Rio Tinto in Madagascar

A mine ~~at the rescue of~~ destroying the unique biodiversity of the littoral zone of Fort Dauphin

By WRM and Re:Common

Credits

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Introduction

"We want to be biodiversity leaders within the mining industry, for the competitive advantage and reputational benefit this provides. Our performance on biodiversity conservation and management issues will create benefits for our business"[1]

Glossy brochures, published by the International Union for the Conservation of Nature (IUCN)[2], BirdLife International, the World Business Council on Sustainable Development, the Business and Biodiversity Offset Programme (BBOP) and others present biodiversity offsetting as an opportunity for the mining industry and showcase the Rio Tinto QMM offset as exemplary. The image they promote is of mining corporations with an interest in biodiversity conservation.

The International Finance Corporation's Performance Standard 6 (PS6) on *Biodiversity Conservation and Sustainable Management of Living Natural Resources* certainly helps explain at least some of that interest in offsetting.[3] The International Finance Corporation (IFC) is the part of the World Bank Group that provides financing to the private sector. Understanding that capital investment is embedded in an "economy of appearances", the World Bank recognizes the potential of biodiversity offsetting in securing investment into mining in times of increasing conflict around new mines and heightened public awareness about the industry's contribution to biodiversity loss, species extinction, climate change, pollution and social upheaval.

In Liberia, for example, the World Bank is promoting mining concessions as a way for the country's economy to recover after the years of civil war between the early 1990s and 2003. In March 2015, the Bank presented "A National Biodiversity Offset Scheme: A Road Map for Liberia's Mining Sector", a report that links mining and funding of protected area management. The report "explores the feasibility of implementing a national biodiversity offset scheme in Liberia to help minimize adverse impacts on biodiversity and ecosystem services resulting from mining."[4] The report does not mention that the mining concessions are located in the most biodiverse region of Liberia and will destroy not only forests rich in biodiversity but also the livelihoods in communities where people depend on those forests and the biodiversity they contain. Instead, the report describes biodiversity offsets as "an

opportunity for the private sector to contribute to an underfunded protected areas network."

The IFC Performance Standard 6 states that for a corporation to obtain an IFC loan, it must present a biodiversity offset plan if the project will destroy what the IFC calls 'critical habitat'.[5] Hence: no biodiversity offset plan – no money from the IFC to expand or set up new mining operations or related infrastructure. And because the IFC is a reference in the banking sector, other banks are beginning to request the same. Presenting biodiversity offset plans is therefore increasingly a requirement when seeking investment for mining in 'critical habitat', on land that forms part of local populations' customary use, that has been designated a protected area of sorts – or all of the above.

One case in point is the Rio Tinto ilmenite mine in Fort Dauphin (Tolagnaro), in the Anosy region of south-eastern Madagascar - one of the most biologically and culturally diverse islands in the world. Involved in so many controversies in the 1990s that it faced trouble securing new investment and mining licenses,[6] Rio Tinto is promising that its operations at select mining sites, including the Fort Dauphin ilmenite mine, will deliver a "Net Positive Impact" (NPI) on biodiversity.

Two principal reasons have been suggested in the literature for Rio Tinto's choice of the Fort Dauphin ilmenite mine as a pilot site: First, ilmenite deposits are "found under littoral forest with high biodiversity value, and thus [biodiversity offsets] represent a way to pre-empt environmental risks. Additionally, campaigns against this mining project emerged in the 1990s (Friends of the Earth, World Development Movement and London Zoo), eventually forcing the company to establish a conservation and environment team in 1996."[7] Even a joint IUCN and Rio Tinto publication acknowledges the high species endemism at the mining site – many species are found only in this type of coastal forest in Madagascar. Their report states that "littoral forests on the mining concession harbour many restricted-range species and species classified as 'Threatened' on the IUCN Red List, including 42 plants and at least 14 invertebrate species that are found nowhere else in the world."[8] Even though mining will destroy around 1,650 hectares of this rare and unique coastal forest, Rio Tinto QMM applied for a mining permit, and a 2009 company press kit about the mine is titled '*A mine at the rescue of the unique biodiversity of the littoral zone of Fort Dauphin'.*[9]

In this context, the value to Rio Tinto of its partnership with IUCN and other conservation groups such as BirdLife International is

obvious. The Rio Tinto QMM biodiversity conservation strategy carries their stamp of approval. These partnerships and the conservation groups' active engagement in the biodiversity conservation initiatives are mentioned frequently in Rio Tinto publications. Studies, many prepared by members of the Rio Tinto QMM Biodiversity Advisory Committee which includes members from academia and conservation NGOs including Birdlife International, complement Rio Tinto's own publications and marketing of its partnerships with conservation groups. They have published reports about the biology, ecology and conservation priorities of forests inside the mining concession. Several studies also describe the ecological characteristics and species make-up of forests at potential biodiversity offset sites, in particular the Tsitongambarika Forest Complex. Tsitongambarika is the largest expanse of lowland humid forest remaining in southern Madagascar, and Rio Tinto claims to have played a crucial role in the protection of the Tsitongambarika Forest (the forest has recently been declared a protected area). A report published in 2011 as part of the *IUCN and Rio Tinto Technical Series* states that Tsitongambarika forest is "a key source of local livelihoods."[10] One of the three biodiversity offset sites, Bemangidy-Ivohibe[11], is located in the north-eastern portion of the Tsitongambarika forest, in Madagascar's Anosy region.

Rio Tinto's biodiversity offset initiative in Madagascar thus is of special importance both for promotional material of the mining and conservation industries but also for Rio Tinto's operations in Madagascar.

In September 2015, Re:Common and the World Rainforest Movement (WRM) visited villages in Iabakoho district in the Anosy region. The villages are located in the vicinity of the Rio Tinto Bemangidy biodiversity offset site, along the north-eastern part of Tsitongambarika Forest.[12]

„Voices from the villages“ are presented below. They provide a snapshot of villagers' experiences at the Bemangidy-Ivohibe biodiversity offset site. The article also explores the role of conservation NGOs and species collections such as those of Kew and Missouri Botanical Gardens in legitimizing the destruction of a unique coastal forest by a mining corporation that wants to extract 40 years worth of raw material for industrial white paint. A description of the metrics used by the biodiversity offset initiative and a reflection on lessons from the field investigation conclude the article.

Voices from the villages: „It's unfair“

"We understand the importance of protecting the forest. But they should have started the projects to help us grow food before stopping us from using the forest. Otherwise we are left with no food and this is a problem"[13]

Rio Tinto QMM has chosen Bemangidy-Ivohibe as one of three biodiversity offset sites intended to compensate for the loss of approximately 1,650 hectares of unique littoral forest that the company will destroy at the Fort Dauphin ilmenite mine. The Bemangidy offset site is located some 50 kilometres – three to six hours drive – to the north of Fort Dauphin.

The forest that will be destroyed over the coming 40 years of anticipated active mining adds up to about 3.5 per cent of Madagascar's remaining littoral forest.[14] The biodiversity offsets at the three different locations are used by Rio Tinto QMM and its partners to claim that the mining will nonetheless have a "Net Positive Impact" on biodiversity. At two offset sites, Sainte Luce and Mahabo, forests are classified as the same ecological type of littoral forest as the one that is destroyed within the ilmenite mining concession. They are referred to in biodiversity offset parlance as „like-for-like offsets“. The biodiversity offset at Bemangidy is a so-called „not-like-for-like offset“. This means that the forest at the Bemangidy location is quite different in its species and habitat make-up to the unique littoral forest at the mining site.

Livelihoods around the Bemangidy offset site

Life for most villagers in this coastal region of south-eastern Madagascar is tough. The soils along the coast are sandy while the land at the foot of the hills inland, the Tsitongambarika forest massif, is steep and the layer of topsoil is thin. Food production is thus mostly for subsistence, and it is hard work. The staple food in the villages the authors visited in September 2015 is manioc.

Prior to the arrival of the Rio Tinto QMM biodiversity offset, villagers grew manioc at the edge of the forest. A $15m^2$ patch on the forested hills would provide enough manioc to feed a family of five people for around five days. Farming was mostly in shifting cultivation, and families would rotate their plots every few years when manioc yields dropped. They would leave the land to recover while manioc cultivation shifted to another plot. The local expression for fields that are left to recover is "hindy". To take

them back into production, villagers usually burn the vegetation, which releases nutrients. No chemical fertilizer is used in these rotation farming systems.

Among the restrictions the Bemangidy biodiversity offset now imposes is that villagers are no longer allowed to plant manioc along the forest edge or use the forest as they did before. The restrictions were presented in what villagers refer to as a “dina”. A „dina“ is part of the traditional ways of regulating customary land use within and among communities. The traditional process of agreeing a „dina“ involves a negotiation between those using the land about what community members can do and how a certain area can be used. For this reason, a "dina" commands a degree of respect that state regulation generally does not.

Until recently, a "dina" was not a written document – it did not need to be. Those to whom it applied had been involved in the negotiation and they committed to respecting what had been agreed together. In the past decade or so, however, state authorities and conservation NGOs have begun to use the term "dina" for documents containing written rules imposed on communities as part of conservation projects.

An academic article on the transfer of protected area management in Madagascar notes that "dinas" linked to such management transfers "reflect the agenda of the institution (NGO and/or project) that supports the implementation of management transfers, rather than the priorities of the community. They lack the flexibility of traditional rules and are incapable of taking into consideration the specific economic situation of rule breakers. They focus on repression and penalties rather than resource extraction modalities."[15]

In conversation, people at villages around Bemangidy reported that a "dina" had been presented to them around 2003, when the Malagasy government authority transferred management of the northern part of the Tsitongambarika forest (TGK III) to local administrative structures and the Malagasy conservation NGO Asity, a partner organisation of BirdLife International.[16,17] The written "dina" applying to the Bemangidy biodiversity offset area divides the forest into three use zones. In one zone, any use is prohibited (except for scientific research). In a second zone, restoration activities are undertaken and restricted use may be allowed in the future. In the third zone, villagers are allowed to use plots previously farmed in shifting cultivation and recuperating "hindy" plots. Use in this zone requires a permit from the local

administrative structures set up as part of the management transfer, the Communauté de Base, COBA.[18] To obtain such a permit, villagers usually have to be COBA members and they also usually have to pay a fee.

If people are found farming in the forest without such a permit, or in zones where use is prohibited, they have to pay a fine of between 50,000 to 1,000,000 Ariary [around 15-300 euros]. To put this into perspective, more than 75 per cent of Malagasy people are living on less than US$2 a day and the official minimum wage in Madagascar was 125,000 Ariary (35 euros / month) in 2015. "If you can't pay the fine, they take you to the Forest Department and then to jail," one villager explained.

Villagers also mentioned a "dina from Asity". This “dina”, villagers explained, prohibits use of fire anywhere on the hillside, even for taking "hindy" patches back into cultivation. Shortly after our visit in September 2015, a villager burned the vegetation on one of his "hindy" patches in preparation for planting. Villagers at a meeting discussing the draft findings of the WRM and Re:Common field report explained that he is suffering and needs land to cultivate manioc. He was ordered to pay a fine of 100,000 Ariary [30 euros] for burning in an area where the “dina” that regulates forest use in the biodiversity offset area prohibits such use.

Manioc fields in the sand dunes. The sand dunes are the only place left for villagers from Antsotso to plant their staple food manioc. Cultivation at fields traditionally used near the forest edge was prohibited when the land was designated part of a protected area and biodiversity offset for Rio Tinto QMM.

The village of Antsotso, Iabakoho district. Villagers are prohibited from planting manioc at the edge of the forest, which has been dedicated a biodiversity offset site for Rio Tinto QMM.

Threat to food security

Because villagers were told they could no longer plant in the hills along the edge of the forest, communities started to search for new areas to cultivate. The only place available to them are the sand dunes. Fields are now as far as 3-4 kilometres from the villages and to get there, villagers have to walk for about an hour, passing small lagoons and streams. Villagers explained that during the rainy season (from November to April), getting to and from the fields is treacherous, particularly when carrying food back to the villages.

In addition, productivity in the sandy soil is lower than at the forest fields, and growing manioc in the sandy soils is not going well. The new manioc fields are not producing enough to feed all families in the villages.

In terms of food security alone, the Rio Tinto QMM biodiversity offset at Bemangidy is thus turning out to be a disaster: planting manioc in the sand dunes is hard work, far from the villages, on very poor soils not suitable for the manioc varieties available to the communities. It leaves villagers without their staple food for much of the year and families have no regular cash income to buy food. At the same time, none of the alternative income generating activities that were promised at the start of the project have been forthcoming at villages such as Antsotso, and villagers have yet to receive compensation for loss of access to customary land.

A Rio Tinto mine to the rescue of biodiversity?

Rio Tinto's claim that the QMM mine at Fort Dauphin has a "Net Positive Impact" on biodiversity is based on two arguments.[19] First, that the forest at the mining site would have been destroyed anyway through farming by the local population. Second, that the company will pay for restoration of forest at three offset sites that have also been 'degraded' by local use. Through these offset measures, the company claims to ensure that biodiversity in these forests does not drop further and will even 'improve' (see section below, on biodiversity metrics). The destruction of over 1,650 hectares of rare and unique forests is turned into a “net positive impact” by these promises for conservation measures at the mining site and biodiversity offsetting outside the mining concession area.

Company brochures (mostly in English) explain the link between restrictions on local forest use, the restoration planting of trees and the biodiversity offset, but these links have not been explained to all the communities affected by the biodiversity offset. Instead, villagers reported that the argument given for the restrictions was that 'it is important to protect the forest for future generations and in respect of ancestors'.

Low pay for tree planting, unpaid restoration work

People at the village of Antsotso, one of the villages perhaps most affected by the Bemangiy-Ivohibe biodiversity offset, explained that the Malagasy partner organisation of BirdLife International, Asity, approached them in 2013 to start planting trees at the edge of the forest. Villagers recalled being told that the project was very important because the communities needed 'more forest for future generations'; that there would be jobs in exchange for loss of access to the forest; and that the project would last for a long time. But in the village of Antsotso, only about 20 people had been hired to plant trees at the forest restoration sites, at 3,000 Ariary [1 euro] per day. Restoration planting provided also only temporary work, with people being paid day by day. “Planting trees is good but it does not give us long-term security”, one villager remarked. Another villager added that “the cost of buying the manioc we need to feed our families for one day is 6,000 Ariary [2 euros] per day, so you see that this is a problem." Others recalled that there had been the promise of some social projects to help the villagers grow food. “They were supposed to start but they haven't started yet”, we heard when enquiring about

progress of these activities.

Villagers also explained how the process for choosing people to help with the restoration planting had been complicated by the interference of the NGO: "They always came without much notice. And then they would go and ask the person in charge of the nursery to choose the people from the village who would come along for the planting. They would come one day and say 'today we need ten people'. He would bring ten people and they would tell him that we were 11 (including him), so they would say 'are you going to pay for the 11th?' Plus, once he brought people, the next time they come and need people for the planting they tell him to bring this or this person again, and this created a problem in the village, because the same few people were working every time. The right thing to do would have been to involve all the people of the COBA, maybe in turns, but they want to save money and so they create another problem."

In conversation, villagers mentioned that when Rio Tinto first came to the villages, there had been talk about planting eucalyptus trees near the villages, to provide firewood and timber for housing construction. Experimental planting was abandoned, and no significant planting - of eucalyptus or native trees - has taken place yet around their villages. Villagers said that when they enquired about the planting near the village, they were told by the conservation group that "it is better to plant native trees for your ancestors, not plantations along the road".

One of the surprising sights during our September 2015 visit at a restoration site at the edge of the forest was the high survival rate of seedlings planted. In conversation, villagers explained why so many seedlings were surviving: People had been asked to water the trees regularly – and were doing so. But since late 2013, not even the person in charge of the tree nursery has been paid for the work he puts into watering the trees.

This unpaid time and effort shows that the community has a strong interest in the forest restoration work. But the way in which the restoration and restriction of traditional forest use are imposed leaves the community in a dreadful situation, as villagers at a community meeting explained:

"We are really suffering now because we had to stop cultivating on the hills. We moved our cultivation into the dunes, but it's so sandy there that growing anything is difficult. Plus they took our land and did not even compensate us. They said they would, but they never did. They provided micro-credit projects to some people, maybe 10, with 60,000 Ariary [18 euros] each, but this is

nothing to make a sustainable project. We think that protecting the forest is really good, but they should have worried first about our survival, they should have taught us how to cultivate somewhere else. Since Asity came here, our life has become much worse than before. Our standard of living is decreasing ever more. It's true that we should think about the future. But how can we think about the future if we have nothing to eat today? If we cannot even feed ourselves? We know that it's necessary to protect the forest because we've got nothing but the forest. And they took that from us."[20]

No compensation for loss of customary use of land

In 2011, *IUCN and Rio Tinto published a report called* "Exploring ecosystem valuation to move towards net positive impact on biodiversity in the mining sector" and assesses, among others, economic aspects of forest use.[21] In the chapter "Distribution of costs and benefits", the report states: "If local communities are not compensated for loss of access to the forest and provided with alternative sources of income and forest products, the welfare implications of conservation will be negative, poverty will be increased and protection of the forest and its biodiversity may be ineffective." At the Bemangidy offset site, this recommendation to compensate local communities for loss of access to the forest does not seem to have been followed - and the consequences are exactly as so eloquently expressed in the IUCN and Rio Tinto report.

The situation at Bemangidy reflects the difficulty forest-dependent communities face in many parts of the world: Their customary rights are often not recognized. "It's true that this land is not titled but there are trees and it's been used since our ancestors' time. So, even if it's State land, if it is being used by someone they should have asked permission from that person, and they didn't. We don't mind planting trees, have nothing against it and we do think it's important but our main concern is our livelihood," villagers explained the situation.

At a community meeting, we heard about a villager who has customary rights to land Asity chose for the biodiversity offset restoration planting. He had been using the land for cultivation and had even planted trees before Asity arrived in the communities to present the biodiversity offset plan. Since he was using the land, he should have received compensation for loss of traditional use rights, villagers explained. Asity or Rio Tinto QMM should have come to negotiate with him but they did not. "He got not even 1

Ariary." We were told by villagers that the person has been reminding NGO staff each time he meets them; that their repeated reply has been 'we hear you', but that he still has not received any compensation and cannot use the trees he planted in what has become the Rio Tinto QMM biodiversity offset site.

"We made sure everyone got down the mountain"

For Asity, the forest had already been dedicated as protected area by the government before the biodiversity offset started. Customary rights should have been dealt with when the protected area was set up and in Asity's view, no-one should have had fields or huts in the forest when the biodiversity offset started.

This approach is all the more problematic because the same group, Asity, together with Rio Tinto, actively pushed for the forest to be designated a protected area before the north-eastern portion of the forest was also declared biodiversity offset for Rio Tinto QMM. Did they advocated for fair compensation when the protected area was decreed?

Ethically deplorable methods to ensure compliance with land use restrictions

At meetings with Rio Tinto QMM and NGO representatives in Fort Dauphin, following our visit to villages, we heard about methods and tactics used to 'make the offset project a success'. Such tactics are not a unique occurrence in the conservation sector. But they are rarely shared in such a candid way. To introduce the Bemangidy biodiversity offset activities, NGO staff visited several times during the initial phase of project implementation. Sometimes, representatives of Rio Tinto QMM and the conservation NGO would visit villages together and sometimes, NGO staff would visit villages around the biodiversity offset site on their own. To the NGO, these visits were part of a process of slow persuasion. "Basically it was brainwashing," we were told.[22] We were told by the conservation NGO managing the Bemangidy biodiversity offset that "dinas" codifying land use at offset sites were developed in "a participatory manner".

In a first meeting, NGO staff would talk about the importance of the forest to villagers' history, followed by introducing the biodiversity offset – not as an offset but as a conservation project that would protect forest for future generations. This 'process of slow persuasion' also included some harsh critique from the NGO about current land use practises. We learned that not all community meetings went well. One meeting in

particular, with Rio Tinto QMM representatives present, had apparently been "a fiasco", not least because villagers requested resolution of the outstanding issue of compensation for lost access to the forest.

To avoid a similar "fiasco" at the following meeting, NGO representatives visited villages without Rio Tinto QMM and arranged for the meeting to start with a church service, followed by the meeting about the biodiversity offset / conservation project - also held in the church, "to avoid disruption."[23] It was thought that people would remain calmer in a church, and that it would be easier to prevent the meeting from turning into another “fiasco”. This was described as “leveraging on the ecumenical culture”. Such "leveraging on the ecumenical culture" also facilitated alluding to God and ancestors as the ones who had requested protection of the forest "for future generations and to respect the ancestors".

Tapping into the strong culture of reciprocity in traditional ways of life, the importance of sharing and the sentiment that if one does not learn how to give one will not receive, allowed the NGO to cast aside requests for compensation more easily.

Asity also takes the view that it should not be the NGOs elaborating the proposals for economic income alternatives, on the basis that the whole process is about sharing rather than giving. While this would appear a commendable approach at first sight, it can also be a barrier if circumstances prevent such community initiative.

Asity requires the community proposals to be “economically viable”. To this end it has carried out training sessions in villages about how to put together a project proposal for alternative income generation, assess the proposal's economic feasibility, present a budget, and develop a financial management plan. The project proposed needs to generate sufficient income for the loan to be paid back. Villagers remembered the training, commenting that initially, it was calling for mainly women and the poorest people in the community to participate, so that they could benefit from an offer of micro-credit. But most could not follow the training:

"He gave a training on financial management but it was too difficult. Especially for those who are illiterate, but even for those who have some level of education. Nobody understood what he said."

In such a context, few will be able to submit a project proposal, and presumably even fewer a proposal that will pass Asity's economic viability assessment.

We were told that to date, Asity had funded some 20 micro-credit loans *(0 per cent*

interest loans) in the four COBAs that are involved at the Bemangidy biodiversity offset. The size of the loans ranged from 60.000 Ariary to 700.000 Ariary [18 – 200 euros]. Most loans were small, with the justification that it was important for people to "think big but start small."

For example, one villager had received 100,000 Ariary [30 euros] in August as micro-credit from Asity. He will have to pay back the loan from September 2015 onwards, and finish the repayment in November 2015. He was told that only once he had paid back his loan, the next person would be able to receive a micro-credit.

Conservation groups as service providers lend credibility to biodiversity offsets in the mining sector internationally and take on offset implementation at local level

"Without the involvement of legitimate NGOs, most [biodiversity offset] concepts may not gain credibility and would not be able to contribute to a social license." [24]

The very concept of biodiversity offsetting is controversial. Yet, offsetting is of increasing interest to the mining industry: Much of what remains for them to mine is in protected areas, considered 'critical habitat', under customary land use or otherwise more difficult to get at than in the past. The industry, therefore, needs biodiversity offsets. What's more, the mining industry needs offsets to be perceived as credible and acceptable, no matter what impact the mining operations and this latest conservation tool have on biologically diverse habitat and on local communities. Corporate partnerships with actors in the conservation sector are one way of securing such credibility and acceptability.

Rio Tinto launched its conservation strategy and "Net Positive Impact" goal at the Third IUCN World Conservation Congress in 2004, and has established partnerships with well-known conservation groups, including BirdLife International, Conservation International, Earthwatch Institute, Fauna & Flora International and Royal Botanic Gardens, Kew.[25] BirdLife International write on their website that in "2001, BirdLife International and Rio Tinto formed a global

partnership *to achieve mutually held goals of biodiversity conservation*."[26] As part of the partnership, BirdLife coordinated extensive research on the biology of the Tsitongambarika Forest Complex, and a plant species inventory was prepared using the standard protocol for botanical sampling developed and adopted by Missouri Botanical Gardens (MBG). Use of this protocol was meant to grant scientific legitimacy to the research.[27] In 2010, Rio Tinto signed a 3-year collaboration agreement with IUCN, the world's largest and oldest global environmental organisation. One of the activities under this collaboration were the *IUCN Rio Tinto Technical Series* publications, two reports contributing to the methodological work for the Fort Dauphin biodiversity offset. The reports outline methodologies for biodiversity quantification and economic valuation of the forests considered as biodiversity offset for the Rio Tinto QMM ilmenite mine.

The first of these reports also hints at another reason for the mining industry's interest in biodiversity offsetting: "For companies like Rio Tinto, robust methods of valuing ecosystem services and the development of well-functioning markets for ecosystem services could provide an opportunity to use large non-operational land holdings to create new income streams for Rio Tinto to be used for conservation activities."[28]

Another important actor providing scientific credentials to Rio Tinto's biodiversity offset initiative is Missouri Botanical Gardens (MBG). MBG has amassed a vast species collection during the past three decades of bioprospecting and biopiracy. Re-using their existing collections, MBG help produce the species inventories and baseline datasets, provide crucial information for the Rio Tinto QMM biodiversity offset plan and lend credibility to the biodiversity offsetting initiative.

MBG's consulting and auditing services thus help Rio Tinto gain and maintain access to mineral deposits beneath forests with high species endemism such as the ilmenite mining site in Fort Dauphin. "Without such specialised inventories, and more importantly MBG brand's ''stamp of approval" as the leading botanical scientific and now essentially auditing team, the mining company's offsets run the risk of legitimacy and could potentially have their mining permits pulled by government ministries," Neimark and Wilson write in 'Re-mining the collections: From bio-prospecting to biodiversity offsetting in Madagascar'.[29]

The example also shows how for

institutions like MBG, biodiversitiy offsetting is providing an opportunity to generate revenue from their immense botanical collections and species databases at a time when funds for large 'bioprospecting' initiatives have begun to dry up. [30]

With regards to actual implementation of activities at the three biodiversity offset sites, it is worth noting that while Rio Tinto QMM manage conservation activities inside the concession area, the company has outsourced implementation of the actual biodiversity offset to different conservation groups, including MBG and Asity, the BirdLife International partner in Madagascar.

Biodiversity metrics and the creation of the ecologically destructive 'Other' in Rio Tinto's Conservation Strategy in Madagascar

"The company shares the same challenge which all the contributors are facing: protect the environment which contains a unique biodiversity on which depends the survival of the majority of the population living under the poverty line level" [31]

The Rio Tinto subsidiary QMM started mining for ilmenite in an exceptionally biodiverse place (65 tree species only exist on exploitation sites, for example[32]) in 2008 / 2009. Thus, four years after Rio Tinto had announced its “Net Positive Impact” strategy, the company applied for a mining permit knowing that extraction of ilmenite would destroy 1,650 hectares – 3.9 per cent of what remains of unfragmented littoral forest unique to coastal Madagascar.

In such a context, two things are important for Rio Tinto to be able to suggest that despite the loss of forest biodiversity, its mining and conservation activities have a "Net Positive Impact" on biodiversity. First, they must be able to present a narrative that biodiversity would have also been lost without the mining taking place. That narrative must be considered convincing and credible by government authorities that issue the permit, banks and investors who provide the financial capital and conservation NGOs as mediators and creators of public perception. Second, the metrics used to show that destruction at the mine has been

compensated through biodiversity offsets elsewhere must be constructed in such a way that their application comes at a cost the mining company is willing to pay and is possible with the habitat available outside but in the vicinity of the mining concession.

"A mine at the rescue of the unique biodiversity of the littoral zone of Fort-Dauphin"[33]?

Since its arrival in Madagascar in the late 1980s, Rio Tinto has emphasized that the littoral forest at the Fort Dauphin mine was already 'degraded', and that this degradation was caused by local use. This creation of the ecologically destructive 'Other' is part of a discourse that has become crucial to the extractive industry's land access strategy in the past 20–25 years: While some uses of the land are portrayed as desirable or acceptable (mining, protected areas), company and conservation publications create an image of other activities (cutting of trees, subsistence agriculture, use of non-timber forest products) as the 'wrong use' - undesirable, destructive, inefficient and backwards.

Rio Tinto's presentation of local subsistence farming as the ecologically destructive 'Other' also reveals neo-Malthusian ideology: "High population growth rates and overwhelming poverty have contributed to serious environmental degradation in the region," a 2007 Community Relations Strategy and Plan notes. A 2014 Rio Tinto QMM newsletter informs its readers that "Madagascar is among the richest countries in the world in terms of biodiversity, where poverty, however, leaves no alternative for communities than turning to natural resources to survive. This high pressure causes massive destruction of natural habitats and includes Madagascar in the red zone (hotspot) for risk on biodiversity" [34]

The suggestion that the coastal region of south-eastern Madagascar would "naturally" be covered in dense littoral forest if it weren't for the local communities – although increasingly questioned in academic literature[35] - is repeated in many publications released by NGOs partnering with Rio Tinto. Such repetition reinforces the company's message that local land use is the big threat to biodiversity, not mining.[36] Rio Tinto combines this tactic of creating an image of local communities as the ecologically destructive 'Other' with couching its own mining operations in language of care and effort to reduce any possible damage: "At Rio Tinto we believe that to obtain a Net Positive Impact we must reduce our impact on biodiversity, through Avoidance,

Minimization, Rehabilitation, Offset and Additional conservation Actions,"[37] a billboard at the Mandena National Park office that also hosts the Rio Tinto QMM nursery, explains.

Biodiversity metrics

Biodiversity offsetting requires metrics that help quantify the scale of biodiversity loss at the mining site and the size and composition of the biodiversity offset required for the mining company to claim compensation. In their *Technical Series* reports, Rio Tinto and IUCN describe metrics used to assess biodiversity at the mine and biodiversity offset sites as well as a five-step assessment to measure progress towards the stated company goal of a "Net Positive Impact" on biodiversity.[38] Besides offsetting, Rio Tinto QMM also uses what they call "avoidance, minimization and rehabilitation" activities within the concession area to limit the loss of biodiversity from mining. The outcome of these activities is included in its biodiversity loss and gains calculations. A brief description of these different conservation activities within the mining concession is included in the Box *The Rio Tinto QMM ilmenite mining project in Fort Dauphin*, below.

The two metrics, or units, Rio Tinto QMM uses to assess "Net Positive Impact" are "Quality Hectares (QH)" and "Units of Global Distribution (UD)". "Quality Hectare" scores indicate the level of forest degradation; they are based on an estimate of forest cover. The IUCN Rio Tinto report explains that, for example, "100 hectares of forest in pristine condition would count as 100 Quality Hectares (100 ha × 100% quality = 100 QH), whereas 100 hectares of fairly degraded forest at 40 per cent 'optimum quality' [meaning 40% of forest cover compared to what is considered forest cover of a pristine forest] would be expressed as 40 Quality Hectares (100 ha × 40% quality = 40 QH)."

Using forest cover as the only indicator (as opposed to, say, a range of different indicators or some other metric altogether) simplifies the calculation method – and thus the cost of the assessment. Reliance on a single indicator also does not require a high degree of actual similarity between the areas where biodiversity is lost and supposedly gained.

The "Units of Global Distribution" is described as "a novel metric", developed specifically for the QMM biodiversity conservation plan. This unit combines "Quality Hectares" and species ratings on the IUCN list of Threatened Species. One unit corresponds to 1 per cent of the global

population of the species.

At least two issues are noteworthy. (1) When summing up "UDs" from different sites, a different species composition can yield the same score depending on the combination of species ranking on the IUCN list and their abundance at the sites. (2) Rio Tinto and IUCN note that it was not possible "to measure losses and gains in UD for a very small number of High Priority species" because the global range and/or population size could not be quantified. Curiously, instead of venturing to estimate an upper and lower range UD for these species (would this have been any more subjective a judgement than the creation of a counter-factual scenario for land use 40 years into the future?), "losses and gains were simply measured in hectares". This way, a very high score for loss of an endemic species high on the IUCN Threatened Species list as a result of the mining can be avoided.[39]

These two metrics are then inserted into the calculations performed as part of the five-step assessment that determines whether the company is on track to achieving the stated "Net Positive Impact" goal. In a first step, Rio Tinto and its conservation partners decided which biodiversity features to include in the "NPI" accounting system. This step involved a critical choice because it determined which species and functions of a complex, dynamic and ever-changing habitat such as a littoral forest should be made visible through inclusion into the accounting system – and which would be condemned to invisibility because they were not relevant to the accounting system. The choice of the units through which to track the chosen functions and species was the second step in assembling the "NPI" accounting system. The chosen metrics are "Quality Hectares (QH)" and "Units of Global Distribution (UD)". In the third step, the counter-factual scenario(s) of what would have happened to biodiversity without the mine was chosen.

The IUCN and Rio Tinto Technical Series report No. 2 acknowledges that the counter-factual scenario "determines the magnitude of loss for which Rio Tinto QMM is considered to be responsible." The bleaker the outlook for the forest biodiversity in the counter-factual - the more convincing the Rio Tinto narrative of the subsistence farmer as the ecologically destructive 'Other' - the easier it is to demonstrate that biodiversity will be better off despite the destruction caused by the ilmente mine. What's more, **depending on the assumptions on land use in the counter-factual scenario, the same impact on biodiversity from the mine might in one scenario lead to a calculation showing losses to biodiversity while construction of another**

counter-factual will yield a "Net Positive Impact" – even if the actual damage done and remedial action undertaken are identical! What is different is the image the mining company has created and can present on the international stage. In the final two steps of the assessment methodology, biodiversity losses and gains that would likely be caused through the mining and through conservation activities were estimated for two time intervals, 2004–2015 and 2004–2065 (the expected end of mining operations at the Fort Dauphin mine).

The 2012 *IUCN and Rio Tinto Technical Series* report No.2 presents the results of the five-step assessment and finds that "net impact [from mining] on littoral forest is forecast to be +350 QH in 2065, representing an increase in forest extent and quality of 13% in comparison to 2004 (measured in QH)." A second calculation includes restoration and conservation efforts at the not-like-for-like Bemangidy biodiversity offset site. This calculation yields an even more impressive number of "biodiversity gain": +1,251 QH – a ratio of gain to loss of approximately 4:1, the report informs the reader.

These calculations thus erase the unsightly fact that the Rio Tinto QMM ilmenite will destroy ca. 1,650 hectares of unique littoral forest. Communicating only the resulting number - +1,251 QH by 2065 - pushes the dubious implicit assumptions built into the calculations such as the counter-factual scenario or the abstractions behind the "QH" and "UD" metrics, out of sight. Highlighting only the number of supposed biodiversity gains by 2015 and 2065 thus reinforces the company claim of "*a mine at the rescue of the unique biodiversity of the littoral zone of Fort Dauphin"* while relegating to the background the fact that the mine destroys 1,650 hectares of forest that provides home to many rare and endemic species and livelihood to many families.

The Rio Tinto QMM ilmenite mining project in Fort Dauphin

Rio Tinto is a British-Australian corporation with headquarters in London, UK. It's involved in the mining of iron ore, copper, bauxite, uranium, coal, and diamonds on six continents. In 2013, Rio Tinto Group owned gross assets valued at USD 81 billion and reported net earnings of USD 3.7 billion on sales of USD 54.6 billion. Their corporate sales that year were thus almost six times the GDP of Madagascar.

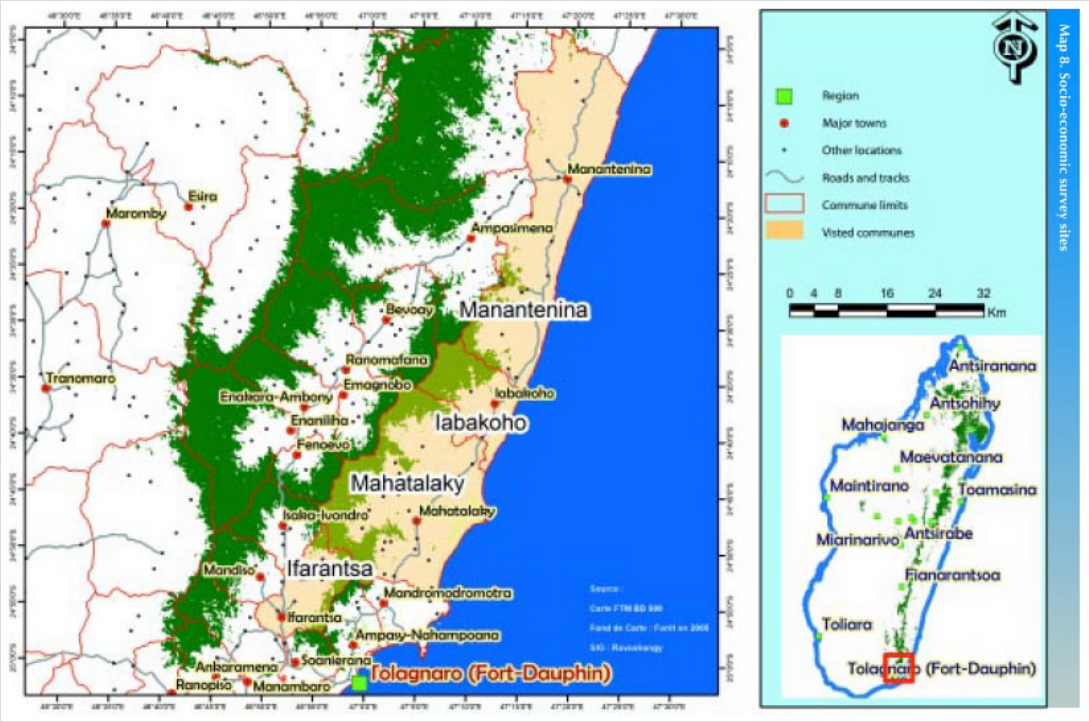
In 2008, after nearly 20 years of preparation and negotiation, Rio Tinto QMM (QIT Minerals Madagascar SA) began dredging for ilmenite deposits in Fort Dauphin, in south-eastern Madagascar. QMM is 80 per cent owned by Rio Tinto, with the Malagasy state holding the remainder 20 per cent. Infrastructure constructed to secure the Rio Tinto investment in the mine includes a new deepwater port at Fort Dauphin, a dedicated industrial zone at the port, paved roads and a stone quarry. Initial investments are reported to have been around USD 930 million.[40]

The company plans to extract ilmenite at three sites (Mandena, Sainte Luce and Petriky) within the 6,000 hectare concession area. Mining at the Mandena deposit started in 2008 / 2009. The three sites will be mined over a period of 40–50 years. Dredging of about 100 hectares of land containing ilmenite deposits annually is expected to yield anywhere between 750,000 and 1 million tonnes of ilmenite ore. Ore processing in Madagascar is minimal, consisting only of separation of sand and ilmenite through flotation. Despite minimal processing at the mine, it's still one of the most energy-intensive operations in the country. Rio Tinto QMM exports the ilmenite ore to Canada where titanium dioxide - the white pigment found in paints and plastics - is extracted from the ilmenite ore. The market value of a tonne of ilmenite ore exported from Madagascar is currently around USD 100 while titanium dioxide sells for around USD 2,000 a tonne.

According to company estimates, 6,000 people live in the immediate vicinity of the 6,000 hectare mining concession.[41] As in other parts of Madagascar, most of the population in the region relies on subsistence farming, making land people’s main source of food and income. In the coastal areas of the Anosy region, artisanal fishing for lobster and prawns for local and international

Artisanal fishing for local markets has been affected by construction of Ehoala port and the Rio Tinto QMM mine located in the vicinity of these fishing grounds used by artisanal fisherfolk.

markets provides a livelihood for local fisherfolk and their families. People also fish in rivers and lakes for domestic consumption. The construction of Ehoala port is said to have significantly reduced fishing catch, even affecting levels of domestic fish and seafood consumption. Excessive use of water for dredging and floatation to separate sand and ilmenite minerals also has an ecological impact. In 'The mining-conservation nexus' Caroline Seagle describes a wide range of social impacts caused by the mine. She reports that Rio Tinto QMM purchased land at low price and paid only around 100–400 Ariary [0.03-0.11 euros] per m^2 in compensation to Malagasy residents dispossessed of land for the mine. Seagle notes that World Bank regulations stipulate compensation of at least 2 000 Ariary [0.50 euros] per m^2. Furthermore, access to land, rather than ownership, is crucial for securing rural livelihoods in Madagascar where the state claims ownership to all non-private lands.[42] Those who lost access to land at the mining site thus can be expected to find themselves in a situation similar to villagers who lost access to the land that provided their livelihood at the biodiversity offset site at Bemangidy. For testimonies and references about the impact of the mine on local livelihoods, see 'Land grabbing in Madagascar. Echoes and testimonies from the field - 2013'. [43]



To demonstrate compliance with its "Net Positive Impact" goal on biodiversity at mining sites with "high biodiversity values", such as at the Fort Dauphin ilmenite mine, Rio Tinto implements four types of conservation actions: Avoidance, Minimization, Rehabilitation and Restoration (mainly inside the concession area), and Biodiversity Offsets (outside the concession area). Avoidance means that Rio Tinto QMM will not mine some of the areas with particularly high species endemism, roughly 27 per cent of the "best quality remaining forest cover on the deposit". The company claims that this measure represents "a cost to Rio Tinto QMM of some 8 per cent of foregone ilmenite, as well as the management cost of maintaining these areas." Collectively, Avoidance areas cover 624 hectares. Minimization activities aim at minimizing disturbance on areas not mined and reducing roadkill from mining-related traffic through training programmes for truck drivers. Rehabilitation and restoration activities are undertaken mainly inside the mining concession or immediately adjacent to attempt to restore over time the littoral forest on areas completely cleared during dredging. Rehabilitation of the mined area, mainly with non-native, fast growing tree species, will be carried out once dredging has moved on to the next part of the deposit. To facilitate restoration, Rio Tinto QMM claims to store topsoil and use it as substrate to propagate seedlings of native species present at the area being mined before the dredging. At each of the three mining sites, Rio Tinto QMM intends to restore some 225 hectares, a total of 675

hectares. Biodiversity offsets are located outside the mining concession. As part of its conservation strategy for the ilmenite mine, Rio Tinto QMM is investing in biodiversity offsets at three forest sites in the region, Sainte Luce, Mahabo and Bemangidy-Ivohibe. The Sainte Luce and Mahabo offset sites harbour the same type of littoral forest as the one destroyed at the mine while the forest at the Bemangidy biodiversity offset site is classified as lowland inland rainforest, with a different structural and species diversity as the littoral forest at the mining site. The three biodiversity offset sites cover c. 6,000 hectares of forest.

The size of the budget Rio Tinto QMM allocate to implementation of the conservation strategy for the ilmenite mine at Fort Dauphin is unknown, nor do publications from Rio Tinto or its conservation partners provide information about the cost of the design of the biodiversity offset methodology and offset implementation. Considering the large volume of information and emphasis on economic valuation in the conservation strategy, it is surprising that no such information on the economic aspects of biodiversity offset implementation is available. Communities visited as part of our September 2015 field investigation reported they had no information about the size of the budget available to the conservation NGOs for implementing the conservation / biodiversity offset, or about the budget available for implementation of activities at their villages.

Rio Tinto Biodiversity offsetting initiatives elsewhere

Biodiversity offsets play an important role in the conservation strategy that Rio Tinto announced in 2004 at the IUCN World Conservation Congress. In addition to the biodiversity offsets at the Fort Dauphin ilmenite mine, Rio Tinto literature mentions pilot offset sites at Simandou in Guinea, Oyu Tolgoi in Mongolia, Rössing in Namibia, Palabora in South Africa, and at its operations in Australia (see WRM & Re:Common report 'Rio Tinto's biodiversity offset in Madagascar. Double landgrab in the name of biodiversity?').

Conclusions

"Faced with development of a mine and development of biodiversity offsets, there is a real risk that local communities may face a 'double whammy' of negative impacts from both initiatives (e.g. if a community is dependent upon forest resources, and its access to forest is reduced through mining-caused deforestation and the implementation of a 'fortress-style' protected area)"[44]

There is a wide gap between the picture presented in glossy brochures distributed internationally about the Rio Tinto QMM biodiversity offset in south-eastern Madagascar and the reality for villagers living around the Bemangidy-Ivohibe biodiversity offset site.

The Re:Common and WRM field investigation in September 2015 confirmed that communities had not been informed about the forest conservation project imposed on them being a biodiversity offset for the Rio Tinto QMM ilmenite mine near Fort Dauphin, some 50 kilometres south from their villages.

The visit also provided insights into the role that conservation groups play in creating an image of villagers practising shifting cultivation, or tavy, as the big threat to forests and biodiversity and about the tactics used when imposing restrictions on community land use. By presenting subsistence farmers as the ecologically destructive 'Other', they contribute to diverting attention away from the fact that the big threat to littoral forests and livelihoods at and around the mining concession is the Rio Tinto QMM ilmenite mine.

Instead of acknowledging the destruction caused by extracting ilmenite across a 6,000 hectare mining concession, Rio Tinto and its collaborators speak of "Net Positive Impacts" on biodiversity, claiming that the coastal forest would have been destroyed anyways over the next few decades by local peasant farming practises. They further claim that the forest restored and protected through three biodiversity offsets would have been destroyed through shifting cultivation and other local forest use without the activities implemented by the biodiversity offsets at Sainte Luce, Mahabo and Bemangidy.

Villagers also spoke of NGOs showing a lack of respect and regard for their situation. "They do not come to talk, they come to tell," was a comment heard frequently when villagers talked about the Rio Tinto QMM biodiversity offset at Bemangidy. We also heard of deplorable tactics used at the

Bemangidy biodiversity offset site to ensure compliance with restrictions the offset places on local land use and subsistence food production.

On closer inspection biodiversity offsetting at Bemangidy reveals itself as a double land grab that takes away access from communities at the mining site as well as where Rio Tinto QMM is claiming forest as offset for the destruction at the mine. The consequences of biodiversity offset implementation at the Bemangidy site are thus similar to well-documented impacts of REDD+ and related offset projects: Income generating alternatives to alleviate the loss of access to the forest are promised but do not materialize while restrictions are already in place.

For villages in the vicinity of the Sainte Luce biodiversity offset, immediately adjacent to the mining concession, the situation of a "double whammy", as cited above, may well be reality. Certainly, subsistence livelihoods of peasant families around Bemangidy have become even more precarious while one of the world's largest mining corporations can increase its profits from the extraction of ilmenite.

Finally, the experience of the field investigation underscored how important it is to combine a critique of biodiversity offsetting as a concept and the absurdities that are inevitable in the process of abstracting complex, dynamic forests into equivalences based on "QH" and "UD" units with insights and knowledge that can only be gained through direct exposure to the reality of biodiversity offset implementation.

Meeting with villagers actually living with the reality of a biodiversity offset that is taking away their livelihood provided a sense of the many levels at which the frequently uttered "It's unfair" applies: it's unfair that peasant families lost their livelihoods so one of the world's largest mining corporations can increase its profits from extracting ilmenite deposited beneath a unique forest; it's unfair that neither Rio Tinto nor the BirdLife International partner organisation in Madagascar informed villagers that the project was a biodiversity offset for Rio Tinto QMM, not just a conventional conservation project; it's unfair (deplorable, actually) that a conservation NGO would insinuate religion, traditional beliefs and custom to enforce restrictions on subsistence land use; it's unfair that people are no longer allowed to grow their staple food, manioc, without being provided with any alternative means or support to grow the food they need to survive; it's unfair that most places where such offset projects are implemented are so

difficult to reach that the isolation plays in the hands of the mining companies and their conservation partners whose glossy brochures and slick presentations build the illusion of a biodiversity offset that benefits forests and people when the reality is one of local communities facing deprivation, loss of access to the land they depend on to feed themselves and lack of respect and regard for their situation. It's unfair.

We hope that this article and the field report on which the article is based will contribute to a more honest debate about the real impacts of biodiversity offsets on local population around offset sites. Above all, those responsible for the biodiversity offset must ensure that the dreadful situation that the biodiversity offset at Bemangidy has created for peasant families who have lost the little they have will end, and that villagers at Antosotso and neighbouring villages are ensured a viable resolution that guarantees they can grow the food needed to feed their families.

Further information:

- World Rainforest Movement & Re:Common (2016): Rio Tinto's biodiversity offset in Madagascar. Double landgrab in the name of biodiversity? http://wrm.org.uy/other-relevant-information/new-report-rio-tintos-biodiversity-offset-in-madagascar/
- Re:Common, Collectif TANY, SIF (2013): Land grabbing in Madagascar: Echoes and testimonies from the field - 2013. www.recommon.org
- Andrews Lees Trust and Panos (2009): Voices of Change. A collection of testimonies from farmers impacted by the Rio Tinto QMM mine. www.andrewsleestrust.org/hepa.htm
- Rod Harbinson (2007): Development Recast? A review of the impact of the Rio tinto Ilmenite Mine in Southern Madagascar. Panos report for Friends of the Earth.
- Lambolez Fred and Jean Marie Pernelle (2013): Je veux ma part de terre – Madagascar. Video documentary.
- Friends of the Earth (2012): Madagascar: Nouvel eldorado des compagnies minières et pétrolières.

- Bidaud, C., et al. (2015): Voluntary biodiversity offset strategies in Madagascar. Ecosystem Services Vol. 15:181–189.
- Seagle, Caroline (2012): The mining-conservation nexus: Rio Tinto, development 'gifts' and contested compensation in Madagascar. The Land Deal Politics Initiative.
- Malika Virah Sawmy (2009): Ecosystem management in Madagascar during global change. Conservation Letters, 2: 163–170.

End Notes

[1] Rio Tinto Position Statement on Biodiversity. In: Rio Tinto. 2008a. Rio Tinto and biodiversity: Achieving results on the ground. Rio Tinto, London and Melbourne. Available at: http://riotinto.com/documents/ReportsPublications/RTBidoversitystrategyfinal.pdf

[2] IUCN is the world's oldest and largest global environmental organisation, with almost 1,300 government and non-governmental organisations as members.

[3] IFC Performance Standard 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources. January 2012. http://www.ifc.org/wps/wcm/connect/bff0a28049a790d6b835faa8c6a8312a/PS6_English_2012.pdf?MOD=AJPERES

[4] http://bbop.forest-trends.org/documents/files/liberia_webinar.pdf

[5] Paragraphs 16-18 are relevant to the Rio Tinto QMM ilmenite mine in Fort Dauphin: "16. Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; […]. 17. In areas of critical habitat, the client will not implement any project activities unless all of the following are demonstrated: *No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical; […]*The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and *A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program. 18. In such cases where a client is able to meet the requirements defined in paragraph 17, the project's mitigation strategy will be described in a Biodiversity Action Plan and will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated." Page 3, http://www.ifc.org/wps/wcm/connect/bff0a28049a790d6b835faa8c6a8312a/PS6_English_2012.pdf?MOD=AJPERES

[6] IndustriALL (2014): Unsustainable: the ugly truth about Rio Tinto. Pg. 14

[7] Bidaud, C., et al. (2015): Voluntary biodiversity offset strategies in Madagascar. Ecosystem Services (2015).

[8] Olsen, Nathalie, Bishop, Joshua and Anstee, Stuart (2011). Exploring ecosystem valuation to move towards net positive impact on biodiversity in the mining sector. IUCN and Rio Tinto Technical Series No.1

[9] QIT Madagascar Minerals SA Press kit (2009): A mine at the rescue of the unique biodiversity of the littoral zone of Fort-Dauphin.

[10] Olsen, Nathalie, Bishop, Joshua and Anstee, Stuart (2011). Exploring ecosystem valuation to move towards net positive impact on biodiversity in the mining sector. IUCN and Rio Tinto Technical Series No.1

[11] Referred to also as 'Bemangidy' in the remainder of the text.

[12] For a detailed report on the field mission, see Rio Tinto's biodiversity offset in Madagascar. Double landgrab in the name of biodiversity? http://wrm.org.uy/other-relevant-information/new-report-rio-tintos-biodiversity-offset-in-madagascar/

[13] Comment made by a villager at a community meeting in Antsotso in September 2015.

[14] Temple, H.J., et al. (2012): Forecasting the path towards a Net Positive Impact on biodiversity for Rio Tinto QMM. IUCN and Rio Tinto Technical Series No.2

[15] M. Berard (2011): Legitimite des normes environnementales dans la gestion locale de la foret a Madagascar. Canadian Journal of Law and Society, Vol. 26. P 89-111.

[16] New protected areas established after 2003 / 2004 are managed by national or international conservation groups rather than the public agency Madagascar National Parks, which manages the ca. 50 "historic" protected areas established between 1927 and 1999. As part of this management transfer of protected areas to private sector conservation groups, the government implemented a number of management transfer contracts (transferts de gestion), implemented under the 1996 GELOSE law (Gestion Localisée Sécurisée) and related 2001 GCF decree (Gestion Contractualisée des Forêts). For more information on management transfers in Madagascar, see Jacques Pollini et al. (2014): The transfer of natural resource management rights to local communities. In: Ivan R. Scales (ed): Conservation and Environmental Management in Madagascar.

[17] Asity is the conservation NGO appointed by Rio Tinto to manage the biodiversity offset at the Bemangidy-Ivohibe site. Communities perceive the project as one run by the NGO rather than by Rio Tinto QMM. In 2008, Asity became the Malagasy affiliate organisation for BirdLife International.

[18] A COBA (Communauté de Base) is a local administrative entity. Such COBAs have been set up across Madagascar in areas where management for protected areas has been transferred to the local level. Various official and conservation NGO publications describe a COBA as "a group of volunteers united by common interests and obeying house rules, for the management of local "natural resources". It can be made up of inhabitants of a hamlet, a village or of a group of villages. The municipality must be officially informed of the setting up of a COBA."

[19] For a detailed critique of the assumptions and projections used to determine what would have happened with the forest without the Rio Tinto QMM ilmenite mine, see Caroline Seagle (2009): Biodiversity for whom? Local experiences and global strategies of land use and access near the Rio Tinto/QMM ilmenite mine in Fort Dauphin, Southeast Madagascar. Masters Thesis. P. 24ff; Malika Virah-Sawmy (2009): Ecosystem management in Madagascar during global change. Conservation Letters 2 (2009) 163–170.

[20] Villager at community meeting during our September 2015 field investigation.

[21] Op. cit.: 7: IUCN and Rio Tinto Technical Series No.1

[22] Response from Asity, received on 08 April 2016 by Email: "la façon dont on a rédigé la phrase ne relate pas vraiment la réalité. Primo, le « lavage de cerveau » n'est pas le mot approprié, mieux vaut dire que c'est un moyen d'apporter des éclaircissements pour la population. Secundo, les visites servent à sensibiliser la population sur les tenants et aboutissants du projet Offset." [The manner in which the sentence is written does not really reflect reality. First, "brain-washing is not the appropriate word, it is better to say that it is a process of clarification for the population. Second, the visits serve to raise awareness about how the Offset project works.]

[23] Response from Asity, received on 08 April 2016 by Email: "En voici la réalité : tout au début, des groupes de personnes trouvaient toujours les moyens de perturber la réunion. Pour éviter cela, nous avons négocié avec les responsables de l'Eglise de Iaboakoho à débuter la réunion par une prière, et de prendre les décisions difficiles dans l'église même." ["Here's the reality: at the beginning, groups of people always find ways to disrupt such meetings. To avoid this, we negotiated with the leaders of the Church at Iaboakoho to start the meeting with a prayer, and to take the tough decisions in the church."]

[24] Mehrdad Nazari and Don Proebstel (2009): Biodiversity Offsets in Mining. MINING.com, January 2009. Page 42

[25] Rio Tinto (undated): Rio Tinto and biodiversity. Achieving results on the ground. http://www.riotinto.com/documents/ReportsPublications/RTBidoversitystrategyfinal.pdf

[26] http://www.birdlife.org/worldwide/business-partnership/partnership-rio-tinto ; emphasis by the authors.

[27] Biodiversity, ecology and conservation of littoral ecosystems in Southeastern Madagascar, Tolagnaro (Fort Dauphin) (Ganzhorn et al., 2007) and the supplemental publication, Forecasting the path towards a net positive impact (Temple et al., 2012).

[28] Op cit.: 7: IUCN and Rio Tinto Technical Series No 1.

[29] B. D. Neimark and B.Wilson (2015): Re-mining the collections: From bioprospecting to biodiversity offsetting in Madagascar. Geoforum 66 (2015) 1–10.

[30] Op cit.: 19: Neimark and Wilson (2015).

[31] Suivi environnemental – Un bilan positif des cinq premières années, N. 002 Magazine semestriel QMM, Octobre 2014 (http://www.riotintomadagascar.com/pdf/fasimaintyoct14.pdf)

[32] Op. cit. : 5: QIT Madagascar Minerals SA Press kit. March 2009

[33] Op. cit. : 5: QIT Madagascar Minerals SA Press kit. March 2009.

[34] Suivi environnemental – Un bilan positif des cinq premières années, N. 002 Magazine semestriel QMM, Octobre 2014 (http://www.riotintomadagascar.com/pdf/fasimaintyoct14.pdf)

[35] See for example, Malika Virah Sawmy (2009): Ecosystem management in Madagascar during global change. Conservation Letters, 2: 163–170. She also cites Noss 2001; Pressey et al. 2007 whose research suggests that the patchy composition of the littoral forest may be due to historical droughts rather than deforestation or shifting cultivation, and that "such areas of ecological discontinuities are adaptive components for diversity, evolution, and persistence in variable environments.

[36] Seagle, Caroline (2012): The mining-conservation nexus: Rio Tinto, development 'gifts' and contested compensation in Madagascar. The Land Deal Politics Initiative. Page 9.

[37] Rio Tinto Biodiversity Action Plan – Vision NPI 2050, billboards at the Mandena National Park Office, in the Region of Anosy, visited on 18 September 2015.

[38] For more detail, see IUCN Rio Tinto Technical Series report No. 2 *Forecasting the path towards a Net Positive Impact on biodiversity for Rio Tinto QMM*. Op cit.: 9

[39] Rio Tinto claims that for the QMM mining concession, "the Biodiversity Committee set a relatively strict 'like-for-like' target requiring that NPI is achieved individually" in those instances and loss of an endemic species because of the mining cannot be compensated through a larger size biodiversity offset but no presence of the threatened species.

[40] Rod Harbinson (2007): Development Recast? A review of the impact of the Rio tinto Ilmenite Mine in Southern Madagascar. Panos report for Friends of the Earth.

[41] Op cit.: 31: Rod Harbinson (2007).

[42] Op cit.: 28: Caroline Seagle (2012).

[43] Re:Common, Collectif TANY, SIF (2013): Land grabbing in Madagascar: Echoes and testimonies from the field. www.recommon.org

[44] Op. cit. : 9; IUCN and Rio Tinto Technical Series No.2. Page 3, reference to BBOP, 2009.

Rio Tinto in Madagascar:

A mine destroying the unique biodiversity of the littoral zone of Fort Dauphin

In recent years, mining companies have become actively engaged in promoting „biodiversity offsetting“ as a way of 'greening' their industry. The Rio Tinto QMM[1] biodiversity offset in the Anosy region of south-eastern Madagascar is probably the most widely advertised biodiversity compensation project in the mining sector. It is intended to compensate Rio Tinto QMM's destruction of more than 1,600 hectares of a unique and rare coastal forest from mining for ilmenite at Fort Dauphin (Tolagnaro), also in Madagascar’s Anosy region.

This article explores advantages for Rio Tinto in choosing biodiversity offsetting for its ilmenite mine at Fort Dauphin, and looks at the role that conservation NGOs and botanical institutions such as Kew and Missouri Botanical Gardens play with their immense species collections in greenwashing a mining operation that is destroying a unique coastal forest to extract 40 years worth of raw material for the production of industrial white paint. The article also describes how villagers at one of three biodiversity offset locations who are left with only the sand dunes to cultivate their staple food, manioc, perceive the Rio Tinto QMM biodiversity offset initiative.

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