

Negotiating the legitimacy of conservation at mining frontiers: Evidence from Madagascar and the DR Congo

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Abstract

Political ecologists are increasingly interested in the dynamics of power and authority where mining and conservation converge. We contribute to this emerging literature by applying an 'actor-oriented' approach to explore the creation of protected areas in African mining frontiers. Concretely, we look at how 'multiple-use' protected areas have been layered on top of mining frontiers in eastern DRC and northern Madagascar. Both of these mining frontiers include artisanal, semi-industrial, and industrial mining activities and permits. In the DRC case, various state and non-state armed actors are also implicated in mining. Our results show that the legitimacy of conservation at mining frontiers evolves as a process involving indiscrete phases of negotiation, coercion, resistance and cooperation. When authorities and alliances supporting mining interests preclude coercive conservation strategies, conservation authorities need to negotiate their way through different phases of resistance and cooperation. We find that in both cases, local actors living at the extraction and conservation nexus assert their agency and 'forum shop', by switching their allegiances between conservation and mining actors.

Keywords: extraction-conservation nexus, artisanal and small-scale mining, public authority, forum shopping, legitimacy

Résumé

Les écologues politiques s'intéressent de plus en plus à la dynamique du pouvoir et de l'autorité là où l'exploitation minière et la conservation convergent. Nous contribuons à cette littérature émergente en appliquant une approche « orientée vers les acteurs » pour explorer la création d'aires protégées dans les frontières minières africaines. Concrètement, nous examinons comment des aires protégées « à usages multiples » ont été superposées sur les frontières minières dans l'est de la RDC et le nord de Madagascar. Ces deux frontières minières comprennent des activités et des permis miniers artisanaux, semi-industriels et industriels. Dans le cas de la RDC, divers acteurs armés étatiques et non étatiques sont également impliqués dans l'exploitation minière. Nos résultats montrent que la légitimité de la conservation aux frontières minières évolue

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comme un processus impliquant des phases indiscrètes de négociation, de coercition, de résistance et de coopération. Lorsque les autorités et les alliances soutenant les intérêts miniers excluent les stratégies de conservation coercitives, les autorités de conservation doivent négocier à travers différentes phases de résistance et de coopération. Nous constatons que dans les deux cas, les acteurs locaux vivant à la croisée des chemins entre l'extraction et la conservation affirment leur autonomie et « forum shop » en changeant d'allégeance entre les acteurs de la conservation et ceux de l'exploitation minière.

Mot-clés: lien extraction-conservation, exploitation minière artisanale et à petite échelle, autorité publique, forum shopping, légitimité

Resumen

La ecología política se muestra cada vez más interesada en la dinámica entre el poder y la autoridad en los lugares donde convergen la minería y la conservación. En el presente trabajo, contribuimos a este campo emergente empleando una aproximación de "orientación a los actores" para explorar la creación de áreas protegidas en las fronteras mineras africanas. En concreto, analizamos cómo las áreas protegidas "de uso múltiple" se han superpuesto a las fronteras mineras en el este de la RDC y el norte de Madagascar. Ambas fronteras mineras incluyen actividades y permisos de minería artesanal, semiindustrial, e industrial. En el caso de la RDC, varios de los actores en armas tanto estatales como no estatales también se encuentran implicados en la minería. Nuestros resultados muestran que la legitimidad de la conservación llevada a cabo en fronteras mineras evoluciona como un proceso que implica fases difusas de negociación, coerción, resistencia y cooperación. Cuando las autoridades y las alianzas que apoyan los intereses mineros imposibilitan estrategias de conservación coercitivas, las autoridades que apoyan la conservación deben navegar a través de diferentes fases de resistencia y cooperación mediante la negociación. Observamos que, en ambos casos, los actores locales que viven dentro del entramado entre la extracción y la conservación reafirman su agencia y su "foro de conveniencia" al cambiar su lealtad entre los actores de la minería y de la conservación.

Palabras clave: nexo extracción-conservación, minería artesanal y en pequeña escala, autoridad pública, forum shopping, legitimidad

1. Introduction

In the early 21st century, protected areas have expanded globally as a result of targets set by the UN Convention on Biological Diversity (CBD) (see the 2010 and 2020 targets in particular²) (CBD Secretariat, 2007, 2020). This extension looks likely to continue over the coming decades with the 2022 Kunming-Montreal Global Biodiversity Framework's objective to establish protected areas on a minimum of 30% of the planet's lands and waters by the year 2030 (CBD, 2022). The Nature Needs Half Movement is even more ambitious in advocating for the protection of half the world's landscapes and seascapes by 2030.

The expansion of conservation is leading to an increasing overlap between protected areas and mining activities. This is exacerbated by the global co-occurrence of known metal deposits and high biodiversity areas (Murguía *et al.*, 2016). Political ecologists have introduced a variety of terms to describe this convergence of mining and conservation, including 'double land grabs' (Huff & Orengo, 2020), 'spaces of double exception' (Le Billon, 2021) and 'double frontiers' (Vuola & Simpson, 2021). These studies highlight the similarities between mining operations initiated by foreign or multinational companies and protected areas driven by global conservation NGOs and ecotourism interests (Adams, 2017; Büsher & Davidov, 2013; Enns *et al.*, 2019; Norris, 2017; Purwins, 2022; Symons, 2018; Marketta Vuola, 2022). They also point to deepening cooperation between conservation organizations and the extractive industries, often under the veneer of the 'green' economy (Huff & Orengo, 2020). It has been argued that a consequence of this overlap is the consolidation of state and/or neoliberal power (Büsher & Davidov, 2013; Käkönen & Thuon, 2019), alongside the dispossession or exclusion of local inhabitants (Hall *et al.*, 2015; Le Billon, 2021).

² In the 2000-2020 period, the global protected area estate increased in terrestrial areas from about 10% to at least 15%, and in marine areas from 3% to at least 7% while the protection of the 'key biodiversity areas' (defined under the CBD) grew from 29% to 44% (CBD Secretariat, 2020).

In this article, we explore the convergence of metal mining frontiers and an increasingly popular conservation strategy: the use of 'multiple-use' protected areas. The latter are a departure from the much criticized 'fortress conservation' approach popular during much of the 20th century (Brockington, 2002; Neumann, 1998). Instead, it is based on a more flexible 'participatory' design (Pimbert & Pretty, 1995) intended, at least in theory, to work for both 'people and biodiversity' (Waeber *et al.*, 2020). Examples include 'protected landscapes', 'protected areas with sustainable use of natural resources', 'community-based conservation' or 'community-based natural resource management' projects (consistent with the IUCN protected area categories V and VI) (Dudley *et al.*, 2010). Many of these new categories of protected area have also at times facilitated the enclosure and privatization of land (Bluwstein, 2021; Corson, 2011; Kelly, 2011). Nevertheless, they represent a significant development of the fortress conservation model, and which the governance implications need to be understood.

How do multiple-use protected areas affect relations of power and authority at mining frontiers? This research question has received surprisingly little attention to date (with the exception of Baker-Médard, 2012). However, it is likely to become more pertinent as both global mining frontiers and the conservation estate continue to expand and overlap. To explore this question, our study compares two multiple-use protected areas recently established in northern Madagascar and the eastern Democratic Republic of Congo (DRC). Both of these areas overlap with artisanal and small-scale mining (ASM) as well as semi-industrial and industrial mining activities and/or permits. We frame these regions as 'frontiers' because they are areas where new metal deposits are still being discovered and mining operations initiated. In mining frontiers, relations of control, access and production are in a state of flux. As such, they are continually contested among numerous public authorities and frontier entrepreneurs (Côte & Korf, 2018; Rasmussen & Lund, 2018; Verbrugge & Geenen, 2019). While the fortress model typically seeks to establish territorial dominance for conservation in frontiers regions through coercive means, multiple-use protected areas adopt a more flexible approach (e.g. Vuola, 2022). As a result, their expansion into extractive mining frontiers generates a very different set of outcomes for local politics than more exclusionary strategies.

Here, we build on previous political ecology research on the convergence of mining and conservation (Adams, 2017; Büsher & Davidov, 2013; Enns *et al.*, 2019; Le Billon, 2021; Norris, 2017; Purwins, 2022; Symons, 2018; Vuola, 2022), by adopting a legal anthropology approach. This approach enables us to explore the micro-level processes through which authority and legitimacy are continually negotiated (and contested) by a variety of actors. As such, we focus not on whether conservation and mining enable or prevent one another, as previous work has done (Büsher & Davidov, 2013). Instead, our focus is on how they become entangled and layered upon one another, and the effects this has on local politics.

In the following section, we introduce our theoretical framework combining insights from political ecology and legal anthropology. We introduce our research methods in section 3 and our case studies and the basis for the comparative analysis in section 4. We present our case studies in sections 5 and 6, discuss our findings in section 7, and offer a conclusion in section 8.

2. Conservation, extraction and public authority

Political ecologists have shown how the allocation of protected areas emerged as a strategy for colonial governments to strengthen their control over territory and populations (Neumann, 1998; Vandergeest & Peluso, 1995). More recently, a variety of authors have shown how militarized conservation projects can serve a similar 'consolidating' function (Dongol & Neumann, 2021; Lunstrum, 2014). Where militarized protected areas are managed in zones of armed conflict, they can be perceived by local communities as 'states within states', enforced primarily by transnational conservation NGOs (Marijnen, 2018). While they involve a different approach, some similar dynamics are evident in multiple-use or 'community-conservation' areas. Corson (2011), for instance, demonstrates that the early 21st century expansion of (mainly multiple-use) protected areas in Madagascar contributed to the state-mandated territorialization of the Malagasy landscapes by foreign and private actors.

States can expand their reach and control through conservation. But this does not mean the people living around protected areas are without agency: studies show local actors resisting conservation policies and

"carving out spaces of relative autonomy from both conservationists and the – – state apparatus" (Cavanagh & Benjaminsen, 2015: 725). In conflict zones, armed groups can themselves act as strong public authorities, which also prevents state or conservation actors from establishing control over protected areas. For instance, the DRC's Virunga National Park, long a hideout for armed groups, has arguably become a "plurality of partly overlapping and partly conflicting political forests" through a mixture of "neoliberalism, regional warfare and non-state militarization" (Marijnen & Verweijen, 2020: 1).

A growing literature looking at the effects of overlapping resource and commodity frontiers and the territories they produce has revealed similar dynamics. In Cambodia, Käkönen and Thuon (2019) find that the presence of overlapping 'zones of exclusion' furthered state consolidation while still leaving limited scope for local agency. Specifically, they argue that exclusions and reconfigurations of resource control "...should not be considered a pre-given end point as the operations and interconnections of the zones maintain considerable indeterminacy" (p. 1212). In a similar vein, Eilenberg (2014) emphasizes how the expansion of multiple frontiers interlocked with wider development and security policies to bolster governmental power in the Indonesian-Malaysian borderlands. However, this expansion simultaneously gave rise to vehement local opposition and faced challenges due to the myriad and occasionally conflicting objectives pursued by different state actors and agencies.

We situate our contribution within the political ecology literature cited above. We do so by exploring how local dynamics of authority and power evolve when multiple-use protected areas are implemented at extractive mining frontiers at the limits of state control. But rather than looking at power relations surrounding mining and conservation through the frame of domination and resistance (e.g. Conde, 2017; Holmes, 2007; Widengård, 2023), we take an actor-oriented approach – an approach rooted in legal anthropology. This allows us to understand the heterogeneous strategies employed by local actors when faced with powerful external interventions for mining and conservation. Key to our analysis is the notion of public authority: "the amalgamated result of the exercise of power by a variety of local institutions and the imposition of external institutions, conjugated with the idea of a state" (Lund, 2006: 686). This authority is not static. Rather, it is part of a historical process where different governance 'layers' are accumulated through time (Bierschenk & Olivier de Sardan, 2014): e.g., protected areas upon mining concessions etc. As such, when a new authority emerges, whether initiated by local actors, the state or international organizations, it does not replace the pre-existing structures. Instead, it integrates with them (Titeca, 2019).

The places which sit at the nexus of conservation and mining can be viewed as 'local political arenas' (Olivier de Sardan, 1995). This term refers to the specific locations where a variety of actors and institutions, at multiple scales, come together through dynamics of contestation and negotiation. Local political arenas are 'semi-autonomous' (Moore, 1973): i.e. both shaped by internal customs, regulations, and symbols, yet also remaining responsive to external forces, decisions, and regulations. In northern Madagascar and eastern DRC, key external influences upon the local political arenas we examine, which contributes to their semi-autonomous character, include the presence of long-standing mining frontiers and, more recently, the establishment of multiple-use protected areas. On the other hand, internal influences on the local political arenas include artisanal miners, farmers, hunters, customary chiefs, various local state agents, and (in the case of eastern DRC) non-state armed groups.

As local political arenas are semi-autonomous, neither conservation organizations nor any other institution has total power within them. They are constrained by local forces. To exercise authority under these conditions, conservationists must therefore maintain – at least a degree of – 'legitimacy'. As per Lund (1997: 100), this implies a "recognition and thus an appreciation" of them as institutions. Yet, as Lund (2006) also remarks, this legitimacy is not a fixed quality. It is a process, since what is viewed as legitimate varies over time and across cultures. As such, legitimacy is "continuously (re-) established through conflict and negotiation" (p. 693).

To examine the processes through which the legitimacy of multiple-use conservation projects evolve, we compare a set of dynamics common to both our cases. These dynamics, brought out later on in our empirical data, are 'negotiation', 'coercion', 'resistance', and 'cooperation.'

3. Research methods

The research design consists of a structured, focused comparison of two protected areas in eastern DRC and northern Madagascar. Our field research itself depends on a qualitative, inductive approach, based on fieldwork. The first author spent nine months in Madagascar during the years 2014, 2018-2019, and 2022, conducting two weeks of field research in villages in Loky Manambato in 2019. The second author was present in eastern DRC's South Kivu Province for almost nine months from August 2019 to February 2020 and April to June 2021. Over these periods he conducted almost two months fieldwork in and around Itombwe Nature Reserve with teams of local researchers. Access to the protected areas was facilitated through local institutions which connected us with local researchers to assist with translation from local languages to French and English.³

The first author conducted 40 interviews and 12 group discussions in communities in Loky Manambato New Protected Area. The second author conducted over 200 interviews and 20 focus groups in villages in and around Itombwe Nature Reserve. Our research participants included customary authorities, artisanal miners, timber cutters, peasant farmers, hunters, eco-guards, protected area managers, employees of local and international conservation NGOs, as well as, in eastern DRC, government soldiers and the members of armed groups. Transect walks were conducted and observations recorded. This involves walking through villages, mining sites, and forests around both protected areas, systematically recording observations on how conservation affects – and is affected by – local political authorities and relations. We triangulated the data through interviews with conservation and mining actors, state officials and activists in capitals and administrative centers, an extensive review of NGO reports, decrees, traditional and social media, and correspondence via WhatsApp.

To analyze the data, we take inspiration from the comparative ethnographic case studies approach developed by Kröger (2021). In comparing complex interactions, this approach takes into account several strategies and contingency factors that can explain the outcomes of the interactions (Kröger, 2021). Based on this approach, we first list contextual factors and their similarities and differences across the two cases, which justify the case selection. We then present our analysis, structured by different dynamics (negotiation, coercion, resistance, and cooperation) between conservation and local actors and illustrate them through moments where authority and legitimacy of conservation were transformed. In the comparison of the ways these dynamics unfolded, we use the key factors (Table 1) to explain the outcomes.

4. The selection of case studies

To study how multiple-use protected areas affect relations of power and authority at extractive mining frontiers, we present two case studies: Itombwe Nature Reserve in eastern DRC, an IUCN category VI protected area; and Loky Manambato New Protected Area in Madagascar, an IUCN category V protected area. Table 1 summarizes the key contextual factors across our case studies. The two protected areas are similar in many respects. Both are multiple-use protected areas, meaning parts of them may be legally inhabited by people engaged in subsistence activities. Both were established relatively recently and are therefore part of the era of rapid conservation expansion in the early 21st century. Both are also situated in long-standing mining frontiers. These frontiers comprise artisanal mining sites, semi-industrial mining operations driven by Chinese entrepreneurs, and industrial mining permits.

While Itombwe Nature Reserve and Loky Manambato areas have many similarities, they also differ in several respects. While the former is located in an armed conflict zone, and acts as a rear operating base for a variety of non-state armed groups, this is not the case for the latter. While armed eco-guards are employed in the former, the local police and military are brought in to uphold conservation regulations in the latter. Whereas both protected areas are located on top of industrial mining permits, it is only in Itombwe Nature Reserve that an industrial mining company engaged in mineral prospection activities inside the reserve itself.

³ In DRC, we collaborated with the Catholic University of Bukavu (UCB), and in Madagascar, we partnered with researchers and students from the Universities of Antananarivo and Fianarantsoa.

Case	Protected area type	Artisanal mining	Semi-industrial mining companies	Industrial mining companies	Non-state armed groups	Enforcement of conservation
Loky Manambato New Protected Area	Multiple-use protected area	ASM active for over 100 years;	Extraction started after creation of protected areas	Mining permits issued after conservation; No prospection started	None	The national gendarmerie and military
Itombwe Nature Reserve		Highly important local livelihood strategy		Mining permits issued before conservation; Prospection started and stopped		

Table 1: Key contextual factors, similar and different, in the case studies.

5. The interplay of conservation and gold mining in Loky Manambato New Protected Area

Our case study site in northern Madagascar is located between the rivers Loky and Manambato. It is characterized by seasonal rainforests, grasslands and mangroves, dotted with villages, fields, forest fragments and small towns. Within this region, we focus especially on the surroundings of the rural commune of Daraina and Daraina town as its center. Until the time of fieldwork, Daraina town was seasonally inaccessible from administrative centers.⁴ The rest of the region is sparsely populated and most villages are only accessible on foot or motorcycle, which significantly slows down and challenges the central state control over the area.

Background: the layered authorities at the gold frontier in Daraina

The landscape in Daraina is administered by several layered authorities. In the district of Vohemar within the SAVA region, Loky Manambato New Protected Area is layered on top of four *communes rurales* governed by a mayor. These communes are further divided in *fokontany*, which is the smallest official administrative unit in Madagascar, comprising one or several villages. Local state officials (such as the Forest Administration, gendarmes and more rarely the military) implement and enforce national legislation but the local social life, including issues of access and control of land and resources, are also governed at the *fokontany* level by a set of taboos (*fady*) and customs (*fomba*). In addition to these, ASM is governed by specific rules, regulations and associations (Klein, 2022).

The district of Vohemar has been known for gold mining since the 17th century and Daraina is one of its most well-known and long-lasting gold production areas (Schreurs & Rakotoarisoa, 2011). ASM increased dramatically in northern Madagascar in the 1990s and early 2000s. During this period, waves of artisanal miners arrived in Daraina and other sites: tens of thousands of miners entered the nearby Betsiaka gold fields and sapphire diggings in Ankarana National Park (Walsh, 2004, 2005; Zhu & Klein, 2024). The expansion of artisanal mining had a pervasive effect on the economy of northern Madagascar as well as territorial arrangements and identity formation (Zhu & Klein, 2024). Some of the gold rushes in the early 1990s brought

⁴ The national road RN5A runs through the region but it has been in a very poor condition. After the fieldwork, construction works to repair the RN5A have been started and completed as a part of the Chinese Belt & Road Initiative. We expect the enhanced accessibility can and is likely already speeding up the circulation of goods and facilitating the central state's policing ability. Up until the time of the fieldwork though, Daraina had remained very difficult to access.

about mining settlements in Daraina that became more permanent and remain active today: one of them is Andranotsimaty where we will return shortly.

Today, an estimated 80–90% of Daraina's population gains income directly or indirectly from mineral exploitation (World Bank, 2019). ASM practices around Daraina range from digging the bare soil with shovels and panning in dried riverbeds to more professionalized rock mining through tunnels, often using simple machinery such as water pumps. Gold trade in Madagascar is mostly operated outside of the legal sphere through well-established networks involving members of the Malagasy elite, politicians and state officials and a handful of families of Indo-Pakistani descent who secure collectors at lower levels (Rahman *et al.*, 2019). Nevertheless, the lowest level of production and trading is decentralized and it offers income and opportunities for large numbers of Malagasy people who work at their own risk.

In 2003, at the World Parks Congress in Durban, the Malagasy president Ravalomanana pledged to triple the coverage of protected areas in Madagascar. It has been argued that the speech led to a race for Madagascar's forests between mining companies and conservation managers (Corson, 2011) and, therefore, new competing authorities arrived in Daraina. A wave of international conservation funding and changes in protected area legislation facilitated the expansion of protected areas (Corson, 2011). Meanwhile, mining concessions were claimed in record numbers, leading to an extensive overlap between mining permits and protected areas; for example, 33 percent of areas protected in 2005 overlapped with mining concessions (Cardiff & Andriamanalina, 2011). Daraina was particularly affected by this development (Cardiff & Andriamanalina, 2011) and still today three industrial mineral exploitation permits remain in Daraina that were issued during this epoch. They are valid until 2055. The protected area manager perceives these concessions as one of the biggest threats to conservation and, despite many attempts to contact the Malagasy Office of Mining Registration (*Bureau du Cadastre Minier*), they have not been able to get the permits cancelled. To date, no exploration or other activities have started. Therefore, the mining corporation is not yet an active player in the local political arena, and to our knowledge has not had an impact on conservation's legitimacy at the local level.

The latest arrival in the Daraina gold frontier is semi-industrial mining. Since the 2008–2009 financial crisis, Chinese mining companies have entered the mining scene in different parts of Madagascar (Klein, 2020). As in continental Africa, these companies are predominantly small and medium-sized, and the projects can move quickly instead of establishing large, long-term mining concessions. The excavations are often started without state-issued permits or negotiations with local communities and artisanal miners (Verweijen *et al.*, 2022). Cases have occurred in different parts of Madagascar where semi-industrial Chinese mining companies have been unofficially sponsored by local state officials, leading to resistance by local artisanal miners (United States Department of State, 2018).

The local political arena in Daraina consists of the intersection of the various formal and informal structures of authority and is deeply influenced by the economic interests related to artisanal and semi-industrial gold production. Next, we will examine the dynamics, which followed the arrival of conservation into the local political arena and the attempts by the protected area managers to establish themselves as a legitimate authority.

Negotiation: The creation of Loky Manambato New Protected Area

In 2001, the Malagasy NGO Fanamby started working to conserve a 250,000-hectare area between the rivers Loky and Manambato with an exceptional biodiversity and an endemism rate of 84 percent (World Bank, 2019). The initial intention was to create a national park (Fanamby, 2003), however, the shifts in the transnational conservation politics changed the direction. After President Ravalomanana's pledge, a new protected area model was created. These 'New Protected Areas' (corresponding to IUCN Protected Area category V) are flexible as they accommodate certain local livelihood activities, which helped to establish almost a hundred new protected areas within a decade in Madagascar; many of them in areas inhabited by large human populations (Gardner *et al.*, 2018). Loky Manambato New Protected Area was one of the pilot sites where the new conservation framework was tested (Fanamby, 2003). It gained official status in 2005.

The new global conservation area targets (CBD targets for 2010) were thus translated into domestic legal frameworks (the category of New Protected Area under the *Système des Aires Protégées de Madagascar*) implemented by largely foreign but also many domestic NGOs, such as Fanamby (Gardner *et al.*, 2018). The

transnational conservation policies are translated into local level actions through decisions made at different organizational levels of Fanamby—from the headquarter in the capital Antananarivo to local office in Daraina. Under the New Protected Area model, the state mandated Fanamby to divide the area into zones, map their boundaries, define which land uses were allowed where and which authority was responsible for controlling which zone⁵ (Figure 1; see Vandergeest & Peluso, 1995 and Corson, 2011 on territorialization).

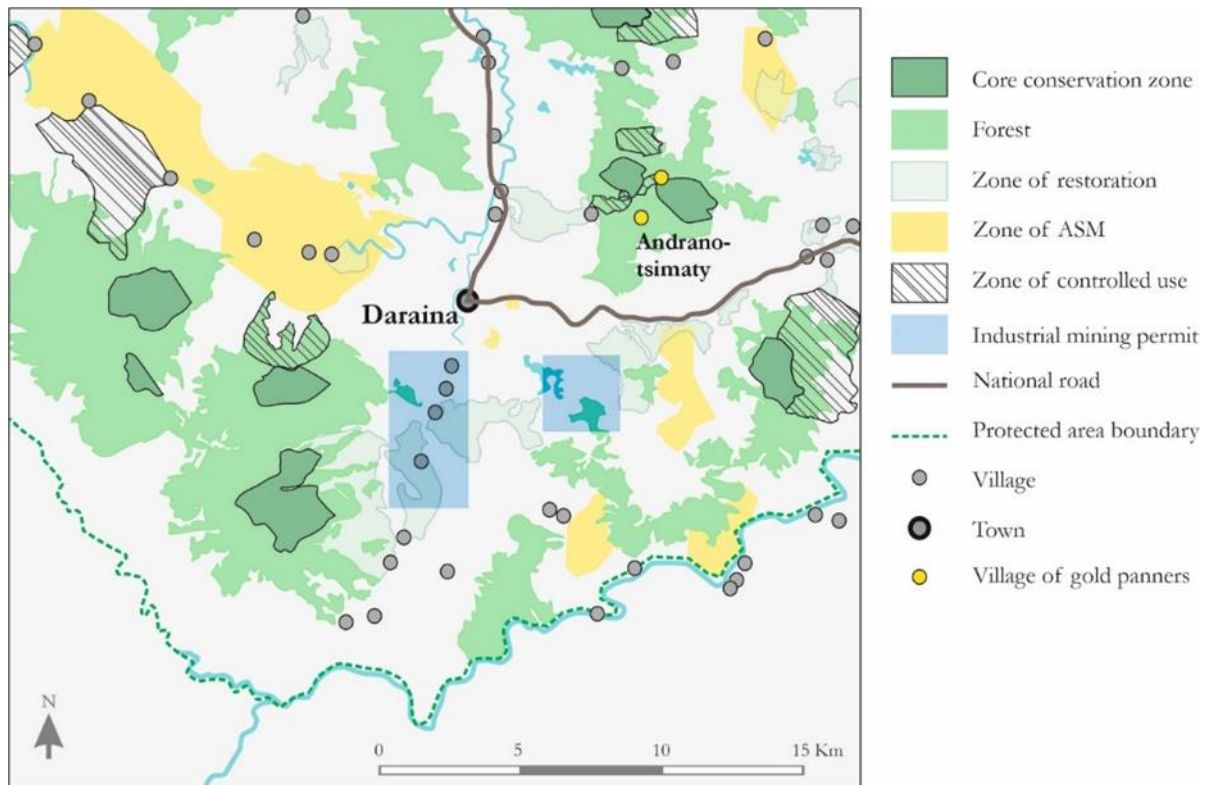


Figure 1: The southern part of the Loky Manambato Protected Area and its official division into zones. The core conservation zones are strict non-use zones whereas the other zones are more flexible with specific user rights. The map shows only two out of the three existing industrial mining permits, as we do not know the exact location of the third permit. (Adaptation of an original zoning map by Fanamby)

Despite the powerful global conservation agendas, Fanamby has to walk a fine line between conservation goals, mining interests and local politics in Daraina. Local politicians have at times questioned the legitimacy of conservation. Already in the early 2000s, when the Durban vision was initiated and the pilot site Loky Manambato New Protected Area was featured on national television, two local politicians challenged it provocatively asking: "Is it Fanamby or the Republic of Madagascar who owns this land?" They had a reason to be doubtful: the Special Reserves of Analamera and Ankarana nearby serve as an example of exclusionary conservation, both established by the French colonial administration in 1956.

⁵ Conservation agents survey the core conservation zones. In other forest areas logging permits can be applied from the district level subdivision of Forest Administration (*chef cantonnement* or *chef forestier*). The local committees of environmental protection (*komity miaro ny tontolo iainana*, KMT), created by Fanamby from members of local communities, monitor logging and the use of fire within their local area.

Fanamby has mostly avoided conflict with local peasants and mining communities by allowing people to continue their livelihood activities in defined zones. Local communities also accepted the protected area with the expectation that they would receive economic opportunities and development projects in return. These have included for example the creation and support for the vanilla cooperative Sahanala and, more recently, local miner associations. The directors of Fanamby emphasize that the NGO's approach has always focused on consistent presence in the field, long-term engagement, and the creation of economic benefits for local residents in order for them to be able and willing to support conservation: i.e. for conservation to gain legitimacy locally. Nevertheless, gold mining and other illegal activities such as bush burning and unauthorized logging continue from time to time, challenging Fanamby's de facto authority.

As Loky Manambato New Protected Area was created, Fanamby needed to decide how to deal with ASM. The Protected Area Code forbids ASM in strict protected area categories, such as national parks. In the multiple-use protected area, Fanamby was able to categorize ASM as a 'local livelihood activity' due to its low level of mechanization, and therefore justify its presence in the conservation landscape in designated zones. Fanamby was thus able to prevent conflict with ASM operators. This was an effective solution, yet not a permanent one. ASM is highly mobile and fluctuating by nature with booms and busts in changing locations. This makes ASM difficult to manage or control with mainstream conservation tools such as zoning. Consequently, soon the active mining areas no longer corresponded to the areas Fanamby had fixed on maps (Figure 1). This resulted in tensions and even conflicts but also innovative forms of adaptation.

Coercion and resistance: tensions between conservation and ASM

The village of Andranotsimaty emerged during gold rushes in the early 1990s and is now located just outside the core conservation zone. Although the population continues to fluctuate depending on where the latest gold rush takes place, since 1992 Andranotsimaty has become a permanent mining village with long-term residents. In 2011, a gold rush pulled numerous miners to Andranotsimaty, starting a clash between mining and conservation. As the number of miners right at the border of the core conservation zone grew, Fanamby abandoned its earlier tactic of flexibility and attempted a strict enforcement of the core conservation zone. Fanamby called the *gendarmes* and military to evict the entire village. Miners recount: "We ran! And in the meanwhile everything in our houses was broken by the military." Miners did not view such a repressive approach as legitimate and they resisted. After a few days, a group of long-term residents returned to the site. They raised the Malagasy flag to indicate their desire to have the village recognized by the state. The mayor of Daraina, supporting ASM as the primary source of income in the commune, also helped to block the eviction. Negotiations followed, and eventually an accord was signed between the parties, which redefined the rules for mining in Andranotsimaty. Long-term inhabitants commented to the first author,

"In the end, the state could not force us to stop mining here. Now we have found a way to be together, miners and conservation."⁶

"Since then, we have the freedom to work and Fanamby does not threaten us like before. This is as long as we stay within the limited area. But it is very difficult to follow the rules of Fanamby because as miners we change places all the time."

In this case, coercion was not seen as legitimate and did not succeed. As such, the conservation actors had to adapt to make space for ASM. The fact Fanamby allowed ASM despite it not being entirely legal is particularly relevant for our analysis. Miners, backed up by local politicians, had enough power to make the conservation manager adapt in favor of informal mining even though it had been given both mandate and enforcement by the state. Regarding the impacts on conservation goals, a study found that by allowing small-

⁶ This quote illustrates how at the local level conservation and the central state are often perceived essentially as the same actor.

scale mining to continue in Andranotsimaty as a part of the unofficial agreement with the communities, Fanamby has actually reduced the impacts of mining on the forest (World Bank, 2019).

Cooperation: when conservation managed to ally with ASM and local politicians

Despite the tensions, Fanamby has also found common goals with local actors, resulting in moments of cooperation. An illustrative example is the arrival of a Chinese mining operation in Andranotsimaty.

In 2017, a Chinese group started digging an open-pit mine near Andranotsimaty. They collaborated with one of the long-term residents of Andranotsimaty who granted them access to his excavation,⁷ which the Chinese miners started to exploit. They also proceeded to hire the man. However, the majority of miners objected. "People did not agree for the Chinese to be here. They feared that the Chinese would take their land and they were also jealous of the gold they found." The community informed Fanamby about the mine and Fanamby organized an operation with the *gendarmerie* to evict the company. Miners in Andranotsimaty explained: "*Gendarmes* came and took the machines. They were called here by the people."⁸

Cooperating with Fanamby against a 'common enemy' was a strategic choice by the miners. As different territorial authorities intersect in the local political arena, artisanal miners can appeal to a growing number of authorities at different jurisdiction levels (Klein, 2022). While previously the miners had turned to the mayor when confronted with conservation, this time, they sided with conservation and used its access to state law enforcement to secure control of the mining site against the Chinese company. The overlap of conservation and mining thus offered a perhaps unexpected avenue for the informal miners to exercise agency. Indeed, while conservation bodies in Madagascar do not officially intervene in the management of ASM, Klein (2022) has showed that when these institutions recombine with local circumstances, they have been repurposed for controlling mineral resources (see also Baker-Médard, 2012).

In addition to artisanal miners, Fanamby has built legitimacy by allying with local politicians. While the mayors and chiefs of *fokontany* challenged conservation at first, they later collaborated with Fanamby. For example, both Fanamby and the mayor's office have had an active role in the formalization efforts of artisanal mining and trading with the National Gold Office. At times, local politicians criticize specific actions or individual employees of Fanamby, yet they do not wish to entirely dismiss the NGO, nor the overall goals of conservation. Stressing instances where Fanamby should cooperate more with them, the local chiefs try to maintain their own authority in the current local political arena where conservation has become an important player.⁹ They, too, are playing the game of power and influence between mining and conservation.

6. Conservation meets armed conflict and extraction: Itombwe Nature Reserve

Our second case study, Itombwe Nature Reserve, is situated in South Kivu Province, eastern DRC. This an isolated and inaccessible region of the country, close to the borders with Rwanda and Burundi. Most villages in and around the reserve are only accessible on foot through dense mountain rainforests. At this 'frontier of a frontier', large swathes of territory lack any proper state presence. But the region is far from a governance void. In fact, it comprises a complex patchwork of territorial configurations with a diverse array of state and non-state – in some cases, armed – actors. The reserve itself represents just the latest form of governance layered upon previous layers, which are heavily influenced by a legacy of armed conflict.

Background: The 'stacking up' of multiple public authorities

Itombwe Nature Reserve straddles several administrative divisions. It overlaps with three territories: Mwenga, Shabunda and Uvira. Within these territories, six chiefdoms and two sectors coincide with the

⁷ Many of the excavations are owned by one individual, leading a team of miners.

⁸ The situation might have been different, had the Chinese company negotiated access with relevant local leaders or a larger number of Andranotsimaty's miners. Being as it was, at least in hindsight, people in Andranotsimaty seemed to enjoy telling the story of unity (among themselves) and influence.

⁹ Gezon (2006) has noted a similar dynamic around Ankarana Special Reserve.

reserve.¹⁰ The chiefdoms and sectors are hierarchically structured, with groupings and villages subordinated within them. Traditional leaders officially acknowledged by the government oversee the chiefdoms, while government-appointed chiefs manage the sectors. Mining activities are present in all territories. While these activities cause significant damage to biodiversity and ecosystems (Verweijen *et al.*, 2022), they provide significant economic opportunities for public authorities at various scales. As such, mineral extraction has continued and expanded in the region since the establishment of the reserve in 2006.

Industrial mining traces back to the 1920s when the Belgian company *Minière des Grands Lacs* (MGL) started exploiting gold, cassiterite, and other metals in South Kivu (Geenen, 2014). ASM also extends to the 1920s (Bakonzi, 1981), but it surged in 1970s for two reasons. First, MGL merged with the partially state-owned company SOMINKI and allowed artisanal miners onto its sites. Second, President Mobutu decided to liberalize the mining sector in 1982, further fueling artisanal mining (Geenen & Radley, 2014). Industrial mining only reemerged in the region in the 2000s. During the Congo wars (1996-1997 & 1998-2003), the Canadian mining company Banro acquired the majority of SOMINKI's shares (Wakenge & Matthysen, 2023). However, Banro's ambitions were impeded by war and legal battles with the government. It was not until 2002 that an agreement was signed which re-recognized Banro's ownership of certain gold concessions (Wakenge & Mathyson, 2023). The company went on to establish two industrial-scale gold mines in South Kivu, in Twangiza and Namoya. However, following a string of financial difficulties, local protests and insecurity, the company was forced to cease its operations in September 2019. It eventually sold its permits to Strategos Group in 2022.

While industrial mining activities are presently in a state of contraction, the reserve still sits atop various mining permits. Shown in Figure 2, 14 industrial exploitation and exploration permits and official artisanal mining zones (ZEAs) overlap the reserve's 2016 boundaries. Furthermore, between 34 to 40 artisanal gold, coltan (tantalum), and cassiterite mining sites are active inside the reserve (Verweijen *et al.*, 2022). Excavated with rudimentary technologies, these sites form a key part of local economies (Weinberg *et al.*, 2013). For instance, the large cassiterite mine of Zombe, previously an MGL site, draws up to 1,000 miners at a busy time of year. Since 2019, Chinese entrepreneurs have also established semi-industrial mining operations at the edge of the reserve. Operated using boat dredges and mechanical diggers, these are significantly more damaging to biodiversity and ecosystems than artisanal mines. They have also spiked tensions with local populations, and fed into the local dynamics of armed conflict (Verweijen *et al.*, 2022).

Large parts of eastern DRC have been embroiled in armed conflict since the 1990s. Minerals are not the cause of this conflict (Vogel, 2022). However, mineral extraction has become part of the broader political economy in which conflict plays out. Non-state armed groups assert strong public authority inside the reserve. These include an array of Mai Mai groups¹¹ and fragments of the *Conseil National pour le Renouveau et la Démocratie* (CNRD) (previously the *Forces Démocratiques de Libération du Rwanda* (FDLR) formed by perpetrators of the Rwandan genocide). At various points, these groups have played a role in the protection, organization and trade of artisanal mining activities. Operating across networks of power, profit and protection, these groups often maintain connections with government actors, including the national military (Verweijen *et al.*, 2021). Government soldiers also sometimes impose taxes at artisanal mines and provide (paid) protection to industrial and semi-industrial mining companies (Verweijen *et al.*, 2022). Along with the importance of ASM for local livelihoods, the involvement of armed actors contributes to the intractability of mining in the region.

In a context where mining activities are widespread and multiple armed actors make claims to public authority, the agency of conservation organizations is significantly constrained.

Negotiation: the establishment of the Itombwe Nature Reserve

In order to establish a protected area in the region, conservation NGOs have been forced to negotiate with other public authorities and continually adapt their approach. Starting in the 1990s, World Conservation

¹⁰ In the DRC, chiefdoms (referred to as *chefferies*) and sectors (*secteurs*) serve as rural administrative units within territories (*territoires*).

¹¹ Among others, the Mai Mai Ruma, Mai Mai Yabeelwa, Mai-Mai Zela Mbuma, Mai-Mai Nguvu Za Milima, and Mai-Mai Nyakiliba.

Society (WCS) and World Wildlife Fund (WWF) lobbied the Congolese state to create a protected area on the Itombwe Massif. A ministerial decree was signed in 2006, formally establishing the Itombwe Nature Reserve. Although the decree included a rough map outlining the reserve's location (Gauthier, 2016), its boundaries were ambiguous. Furthermore, local communities were not consulted beforehand. Some of them still harbored memories of displacements from the nearby Kahuzi-Biega National Park in the 1970s. They feared the same was going to happen with the Itombwe Nature Reserve. Consequently, many communities did not allow representatives of the Congolese conservation agency (ICCN) or conservation NGOs onto their lands. Some of them even sought support from a local NGO to have the entire reserve de-gazetted (Kujirakwinja *et al.*, 2019).

Faced with these pressures, the key organizations involved in the reserve's creation¹² adopted a more flexible approach. They sought to establish legitimacy in the eyes of the local population through a participatory mapping process based on the principle of Free, Prior and Informed Consent. This involved the consultation of around 550 villages in and around the reserve between 2010 and 2014 (Kujirakwinja *et al.*, 2019). Through negotiation with the population, the reserve was divided into three zones: a multiple-use zone where communities could reside and continue local resource uses (including artisanal mining); a core ecological zone strictly dedicated to conservation and scientific research; and a buffer zone connecting the former two zones. In conjunction with this, communities would receive small economic benefits, such as development projects and jobs, if they participated in the reserve (Simpson & Pellegrini, 2022). A new decree was finally issued in 2016 featuring a map of the external boundaries and internal zones (Figure 2).

The limits of coercive conservation

As discussed, the reserve managers sought to establish themselves as legitimate authorities through a participatory rather than a coercive approach. However, unlike in the case of Loky Manambato, a team of around 30 or so armed eco-guards has been employed to protect the reserve. These guards conduct patrols from two patrol posts located in the chiefdoms of Basile and Wamuzimu. However, seeing that the reserve managers have not yet started to enforce conservation regulations, their role is unclear. For now, they have been instructed to inform people of conservation regulations, rather than arrest or punish them in another way. Their capacity to enforce conservation rules is further restricted by a lack of equipment and poor training. As such, they are no match for the armed groups that use the reserve as a rear operating base.

Given their limited power within the local political arena, the reserve managers have strategically balanced conservation goals with mining interests. Following consultation with customary chiefs, they agreed artisanal mining could continue in the reserve's multiple-use zone, but not in the core or buffer zones (although, as shown in Figure 2, ASM has continued to take place throughout the reserve.) The decision not to shut down ASM partly reflected its importance for local livelihoods. But it also reflected the fact many ASM sites inside the reserve are taxed by non-state armed groups. Sites such as Miki, situated directly in the zone of influence of a powerful Mai Mai group, would likely be impossible to shut down by poorly equipped ego-guards. Reserve managers therefore decided not to challenge the public authority or mining interests of the armed groups.

¹² These were WWF, WCS, Rainforest Foundation Norway, and ICCN.

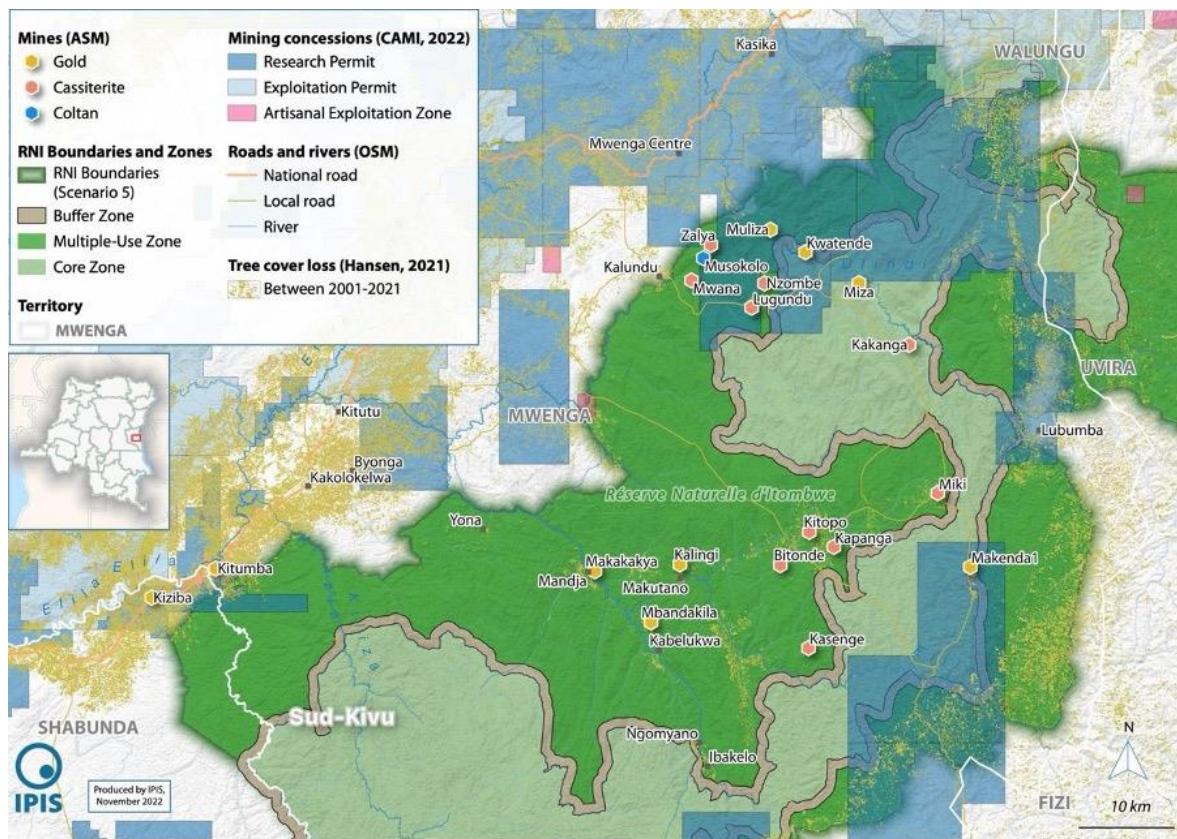


Figure 2: Mining permits and artisanal mining sites located in and around Itombwe Nature Reserve in eastern DRC's South Kivu Province (taken from Verweijen *et al.*, 2022, with permission).

The reserve managers, however, did at one point adopt another strategy to have the armed groups removed. In 2018, Banro conducted gold prospection in six sites in part of the reserve coinciding with Luindi chiefdom. ICCN's Provincial Director pressured Banro to stop. In a letter addressed to the commander of the national army for South Kivu, he accused Banro of using the notorious FDLR rebel group to secure its prospection sites.¹³ This claim is unlikely to be accurate considering the FDLR did not have a presence in Luindi Chiefdom at the time. In fact, as we will address in the next section, it was most likely a local Mai Mai group that worked with Banro to provide protection. However, the Director's claim did provide a basis to a) paint Banro as an illegitimate actor considering it was collaborating with such a notorious rebel group; and b) call for the military to remove the armed groups from the reserve. Demonstrating the limited power of conservation actors in this context to influence, the military did not respond to the latter request.

As discussed above, Banro eventually stopped its activities inside the reserve, and sold its assets in DRC to Strategos Group. However, mineral prospection or extraction could happen in the future, since the mining permits that overlap with the reserve remain legitimate in the eyes of certain state officials. For now, there exists an uneasy coexistence between the boundaries of the reserve and the industrial mining permits.

Chinese companies have established numerous semi-industrial mining operations in the Mwenga and Shabunda territories of South Kivu over recent years. Two such mines are located near the reserve's southeastern

¹³ <https://radiomaendeleo.info/sud-kivu-banro-accusee-dutiliser-les-fdlr-dans-la-mi-la-chefferie-de-lwindi-sinterpose>

flank in the villages of Kitumba and Kiziba, respectively in Wamuzimu chiefdom and Wakabango 1 sector. Chinese entrepreneurs paid off local mining cooperatives, customary chiefs, and members of provisional and national parliaments to establish the mines (Mwetaminwa & Vircoulon, 2022). They also paid the Congolese police force to provide security for their employees. The operations have led to considerable environmental damage. Since 2019, the Kitumba operation has resulted in approximately 82 hectares of tree cover loss in the vicinity of the reserve (Verweijen *et al.*, 2022). However, ICCN has not tried to prevent them because the mining activities are not taking place inside the reserve itself.

The arrival of the semi-industrial mining operations in the vicinity of the reserve has led to tensions with the local population. A villager in Kitumba explained how, "The local population began to do strikes and demonstrations when they saw Chinese were operating where they were." The tensions reached a boiling point on 21 November 2019 when an armed group attacked the Chinese mining operation, kidnapping three Chinese workers and taking them as hostages into deep forests inside the reserve. A fourth worker was severely injured, while two government soldiers were killed during the attack. In the days after, ICCN abandoned its patrol post in the village of Kitumba, fearing its eco-guards could suffer a similar fate. The patrol post was eventually moved to the village of Kakolokelwa, some distance away from the mining conflict.

The incident again demonstrates the limited power of conservation actors. As a result of contested gold mining interests that pit a foreign company against local people and a non-state armed group, it was no longer feasible to maintain a patrol post in Kitumba. Yet, the semi-industrial mining activities persisted: the Chinese mining entrepreneurs returned to Kitumba with support from Congolese military, which moved its local headquarters in Wamuzimu chiefdom to Kitumba village in order to protect the mining sites.

Resistance to conservation

Despite the participatory approach used to establish the reserve, community discontent is on the rise. Basile chiefdom was one of the first chiefdoms to accept a reserve to be established on its territory. As a result, of a good relationship with Basile's chief, ICCN and its partners established the reserve headquarters in Mewenga Centre, in Basile, and one of its two patrol posts in Basile's Kalundu village. Yet, the relations eventually soured. Over time, the population began to fear further restrictions would be imposed on their activities inside the forest, including on artisanal mining. They also believed that the reserve managers failed to deliver on their promise to provide development projects, alternative livelihood activities, and job opportunities for them. As a result, they stopped viewing the reserve managers as a legitimate authority. Several protests were subsequently organized in the chiefdom, calling for the forests of Basile to be withdrawn from the reserve (Kitoka, 2022). The conflict peaked when Basile's chief forbade eco-guards from entering the forest, leading to the closure of the Kalundu patrol post between 2022 and 2024 (Kiyengo & Bisuro, 2024).

As was the case in Basile, the chief of Kigogo *groupement*, in Luindi chiefdom, initially accepted the reserve on part of his territory. He agreed to this based on the expectation that the reserve would bring development projects and economic opportunities for his population, which are isolated from the rest of Luindi. He stressed a road should be built linking Kigogo to Kasica, in Luindi's center. However, the vast majority of these expectations – including the road – did not materialize. As a result, the legitimacy of the reserve was greatly diminished in the eyes of the local population. This paved the way for a radical shift of allegiances when Banro arrived in the area in 2018. Offering to build the road and employ people as day laborers, the mining company gained the support of the customary authorities, who by then were turning against the reserve. Banro also paid the Mai Mai Ruma, a powerful armed group based in Kigogo, to provide security at its prospection sites. As a result, the reserve managers and the eco-guards discontinued their activities in the area.

Banro ultimately failed to establish a functional mine, and sold its mining permits in the wider region. Yet the example of Kigogo *groupement* nevertheless demonstrates the tenuous legitimacy of conservation. The failure to deliver on people's expectations that conservation would bring development sparked local discontent, which was expressed in the community's decision to switch its allegiance from the reserve to Banro. In this context, public authority is far from concentrated in a single entity or institution, but continually negotiated and contested between conservationists, miners, armed groups, and local communities.

Cooperation: Where armed groups do not oppose conservation

While Itombwe Nature Reserve faced some significant resistance, there are also examples of cooperation between conservation actors and artisanal miners. One example of this cooperation stemmed from the formation of 'community conservation committees' (CCCs). The primary purpose of the CCC's is to enable community involvement in the reserve's management, including the management of ASM sites that are key to local livelihoods. In 2020, the reserve managers, Basile chiefdom's CCC, and a local mining cooperative began a process to formally validate ASM sites inside the multiple use zone. This would be a first for the DRC as the law technically forbids mining inside protected areas. While the validation process has been hampered by ongoing tensions between ICCN and Basile's population, the example demonstrates there is still a possibility for compromise and cooperation between conservation authorities with artisanal miners.

In another striking example of cooperation, some non-state armed groups responded positively to the reserve. The former Mai-Mai commander Kapopo, who controlled several ASM sites within the reserve, supported its creation and encouraged the local population to protect it.¹⁴ He claimed this was his responsibility as a native of the area. Other Mai-Mai groups participated in meetings to agree upon the reserve's boundaries (Verweijen, Schouten, & Simpson, 2022). Representatives of the Mai-Mai Aoci even took part in a micro-zoning project in the Mwana Valley to designate different land use areas (Verweijen, Schouten, & Simpson, 2022). The willingness of armed groups to cooperate can partly be explained by the fact that the reserve, as a multiple-use protected area, did not affect their interests in mining or other forms of resource extraction. Even if this is so, the absence of conflict between the armed groups and conservation authorities is unique considering the violence that blights many other protected areas in the DRC where armed groups are involved in mining (Simpson & Pellegrini, 2023).

7. Discussion

Our study makes two contributions to political ecology research on the extraction-conservation nexus. First, it introduces an actor-oriented approach rooted in legal anthropology to study the convergence of multiple-use protected areas and mining frontiers. Second, it identifies and compares the dynamics through which the legitimacy of conservation evolves in political arenas where mining interests are widespread. In Loky Manambato New Protected Area and Itombwe Nature Reserve, we observed the dynamics of negotiation, coercion, resistance, and cooperation. In what remains of the article, we elaborate on these contributions.

A wave of political ecology research explores how overlaps between mining and conservation can serve to structurally reinforce each activity (e.g. Enns, Bersaglio & Sneyd, 2019). As per Büscher and Davidov (2013), this leads to an 'intensification of power' (Nealon, 2008), or the extraction of more and more value from smaller and smaller areas of land. The result is somewhat paradoxical: i.e. mining supporting conservation and conservation supporting mining. Our approach builds on this literature in two ways. On the one hand, it frames mining and conservation as different governance 'layers' that interact with one another (Bierschenk & Olivier de Sardan, 2014). In Loky Manambato and Itombwe, conservation was layered upon local political arenas already saturated with multiple authorities, strong mining interests and, in the Itombwe case, multiple armed actors. In neither case has conservation enabled (or prevented) the mining frontier; it has integrated with it.

On the other hand, our approach enables us to zoom in on the heterogeneous strategies of actors where mining and conservation meet. In both protected areas we study, conservation authorities' agency is significantly constrained by local politics, in particular by actors involved in various forms of mining. It is in this sense that the local political arenas within which conservation and mining collide can be viewed as 'semi-autonomous fields' (Moore, 1973): i.e. no single actor or institution maintains overall control. Under these conditions, the authority of different actors "waxes and wanes" (Lund, 2006: 686) in a complex dialectical relationship with one another. We will now compare the results of our two case studies. To do so, we look at the different 'processes' (Moore, 1988) through which the legitimacy of conservation authorities developed.

Negotiation: Multiple-use protected areas are an 'adaptation' which allows conservation to expand into regions where mining and other resources uses are widespread. By using a negotiated (rather than strict,

¹⁴ Interview, Bukavu Central Prison, 17/04/2021.

exclusionary) approach, this model is designed to establish conservation as legitimate. In Itombwe, initial resistance at the local level led to a shift away from an exclusionary to a multiple-use model. In Loky Manambato, a similar model was piloted, this time driven by a policy to triple the size of Madagascar's conservation territory. In both sites, there were two layers to the conservation negotiations. First, the landscapes were divided into zones, partly in consultation with local community leaders, defining which activities could take place and where. As a result, artisanal mining was allowed to continue inside certain areas. The negotiation also involved more informal agreements with e.g. informal artisanal miners and making compromises and trade-offs to keep the tensions and conflict at bay. Second, conservation authorities promised to provide development projects and alternative livelihood activities to local people. However, following this bargain, conservation authorities' legitimacy was frequently undermined when they failed to deliver on the expectations of local communities. We conclude that these recurring tensions are inherent even with a negotiated conservation approach. As we will now show, they play out via processes of coercion, resistance and cooperation.

Coercion: In both our cases, mining interests constrain conservation actors' ability to exert authority through coercion. In Itombwe, the reserve managers have been left with little alternative but to tolerate mining. Although the eco-guards are armed, they remain relatively powerless in a context where mining sites within and around the reserve are protected by powerful state and non-state armed actors. Their ability to coerce is severely constrained since the risk of violent retaliation is great and could lead to conservation's withdrawal (as has already happened at the Kitumba patrol post). In Loky Manambato, there are no armed eco-guards, although the conservation manager can request for the gendarmerie and military to remove artisanal miners, which it has done. Yet, even in this relatively peaceful context (compared to eastern DRC) coercion failed to prevent the expansion of artisanal mining (see below, under resistance). This is because even without the presence of armed groups, the artisanal mining frontier entails powerful interests and opportunities for alliances.

Resistance: Local residents and artisanal miners have engaged in several rounds of resistance against conservation in both our cases. This was sparked by conservation bodies's efforts to restrict artisanal mining and the failure to meet people's expectations in terms of development projects. In both cases, local actors have resisted conservation by forming alliances with powerful public authorities that have strong interests in mining. In Itombwe, the Kigogo community formed an alliance with an industrial mining company, which was conducting gold prospection inside the reserve. In Loky Manambato, the one attempt at coercive conservation (i.e. the eviction of miners from Andranotsimaty) was also met with resistance: artisanal miners allied with the mayor and together forced conservation to shift back to negotiation strategy.

Cooperation: Artisanal miners, customary authorities, armed groups and local politicians did not always oppose conservation in Itombwe and Loky Manambato. In fact, in many cases they also worked with protected area managers. This tended to be the case when conservation served, or at least did not challenge, their interests: e.g. by securing access to metal deposits (miners), consolidating their influence among the local population (local politicians), or aligned with local conservation norms without restricting their activities (armed groups). Such examples, where other local actors appeal to and align with conservation as a public authority, were the strongest examples of conservation authorities establishing legitimate authority.

These dynamics of negotiation, coercion, resistance and cooperation are neither isolated nor permanent. They are rather indiscrete phases in a continual process through which the legitimacy of (conservation) authority ebbs and flows. As part of this process, local actors may, at times, cooperate with conservation authorities; while at other times they might ally with mining interests to resist conservation. In other words, local actors can creatively choose between and modify a variety of flexible positionalities (in favor/against conservation, extraction or both). As such, people living at the extraction-conservation nexus are not without agency (Asiyanbi & Ogar, 2023), even if they face considerable structural constraints (Le Billon, 2021).

Linking this to legal anthropology literature, these interactions can be seen as a version of 'forum shopping': i.e. where the parties involved in disputes seek to have their dispute judged by the institution most likely to provide a favorable outcome (Von Benda-Beckmann, 1981). However, in our case, people are not looking for favorable judges, but instead for external allies to support – or at least not hinder – them in their seemingly perpetual quest for stability and security. Where the number and layers of public authorities grow through the convergence of mining and conservation, local people may even have a wider choice of possible

allegiances to choose from. Our cases show that where armed groups or industrial mining are located, the options to forum shop actually increase while the maneuvering space for conservation further decreases.

8. Conclusion

Our analysis shows that when conservation expands to mining frontiers, exclusionary and coercive conservation strategies can become untenable due to the prominent interests that support mining.

Under these circumstances, conservation authorities that are unable to establish themselves as legitimate can risk provoking resistance from mining actors, and then have to withdraw altogether. In such contexts, multiple-use protected areas provide a means for conservation to coexist with other land-uses, including artisanal mines, through a negotiated approach. Yet, even with flexible conservation models, the legitimacy of conservation is not simply established or 'fixed' in time. Rather, it is marked by a continual process with overlapping phases of negotiation, coercion, resistance and cooperation. By adding additional layers of authority into local political arenas, the expansion of conservation into mining frontiers can even enhance local actors', including artisanal miners', options for forum shopping to achieve the most favorable outcomes. While this may be a matter of choosing the least bad option, it also suggests that local agency can persist and even influence the outcomes of the competition between conservation and mining interests.

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