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The Rhino Horn Trade and Radical Inequality as Environmental Conflict

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Abstract: The illegal wildlife trade (IWT) is one of the most acute global conservation challenges. This paper examines what is driving young men to enter the rhino horn trade while advancing theory on environmental conflict. We show how the illicit rhino horn economy is a telling instance of environmental conflict—largely between ground-level hunters and increasingly militarized state conservation forces—that emerges from a context of radical inequality. We examine how practices ranging from labor migration and sidelining rural development to biodiversity conservation itself have profoundly transformed the Mozambican-South African borderlands from which many hunters originate, in turn generating poverty, exclusion, and vulnerability across the region. Juxtaposed against the wealth afforded by rhino hunting, this changing agrarian political economy has created an enabling environment for the rhino horn economy to take off. Illicit hunting, in other words, has become an attractive albeit risky livelihood alternative. We close by examining two questions that broaden our understanding of both environmental conflict and IWT: under what conditions might poverty lead to environmental harm and to what extent should such conflict be read as resistance that can bring about more just ends.

Introduction

The commercial illegal hunting of wildlife, or what is popularly known as commercial poaching, is a core component of the global illegal wildlife trade (IWT). The illicit hunting of rhinos for their horns has emerged as one of Southern Africa's most acute conservation challenges with South Africa's Kruger National Park at its epicenter.[1] This paper unpacks key features of what is driving young men to enter the rhino horn trade as ground-level hunters while advancing theory on environmental conflict. We address this by examining how the supply side of the rhino horn economy is a telling instance of environmental conflict that emerges from a context of radical inequality. The conflict unfolds as ground-level rhino hunters risk their lives to procure rhino horn within an increasingly fortified Kruger. Given the robust literature on South Africa's militarized response and green militarization more broadly, we

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explore a less understood aspect of the conflict: the larger structural factors and particularly the radical inequality that motivate young men to enter the trade. We examine how the Mozambican-South African borderlands from which many hunters originate have been transformed by profound changes to land, labor, livelihoods, and the valuing of life tied to changing patterns of labor migration, colonial exploitation, war, the decline of state agricultural support, and ultimately exclusions provoked by the conservation sector itself. These changes, we show, have generated poverty, exclusion, and vulnerability across the region. Juxtaposed against the wealth afforded by rhino hunting, this changing agrarian political economy has created an enabling environment for the rhino horn economy to take off. Illicit hunting, in other words, has become an attractive albeit risky livelihood alternative.

Grounding this study in the traditions of political ecology and agrarian studies and long-term fieldwork in the Mozambican-South African borderlands, we begin with the research context and methodology followed by a brief literature review on environmental conflict and relevant aspects of biodiversity conservation. We then examine the supply side of the rhino horn economy as a revealing case of environmental conflict rooted in radical inequality. Here we focus on the historical-geographical emergence and entrenchment of such inequality followed by two distinct features of these transformations: the political economy of devalued lives and exclusions incited by conservation. We close by examining two questions that deepen our understanding of environmental conflict and IWT: first under what conditions might poverty lead to environmental harm and conflict as there is no direct causal relation between the two; and, second, the extent to which environmental conflict may be read as resistance that can bring about more just ends, a vexing question in the ethically murky waters of the rhino horn economy.

Research Context and Methods

During research on community relocation from Mozambique's newly created Limpopo National Park (LNP) (Figure 1), we began to observe the emergence of largescale illicit rhino hunting in South Africa's adjacent Kruger National Park beginning in 2009. The numbers of rhinos killed in South Africa for their horns shot up from the single and low-double-digits before 2008 to over 1,000 a year between 2013 and 2017, with those numbers falling to 394 in 2020 (Environmental Affairs 2021; Save the Rhino 2021). Kruger and the international border have become heavily militarized as the South African state has worked to "neutralize" suspected poachers, both arresting and killing them. The semi-subsistence-based Mozambican side of the borderlands where many hunting recruits originate have also been transformed. This begins with the greater presence of young men in the communities who have returned from working in South Africa largely to engage in rhino hunting. Those who are successful have

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garnered substantial riches, with this wealth often supplementing their family *machambas* or subsistence farms and addressing material vulnerabilities including acute poverty. 4x4 trucks frequently acquired through rhino hunting income have improved transportation and made it easier to move water, agricultural goods, and people, but also rhino horn. And a sizable number of thatched-roof huts have been replaced by larger, more permanent masonry homes even for ground-level recruits with kingpins who organize the trade building expansive, multi-story homes. Others have not been so lucky. Many have been arrested and jailed for lengthy sentences and others killed by Kruger's security forces. With graveyards expanding across the region, left behind are young widows and orphans confronting increasingly difficult agricultural livelihoods (Interviews and field observations 2014-2019). These changes stand as clear signs of rhino hunting's riches and losses and begin to shed light on links between the rhino horn trade, inequality, and environmental conflict.

[Insert Figure 1 here]

Research for this article is based on fieldwork including semi-structured, open-ended, and focus group interviews and participant observation conducted yearly between 2012 and 2019. The 59 interviews from 2012-2013 focused on changes to labor migration, resettlement, and life in the park. The 30 interviews from 2014-2016 focused largely on relocation from the LNP. Both sets of interviews were primarily based in one of the communities most centrally involved in the rhino horn economy, allowing us to glean insights into the trade. The 82 interviews from 2017-2019 focused explicitly on the trade and were spread across four communities inside the LNP's core, its buffer zone, and the district center of Massingir, arguably the hub of the rhino horn economy. With several important exceptions, we conducted interviews with individuals not directly involved in rhino hunting given the security context. We mainly interviewed former and current community leaders, relatives of rhino hunters including their widows, and other community members with insight into the trade. We supplemented these with interviews with Limpopo and Kruger park staff and other government, anti-poaching security, and NGO officials. Interviews across multiple years with a range of people in different relation to the rhino economy located across different communities and locations allowed us to triangulate findings and ensure validity. Interviews were conducted in Shangaan, Portuguese, and English by our multi-lingual research team and, where relevant, translated into Portuguese or English for data analysis. For data analysis, we incorporated interview transcripts/notes into NVivo 10 where we coded data for the drivers of rhino hunting, focusing on more obvious drivers (e.g., earning money) and more subtle drivers (e.g., the devaluing of life). Over half of the drivers mentioned by respondents were explicitly economic (e.g., hunting to enable a better life/address poverty). We coded for and grouped the other drivers

under the umbrella category of "extra-economic" (see Lunstrum and Givá 2020 for more detail). Yet as we show below, even some of these drivers (e.g., drought) are intimately tied to a broader context of radical inequality. Our engagement with respondents was shaped by an ethic of empathy and non-judgment. This, along with guaranteeing anonymity, the conversational and flexible nature of the interviews, and our prior work and reputation in the area, helped build rapport and trust. To provide additional context, we also draw on previous work in Mozambique and South Africa, including interviews, focus groups, and participant observation, on the rhino economy beginning in 2009 and the LNP in 2003.

Environmental Conflict: An Overview

Mainstream understandings of environmental conflict routinely begin from a determinist stance in which environmental changes related to population growth or other mounting pressures on natural resources are understood as driving conflict, and hence conflict itself is naturalized (e.g., Ehrlich 1968; Kaplan 1994; Homer-Dixon 1999). The closely aligned fields of political ecology and agrarian studies share this concern for environmental conflict but expand their focus to include broader struggles over land and environmental resources including issues of marginalization, dispossession, unequal distribution, and rural transformation (Le Billon 2015; Asiyanbi 2016; Edelman and Wolford 2017; LeBillon and Duffy 2018). Noted political ecologist Martínez-Alier (2002, 54), for instance, even defines political ecology as "the study of ecological distribution conflicts." These fields reject the environmental determinism of mainstream approaches by focusing instead on how underlying unequal political and capitalist economic structures incite conflict in the first place. Here state and economic elites routinely capture resources to secure profit, ultimately leaving less behind for and even dispossessing everyone else, especially the poor. This in turn provokes tension, struggle, and conflict (Peluso and Watts 2001; Watts 2013 [1983]).

While sharing with neo-Malthusian perspectives the assumption that poor people degrade their environments, more radical approaches nonetheless see this harm emerging from unequal relations and structures, not simply the desperation, ignorance, and irresponsibility of the poor (ibid; Blaikie and Brookfield 1987; Benjaminsen 2015). These contributions equally stress the importance of historical and geographical context, with environmental conflict and violence understood as "site specific phenomenon rooted in local histories and social relations yet connected to larger processes of material transformation and power relations" (Peluso and Watts 2001, p. 5). Related, rather than an event, environmental conflict is better understood as a process through which incompatibility emerges between groups over the symbolic and material value of natural resources, their use and misuse, and

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the dynamics of environmental change (LeBillon and Duffy 2018). Political ecology and agrarian studies also chart how the rural poor actively respond to and even resist unequal forms of environmental change and dispossession to shape the struggle and its outcomes (Scott 1985; Peluso and Watts 2001; Cavanagh and Benjaminsen 2015; Le Billon 2015; Mariki et al. 2015; Asiyanbi 2016; Edelman and Wolford 2017). Environmental conflict, therefore, is not necessarily something to be avoided given that it can expose and confront structural inequality and related violence (Peluso and Watts 2001; Le Billon 2015; Asiyanbi 2016; Edelman and Wolford 2017).

Political ecology and agrarian studies have also paid close attention to biodiversity conservation, with a core focus on how it can provoke land enclosures and more broadly upend local livelihoods. Such dispossession, often justified in the name of ecological protection, is routinely aimed at facilitating accumulation by dispossession for environmental ends or what scholars have labeled green grabbing (Kelly 2011; Fairhead et al. 2012; Massé and Lunstrum 2016; Mbaria and Ogada 2016). Political ecology has also been at the forefront of theorizing and critiquing green militarization, or the unprecedented securitization and militarization of conservation practice, to defend protected areas and in particular stem commercial poaching. Scholars chronicle how this approach fails to address the primary drivers of environmental decline/IWT, reproduces racialized understandings of perceived environmental transgressors, and justifies extra-judicial killings and forced displacement. The latter violate human rights while alienating the very communities conservation needs for its long-term sustainability (Lunstrum 2014; Büscher 2015; Annecke and Masubelele 2016; Hübschle 2016; Mabele 2016; Duffy et al. 2019; Weldemichel 2020; Witter 2021). These critiques of green militarization, however, largely sidestep broader debate on environmental conflict and have only recently begun to examine what drives people into IWT in the first place. In terms of the latter, contributions across conservation biology and environmental criminology complemented by political ecology show that people hunt illicitly for a host of reasons, from economic gain and recreation to cultural practice and resistance against conservation-related restrictions (Muth and Bowe 1998). Of these, economic motivations are central in illicit bushmeat provision and commercial poaching (e.g., von Essen et al. 2014; Hauenstein et al. 2019, also see Duffy et al. 2016). Illicit rhino hunting in the Mozambican borderlands follows this trend: economic motivations are not the only drivers (Hübschle 2016; Silva et al. 2018; Witter 2021, also see Ntuli et al. 2021) but are nonetheless paramount, a point we elaborate upon below. We draw from these contributions to examine illicit hunting as a provocative instance of environmental conflict rooted in radical inequality.

The Rhino Horn Trade and Radical Inequality as Environmental Conflict

The rhino horn trade has emerged as one of the most lethal environmental conflicts in Southern Africa for rhinos but also ground-level hunters tasked with procuring their horns, with several hundred suspected poachers shot and killed since this latest round of illicit hunting broke out in 2009 (Reuters 2015). Most straightforwardly, the conflict is over rhinos as both protected natural and cultural resource and increasingly valuable black-market commodity. On the one side, ground-level hunters coming largely from Mozambican communities surrounding Kruger obtain rhino horn for criminal syndicates who feed demand coming largely from Asia (Hübschle 2016; UNODC 2016). Using their sophisticated animal tracking skills gained from cattle rearing and subsistence hunting, small hunting teams can earn up to USD $5,000 for a successful hunt (Interviews 2012-2016). On the other side are South African conservation and security officials charged with protecting rhinos. Their work is authorized by state and public concerns that commercial poaching may wipe out rhinos in the wild, that the poaching economy is a threat to national security given its transboundary nature, and that poaching threatens ecotourism revenues and South Africa's natural heritage symbolically embodied in rhinos (Lunstrum 2014; Annecke and Masubelele 2016). While South Africa's response is multi-faceted and includes agreements with user-end countries to curb demand, inside Kruger and along the international border its approach has become heavily militarized. It has engaged rangers in further paramilitary training and dedicated the vast majority of their time to anti-poaching, deployed the South African Defence Force to patrol Kruger and the border, and forged partnerships with private and state military corporations to provide anti-poaching hardware and services (Lunstrum 2014; Annecke and Masubelele 2016; Lunstrum 2018; Massé 2018). We see a similar although less well-resourced approach on the Mozambican side of the border (Interviews and field observations 2014-2019). As anti-poaching forces and hunting teams collide, a deadly environmental conflict unfolds.

While the state rationale for protecting rhinos and its militarized approach is well-articulated and well-researched, grasping illicit rhino hunting as environmental conflict also requires an understanding of what is motivating ground-level recruits to enter the trade. As we illustrate in detail elsewhere (Lunstrum and Givá 2020), economic motivations and especially the lack of jobs and other economic opportunities stand out as the most frequently cited reasons for entry into the trade (also see Hübschle 2016). For instance, as one community leader explained, "It is not an easy decision that the young men make [to hunt given the likelihood of being killed in Kruger]. But the lack of other opportunities and seeing others who earn lots of money through poaching attracts them, leaving them without option" (Interview 2017). Rather than reducing these economic motivations to mere poverty and economic gain, we show it is more accurate to see economic inequality as the primary driver of illicit hunting. Similar to the concept of relative poverty, this captures how economic drivers include more

than material deprivation and embody multiple interpretations of poverty and desires to escape it. These motivations range from caring for family and community, supplementing agricultural livelihoods, and otherwise making ends meet, to partying, showing off, increasing social standing, and reaching a previously unattainable level of freedom. Economic inequality also foregrounds how the trade emerges from the immense wealth of consumers on the demand side and, more precisely, the gap between poverty and wealth.

Building from here, we examine where such inequality has come from and what it can tell us about the supply-side of illicit rhino hunting as environmental conflict. While most obviously a conflict over rhinos and the values they have come to embody, at a deeper level this is a struggle over who has wealth and who does not. It is a struggle shaped by how wealth has flown into, out of, and been captured before it could enter the borderlands. We chart how this conflict—and especially why young men enter the trade despite the risks—emerges from a context of inequality and exclusion rooted in changes to land, labor, and livelihood options. This inequality, we show, is indeed radical given the extreme and ongoing disparities in access to wealth and resources, the fact these are amassed by exploiting and excluding others, and the dire consequences of such inequality.

The Emergence and Entrenchment of Radical Inequality in the Mozambican-South African Borderlands

Political ecology and agrarian studies have repeatedly shown that environmental conflict is not a natural feature of the landscape but rather emerges from unequal economic and political relations. Grasping illicit rhino hunting as environmental conflict therefore requires a dive into the historical-geographical emergence and entrenchment of inequality in the rural borderlands. This begins with labor migration. Labor migration in what is today southern Mozambique, which encompasses the borderlands, began in the 19th Century under the Gaza Empire when Shangaan men left to work on South African agricultural plantations and later the Rand gold and Kimberly diamond mines (Mercandalli and Anseeuw 2017). This is the origin of broadscale wage labor in the borderlands and the early semi-proletarianization of the peasantry. As the Portuguese worked to consolidate power over Portuguese East Africa (today Mozambique) over the next century, they instituted the Indigenato, a legal code applied to Black Mozambicans that required smallholder cotton cultivation or six months of forced labor (chibalo) on Portuguese farms. While many men initially resisted through clandestine labor migration to South Africa, soon South African labor recruiting companies like the Witwatersrand Native Labour Association (WNLA) worked with Portuguese officials to formalize labor migration. This secured a steady supply of cheap labor for the mines and its taxation for the Portuguese (Harries 1994; O'Laughlin 2002). Mine labor enabled workers to purchase consumer goods, invest in cattle, and lessen dependence on

subsistence agriculture, but it was also dangerous and needed to be supplemented by the non-wage-labor especially of women on subsistence farms or *machambas* back home. This ultimately enabled remuneration below the cost of social reproduction, core to enabling low wages and heavy taxation (O'Laughlin 2002, Interviews 2004-2005). This was paralleled by extremely limited Portuguese investment in human development for Black Mozambicans along with land and labor laws that excluded them from prime agricultural land and higher-paying nonagricultural employment unless they "assimilated" (O'Laughlin 1996, Interviews 2004-2005). For borderland residents, smaller-scale wage-labor was also available in Kruger even as the park and its wildlife divided Shangaan communities and made clandestine labor migration more dangerous (Rodgers 2009, Interviews 2004-2005, 2009).

By mid-century, in a wave of anti-colonial activism sweeping Africa, a war for Mozambican independence broke out, with the Marxist-Socialist party Frelimo (Frente de Libertação de Moçambique) coming to rule the newly independent country in 1975. Frelimo saw agricultural development as the basis of national development, enshrined this in the Constitution, and set out to nationalize land and resettle rural communities, who Frelimo saw as primarily agrarian, into communal villages with agricultural co-operatives. Such demographic clustering was to provide food security, employment, healthcare, and education and equally unify a non-existent nation and consolidate state power (Araújo 1988; Newitt 1995). Frelimo's vision, however, proved fleeting. Its understanding of agrarian class structure had failed to consider the dependence of the peasantry on wage labor (O'Laughlin 1996). More profoundly, white-supremacist Southern Rhodesia and Apartheid South Africa fueled the Mozambican "civil" war, which destroyed any possibility for national development. Lasting from 1977 to 1992, over 1 million people lost their lives during the war with over a third of the country displaced (Newitt 1995). The borderlands were hit hard, with entire villages brutalized and emptied, agriculture destroyed, and thousands of refugees fleeing through Kruger into South Africa with many never returning (Interviews 2009; Rodgers 2009).

In the 1980s as the war waged on, Frelimo entered into negotiations with the International Monetary Fund and World Bank to accept an ambitious structural adjustment program. Loan conditionalities required the neoliberal privatization of state assets and austerity measures aimed at limiting public spending including in the agricultural sector (O'Laughlin 1996; Hanlon 2017). Mozambique emerged as a "donor darling" during the post-war years, which were characterized by impressive annual growth rates of over 7% until 2014. But as critics repeatedly point out, these changes have not addressed the poverty gap. And even though 80% of Mozambicans engage in agriculture, the state has largely sidelined rural development and especially smallholder support during structural adjustment through to today (Castel-Branco 2014; Castel-Branco et al. 2015; Mosca 2016; Hanlon 2018).

Over the last decade, Frelimo has chosen instead to base development in a small number of foreign-investment generating mega-projects in hydropower and the rapidly expanding coal and natural gas sectors. These, however, provide few jobs and have enabled a handful of the country's economic elites to capture rather than distribute rents (Castel-Branco 2014; Mosca 2016; Hanlon 2017, 2018), a dynamic noted even by the World Bank (Lachler and Walker 2018). This lack of support for rural development, combined with corruption and elite capture of both foreign investment and international aid (Hanlon 2018), has ensured the majority of Mozambicans remain poor. This is reflected in the country's consistently low human-development index ranking over the last several *decades* (UNDP 2020).

These trends have translated into poverty and vulnerability in the borderlands. Reflecting national trends, the borderlands are predominantly rural and dependent on rain-fed subsistence agriculture (mainly maize, pumpkin, and beans) and livestock production. Residents repeatedly speak of the extreme hardships of agricultural production in a semi-arid region made more difficult by inadequate alternatives and insufficient state support. And support that does exist is often only provided as loans and so available only to residents who have jobs and means of repayment (Interviews 2016-2017; also see Givá and Ratio 2017). Agriculture has been made more difficult by recurring droughts in 2009-2011 and 2014-2016 that correspond with broader patterns of climate change.[2] These remain inadequately addressed due to Mozambique's poverty and weak adaptive capacity (República de Moçambique 2012) but also arguably elite capture elsewhere. Also contributing to regional poverty is the conservation sector, which we expand upon below, along with the drastic reductions in labor migration to the South African mines. Once relatively well-paying jobs have been replaced with insecure and often seasonal work in the South African agricultural and informal sectors. The current round of migration is still dependent on subsistence agriculture back home to cover the cost of social reproduction. But today both income and subsistence farming are less secure, what amounts to a dual erosion of economic and subsistence safety nets (Interviews 2009, 2014-2017).

Here we begin to see the transformation of an agrarian landscape progressively characterized by radical inequality. Possibilities for reasonably secure livelihoods and broader development have certainly ebbed and flowed over time. But because of colonial exploitation, the war, development policy, elite capture, drought, and changes to South Africa's mining sector, these possibilities have either never fully materialized or deteriorated. Here we see that livelihood options, whether paid employment or subsistence agriculture, have largely been *made* limited. This has happened as wealth and labor resources have flowed into, out of, and been prevented from entering the region, with groups often outside the area capturing this value (or destroying it in the case of the war) at the expense of resident communities.

This political-economic context of smallholder marginalization and *options-made-limited* is key to understanding why the rhino horn economy has emerged so forcefully. As we show above and elsewhere (Lunstrum and Givá 2020), the primary drivers behind entry into the trade are economic and distill down into the lack of adequate opportunities and related fraying economic and subsistence safety nets. Against this context, rhino hunting enables recruits to make ends meet, care for family and community, support subsistence livelihoods, increase social standing, etc. The historical political-economy of the borderlands shows how such poverty and inequality have emerged from practices that have limited options through the reorganization of land, labor relations, and livelihoods. More concretely, residents and other respondents repeatedly made clear that the lack of jobs and other livelihood options, especially in the context of existing poverty, has made the rhino horn trade a welcome employment opportunity for many despite the risks. Several community members explained that jobs in South Africa are no longer plentiful and mainly consist of extremely insecure work in the informal economy and physically arduous, low-paying seasonal work in the orange plantations, with agriculture in Mozambique—once more, largely unsupported—an unattractive alternative. It is this context that leads to interest in hunting rhino (Interviews 2014-2019). As one man elaborated:

> Poverty still exists and people are still poor, and it is this poverty that pushes youth to [hunt rhino]. The youth see people who have jobs, money, and cars and build houses while they have no work, nothing to do, and don't even have a house... This is what makes them go into the bush and hunt rhinos even knowing that they might be killed, even knowing that yesterday someone was killed (Interview 2013).

This context of constrained options, moreover, is only intensified by drought. As a community leader expressed, "... most young men do not like farming, and the drought does not help. That's why most of them hunt rhino" (Interview 2017). When asked what has changed in society so that young men hunt rhino in the face of grave danger, another resident added: "Misery, lack of jobs, drought, and laziness" (Interview 2017). Drought, residents made clear, eats away at fraying safety nets and exacerbates existing inequality to provide more incentive to hunt (see also Givá and Raitio 2017; Lunstrum and Givá 2020).

In sum, regardless of their relation to the rhino horn economy, from those who benefit from it to those working to stop it, respondents confirm that the pronounced vulnerability and lack of viable options in the region juxtaposed against the quick riches of rhino hunting explain why entry into the trade has become not only common but actively sought out (Interviews 2014-2019). This radical inequality rooted in smallholder marginalization and *options-made-limited* is hence key to understanding why men enter the trade despite the risks and, in relation, grasping rhino hunting as a

form of environmental conflict. Here, men with limited options seek to tap into the value embodied in rhinos not as a conserved species but rather an illicit commodity, confronting conservation security forces in the process. The supply-side of the conflict, in short, emerges from a context of radical inequality.

The Political Economy of Devaluing Life and Exposing it to Risk

Adding to our understanding of the link between inequality and environmental conflict is the regional political economy of devaluing rural Mozambican life. While not a direct driver per se, this devaluation and related economy of risk-taking has helped create an enabling environment for the rhino horn trade to take off. What is striking about the trade is how young men engage in it knowing how deadly it is, with many killed by Kruger's security forces by their third trip into Kruger if not earlier. Underscoring this, rhino hunting across the region is referred to as "playing with death" (*utlanga hi lifo / vão brincar com a morte*) (Interviews 2016-2019). This embrace of risk can be traced back to labor relations in the South African mines that devalued rural, predominantly poor Mozambican life especially as it engaged in labor. Rhino hunting recruits themselves draw the connection by pointing out that they are following a tradition of risk-taking the same way their fathers did in the mines. As a community leader explained, when leaders try to build awareness to steer potential recruits from the trade:

> [the young men] react saying that the same risk of death existed in the mines where
> most of their parents worked, and they did not stop because of that. Everyone tried
> their own luck, and some died while others lived. Poaching should be seen the same
> way. "It's our mine" they say (Interview 2017).

Similarly, a protection officer explained:

> When the parents talk to their youth to stop poaching due to its consequences like
> death, they respond: "Now it's our time. You had your time with similar risk. You went
> to the mines, and many of you died and were buried there, but you did not stop. So this
> is our mining" (Interviews 2017).

Nearly everyone we asked insisted that rhino hunting is far more dangerous than mining. Yet connecting the two is a pattern of risk-taking that emerges from radical inequality and related devaluation of the life of the rural poor unfolding at the interplay of poverty and wealth. If the poverty side of the equation includes lack of decent employment and aspirations for a better life among laborers (mine workers and hunting recruits), the wealth side includes how laborers pursue this better life through wage labor even in the face of great risk. The wealth side, of course, also includes the desires of capital—both mining

capital and poaching capital (kingpins and larger criminal syndicates)—to amass profit, which is made possible by exploiting the poverty and bodies of vulnerable rural men.

Beyond the question of how inequality generates interest in the trade, this point about poaching capital also highlights the pivotal role kingpins and syndicates play in actively exposing the life of recruits to death and hence in fueling environmental conflict. This is thus not merely a conflict between peasant-poachers and state conservation actors. It might be conservation officials that pull the trigger that kills recruits, but it is the kingpins and syndicates as "bosses" or *patrões,* driven by profit, who draw the proverbial target on their backs. Conservation officials and local residents alike stress how powerful *patrões* are in controlling recruits, entire communities, and even rangers and the police. They also describe how communities become perversely dependent on *patrões* and often unwilling to publicly criticize them, as they pay for funeral expenses and provide other short-term support after recruits have been killed (Interviews 2015, 2017). The roster of actors devaluing life for profit expands to include *curandeiros* or traditional healers. As gatekeepers of entry into the trade, they sell ceremonies and potions intended to protect hunters by making them invisible to rangers or invincible to bullets and wild animals. The influence of *curandeiros* is so strong that anti-poaching efforts now focus on encouraging them to withdraw these services and steer potential recruits away from the trade (Interviews 2016-2019). This focus on who exposes life to risk is an important contribution to political ecology perspectives that place moral blame for the killing of suspected rhino hunters almost entirely on the state's conservation forces and military partners. To connect back to the regional political economy of devalued lives, the kingpins and syndicates are the modern-day mine labor recruiters with the *curandeiros* their agents. With little risk to themselves, kingpins and *curandeiros* exploit the poverty, dreams, and aspirations of ground-level recruits, profiting from the life and labor they expose to harm and exploiting the inequality that makes the rhino horn trade so attractive. This also enables us to see in stark relief the parasitic relation between wealth and poverty as a key feature of inequality in which "poor life" is exposed to risk and rendered expendable to generate wealth. Such environmental conflict additionally reveals a particularly troubling form of necrocapitalism (Banerjee 2008) that profits from the death of rhinos made possible by risking and ultimately sacrificing the life of devalued people.

Conservation's Exclusions: Worsening Inequality, Deepening Conflict

Conservation practice and its exclusions have further fueled involvement in the rhino horn trade. Yet while the harming of wildlife emerges as a direct form of resistance against these exclusions seen elsewhere in the political ecology literature (e.g., Mavhunga 2014; Mariki et al. 2015; also see Hübschle 2016; Witter 2021), more subtle connections emerged from our data that link directly back to

inequality. More explicitly, while the rhino horn trade may have unfolded anyway, conservation-related land use changes have exacerbated existing poverty and vulnerability. This is the very poverty and vulnerability that have made the rhino horn trade attractive in the first place, hence further fanning interest in it. This interest is additionally fueled by conservation measures that have invested exclusionary value in wildlife not (legally) available to most rural residents.

We begin with the LNP. When the possibility of developing the Great Limpopo Transfrontier Park (GLTP) was discussed by state officials and NGOs in the 1990s, Mozambique did not yet have a park to contribute unlike South Africa (with Kruger) and Zimbabwe (with Gonarezhou) (Figure 1). With great pressure from South Africa and following a donor-endorsed market-based approach designed to generate investment opportunities via nature-based tourism (Diallo and Rodary 2017; Matusse 2019), Mozambique gazetted a defunct colonial hunting reserve, Coutada 16, into the LNP in 2001 (Lopes José 2017). The restocking of wildlife left bereft by the war was soon joined by plans to relocate some 7,000 people across eight communities living in the park's prime wildlife habitat along with growing restrictions on community access to natural resources. In many ways, this is a classic example of green grabbing, with hopes the park would generate economic opportunities for investors and the state while also sparking rural development. With the rhino crisis, displacement is now additionally justified as an anti-poaching security strategy that moves villages farther into Mozambique and thereby away from Kruger and its rhinos (Interviews 2014-2016; Lunstrum 2016). Although natural resource restrictions and preparation for relocation began in 2001, the first village was not moved until 2007 (Otsuki et al. 2017), and several communities remain to be resettled. The process has been stalled for complex reasons including community resistance and the development of a now-defunct sugarcane-ethanol plantation that appropriated lands set aside for resettlement, amounting to a collision of land/green grabs (Interviews 2016-2019; Borras et al. 2011; Milgroom 2015; Lunstrum 2016; Bruna 2019).

Although not entirely the fault of the LNP, its development along with changes in Kruger have led to non-improved or even degraded livelihood conditions and increased vulnerability that have provided more incentive to enter the rhino horn trade (also see Witter and Satterfield 2019; Witter 2021). Residents explained several ways in which the park and resettlement have contributed to these conditions. First, ongoing human-wildlife conflict resulting from wildlife restocking has led to several deaths of community members, considerable attacks on cattle, and substantial crop destruction (Interviews 2004-2005, 2014-2017). Increased law enforcement preventing hunting and fishing within the park is further eroding long-standing forms of subsistence and food security for the most vulnerable (Witter 2021). When asked what it was like knowing resettlement was coming, one community member highlighted these human-wildlife dynamics along with the criminalization of customary practices:

We had to live with wild animals. When our young boys who had taken cattle to pasture were found with machetes, they were considered poachers and were punished. We planted corn and it was eaten by wild animals. Life during this time was very difficult, there was no peace. When we planted our crops buffaloes would eat them. When we complained, the park told us: "We already told you that this area was a park." There was no peace. Our hearts were broken (Interview 2016).

These human-wildlife encounters, moreover, have only increased during periods of drought given that wildlife vie with humans and cattle for limited water resources (Ekblom et al. 2017; Givá and Raitio 2017). Second, several communities were resettled not only during a drought but also provided with uncleared land for their new *machambas*, leaving them without the means to farm and feed themselves, with labor remittances unable to pick up the slack. This crisis became so dire that the LNP administration allowed people temporarily back into the park to farm their previous fields where water was still available (Interviews 2016). For many, however, this proved too little too late as households lost substantial cattle. As one woman explained, "During the resettlement process, [our village] lost a lot of cattle due to lack of water and pasture and the cattle not knowing the new area" (Interview 2019). With cattle kept as a type of insurance policy to sell when the harvest is poor, their loss has meant fraying economic security.

Third, other residents voiced concern about how the militarization of Kruger and the international border have made it impossible to use Kruger as an on-foot labor migration route into South Africa, one that stretches back for generations. This has further exacerbated poverty especially among the poorest-of-the poor who were more likely to depend on footpaths through Kruger as an alternative to paid transportation (Interviews 2012-2013). More recently, those who cannot afford these transportation fees have turned to begging for money from "those who play with death" (Interview 2016). Finally, while the LNP promised jobs, community members have been disappointed in how few have been provided (Interviews 2013-2016). As one woman explained, the park "only spoke about employment but did not hire many of us. Even when they started recruiting rangers, they came to us and saw that no one in the community had training or education to be a ranger" (Interview 2016). An LNP official explained that the park was actually looking for rangers beyond local villages given concerns of local involvement in rhino poaching, meaning even fewer jobs (Interview 2013). A community leader similarly lamented: the park "promised jobs and development, but what capacity has the park to hire people? Up to now only few were hired to be rangers... What about many other unemployed young men hanging around the villages? Those are easily attracted to the criminal life" (Interview 2015). Taken together, the land use changes ushered in by the LNP, as well as Kruger, have led to increased poverty

and vulnerability while providing only limited employment. So when residents talk about the difficulty of agrarian livelihoods and lack of alternatives steering young men into the rhino horn economy, conservation and its exclusions are a crucial piece of what adds to this difficulty. In other words, people hunt illicitly because they are poor, vulnerable, and experience acute inequality, and conservation has made this worse.

This point about lack of adequate jobs deserves further attention. When Mozambican laborers were extracting gold and diamonds in the South African mines, it was their land in the form of *machambas* back home (cultivated by women's unpaid farm labor) that allowed families to be fed and mining capital to pay less than the cost of social reproduction. Today the situation is arguably worse. Reflecting a pattern noted by Li (2010) in Asia, communities displaced from the LNP have lost their land to conservation, but conservation capital does not need their labor, at least not in large numbers. These communities are indeed "surplus to the needs of [conservation] capital" (p. 66) and alienated from both land and labor. This context has proven extraordinarily convenient for *poaching* capital: it has found a skilled and willing surplus labor reserve ready to enter South Africa for a new round of labor migration to extract rhino horn.

The incentive to hunt rhinos additionally is bolstered by the fact that conservation and the larger wildlife economy have invested rhinos with economic value from which communities are barred. As one woman elaborated when asked how the rhino poaching economy emerged: "They made this place a park to protect these animals. You protect something that has value, so they made these young men discover the value of these animals" (Interview 2017). And the reality is that great value has been invested in rhinos—as key species of savanna ecosystems, spectacles of safari wilderness, generators of tourism revenue, and embodiments of the nation—in ways that have excluded local people. Another man responded to the same question by explaining that this value emerged from the *legal* sport hunting economy, which is itself part of the larger conservation economy. He explained:

> In my opinion whites started this poaching [economy] because they are very wealthy, and their children too are so wealthy they drive luxury cars... Where could they have worked so early on to have so much wealth? They have seized the rhino and have licenses to hunt it. So we start going in to hunt to be like them. But we're killed. And it hurts us because we do not have those licenses and we're poor. They stole our wealth [in the form of rhinos and broader wildlife], and they even order our brothers to kill their own brothers to defend the interests of whites, which is to protect the rhino [translation = The park rangers who are African are ordered to kill their fellow Africans to protect rhinos for white people]. And we remain poor (Interview 2017).

What is crucial here is that such wildlife-related value production is made possible by the exclusion and dispossession of communities first from wildlife and protected areas and then from the value they generate. From this context, "poaching" is not seen as illegitimate by local people, and young men understand they are merely tapping into a value system created at their expense by mostly white conservationists, tourists, and hunters (Interviews 2017). From this perspective, along with a sense that killing wildlife is merely the utilization of nature, the emergence of illicit hunting and broader conflict over rhino horn is unsurprising. More broadly, this lays bare the relational nature of inequality: that value creation for one group is enabled by the exclusion of another.

Conclusion: Does Poverty Incite Environmental Conflict? Is Rhino Hunting Resistance?

We have examined the rhino crisis as a telling instance of environmental conflict, in this case over the values embodied in rhinos, and how this conflict is incited by radical inequality. Such inequality has created an environment in which illicit rhino hunting is a viable and even sought-out livelihood option. We close by examining two additional questions that draw from this case to extend our understanding of environmental conflict. The first is whether and how exactly poverty and inequality lead to conflict, the second is the extent to which we should read illicit rhino hunting as resistance, particularly resistance that might lead to more just ends.

First, we have seen how entry into the rhino horn economy and the ensuing conflict over resources is motivated by poverty in the form of difficulties in making ends meet, lack of economic opportunities, fraying safety nets, and so forth. This reflects a shared assumption across critical and neo-Malthusian scholarship that the poor harm their environments *because* they are poor. Even though critical scholarship provides a more complex understanding as to why, it nonetheless often overlooks the fact there is no necessary causal relation between poverty and inequality on the one hand and environmental harm and conflict on the other. In fact, there is ample evidence poor people cooperate to protect environmental resources in part because their livelihoods depend on this (Hartmann 2014). This reflects Ostrom's Nobel Prize winning critique of neo-Malthusian "tragedy of the commons" thinking. She shows that under certain conditions where resources are shared, where governance structures clearly-define rules of access, and where communities are part of these structures and help develop these rules, communities can and do cooperate, hence avoiding overuse and defusing conflict (Ostrom 1990).

This pushes us to develop a more nuanced understanding of under what conditions poverty and inequality may lead to environmental harm and conflict. With the illicit rhino horn trade, literally none of these aspects of effective common property and cooperation are present. Rather, in their place is

extreme inequality, i.e., extreme poverty juxtaposed against extreme wealth playing out in a context of deteriorating semi-agrarian livelihoods and outright dispossession. This is a context in which folks have little if any ownership of the resources (including wildlife), related wealth, and broader governance structures from which they have been actively alienated by increasingly militarized and other means. The difference, in short, is radical inequality itself. This is yet another reminder of the gravity of radical inequality and of the urgency to understand and address it, as poverty alone does not incite conflict.

Zooming out from the supply side, the conflict is also inextricably driven by the wealth of consumers on the *demand* side of the trade, reminding us that poverty alone does not drive the trade. Here, increasingly affluent consumers, largely but not entirely in Asia, pay exorbitant prices for rhino horn, more than the cost of gold and cocaine pound-for-pound. Rhino horn is used for traditional medicine but increasingly and more concerningly bought to display wealth and prestige and used as an investment tool after the 2008 financial crisis (UNODC 2016). Hence international demand for rhino horn, and the wealth that makes this possible, is a core driver of the conflict unfolding in Southern Africa. Stated differently, if there were no demand, there would be no trade. Of course, the trade is also driven by the desire for wealth among kingpins, larger criminal syndicates, and ground-level hunters themselves. From here we can see that what is driving the trade is not merely supply-side poverty and demand-side wealth but the vast *gap* or inequality between these along with supply-side hunters seeking to access some portion of demand-side wealth (also see Lunstrum and Givá 2020).

Our brief discussion of how drought and climate change exacerbate inequality also sheds light on the causal relation between inequality and conflict. Climate change has taken a privileged position in analyses of environmental conflict. Often framed by neo-Malthusian assumptions of too many people overproducing greenhouse gases, these perspectives see the resulting climate change as provoking disputes over degraded resources and mass migrations of racialized climate refugees (for analysis and critique, see Hartmann 2014; Ojeda et al. 2019). More realistically and as the case of the rhino horn economy shows, climate change eats away at the already weakened safety nets of the poor. This further entrenches inequality and can cause conflict by pushing the poor into illicit (resource) economies like illegal hunting (also see Ahmed et al. 2019). While climate pressures may lead to increased cooperation along the lines suggested by Ostrom, it can also lead to environmental conflict but in a more complicated way than neo-Malthusians predict, one rooted in enduring and deepening inequality.

Then there is the question of how, or even whether, to read rhino hunting as resistance and a path toward more just ends. Our earlier analysis shows how rhino hunting is a struggle over resources and at some level resistance against conservation's exclusions. Even those working on environmental crime in Mozambique's Attorney General's Office share this perspective: "Rhino poaching… is caused by

social injustices inflicted upon the people in large part by and for conservation and now anti-poaching. Rhino poaching is a popular rebellion against these injustices" (Interview 2019; also see Witter 2021). In this sense, ground-level recruits and local *patrões* are seen by some community members and often by themselves as Robin Hoods, taking from the rich to give to the poor to right historical wrongs (Interviews 2012; Hübschle 2016). This reflects insights from political ecology and agrarian studies that take seriously the "marginality of groups who are ignored until they become visible through the unexpected ecological changes and frequent conflicts that erupt as a result of lack of inclusion" (Le Billon 2015, 606). With this we can begin to grasp how environmental conflict can bring about more just environmental and political-economic ends. This can happen either through conflict exposing such inequality, which is needed for developing more just alternatives, or more directly by helping build these alternatives through taking back stolen resources or generating more inclusive governance structures, dialogue, and compromise (Le Billon 2015; Anderson et al. 2016; Edelman and Wolford 2017; LeBillon and Duffy 2018).

Illicit rhino hunting stands in tension with these perspectives as it is not clear the practice will or even can lead to more just futures. While the poaching economy may bring riches to some, these are largely fleeting and counterbalanced by the loss of life and deepening economic deprivation this brings (Interviews 2016-2017). In the powerful lament of a community leader, because of the rhino economy, "… we are running out of young men… we will not be able to develop our villages if we don't have strong men left" (Interview 2017). An anti-poaching security officer similarly explained that poverty will only worsen with so many young men dying and leaving behind widows and orphans (Interview 2017). The rhino economy is also leading to tensions within families and communities and across generations. This includes concerns profits are being spent in culturally inappropriate ways (e.g., excessive drinking and prostitution), tensions over whether men should hunt given the risks, fights over earnings, and growing economic stratification between *patrões* and everyone else (Interviews and field observations 2014-2019). This leads to a note of caution against romanticizing those who are engaged in illicit hunting and seeing their activities as an idealistic form of resistance reflected, for instance, in celebrating them as Robin Hoods. Doing so at least in any simple sense would be to overlook the stark realities of the trade and the ways it *reinforces*, rather than reverses, inequality.

Nonetheless, as dire as it is, the poaching economy exposes the radical inequality characterizing the region, especially the extreme poverty of rural families set against the wealth and exclusions responsible for generating and exacerbating this poverty. Rural development agencies are beginning to recognize the first half of this equation and channel funds into the borderlands to address poverty and broader material vulnerabilities to quell interest in the trade (e.g., USAID 2020). More broadly, the focus

on inequality shows that even if one only cares for wildlife, to address and prevent environmental harm we must acknowledge inequality and address it head on. And, while recognizing the need for enforcement, this points to even more reason to be cautious of militarized and other violent approaches to conservation beyond the criticisms already levied (Lunstrum 2014; Biggs et al. 2017; Duffy et al. 2019; Witter 2021). In killing suspected poachers, those left behind experience an even deeper form of poverty and exclusion that may further fuel conflict. In short, illicit rhino hunting as environmental conflict, while grim, may in some limited sense lead to better ends by standing as witness to radical inequality and its consequences. This is a first step in helping to build more viable ecological and just futures for people and non-human nature alike.

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[1] "Illegal" and "illicit" are often use interchangeably but have nuanced differences. "Illegal" refers to an act forbidden by law while "illicit" accounts for varying social and cultural perceptions that might see some illegal behavior as socially acceptable, thus underscoring "the difficulty of attributing universally accepted meaning to crimes" (Abraham & Van Schendel 2005, 19). We use the term "illicit" hunting to acknowledge the different values and perceptions concerning rhino hunting that is forbidden by law.

[2] While it is difficult to tie any single climatic event to climate change, the average temperature has increased and precipitation decreased in Mozambique since the 1960s. These changes correspond with persistent drought periods in the country's southern region (World Bank 2021).