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Biodiversity offsetting – *en vogue* in Madagascar?

In August I attended the International Primatological Society meeting in Mexico. During the session devoted to lemurs, there was an intriguing presentation on lemur conservation in the mining area of Ambatovy, some 80 km east of Antananarivo. Among other fauna, a remarkable 16 lemur species have been recorded there, including the IUCN Critically Endangered *Prolemur simus* and the Endangered *Propithecus diadema*. According to the company website, Ambatovy is a "large-tonnage, long-life nickel and cobalt mining enterprise located in Madagascar. Total project cost is US$ 6.3 billion, making Ambatovy the largest-ever foreign investment in the country – and one of the biggest in sub-Saharan Africa and the Indian Ocean region. Once fully operational, it will have the annual capacity to produce 60,000 tonnes of refined nickel, 5,600 tonnes of cobalt and 210,000 tonnes of ammonium sulphate fertilizer." This will position the Ambatovy project among the world's most productive lateritic nickel mines. Clearly on the payroll of the mining company, the presenter showed a map of the Sherritt mining area, revealing among other features, a conservation area for biodiversity offsetting some 70 km northeast of the mining site. This got me wondering: it seems quite a distance from the mining site, in other words, the biological / ecological conditions may be different. So how exactly is biodiversity offsetting working?

Biodiversity offsets are conservation measures implemented to compensate for the residual biodiversity losses caused by development activities. This entails 'adequate' compensation in form of upgrading the environmental value of other sites. The 'successful' upgrading or reconstruction of valuable habitat is documented through permits which are issued by an authorized agency ensuring that quality standards are met (Wissel and Wätzold 2010). The conceptual assumption behind offsetting is that degraded natural environments can be balanced by conserving 'pristine' nature, or, using Brockington and Duffy's (2010) notion of a "global virtual ledger" on which a quantitative balancing of beneficial and adverse environmental actions is carried out. So, how are compensatory mechanisms applied when dealing with biodiversity? Its conceptual complexity renders delineating physical boundaries of ecosystem functions and services extremely challenging, and to assign virtual price tags to single systemic elements or values and to relatively weight their contribution to the entire 'biodiversity' (Kosoy and Corbera 2010). Common offsetting schemes tend to abstract biodiversity into tangible, itemized proxies such as 'habitat hectares', or they may favor certain flagship species, for example lemurs – hence engaging in what Castree (2003) calls "trading [off] biodiversity elements". Trade-offs can be decided empirically, by identifying ecological thresholds, assessing vulnerability, or defining uniqueness (e.g., endemism, irreplaceability, etc.) of components of elements of biodiversity, such as species. Oftentimes single metrics (e.g., monetary value) are used to quantify biodiversity values in such a context (Hirsch et al. 2011). However, biodiversity trade-offs extend beyond the pure economic value dimension (cf. Gowdy 1997), adding to the complexity analysing and assessing trade-offs. International standards are required to ensure best practice and transparency of biodiversity offsetting. It is similar to the more known Carbon offsetting in that both are trying to mitigate or reduce impacts (of emission for the latter mechanism). However, the greenhouse gases are more uniform and less complex than 'biodiversity' and therefore represent a better tradable commodity on an international level (ten Kate et al. 2004).

Madagascar is extremely rich in minerals as Tsilavo Raharimahefa in this issue depicted when discussing Madagascar's geoconservation and geodiversity (Raharimahefa 2012). During the past decade, large-scale mining has grown considerably in the country (e.g., Cardiff and Andriamanalina 2007). This is partly because of the Large Mining Investment Act (cf. Sarrasin 2006). According to the World Bank 2010 report, Madagascar is only just about to enter a large-scale exploitation phase where relatively easy rentals and revenues for government (Malagasy) are assured from industrial mining since respective transnational industries have sophisticated administrative and governance structures in place. "Companies may be motivated [i.e., by self-interest] to offset the harm they are causing when transforming biodiversity on a purely voluntary basis." (ten Kate et al. 2004: 38). They do so in order to increase efficiency in terms of acquiring necessary permits for development projects (such as industrial mining) and to enhance global reputation ("we are practicing conservation and improving local economy by creating many jobs"), and to secure social licenses with stakeholders (ten Kate and Inbar 2008). Many of these companies aim to reduce rates of biodiversity loss, by promoting a 'no net loss' of biodiversity, or even to achieve a 'net positive impact' following destructive activities (Rio Tinto 2004, 2008, TEEB 2010). Best practices (following the mitigation hierarchy of avoiding, minimizing, restoring, offsetting) to achieve such highly staked goals are formulated by the BBOP (Business and Biodiversity Offsets Programme), an international collaboration between companies of the extractive industries, financial institutions such as the International Finance Corporation (a member of the World Bank Group) or the Global Environment Fund, government and non-governmental agencies (e.g., Birdlife International, Conservation International, International Union for Conservation of Nature, Wildlife Conservation Society), and civil societies (BBOP 2012).

In conclusion, when perusing the list of NGOs active in Madagascar that are engaging with the extractive industries, it is apparent that there seem to be more than just a business opportunity involved to engage in biodiversity conservation (offsetting) in Madagascar. There are two main risks to emphasize in this regard: (i) A great deal of uncertainty remains, i.e., it is not assured that the compensatory mechanisms or conservation activities on a different patch (one which is connected or not with the developed /mined patch) will create a no net loss or even a net positive impact: only time will tell (e.g., Johst et al. 2012). (ii) Land development activities (extractive mining) continues to harm biodiversity. What has changed in the past years is the marketing strategy employed by the extractive industries: it uses the same narrative and presentation as conservation organizations (for in-depth examples and case studies, refer to Seagle 2012, Evers and Seagle 2012). These narratives are too

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often used to shoulder farmers or the impoverished rural people as culprits of deforestation or other environmental destruction (Horning 2012, this issue) while in reality, land and patch conversions are supported by governments and the conservation community. I do not wish to engage in a blame game, but rather, would like to point out the risks of falling too easily into the one or the other narrative to deflect from actual issues. Biodiversity offsetting in Madagascar seems to be coming into vogue in the years ahead. Therefore, it appears logical to delve more deeply into models such as 'Zones of intermediality', proposed by Sandra Evers in this issue, where all different stakeholders engaged in a resource interaction (such as biodiversity offsetting) are profiled in a holistic and respectful way (Evers 2012).

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REFERENCES

BBOP (Business and Biodiversity Offsets Programme). 2012. <http://bbop.forest-trends.org/> accessed 17 December 2012.

Brockington, D. and Duffy, R. 2010. Capitalism and conservation: the production and reproduction of biodiversity conservation. Antipode. 42, 3: 469–484. (doi:10.1111/j.1467-8330.2010.00760.x)

Cardiff, S. and Andriamanalina, A. 2007. Contested spatial coincidence of conservation and mining efforts in Madagascar. Madagascar Conservation & Development 2, 1: 28–34.

Castree, N. 2003. Commodifying what nature? Progress in Human Geography 27, 3: 273–297. (doi:10.1191/0309132503ph428oa)

Evers, S. J. T. M. 2012. Ideology and the self-fulfilling prophecy in conservation and social science research. Madagascar Conservation & Development 7, 3: 112–115. (doi:10.4314/mcd.v7i3.2)

Evers, S. J. T.M. and Seagle, C. 2012. Stealing the sacred: Why 'global heritage' discourse is perceived as a frontal attack on local heritage-making in Madagascar. Madagascar Conservation & Development 7, 2S: 97–106. (doi:10.4314/mcd.v7i2S.6)

Gowdy, J. M. 1997. The value of biodiversity: markets, society, and ecosystems. Land Economics 73, 1: 25–41.

Hirsch, P. D., Adams, W. M., Brosius, J. P., Zia, A., Bariola, N. and Dammert, J. L. 2011. Acknowledging conservation trade-offs and embracing complexity. Conservation Biology 25, 2: 259–264. (doi:10.1111/j.1523-1739.2010.01608.x)

Horning, N. R. 2012. Debunking three myths about Madagascar's deforestation. Madagascar Conservation & Development 7, 3: 116–119. (doi:10.4314/mcd.v7i3.3)

Johst, K., Hartig, F. and Drechsler, M. 2012. Offsetting policies for biodiversity conservation: the need for compensating habitat relocation. In: Models of the Ecological Hierarchy: From Molecules to the Ecosphere. F. Jordan and S. E. Jorgensen (eds.), pp 413–430. Elsevier, Amsterdam, The Netherlands.

Kosoy, N. and Corbera, E. 2010. Payments for ecosystem services as commodity fetishism. Ecological Economics. 69, 6: 1228–1236. (doi:10.1016/j.ecolecon.2009.11.002)

Raharimahefa, T. 2012. Geoconservation and geodiversity for sustainable development in Madagascar. Madagascar Conservation & Development 7, 3: 126–134. (doi:10.4314/mcd.v7i3.5)

Rio Tinto. 2004. Rio Tinto's Biodiversity Strategy. London, U.K. and Melbourne, Australia.

Rio Tinto. 2008. Rio Tinto and Biodiversity: Achieving results on the ground. Available at <http://www.riotinto.com/documents/ReportsPublications/RTBidoversitystrategyfinal.pdf>

Sarrasin, B. 2006. The mining industry and the regulatory framework in Madagascar: some developmental and environmental issues. Journal of Cleaner Production 14, 3–4: 388–396. (doi:10.1016/j.jclepro.2004.03.004)

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

TEEB (The Economics of Ecosystems and Biodiversity) 2010. Report for Business – Executive Summary 2010. Available at <http://www.illegal-logging.info/uploads/TEEBforBusinessSummaryFINALPDF.pdf>

ten Kate, K. and Inbar, M. 2008. Biodiversity offsets. In: Conservation and Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems. First edition. R. Bayon, J. Fox and N. Carroll (eds.), pp 189–204. Earthscan, London.

ten Kate, K., Bishop, J. and Bayon, R. 2004. Biodiversity Offsets: Views, Experience, and the Business Case. IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment, London UK.

Wissel, S. and Wätzold, F. 2010. A conceptual analysis of the application of tradable permits to biodiversity conservation. Conservation Biology 24, 2: 404–411. (doi:10.1111/j.1523-1739.2009.01444.x)

World Bank. 2010. Governance and Development Effectiveness Review. A Political Economy Analysis of Governance in Madagascar. Report No. 54277-MG. The World Bank.