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Article

Payments for Ecosystem Services as Neoliberal Conservation: (Reinterpreting) Evidence from the Maloti-Drakensberg, South Africa

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Abstract

Payments for ecosystem/environmental services (PES) interventions aim to subject ecosystem conservation to market dynamics and are often posited as win-win solutions to contemporary ecological, developmental and economic quagmires. This paper aims to contribute to the heated debate on PES by giving contrasting evidence from the Maloti-Drakensberg area, a crucial site for water and biodiversity resources in southern Africa. Several PES initiatives and studies, especially those associated with the Maloti-Drakensberg Transfrontier Project (MDTP), claim that an 'ecosystem services' market in the area is feasible and desirable. Based on empirical research in the area between 2003 and 2008, the paper challenges these assertions. It argues that the internationally popular PES trend provided an expedient way for the MDTP implementers to deal with the immense socio-political and institutional pressures they faced. Following and in spite of, tenuous assumptions and one-sided evidence, PES was marketed as a 'success' by the MDTP and associated epistemic communities that are implicated in and dependent on, this 'success'. The paper concludes that PES and the process by which it was marketed are both inherent to 'neoliberal conservation'—the paradoxical idea that capitalist markets are the answer to their own ecological contradictions.

Keywords: Maloti-Drakensberg, Lesotho, South Africa, payments for ecosystem services, neoliberal conservation, marketing

INTRODUCTION

Payments for ecosystem/environmental services (PES), the idea that the value of ecosystems should be captured in monetary terms and conserved through market dynamics, is hotly debated. In several recent contributions, PES is referred to as commodity fetishism (Kosoy and Corbera 2010), a complexity blinder (Norgaard 2010), as well as 'desirable from both a rural development and a social equity perspective' (Blignaut et al. 2010: 1322). These contributions already point to a crude distinction that can be made in the literature between those who view PES critically and believe it is a (familiar) process of capitalist intensification in new areas, and those who basically 'try to make PES work' despite acknowledgements of difficulties and disclaimers of conditionality.

The majority of this work so far has been conceptual and/or theoretical. However, an increasing amount of literature is coming out based on empirical data collected on unfolding PES programmes and initiatives in practice (e.g., Van Hecken and Bastiaensen 2010; McAfee and Shapiro 2010). This enables one to revisit the data around particular cases and assess their validity, something which has not been done much in the

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literature to date. The objective of this article is to present alternative evidence from a case study that has featured quite prominently in the debate. This is the Maloti-Drakensberg area in southern Africa, a regional biodiversity hotbed and a crucially important source of water for the wider region (Nel 2009). In many publications, the area is depicted as an ideal site for successful implementation of a PES system (e.g., Blignaut et al. 2008; Forslund et al. 2009; Mander and Everard 2008; Turpie et al. 2008). In particular, a recent article by Blignaut et al. (2010: 1322) concludes that for the Maloti-Drakensberg area a "payment for flows of ecosystem goods and services system […] under certain conditions, [...] is definitely viable, not only financially but also institutionally".

The ensuing pages aim to challenge this conclusion by presenting alternative evidence that centres on the role of the Maloti-Drakensberg Transfrontier Project (MDTP)—the intervention that was crucial in introducing and stimulating PES in the area. By doing so, the three central objectives (and the associated structure) of this article will emerge: 1) to place PES as stimulated and marketed by the MDTP within an explicitly political-economic context that emphasises both the politics of the intervention as well as the broader political-economic system in which it was implemented; 2) to critically interpret and analyse the scientific evidence underpinning the stimulation and marketing of PES in the Maloti-Drakensberg area, especially the social, political, and economic argumentation and assumptions around the more technical details of the water resources that were the project's principal target 'environmental service'; and 3) to argue for a more explicitly political-economic interpretation of PES and the way it is marketed, namely as 'neoliberal conservation'.

South Africa's chequered history and its contemporary volatile socio-political situation often makes it very difficult for conservation interventions to mediate the various social, economic, and political pressures on land-use, and marry these constructively with the conservation of biodiversity. The same applied for the implementers of the MDTP, a Global Environment Facility (GEF)/World Bank funded intervention that was implemented from 2003 to 2008, and is currently in its second phase. Due to its alleged propensity to stimulate win-win solutions and the legitimacy brought by its international popularity, I argue that PES provided a seemingly ideal mechanism for the implementers of the MDTP to deal with the differential demands of stimulating economic development, social justice, and ecological sustainability in the area.

In turn, the transfrontier project and the consultants it had contracted for the PES studies started marketing the potential for successful PES implementation in the area very early on in the project. This directs attention to another point which is only alluded to in the PES literature (f.i. Muradian et al. 2010), i.e., that the evidence built up in scientific constructions of PES depends on it being validated and taken up by particular epistemic communities "of experts sharing a belief in a common set of cause-and-effect relationships as well as common values to which policies governing these relationships will be applied" (Haas 1989: 384)[1]. This is the second argument I wish to make in the article— how politics and science are intrinsically interwoven (Haraway 1997; Latour 2005). By showing how scientific representations of PES in the Maloti-Drakensberg area are marketed through epistemic communities that already support and/or depend on the success of these same PES models, a seemingly convincing case is set up, backed by scientific evidence. What my research shows, however, is that a lot of this evidence is tenuous and/or one-sided in order to try and present a convincing picture that guarantees—as in development policies more generally—the 'flows of resources' and inscribes actors' careers within a particular popular paradigm (Mosse 2004).

This argument resembles David Mosse's conclusions about how development policies and practices in general are "shaped by the logic and demands of institutional relations (and incentives)" (Mosse 2004: 664). Often, according to Mosse:

> development workers and managers are unable (or unwilling) [...] to contradict the models in terms of which they are busy framing and validating their enterprises and identities; the models that make them successful, ensure coalitions of support and justify the flow of resources. So, while the coherence of design unravels in the practical unfolding of a project, everybody is particularly concerned with making, protecting, elaborating and promoting models with the power to organize authoritative interpretations, concealing operational realities, re-enforcing given models and limiting institutional learning. (Mosse 2004: 664)

Mosse, however, does not tie his incisive argument to the global political economy of neoliberalism—the political ideology and related practices that aim to substitute social and political affairs by capitalist market dynamics in all facets of life, including conservation (for in-depth discussions, see, amongst others, Brockington et al. 2008; Büscher 2010, In press; Sullivan 2009; Fletcher, 2010; Büscher et al. In press). As such, the third argument of the article arises: that both the phenomenon of PES and the way in which many actors in the Maloti-Drakensberg area in southern Africa currently work hard to 'make, protect, elaborate, and promote' this popular model are configured by this broader political-economic framework. This leads the paper to conclude that PES should first and foremost be conceptualised as 'neoliberal conservation'—the paradoxical idea that capitalist markets are the answer to their own ecological contradictions. In order to get there, however, the paper first describes the methods used for the study and introduces the case study area.

METHODS

The research presented here is based on long-term fieldwork conducted by the author in the Maloti-Drakensberg area in southern Africa between 2003 and 2008. It entailed multi-level, multi-sited research on the politics and governance of transfrontier conservation areas with the MDTP as an in-depth case study. In this case study, the focus was on the constitution of, and interactions between, the most important actors—from local villagers, private companies and consultants via project

coordination committees to provincial and state agencies and international donors—and how they tried to conceptualise and implement the MDTP or responded to the intervention. While the research focused on the intervention as a whole, special attention was reserved for the way it used market instruments to reach its objectives of biodiversity conservation and poverty reduction.

The research strategy that I followed, particularly from 2005 to 2007, came close to what Bruno Latour states about interactions in 'the field':

> … any given interaction seems to *overflow* with elements which are already in the situation coming from some other *time*, some other *place*, and generated by some other *agency*. … Thus, if any observer is faithful to the direction suggested by this overflow, she will be led *away* from any given interaction to some *other places, other times,* and *other agencies* that appear to have moulded them into shape. (Latour 2005: 166)

This research strategy, in turn, informed the way in which I operationalised the three practical methods that informed the research—participatory observation, documentary analysis, and semi-structured interviews. Ethnographic participatory observation entails delving into what Li (2007) calls the 'witches brew'—observing and participating in the situated practices of real-world actors. I attended many important project meetings and activities, and studied the social interactions between those implementing and those undergoing the intervention. My main point of entry were the two project coordination units (PCUs) in South Africa and Lesotho—the teams responsible for most of the implementation of the project. Through them, I was able to access the most important events and documents that aimed to conserve the region's biodiversity and support the development of local people through ecotourism—the MDTP's two official objectives.

I also went beyond these PCUs in order to gather data from other involved actors, such as various NGOs, consultants, government officials and—most importantly—the local communities living in the area. I collected written and oral data from all these actors and their interactions. First, I collected documentary evidence—to systematically amass project documents, archival material, and clippings from the (popular) press. Second, I conducted over 110 semi-structured interviews with (key) actors across all levels of the intervention and within the project area.

THE MALOTI-DRAKENSBERG TRANSFRONTIER CONSERVATION AND DEVELOPMENT PROJECT

The Maloti-Drakensberg Transfrontier Conservation and Development Project is part of a wider transfrontier conservation trend within southern Africa and beyond (Ramutsindela 2007). Transfrontier Conservation Areas constitute conservation areas across international borders, commonly managed by the involved nation states. Although part of the current regional Transfrontier Conservation Area hype, the basic idea for the MDTP has been in existence since at least 1982. It developed out of a long felt need and desire on the side of South Africa to protect the rich biological and cultural diversity and the important water catchments of the Maloti-Drakensberg Mountains between Lesotho and South Africa in an integrated manner. This long history involved several joint cooperation initiatives funded by a variety of donors, culminating into the collaborative effort that was to become the MDTP. Starting in 1997 with a World Bank funded workshop, important stakeholders in Lesotho (in particular the National Environment Secretariat) and KwaZulu Natal (especially the 'Natal Parks Board', which later merged with other institutions to become the current provincial conservation parastatal 'Ezemvelo KwaZulu Natal Wildlife') systematically worked to acquire funding from the GEF, and succeeded in the early 2000s. With the World Bank as the GEF implementing agency[2] and after some delay due to difficulties in attaining the conditions set for 'successful implementation', the USD 15.5 million project officially started early 2003.

The institutional set-up of the MDTP was very complex, particularly because the project area stretched out over many different levels of jurisdiction, both in Lesotho and South Africa

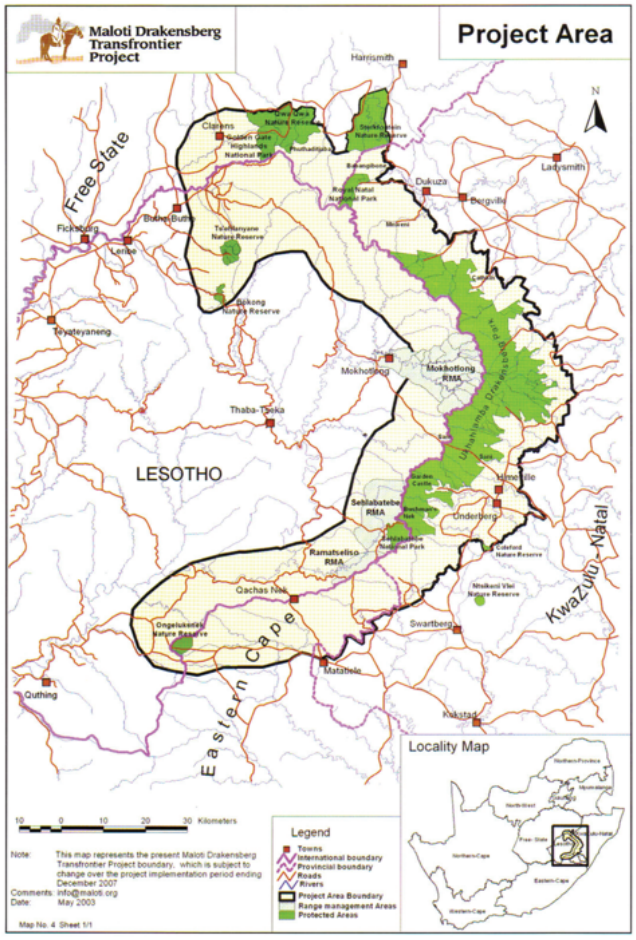

Figure 1
A locality map of the Maloti-Drakensberg Transfrontier Project

(Figure 1). In Lesotho, the MDTP worked in the three districts of Botha Bothe, Mokhotlong and Qacha's Nek. In South Africa, the project area covered three provinces—KwaZulu Natal, Free State and Eastern Cape—whose governmental conservation agencies acted as official 'implementing agencies'. To aid implementation, both countries employed independent project coordination units (PCUs), to facilitate and support the implementing agencies. It is these two PCUs that became the focal points for activity and initiative in the project, as they comprised full-time and highly trained specialist staff specially hired for the project.

The socio-political, economic, cultural, and ecological dynamics that the two PCUs had to operate in were immensely complex and historically laden. The different population groups in the area—most prominently Zulu, Xhosa, Sotho and whites[3]—have long experienced regular friction and violence between them, particularly over livestock theft, land, and other economic or political issues. Among these population groups, the black groups, particularly in South Africa, had been marginalised under apartheid and forced to live in small patches of commonage land wedged between white farmland, villages, and national parks; which was another source of continuous friction. Sources of livelihood in the area are diverse and include (subsistence) farming, remittances, migrant labour, and (increasingly due to jobs) tourism. Of late, private sector demand on the South African part of the Maloti-Drakensberg area has grown enormously, particularly for golf and tourism estates. And while some local people benefit from this development through low-wage jobs, clearly this adds another layer of friction as it brings unrivalled luxury and destitute poverty into ever closer proximity (Büscher 2009).

Relationships between South Africa and Lesotho are historically tense, particularly because Lesotho's sovereignty is severely compromised by its much stronger neighbour South Africa, which completely surrounds it (Ferguson 2006: 55). Another major source of contention and concern is South Africa's capture of Lesotho's water resources. Originally instigated by an apartheid-South Africa-backed coup-d'état in Lesotho in the 1980s, the current 'Lesotho Highlands Water Project' dams and tunnelling infrastructure transport water straight from the Lesotho mountains to the South African Ash river, which flows in the direction of Gauteng Province, which is the economic heart of South(ern) Africa. Past and continuous problems around this massive project include the displacement and insufficient compensation of large numbers of people in Lesotho, and the uneven distribution of benefits between and within South Africa and Lesotho (Mwangi 2007).

The MDTP should be seen in the context of this history of the importance of water for South Africa, and repeated attempts by South African governments to control Lesotho's water for its own (economic and social) benefits. In order to secure the water supply to the dams and tunnels, and to the associated infrastructure and rivers on the South African side, the appropriate 'management' of the water catchments in the high mountains of the Maloti-Drakensberg area is critical. Yet, due to pressures on the land, these catchments, which besides the rich biodiversity of the area provided an important rationale for the Maloti-Drakensberg intervention, are degrading fast (Büscher In press). It is these demanding—yet in South Africa not unfamiliar—contexts that the PCUs had to mediate the differential demands of stimulating economic development, social justice, and ecological sustainability in the area, while delivering on a very complicated transfrontier project across eight different components ranging from conservation planning, transfrontier collaboration, and data gathering to community development, tourism and 'institutional development' of the implementing agencies. The next section describes how they lived up to the task, and how they increasingly constructed PES as the solution to bring these demands together.

INSERTING 'PAYMENTS FOR ECOSYSTEM/ ENVIRONMENTAL SERVICES' IN THE MALOTI-DRAKENSBERG TRANSFRONTIER PROJECT

Although the MDTP was thoroughly planned, its implementation was troubled from the start. The main reason was that the two PCUs did not work well together (South African PCU staff in an interview, May 3, 2005). The Lesotho PCU wanted to implement the project as it had been designed, while the South African PCU was critical of the 'project implementation plan' and wanted it changed. They argued that this plan did not provide accurate technical information on which to base decisions for the region's long-term conservation planning (South African PCU staff in an interview, May 3, 2005 and September 20, 2005). Indeed, they even challenged the studies done during the preparation phases, which were intended to provide the baseline information upon which smooth implementation was assumed (MDTP project preparation consultant in an interview October 20, 2005). According to one PCU member, this data was 'anecdotal' and only accounted for roughly 10 per cent of the information they thought was needed (South African PCU staff in an interview, September 20, 2005). Another PCU member stated that 'the idea that the World Bank had, that we could make a flying start because we had all the information that we needed, as this was gathered during the prep phase, is a flaw' (South African PCU staff in an interview, May 03, 2005). This led the South African team to embark on extensive data collection with the purpose of feeding this into an overall bioregional planning framework.

The Lesotho PCU did not agree with their South African counterparts. Its coordinator argued that they 'had been hired to implement the project, not re-design it' (Lesotho PCU coordinator in an interview, April 27, 2005). This and other personal struggles between the two PCUs soon turned to serious antagonism, which intensified the already considerable pressures on the implementation of the project. This was particularly true for the South African PCU, which was also heavily criticised by many stakeholders—particularly by staff of the South African National Department of Environmental

Affairs and Tourism, Ezemvelo KwaZulu Natal Wildlife, and several Lesotho national ministries—for being predominantly white and thus not representative of the 'new', post-apartheid South Africa (for details, see Büscher In press). It is in this context that the South African PCU started lobbying for PES to be incorporated in the project.

By the time the MDTP commenced, PES had become a popular international conservation trend (Sullivan 2009). However, the MDTP planners had not incorporated the concept in the official 'project implementation plan' and as such there was no mandate to deal with PES in the project. Stimulated by the international popularity of PES and spurred on by an increasingly 'PES-minded' South African conservation network (of which many of the South African PCU staff members were part), the South African PCU became convinced that PES was the way to go (South African PCU coordinator in an interview, July 22, 2005). They thus suggested PES as another subcomponent of the MDTP, which was resolutely declined by his Lesotho counterpart. In an interview, the Lesotho PCU coordinator mentioned that although he thought PES was a 'brilliant' concept, he wanted to focus on the project as it had been planned, and not add new elements to an already complex endeavour (Lesotho PCU coordinator in interviews, April 27, 2005 and October 26, 2005).

Notwithstanding the refusal from the Lesotho side, the South African PCU decided to pursue PES independently and commissioned a 'base-line study' in 2004 to explore its potential in the Maloti-Drakensberg bioregion. By the time the report came out in December 2004, the tensions between the PCUs had reached boiling point. Several issues had been simmering for some time already—to the extent that in July 2004 a 'bi-lateral strategic planning workshop' had to be conducted in order for the PCUs to discuss their differences in the presence of two neutral mediators. In their report of the workshop, the two mediators noted that:

> Interpersonal relations between key staff members on each side of the project are brittle and fragile. There is a readiness to allow relatively minor issues to fester coupled with a tendency to present a misleading façade. There is some mistrust and perceptions of self-promotion when one side initiates an action. Intentions are sometimes negatively interpreted and there is some confusion between what is real and what is expected to happen. (Matela and Fraser 2004: 27)

The issue that truly soured relations between the two PCUs, however, was the unilateral downgrading of the Lesotho part of the MDTP by the World Bank. While space prohibits a detailed discussed (see Büscher In press), what principally caused the tensions was that the Lesotho PCU felt that their South African counterparts had been 'gossiping' and 'complaining' about their performance in the project to the World Bank and had thereby convinced the World Bank to downgrade their approval rate (Lesotho PCU coordinator in an interview, April 27, 2005). This decision was taken very seriously in Lesotho—up to the level of the prime minister—and the responsible World Bank staff member ultimately had to backtrack and reinstate Lesotho's 'satisfactory' approval rate. As important South African actors were more favourable towards the Lesotho PCU's approach to the project, the South African PCU became increasingly marginalised, particularly since the whole incident received an added 'race connotation' due to the World Bank staff officer being a white South African[4].

In this tense atmosphere, and with much pressure on the South African PCU, the PES solution was indeed welcome. The report that came out of the baseline study explains what PES entails:

> Payment for environmental services provides an incentive for directing landowners towards environment management actions that address priority environmental services, such as water security. As a payment system directly links buyers and producers of environmental services, it builds relationships between people who are economically linked and allows market based transactions to take place, reducing the need for further state regulation. Furthermore it focuses on measurable deliverables and consequently sharpens the performance of conservation actors (public, private or communal). (Diederichs and Mander 2004: 5)

Interestingly, the baseline study says almost nothing about the complex context and chequered history of the Maloti-Drakensberg area. Rather, (as in paragraphs such as the one above) these are replaced by a closed (ahistorical) framework whereby social relations, individual behaviour and their environmental effects are (efficiently) directed by market incentives. The experience of the MDTP itself easily illustrated that it is a major stretch to replace political and social dynamics with a focus on 'relationships between people who are economically linked'. As shown above, the socio-political relations between the PCUs were very fragile and difficult, and the racial composition of the South African PCU did not reflect the 'new' South Africa, which further complicated their (political) relations with other important actors (explicitly stated by an official of the Department of Environmental Affairs and Tourism in an interview, October 10, 2005.). All these socio-political dynamics were completely unforeseen by the original project planners who were quite taken aback as they had foreseen mere 'technical' cooperation (MDTP planner in an interview, December 22, 2005; World Bank MDTP task team leader in an interview, September 27, 2005). Yet, leaving out complex historical and political realities is a familiar feature in many conservation/development projects, not just the MDTP. As Mosse (2005: 26) argues:

> project models have the purpose of conveying precisely the impression of manageability, coherence and rationality that is absent in practice. And as such their orientation is more often upwards (or 'outwards') to validate higher policy goals or justify the allocation of resources than downwards to orientate action.

Indeed, the goal of the South African PCU, from the start, was to set up PES as the magic bullet, as the ideal mechanism to deal with the ecological, developmental, and economic concerns in the Maloti-Drakensberg area[5]. Interestingly, the PES baseline study admits this by stating that:

> *The resources available to this project (MDTCDP), both internally and externally (by means of partners), and the willingness of the MDTCDP to use economics for conservation action, generates a practical opportunity to initiate a market development process in the next three years.* Furthermore, the current activities of the existing project, such as research and public education, are complementary to the development of a payment system. (Diederichs and Mander 2004: 46; author emphasis)

Hence, it is clear from this quote that the resources available to the MDTP were put to use in a very specific way, i.e., in order to strengthen and further deepen the idea of the Maloti-Drakensberg area as an 'ecosystem services market'. In turn, this corroborates the point that market forces are not 'natural', but need to be 'constructed' into place through what Glassman refers to as 'extra-economic' means (Glassman 2006). In other words, a whole host of *political, social, and scientific* tools are necessary to construct (and oversee) particular 'economic relations between people' (see also Fletcher, 2010).

Not surprisingly, then, the baseline study provided the rationale for the MDTP to pursue PES on a larger scale. As noted by the MDTP long-term transfrontier strategy document:

> An initial baseline study determined the initial feasibility of establishing a trade system around the water production and use patterns associated with the Maloti Drakensberg region. In effect, *it suggested that there was scope for investigating and piloting this trade system*. In this regard, a consultancy was appointed in 2006 to do just this. (MDTP 2007a: 38; author emphasis)

While the report and two associated articles (Blignaut et al. 2008, 2010) that came out of the pilot project will be discussed below, it is clear that the *political* function of the baseline study was to make PES a priority for the long-term planning of the MDTP bioregion, as exemplified again by the transfrontier strategy document (MDTP 2007a: 106):

> Both countries recognise the vital role that environmental economics tools play in (i) placing a monetary value on ecosystem goods and services (where their lack of monetary value in the past has meant they are treated as "free resources" often resulting in overutilisation), and (ii) in defining how such values can assist decision-makers in mainstreaming ecosystem goods and services into accounting and other business practices.

Obviously, in the reconstitution of the Maloti-Drakensberg area in neoliberal terms—the substitution of socio-political dynamics for capitalist market processes—the MDTP is not alone. The baseline study mentions that the South African government explicitly promotes this development (Diederichs and Mander 2004: 46), while the World Bank was equally eager. In all this, assumptions underlying PES were little discussed, let alone problematised, in any of the MDTP outlets[6]. But problematising what was regarded as a potential 'magic bullet' was not on the radar screen of the MDTP or the consultants they hired. What mattered was that it seemed to provide a way to deal with all the various pressures they were under, and in the process bring conservation to the attention of power-holders and politicians. This point was repeated acknowledged and emphasised during my research. According to a staff member of Ezemvelo KwaZulu Natal Wildlife during an MDTP South African strategic planning workshop in March 2007, "we must stop being scared of placing proper value on biodiversity", because "if we can't put a value on it, we can't convince people."[7] In this same vein, the PES baseline study advises the MDTP to do appropriate 'packaging of the message':

> Biodiversity conservation has little appeal to decision makers in South Africa. Biodiversity conservation has to be shown to be a human development tool, where investing in the natural asset enables humans to benefit as directly as possible […]. Package the message appropriately and gain the support of the politicians. (Diederichs and Mander 2004: 47)

Hence, PES appeared ideal for 'convincing politicians' as it provided for a seemingly 'straightforward' way to connect developmental pressures with conservation of biodiversity while fitting in perfectly with South Africa's neoliberal political economy (Bond 2000). Accordingly, the MDTP went ahead and asked the same consultants and their companies to set up a bigger PES pilot project resulting in an 'ecosystem services trading model for the Mnweni/Cathedral Peak and Eastern Cape Drakensberg areas'. This PES pilot project enabled consultants close to the MDTP to build up scientific constructions of PES and market these through supportive 'epistemic communities'. Hence, having shown how PES provided a seemingly ideal mechanism for the implementers of the MDTP to deal with the differential demands they were under, we now move to the article's second argument that the overall scientific evidence around PES built up through the pilot project is rather tenuous and/or 'one-sided'.

Before doing so, I want to clarify that I am not arguing that the MDTP PES reports are solely based on 'bad science' with respect to the technical calculations around the water 'services' they were primarily focused on. As the PES system in the Maloti-Drakensberg area was not implemented during the project's time span, there is yet no way to assess whether these calculations are correct, and what actual effects a rudimentary ecosystem market in the Maloti-Drakensberg area would have on people and nature. The point is that the scientific effort performed under the MDTP needs to be seen within the broader

political-economic context as outlined above. This context—pregnant with vested interests and particular belief systems closely related to, and influenced by, racialised conservation histories—was geared to developing a particular expert discourse of science that could be disassociated from this same context and so function as a 'salvation story full of promise' (Haraway 1997: 8). From the beginning, it was the MDTPs objective to set up PES as an ontologically stable proposition whereby 'market-based transactions' would 'reduce the need for state regulation' and become naturalised to guarantee 'measurable deliverables' and 'sharpened performance of conservation actors' (see above). In other words, the science was driven by, and used for, the need to set up PES as the magic bullet. This in turn enabled the MDTP consultants to market PES as a success and use the 'evidence' as political and economic leverage in relevant South African and international policy circles (see below). My aim, then, is to follow David Demeritt's (1998: 181) suggestion that "questions about scientific representation and correspondence to an external and ontologically given natural world" must "give way to questions about scientific practice and the mediated relationships [...] in the social production of knowledge and nature."

CONSTRUCTING EVIDENCE

The construction of markets and economic relations through 'extra-economic means' is no easy feat, particularly in an area as complex as the Maloti-Drakensberg bioregion. This is acknowledged by Blignaut et al. (2008: 148) who frame the main challenges as follows:

> The legal mechanisms, institutional structures, management incentives, management and supply skills, willingness to pay, tariff collection, and distribution systems are all in place, albeit across a range of government agencies and private groups. And herein rests our next challenge: how to connect the discrete links of the trade chain into a functional and integrated trade system across the public and private sectors, and with the added challenge of implementing the plan in economically undeveloped rural communities.

In a follow-up publication, Blignaut et al. (2010) develop a potential organisational matrix for these 'links of the trade chain', but warn that the institutional structures which in 2008 were thought to be 'in place' need 'more rigorous assessment', which they admit is a 'type of work' which is "inherently subjective in nature" (Blignaut et al. 2010: 1322). Moreover, they state that "it has to be acknowledged that the history of efforts involving communal land and assets are patchy at best" (Blignaut et al. 2010). Yet, despite this acknowledgement, they still maintain that 'under certain conditions', PES "is definitely viable, not only financially but also institutionally." In order to see why this conclusion is tenuous and one-sided, we need to take a closer look at the pilot project report that many of these same authors had put together for the MDTP, as well as two follow-up articles (by Blignaut et al. 2008, 2010). In particular, we need to critically scrutinise the two main issues around which much of the other evidence (especially the technical calculations around water flows), and thus the potential for PES to link conservation and development, depends—land management and 'institutional structures'.

Land management

As stated above, water is the most crucial resource in the Maloti-Drakensberg area, and according to the report also the resource most suitable for commodification through a PES system (MDTP 2007b). In turn, the report argues that vegetation and land-use practices that impact vegetation-types greatly influence the regulation of water supply, and that 'upstream users' particularly influence the catchments:

> A robust basal cover, together with a dense canopy, promotes greater infiltration and reduced storm flow, and increased soil water storage. Such improved water retention capacity allows for the slow release of such retained water over time. Improved land use management will reduce stormflow reduce soil erosion – and hence siltation. An additional benefit is that there would be a higher carbon sequestration capacity of the area under management. (MDTP 2007b: 40)

Yet, in order to connect water flows to land management, and hence conservation to community benefits, the report resorted to some tricky maneuvering. It simultaneously needed to construct communities as the culprits of the old 'unsustainable' system *and* the beneficiaries of the new 'sustainable' PES system. In the old, unsustainable scenario, according to the report:

> The application of regulations relating to fire management and stocking rates has been largely unsuccessful, with large areas of landscape becoming seriously degraded. In addition, previously well managed areas are coming under increasing pressure from arson, excessive grazing and land use transformation. (MDTP 2007b: 95)

And while this 'land-use transformation' could have been instigated by different actors, the report is clear in whom to target in order to supply the sustainable land management services:

> Due to the high value of the water resource supplied from the Maloti Drakensberg, and the growing scarcity of water in South Africa, there is an emerging need to incentivise mountain catchment management *by paying mountain communities to supply ecosystem services*, and in particular, water related services. (MDTP 2007b: 95; author emphasis)

Interestingly, the report does not mention (water intensive) golf courses or tourist resorts as potential culprits. Rather, it refers vaguely to 'mountain communities', which in the

Maloti-Drakensberg area, as mostly anywhere else, is an extremely unstable and imprecise category. The larger Maloti-Drakensberg transfrontier area is inhabited by almost two million people and most of these live in marginal areas where they were historically confined to under colonialism and apartheid—a fact not acknowledged in the report. Many other non-exclusive areas fall under commonage tenure regimes which are used not just by people in the direct vicinity, but also by those practicing seasonal (transhumance) grazing practices, various kinds of (legal and illegal) trades, and other practices. Implicitly, then, the report essentialises these peoples into (homogenous) communities whose traditional (and often less-than-traditional) lifestyles around livestock and grazing are responsible for the degradation of the ecosystem. This, in turn, enables the report to assert that these communities should be 'incentivised' to become better 'managers' in the Maloti-Drakensberg water-market.

This line of argumentation has shown itself to be extremely problematic yet pervasive for Africa in general (Fairhead and Leach 1996), and for the Lesotho part of the Maloti-Drakensberg area (Showers 1989). In fact, PES as operationalised by the MDTP follows a long line of land and grazing policies in southern Africa that depend on "land degradation and tragedy of the commons narratives and the modernisation model" (Rohde et al. 2006: 313). For example, referring to the people's relation to the land as 'management' has broader implications than mere semantics. Firstly, it implies that there is a certain (modern, rational) distance between people and the land that is not true of many (especially African) cultures. Secondly, it implies the possibility of being able to change the 'technicalities' of this management, whereby modern scientific management according to 'ecological indicators' is deemed superior to traditional pasture and grazing systems by local people. Obviously, this is a highly reductionist, even neocolonial view of people's relation to, and use of, the land. It falls in line with many other degradation and modernisation narratives that according to Rohde et al. (2006: 302) "typically ignored the multi-purpose goals of traditional pastoral systems and emphasized commercialisation of livestock farming and privatisation of communal land, which resulted in the weakening or destruction of local, traditional land management institutions."

Yet, for PES to work, it needs to radically change traditional land management in order to come to a "common currency among ecologists, hydrologists and economists" (Blignaut et al. 2010: 1317). Blignaut et al. (2010: 1317) explain that the need for this 'common currency' arises "from the fact that it is necessary to link hydrological responses (i.e., changes in baseflows, stormflows and sediment yields) to a measurable land use management change that has a measurable impact on an ecological indicator." They continue by stating that:

> these linkages are required to develop a payment mechanism which enables compensation to participants based on measurement of an ecological indicator which reflects a change in land use and associated improvements in hydrological responses." (Blignaut et al. 2010: 1317)

In other words, for a payment system to work, the destruction of local, traditional land management systems becomes paramount, which the report warns might not be easy (MDTP 2007b: 71): "When it comes to aspects such as livestock management there are deeply ingrained cultural practices in place that will not be easy to change." The type of 'development' that the PES report proposes neatly mirrors so many other development and environment interventions in Africa and beyond that do not take seriously local social relations, values, traditions, and histories, and have been shown by many authors to be tenuous and often counter-productive (e.g., Ferguson 1994; West 2006; Li 2007; Dressler 2009).

What then about the conservation side of the technical land management system proposed by the MDTP report? As with many other PES initiatives (see Muradian et al. 2010), the MDTP report is highly reductionist by focusing solely on describing "a nature that capital can 'see'—that has an uncontroversial measure—in order for trade to occur" (Robertson 2006: 367). Yet, as Robertson (2006) and other authors argue, technical, quantitative 'ecological indicators' are inherently unstable. Kosoy and Corbera (2010: 1231) note that "compartmentalizing nature's goods and services has been challenged from a technical perspective, as it neglects the relational aspects of nature and masks the fact that each ecosystem function is dependent upon others." Moreover, compartmentalising nature does not take into account 'emergent' properties of ecosystems—important functions that ecosystems acquire through interaction of aspects of nature *over time*. While the PES system has not yet been implemented in the Maloti-Drakensberg area, this makes its ecological feasibility inherently unstable.

In turn, this instability increases considerably in the light of climate change uncertainties. As Redford and Adams (2009: 786–787) argue,

> as always the joker in the pack, the impacts of climate change on ecosystem service delivery are unknown. If we succeed in selling existing ecosystems in terms of their provision of services, what happens when those ecosystems break apart and reassemble in new ways?

Yet, climate change is not accounted for in the model, at least not in terms of how global climate change will change the 'water services' due to already visible increased rainfall variability in the Maloti-Drakensberg bioregion (Nel 2009). Blignaut et al. (2010: 1314), justly, give the following reason: "Given the significant degree of uncertainty, no provision for the plausible impacts of climate change has been made." Climate change does feature in another way in the report, but in line with its broader political message, i.e., that PES will likely result in 'local climate regulation'. All of this makes the evidence upon which the feasibility of PES is assumed even more fragile.

But again, problematising a magic bullet was not on the MDTP's and the authors' agenda. The pilot project report concludes by summing up all the ecological, hydrological,

economic, and institutional benefits attached to PES, while trying to leave little doubt that the vision of PES is shrouded in a general consensus amongst 'all stakeholders':

> The eco-hydrological/economic assessment has shown conclusively that it is feasible and indeed economically desirable for a payment for ecosystem services system to be established in the Maloti Drakensberg. The model developed in this process is 'live' and can be used by stakeholders to inform project implementation activities. A set of variables can be changed and the outputs used to inform decision making. (MDTP 2007b: 98)

According to the report, the only question that still remains to be answered is: "what is the institutional system required to establish and implement such a trade system?" (MDTP 2007b: 98).

Institutional arrangements

The answer given by the report corroborates the point that 'extra-economic' (public) support and pressure is seen as vital to get markets going:

> The magnitude of the restoration costs has broader implications for an ecosystem services trading system. As much of the restoration necessary is on communal lands—state land—there needs to be state funding for this intervention. The feasibility assessment shows that consumers could pay for management, but the income from water is generally not sufficient to pay for restoration actions. This implies that the state should use state funds to implement restoration of state lands, and then it becomes feasible to charge the ensuing service users for the upkeep of those lands. The results of the assessment shows that there is a need for a combination of both market based trade in ecosystem services and state funded natural capital restoration programmes. (MDTP 2007b: 97)

At the same time the report notes that:

> The whole area of building/facilitating a market for trading ecosystem services is one that lends itself to more of a private sector input. It has even been suggested that some sort of public private partnership should be explored. (MDTP 2007b: 93)

All of this implies that 'institutional arrangements' come down to finding out 'who does what' in a seemingly self-explanatory and unproblematic market chain. The report looks at the public sector, communities, and other actors as mere players in the (ecosystem) marketplace. As such, institutional arrangements recommended in Blignaut et al. (2010: 1321) categorise actors into variables that matter to markets: 'incentives', 'outputs', 'required skills and capacity', and 'institutional requirements'.

All of this sounds 'neutral', straightforward, and apolitical, exactly how markets are often depicted in general. Yet, it needs to be stressed that this scientific practice of framing institutional arrangements according to markets and market metaphors means bringing actors and ecosystems (further) into the *capitalist* mode of production. Hence, where Blignaut et al. (2010: 1314) ask "can markets do better?", the point is that 'markets' are not an instrument that can be switched on and off to see whether they 'work'. Markets change social and socio-ecological relations, and markets in a capitalist political economy change these relations according to the capitalist mode of production (Büscher et al. In press). In turn, the capitalist mode of production harbours particular socio-ecological contradictions in general (Burkett 2005) and with specific reference to ecosystem services (Kosoy and Corbera, 2010). Attempting to investigate and understand these, however, were not part of the 'terms of references' of the consultants who produced the MDTP PES report, hence my assertion that the 'social production of knowledge and nature' is rather one-side and tenuous, with no room for possible contradictions, conflicts and power struggles. Indeed, by doing so the report adheres exactly to Marx' critique of many eighteenth and nineteenth century economists, a characteristic of whom is:

> the attempt to explain away the contradictions of the capitalist process of production by dissolving the relations between persons engaged in that process of production into the simple relations arising out of the circulation of commodities. (Marx 1976: 209, note 24)

In effect, the PES report functions as a 'complexity blinder' (Norgaard, 2010) or 'contradiction blinder'. Many important questions that could impede severely on the 'institutional arrangements' are not asked in the report. What if—as often happens in capitalist markets—certain actors want to make more profits and so take their individual rather than the collective arrangement into higher regard? Blignaut et al. (2010: 1322) recommend that PES should be considered as "the outcome of a multi-institutional collaborative effort and organizational process." This sounds like a strange recommendation from a PES perspective; after all, markets (should, according to theory) function as a competitive process where individual discipline and rationales are rewarded, as this is what is supposed to deliver 'efficiency' and 'effectiveness'. Moreover, 'multi-institutional collaborative efforts' almost never work out the way they are planned. This can again be illustrated by referring back to the above-described politics and power struggles in the Maloti-Drakensberg intervention itself, which according to the planners and consultants was also supposed to be collaborative and 'lead to friendship' while it was widely acknowledged that this had failed (MDTP planner in an interview, December 22, 2005; South African PCU coordinator in an interview, July 22, 2005).

Another question that is not asked is what if people do not keep to the institutional rules but 'sell' the 'ecosystem services'

illegally, or engage in land use management activities outside the 'ecological indicators' set by the MDTP? During my field research, this issue often came up as local people—for example those in the Mnweni/Cathedral Peak area that was targeted by the MDPT PES programme—indicated that by day people took into account the grazing schemes suggested by the MDTP, but at night they went grazing wherever they wanted. More critical questions could be asked, but again, these were all beside the point for the PES report, which sought to construct an 'expert discourse', about which Li (2007: 11) notes that they "are devoid of reference to questions they cannot address, or that might cast doubt upon the completeness of their diagnoses or the feasibility of their solutions."

Li (2007) agrees with Ferguson (1994), who showed that experts 'render legible' particular realities and define problems in a way that affirms the need for interventions based on the solutions they are there to provide. The solution was clear: payments for environmental services. The 'problem', then, needed to be reconstructed in such a way that a PES solution would fit. Whether the PES solution fits in reality becomes less important than 'upholding the model' through which actors can link up to—in this case—PES minded epistemic communities across national and international policy and donor communities. This, of course, is important as many of the authors of the PES report, like staff members or consultants of NGOs or semi-public international organisations more generally, are often under high pressures to secure funding to guarantee their own 'livelihoods' and the viability of the organisations they work for. How this is done is the subject of the next section.

MARKETING THE PAYMENTS FOR ECOSYSTEM/ ENVIRONMENTAL SERVICES SOLUTION

A substantial part of the USD 15.5 million that the GEF donated to the MDTP was used to enable the construction of the idea that PES is the ideal solution for the social, ecological, and economic problems in the Maloti-Drakensberg area. On the one hand, this was done through careful scientific representation and rhetorical manoeuvring to avoid contradictions and questions that cannot be addressed. On the other hand, this section will argue, these representations and their associated rhetoric need to be actively, but carefully marketed through relevant networks and institutions so that the science is 'publicly' accepted as 'credible' (Haraway 1997: 25). This in turn helps to attract further attention and resources to the area, while simultaneously inscribing the careers of members of particular epistemic communities in a popular paradigm. Both are needed to guarantee the 'flow of resources' (Mosse 2004) for future projects and consultancies.

Interestingly, the PES system in the Maloti-Drakensberg area has remarkably quickly been 'making the rounds' in national and global policy and donor arenas that could loosely be described as a PES epistemic community. One example from the policy world is a report by the NGO 'Swedish Water House' (Forslund et al. 2009). According to the document, "The report is a joint collaboration between member organisations of The Global Environmental Flows Network" (www.eflownet.org), which includes influential organisations and potential donors for PES programmes and studies such as the International Union for Conservation of Nature, the World Wildlife Fund, The Nature Conservancy, the United Nations Environment Programme, the United Nations Educational, Scientific and Cultural Organization, among others. Remarkably, since the MDTP PES project had not yet been implemented, the report concludes:

> PES *has* proven to be a viable option to enhance supply in the catchments of the Maloti Drakensberg Mountains on the border between Lesotho and South Africa. Land use in the surrounding grassland has reduced stream flow in the dry season and intensified flow in wet season. This has resulted in seasonal water shortage, reduced water quality, soil erosion, reduced productivity and increased water vulnerability. The Maloti Drakensberg Transfrontier Project showed that implementing a PES system […] would be an economically and institutionally feasible way to incorporate ecosystem services into water management. There are significant benefits to be gained by both local ecosystem services producers (the mountain communities) and by the broader user or catchment community: less water vulnerability, more jobs in the region, and improved land quality that can stimulate the development of other economic options, such as tourism, game farming, improved grazing and natural products harvesting. The Transfrontier Project also showed that such a system is desirable from a rural development and social equity perspective, rewarding those who maintain a water supply engine but who are spatially and economically marginalised. (Forslund et al. 2009: 31; author emphasis)

Not only does the report insinuate that the results of the PES project have already been ascertained (by use of words such as 'has proven', 'showed', etc.), some of the language is *exactly* the same as that of the MDTP report, providing ample evidence of the power of epistemic communities to take at face value messages that reinforce particular knowledge constructions.

Similarly, on the national, South African level, the same MDTP consultants (and others in the same network) wrote a policy paper for the influential 'Trade and Industrial Policy Strategies' which supports government agencies through research activities. The policy paper came out under its '2nd Economy Strategy Project', and is (bombastically) entitled *Making markets work for people and the environment: Employment creation from payment for eco-systems services combating environmental degradation and poverty on a single budget while delivering real services to real people*. Using the MDTP PES report as a reference, and while acknowledging that 'the stability of the trade is unknown', it concludes that "the eco-hydrological economic model shows that it is financially feasible and economically beneficial to trade baseflow augmentation, sediment reduction and carbon sequestration

from areas of high rainfall in the Maloti-Drakensberg."[8]

While these examples are directed at the policy world, the MDTP consultants and researchers equally aim to market PES in the Maloti-Drakensberg area by giving it academic credibility. Two examples (Blignaut et al. 2008, 2010) have already been discussed extensively. Another example is an article by Turpie et al. (2008) in *Ecological Economics* that again includes some of the same authors as the PES reports and other papers. While the article deals with another South African environmental programme, it is clear that it aims to advance PES in South Africa in general. The article is entitled *The working for water programme: Evolution of a payments for ecosystem services mechanism that addresses both poverty and ecosystem service delivery in South Africa,* and approvingly refers to the MDTP as one of the 'conservation initiatives' where "conservation planners in South Africa are currently looking to PES as potentially playing a major role" (Turpie et al. 2008: 796). After stating this, it cites the MDTP baseline study of 2004 (Diederichs and Mander 2004). Yet another example is an article in the popular scientific magazine *Environmental Scientist*, entitled *The socio-economics of river management*, co-authored again by one of the consultants hired by the MDTP (Mander and Everard 2008). They argue that:

> South Africa's innovative water laws, which enshrine the principles of equity, sustainability and efficiency, have enabled the development of some of the most advanced approaches to PES in the world. The Maloti Drakensberg Transfrontier Project, published in 2007, explored hydrological and economic linkages between uplands that 'produce' water and the consumption of water lower down in selected river catchments, progressing this into the design of market mechanisms for payment from consumers for the protection, restoration and management of upper catchment areas critical for dependable run-off of clean water. (Mander and Everard 2008: 33)

The point of these examples is to show that while the evidence is tenuous and/or one-sided, this does not deter the same consultants and researchers from forcefully marketing PES in the Maloti-Drakensberg area through epistemic communities and policy arenas that already support and/or depend on the success of these same PES models, or are likely to be supportive due to their own neoliberal policy outlook (e.g., the South African government, UNEP, etc.; see Bond 2000). Crucially then, *the interpretation of scientific evidence also resembles a market*—if particular epistemic communities 'buy' into this evidence, it can seem to be legitimate and/or attract attention and more resources[9]. In other words, the case of the MDTP functions in a broader 'scientific context' where likeminded epistemic communities valorise and indeed promote the paradoxical idea that capitalist markets can be the answer to their own ecological contradictions. In turn, this dynamic can become self-reinforcing in that more attention and resources can be exploited to further strengthen the power of the PES discourse, making it susceptible to becoming a relatively closed loop that effectively shuts out the complex socio-ecological dynamics it aims to address.

CONCLUSION: 'PAYMENTS FOR ECOSYSTEM/ENVIRONMENTAL SERVICES' AS NEOLIBERAL CONSERVATION

This article has argued that when taking into account the broader political-economic and historical contexts of the Maloti-Drakensberg area, and paying attention to "scientific practice and the mediated relationships [...] in the social production of knowledge and nature" (Demeritt 1998: 181), one comes to very different conclusions from the ones drawn by Blignaut et al. (2010: 1322) that a 'payment for flows of ecosystem goods and services system' "under certain conditions, [...] is definitely viable, not only financially but also institutionally." By critically interrogating the assumptions around land management and institutional arrangements underlying these conclusions, they were shown to be tenuous and one-sided from both theoretical and (comparative) empirical perspectives. In particular, the article argued that the MDTP PES case built up by reports and academic publications erroneously asserts that modernist, technical interventions that stimulate economic market dynamics can solve and/or replace complex socio-political dynamics, especially since the (colonial, racialised, capitalist, and conservation) roots of these dynamics are almost completely ignored in the same publications. At the same time, an alternative reading of events was suggested, i.e., that PES provided an expedient way for the MDTP implementers—especially the South African PCU—to deal with the complex socio-political and institutional pressures they were under and so bracket these more complex and sensitive socio-political dynamics and historical roots.

Taking this alternative evidence from the Maloti-Drakensberg area case study, one could simply conclude that PES indeed seems a familiar progression of capitalist expansion and intensification in the area of environmental conservation. Yet, it is important to point out that what seems new is that it is openly acknowledged that conservation of biodiversity and ecosystems should occur through its submission to the capitalist mode of production while being completely blind to the contradictions and histories of this same mode of production. Indeed, this article shows that conservation projects and associated epistemic communities work hard to produce evidence that works to establish scientific credibility while erasing difficult and conflict-wrought histories in order to effectuate this submission. In turn, this enabled those same actors to market PES as a 'success', and so build a context that serves to attract resources and cement actors' careers within a popular paradigm. To capture these dynamics adequately, one needs to acknowledge PES and the way in which it is marketed within a global political economy that has sought to undo the restraints placed on capitalism since the 1970s and now seems to be at its zenith (Brockington et al. 2008). PES, therefore, should be recognised first and foremost as 'neoliberal conservation'—as a response to the global neoliberal political

economy that South Africa has also adopted and strengthened over the past 15 years.

Unless one takes this context into account, one risks missing the bigger picture—that the political-economic realities that cause many of the environmental and social problems in the Maloti-Drakensberg area, frame solutions for them in the same spirit, in this case through 'PES'. And as these are built into the same mechanisms, they might equally strengthen, rather than alleviate, the dynamics that cause the problems in the first place. Only by first framing PES as 'neoliberal conservation', and thereby acknowledging the broader point that capitalist markets cannot be the answer to their own ecological contradictions, can we begin to understand contemporary socio-ecological problems in their full complexity and start working on devising meaningful and constructive solutions for the Maloti-Drakensberg area and beyond.

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Notes

1. Obviously, this is not necessarily different from scientific constructions of other topics (Latour 1987).
2. For details about the GEF's operational structure, see www.gefweb.org.
3. One could add the South Africans of Indian origin here, but their role in the types of conflicts described here has been marginal compared to the others.
4. This became clear from interviews with Lesotho PCU staff members, as well as other important MDTP stakeholders in Lesotho who, in many interviews, explicitly mentioned the race issue being part of decision by the World Bank to downgrade the Lesotho side of the project. For broader discussions around race and conservation, see the excellent recent book by David Hughes (2010).
5. In which they are obviously not alone, see Vira and Adams (2009).
6. Redford and Adams (2009) have recently argued that this is a more general tendency in the PES trend.
7. It must be noted that not everybody agreed with this statement, although most participants did.
8. See http://www.tips.org.za/publication/making-markets-work-people-and-environment-employment-creation-payment-eco-systems-servi. P. 37. Last viewed on April 12, 2011.
9. This is in line with recent work in Science and Technology studies by Lave et al. (2010: 696), who state that "neoliberalism continues to have profound impacts on the organization, practice, and social implications of science." See also Haraway 1997.

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