presented the ontological verbal categories equivalent to our “nature” as expressed by some of my rurally based informants in south eastern Madagascar, arguing that they can be equated to a more phenomenological focus on embodied experiences of nature beyond a visual, distilling and static form of universalist knowledge production about the environment. By deconstructing ethnocentric visual metaphors as part of dominant narratives when representing people and places in the politics of development and conservation, we get a better understanding of the political nature of the oft-repeated story of environmental degradation in Madagascar.

Finally, by opening up for the deployment of our own embodied relations with these resources beyond visual classification or analysis we come to a more nuanced and holistic analysis of “nature”, “culture” and its interconnection in sites of struggles over resources, and our own involvement in these struggles in terms of privileged produces of authoritative knowledge.

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