5

Gold Mining, Illegality, and Deforestation in the Amazon

In May 2017, I was invited to join the Tres Islas native community for a trip upriver on the Madre de Dios River, to see a lake where giant otter lived and to observe the rampant gold mining eating away and poisoning the living grounds of the Indigenous peoples living in the area. The guides told me not to show my camera openly, as the Navy had come upriver recently – burning and destroying miner camps – and there were armed watchmen on the shorelines. Needless to say, outsiders were not welcome, especially if they were documenting the illegalities. We passed barges on the muddy river that were noisily sucking large amounts of mud from the riverbed, hoping to find their daily few grams of gold. From the boat we could see trailheads leading inland to mining sites, whose magnitude was only revealed to me later when looking at satellite images. When we finally landed near the lake, a group of people was coming down the bank with mining tubes and equipment. The meeting was silent, it was tense.

The tense mood finally eased once we returned to the village, where I could learn more about how the community was building facilities to process nuts for sale and developing tourism infrastructure as an alternative to the ever-present lure of fast enrichment by gold, on which some locals had embarked, causing tensions even inside the community. Later, I visited other sites of gold mining in Brazil in the south-western Pará state, on land and on rivers, always seeing the detrimental impacts this sector has caused to the riverbanks, forests, and the social fabric of the community.

Small and medium-sized illegal, informal, and other irregular forms of artisanal gold mining, as well as large-scale corporate gold mines in the Amazon, have been a major and multifaceted cause of socioenvironmental–health–human rights crises for decades. The study of this sector is important to understand the key political economic factors behind forest degradation and deforestation and to highlight how RDPEs work. There are different types of RDPEs; for example, ranching-grabbing explains the dynamics in Acre, while in the neighboring Madre de Dios province in Peru gold mining explains the bulk of land and forest use. Between 2010 and 2015,

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gold mining was the key cause of deforestation in Madre de Dios (Nicolau et al., 2019). The already-consolidating gold-mining RDPE in the region was pushed by the completion of the Interoceanic Highway in 2012, which runs from Acre in Brazil to Cusco via Puerto Maldonado in Peru (Cannon, 2017; van Eerten, 2017).

What is meant by illegal gold mining? Often this sector is referred to as artisanal or small-scale mining, but due to the central role of large and illegal capital, artisanal is not really an appropriate term (see Figures 5.1 and 5.2); better examples would be "network or syndicate mining" (Caballero Espejo et al., 2018). This means individual mining operations are connected to larger capital that is working for larger businesses. Therefore, in Madre de Dios, Peyronnin (2019) studies mining as a "complex web of interlocking commercial networks." These interactions could also be described as a kind of symbiosis between formal, informal, and illegal economies (Damonte, 2018).

Typically, illegality is framed as the key cause and problem of gold mining and its polluting and deforesting impact (e.g. Asner & Tupayachi, 2017; Diringer et al., 2019). However, to focus on the illegality and informality would give an



Figure 5.1 Currently, so-called artisanal or small-scale gold mining in the Amazon is mostly mechanized and causes large deforestation and long-term degradation of the environment. A gold mine east from Castelo dos Sonhos, Brazil. November 2019. Photo by author.

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Figure 5.2 An illegal "artisanal" gold-mining site east from Castelo dos Sonhos, Pará, Brazil, November 2019. These open-pit mines typically flood and leak, ravaging the rainforest and causing long-term damage. Additionally, they contain mercury and other toxic substances. Photo by author.

incomplete or inaccurate picture of the political economy of this sector and how it impacts deforestation. The illegal and informal mining in Peru is closely tied to state institutions, networks, and commerce (Damonte, 2018; Peyronnin, 2019; Smith et al., 2020), which is characteristic of an RDPE that has become nationally dominant. The legal-political system supports this sector, for example through activities like money laundering. Smith et al. (2020: 248) assert that the "illegally mined gold and exporting it is being done by legal firms." The state often targets the wrong people and social actors in its attempts to curb the problem. The focus is on the people doing the mining, not on the people who finance the activity, run it at the upper level, and benefit most (Praeli, 2019). This is explainable because the corruption linked to the sector is so widespread, penetrating all levels of society (Smith et al., 2020), which makes it difficult to enforce any efficient efforts that would hurt the powerful players in the system. It is typical in socioenvironmental conflicts that the lower-level workers and other people harmed by the practical work and impacts of extractivist RDPEs are held as key culprits; they are often considered to be responsible for the damage, which makes them policy targets.

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Political ecology has amply demonstrated and analyzed these dynamics in detail in many different contexts (Peet et al., 2010).

In February 2019 while in Brasília, I asked Ricardo, an expert NGO representative from Instituto Socioambiental, "who is responsible for Amazon deforestation?" He emphasized the importance of regional analysis in answering the question. In other words, the guilty parties vary depending on the region. He shared that "Deforestation inside the Caiapó [territories], for example, is the responsibility of *garimpeiros* [small-scale gold miners, typically illegal, and currently medium-scale, mechanized], which is one kind of actor." He showed me several satellite and geographical information systems (GIS) tools that are used to trace the ongoing deforestation in different parts of Brazil. He then pinpointed another region in the Amazon and shared:

> Deforestation in this region has loggers [which are] more difficult to see since it is so bright in satellite images … it is like a rat's trail. And here in this other region, there are large areas deforested.… All depends on the regional context, and who are the actors in that region. Only this way it is possible to responsibilize someone [make someone responsible].

I have followed this approach here, developing my analysis about the RDPE to account for the diverging actors by regions. In Colombia, for example, illegal gold mining has quickly expanded in recent years, mostly due to the actions of the country's many armed groups. About half of this expansion is taking place in environmental protection areas, operated by armed groups such as *autodefensas* (right-wing paramilitary groups), ex- Revolutionary Armed Forces of Colombia (FARC) mafias, and National Liberation Army (ELN) guerilla groups. In these same deforesting gold-mining sites are also widespread coca cultivation, human trafficking, and other criminal activities, as described by an InSight Crime report (Valencia, 2023). Organized crime is controlling so-called artisanal gold mining, especially in Colombia, Venezuela, and many parts of Brazil, leading to an increase in the overall spread of the organized crime variety of the gold-deforesting RDPE. Several governments are either openly supporting this illegal gold mining (e.g. Venezuela, Brazil under Bolsonaro), being captured by their interests to a large degree (e.g. Peru), or it is outside the possibilities of the state to regulate the activities due to lack of state monopoly on territorial violence (e.g. Colombia, Guyana).

In this part of the book I focus on three regions where irregular gold mining can be argued to be the RDPE and the most important driver of deforestation (see Figure 5.3). The first is the triple frontier between Colombia, Venezuela, and Brazil, where gold-mining operations are led by ex-FARC in Venezuela's Yapacana Indigenous reserves, paramilitaries and other armed groups in Colombia, and, increasingly, by PCC and other drug factions from southeastern Brazil in Roraima's Yanomami Indigenous lands. Second, I further unpack the Peruvian

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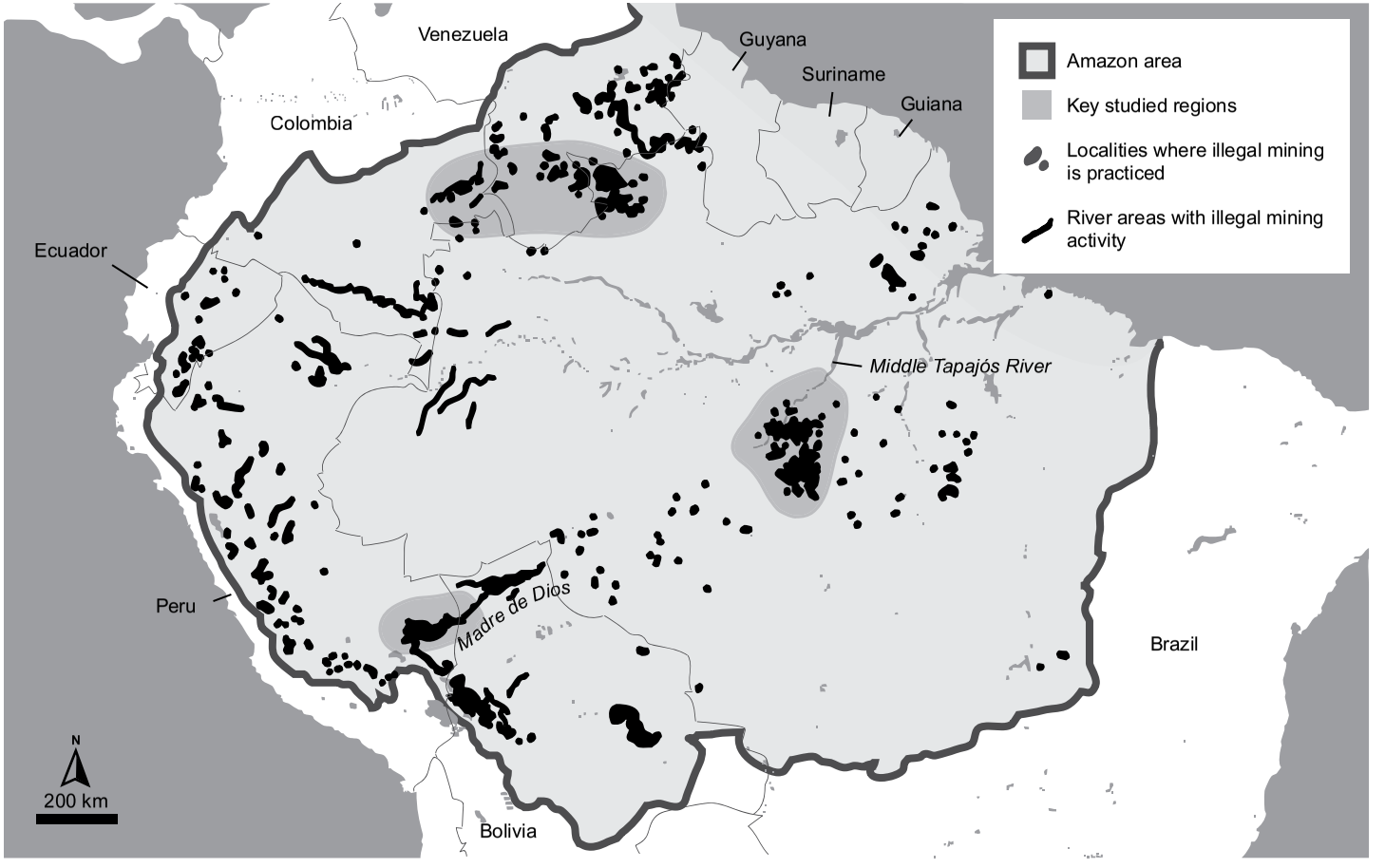


Figure 5.3 This map shows the regions I analyze herein and the areas where there is illegal gold mining on land and in the rivers. It is inspired by an illustrative map used in Angelo (2020).

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dynamics through an examination of the Madre de Dios province in Peru. Third, I study the southwestern Pará state in Brazil and Brazil's largest gold-mining town, Itaituba, known as Nugget City, due to the many illegal gold miners upriver in the Tapajós Basin. In southwestern Pará, gold mining is the leading cause of deforestation inside areas like the upper Tapajós Munduruku Indigenous lands near Jacareacanga, where deforestation tripled between 2018 and 2020.

The analysis of gold mining herein is based on the comparison between these three regions, which constitute the bulk of currently ongoing Amazon gold mining. These regions have also subvariations that I will discuss further.

In technical terms, in the Amazon there is no difference between illegal or legal gold mining carried out by noncorporate players (called garimpo in Brazil), Igor explained in our interview in December 2023. Igor had insight in this matter because he worked at ICMBio and specialized in the inspection of gold mining in southwestern Pará. This was our second conversation, as I had also talked with him and his colleagues at length in Itaituba in November 2019. He shared that for both illegal and legal noncorporates the same machinery and techniques are used. First, companies bring in hydraulic excavators to remove vegetation and then they make trails, which allows them to open the pits. Igor continued, "and from then on, they use the sandblasting technique. They use a hose, which is called a jet nozzle, for suction." He explained that what he described happened on land, but a substantial part of gold mining also takes place from rafts that are on the rivers. Igor continued by asserting that none of the on-land or riverine gold mining is regularized, as the miners do not have the required environmental licenses. He indicated that of all these irregular mines, about 70 percent are illegal in the southwestern Pará region.

ICMBio officers (interviewed in November 2019 and December 2023), operating in the southwestern Pará region, stated that there was a mix of different types of miners, including families, especially from Maranhão, some of whom had moved to the area earlier, and others later. There is a complex set of gold-mining actors. They range from small miners to laborers who are paid a percentage of the extraction. In addition, there are miners who own the mines, barges, or dredgers, or who are investors. There are also some who operate as members of cooperatives or even companies (Coelho et al., 2017). In 2023, Igor shared that this array of gold-mining actors has been changing recently with the arrival of new bosses with capital from Mato Grosso who run operations, especially in the southern parts of Pará. There have also been the intrusions of *narcogarimpeiros* (those carrying out the criminal activities in the interlinked gold-mining and drug networks). Thus, the research needs updating, due to increasing narco influence and hierarchization of gold mining, away from the so-called small-scale or family-based operations, with increasing mechanization and deforesting impacts caused by garimpo, both legal and illegal, with the bulk being illegal.

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In Amazon gold mining, it is essential to understand and take into account the legal–illegal networks, not just focus on one or the other. The situation is not a straightforward lack of governance, since a substantial number of those governing are deeply embedded in the system. Mining interests have permeated the state to such an extent that any idea that some kind of Western-style "ideal governance" could solve the issue is based on a fundamental misunderstanding of the power and extent of the underlying RDPE. Curbing deforesting mining is not only an issue of governance or lack of regulation; rather, it is an issue of driving political economic forces and actors.

As a form of extractivism, gold mining in the Amazon is a process producing negative value, violence, human rights violations, and other developmental harms. The monetary value of losses caused by illegal Amazon gold mining has been estimated by Brazil's Prosecution Service and researchers to be around 39 billion reais per year (about USD 8 billion) (Manzolli & Rajão, 2022). In Brazil, the support given to gold mining fluctuates, as the RDPE of gold mining is not as dominant as it is in Peru, where mining interests align with national elites that have captured the state to some extent and thus ensure lasting support (Crabtree & Durand, 2017). Gold-mining damages are closely connected to the highest level of politics, which means they are affected by regime changes and especially major changes in the capitalist world-ecology.

Committing environmental crimes in the Amazon has become one of the world's largest illegal businesses (after the global drug trade and counterfeiting), generating an estimated annual profit between USD 110 billion and 281 billion (Risso et al., 2023). In Brazil, the key for profit making is the production of commodities based on illegal deforestation, including gold mining, which is the key cause in Peru (Risso et al., 2023). This profitable illegal deforesting is linked to difficult-to-detect sophisticated forms of international crime, such as trade-based money laundering and smuggling. Mercury is the key substance required for gold production, with about 5 to 8 grams needed to produce 1 gram of gold. In Brazil, there is no legal market for mercury and it is smuggled in from Bolivia and Guyana (Senra et al., 2023). This mercury smuggling creates yet another way of making money through the illegalities of the gold RDPEs in the Amazon.

Gold Prices and Deforestation

While illegal, informal, and other forms of Amazon gold mining have been amply studied from various viewpoints, Peyronnin (2019: 11) argues that the deforesting role of gold mining requires further scrutiny:

> The economics of how this capital affects mining and its relation to not only the overall magnitude of deforestation, but also its spatial extent and spread, is unstudied, and presents an important opportunity for research that is crucial for understanding the spatial

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distribution and spread of mining, as well as implementation of effective policy to constrain the patterns of its growth.

I will address this gap in literature. Most studies, although the main focus is elsewhere, can be used as a material base because they at least tangentially mention how the focus sector affects deforestation. Smith et al. (2020: 236) argue that the export value of illegal gold mining in Latin America has surpassed cocaine. In a comparison between Peru and Colombia, they show how these sectors, which they call "treadmills of production and destruction" due to their contribution to deforestation and environmental degradation, vary in their regional impacts and functioning. This variance also depends on world-systemic factors. Due to the damages caused, in 2021 the environmental cost of gold mining in the Amazon was estimated to be tenfold the price of gold produced (Diele-Viegas et al., 2020). Thus, in addition to ranching in the Amazon, Amazon gold is another form of unproductive capital (Dowbor, 2018). It is extracted by a system that has become regionally dominant in many places, destroying lived environments and causing socioenvironmental damage. In the Amazon regions that have already experienced gold-mining booms, their bust has meant local economic collapse (Diele-Viegas et al., 2020). After the gold fever has passed, the miners typically turn to other deforesting livelihoods, or move elsewhere in the Amazon to open a new mining front. Gold leaves in its wake a trail of boomtowns that serve as hubs for further deforestation, especially ranching-grabbing based. Some quantitative figures on the extent of deforestation caused by the sector are provided by Asner and Tupayachi (2017) and Nicolau et al. (2019). In Peru the height of gold-driven clearcutting was in 2017, with a total area of 95,750 hectares deforested in Madre de Dios by 2017 (Peyronnin, 2019). Most of this deforestation has occurred in the time since the completion of the Interoceanic Highway. About 80,000 hectares of this deforestation is estimated to be caused by gold mining, with 30,500 hectares of the total happening between 2013 and 2016, although during that time the Army realized 109 interdiction missions to destroy illegal mining sites (Reaño, 2019).

Deforestation caused by gold mining in Peru's Amazon is not a new phenomenon, as it expanded by an average of 1,202 hectares per year in the 1985–2009 period; however, since then the figure has jumped to 7,432 hectares per year (Caballero Espejo et al., 2018: 10). This change, or the other fluctuations in the relations between mining deforestation, cannot be explained solely or directly by gold prices (see Figure 5.4), which do not correlate with deforestation. Between 2012 and 2017, gold prices decreased 26 percent, while the deforestation caused by gold mining increased by 53 percent (Caballero Espejo et al., 2018: 8). However, research in Brazil has shown that there is about a 10-year delay between gold prices, increased mining, and deforestation, with the correlation between gold prices and mining area showing the trend (see also Graph 2 in Senra

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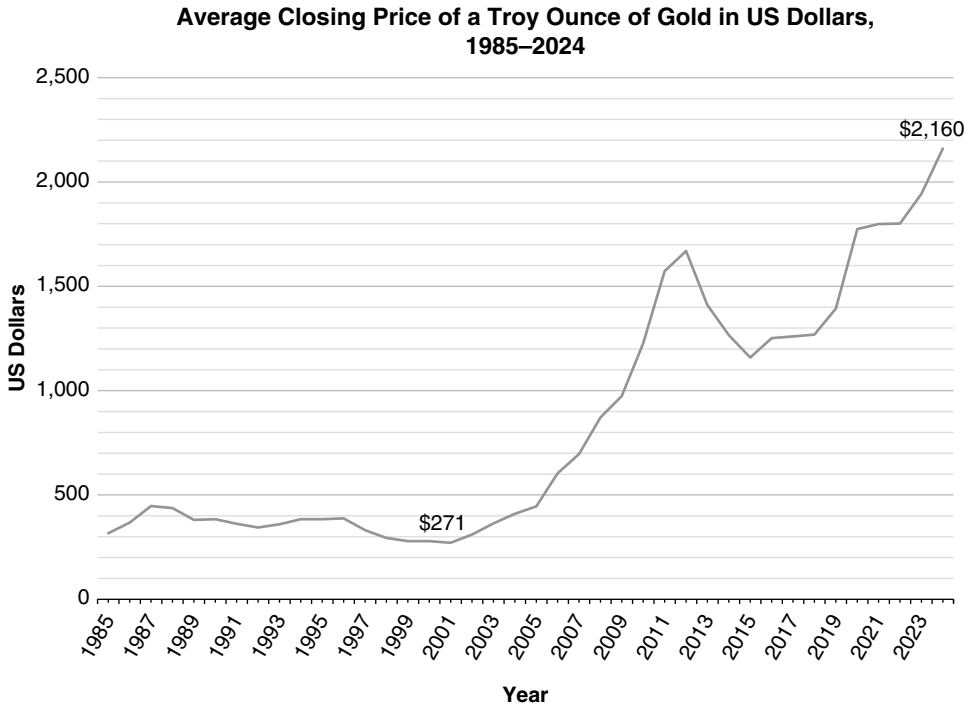


Figure 5.4 The average price of gold in US dollars from 1985 to 2024. Data from Macrotrends 2024.

et al., 2023: 28). Between 1992 and 2011, the area occupied by gold mining in Brazil remained stable at approximately 25,000 hectares.

However, since 2011 there has been a steady linear rise in the deforested areas as the gold-mining area in Brazil increased to almost 100,000 hectares by 2020. Since the spike in 2011 (see Figure 5.4) the price of gold has remained high as central banks can use it to protect national economies from international financial tumults and attacks. Gold's role in this capacity had increased as other asset classes have become riskier due to the multiple global crises since 2008.

The two most severely deforested conservation units in the Brazilian Amazon are in southwestern Pará, the FLONA do Jamanxim (86,110 hectares deforested between 2014 and 2023 according to ICMBio data shared with me by their personnel), and the environmental protection area (*área de proteção ambiental*, APA) of Tapajós (56,830 hectares deforested). In both cases, a key cause of this deforestation is gold mining. For example, the company Gana Gold commercialized over 1 billion reais (about USD 210 million) worth of gold from the APA of Tapajós without proper environmental licensing, which caused the police to ban their operations in 2022 (Piran, 2023). Therefore, it is particularly important to study gold mining when analyzing why deforestation is taking place inside conservation areas

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and Indigenous lands in an extremely destructive, violent, and polluting manner. This deforestation inside conservation areas in Brazil, totaling 334,000 hectares between 2014 and 2023, increased dramatically during the Bolsonaro regime, with annual deforestation rising from 24,888 hectares in 2018 to 62,026 hectares in 2021. When Lula came to power in 2023, this came down to less than 20,000 hectares. Meanwhile, Brazil's gold exports doubled between 2017 and 2022, from 11.6 tons to 22 tons, which was due, to a large extent, to illegal gold (Potter, 2023).

A senior IBAMA officer I interviewed in November 2023 considered that currently the problem in Brazil with garimpo is still mostly related to the price of gold, not to the narco connections. An expert ICMBio officer shared this view, stating that the high price of gold makes the extraction of low-value deposits profitable in areas like the southwestern parts of Pará. The low real value in relation to the dollar allows the exporters to make profits even when they are mining less valuable deposits. The IBAMA officer told me that the banks are a key problem in the gold market dynamics because of gold's value and importance to central banks and other financial institutions, which are making money off the illegal gold trade. In Roraima, he argued, "There are a lot of big people who make money from mining, a lot of politicians, a lot of banks. I think the banks really make the money, anyway. Banks make a lot of money from mining. Illegal mining is a very large network."

The extraction volumes are high but vary. In Peru's Madre de Dios, just one of the motors used in the process of mining was estimated to produce between 13 and 15 grams of gold per day. These motors are the most important part of the mining operation because they physically dredge the bottom of the riverbed to find the gold. The production from the gold-mining rafts situated in Roraima on one of the Yanomami rivers, such as the Uraricoera, were estimated to be substantially higher, 40 to 100 grams per day, which results in 1.2 to 3 kilos of gold per month (Ramos, 2020).

In the post-2005 setting, the gold–deforestation linkage needs to be understood as a part of the wider problem of cheap natures (Moore, 2015). As the costs to obtain gold rise, profit margins are affected, as are the possibilities to expand in the same manner as previously. Thus, more destructive means of extraction are sought, usually by manipulating regulations by global and regional mining interests (Kröger, 2016). This process becomes systemic when state control has been captured. Once an RDPE is established, the deforesting and other negative impacts are no longer dictated by the logical reality of the place where they are felt. Rather, they become secondary to the interests of the wide variety of actors that benefit from further expansion of the sector. These interested are consolidated in the key nodes, for example, selling machinery, getting rents, grabbing a slice of the illegal/legal trade of gold, involved in other increased sales, and/or retaining overall

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power and clout. The linear expansion of illegal gold mining in the Brazilian Amazon between 2011 and 2020, even as gold prices were dropping relatively, is telling of how the RDPE, once established and set into an expansion mode, draws other sectors into its thrust (especially the drug trade and other organized crime in the case of Amazon gold), which causes the expansion to operate increasingly by its own logic. The expansion logic of the RDPE can overcome relatively small decreases in global prices, or decreases in state subsidies, as my prior analysis on the linkage between state crediting of industrial tree plantations in Brazil and their expansion showed (Kröger, 2013a). The state funding by BNDES in most parts of Brazil was the key to make the paper pulp sector regionally dominant – and globally most cost-effective. Even though the funding level dropped for a time, plantations continued to expand. This is the reason that, when investigating these sectors, it is important to look at fluctuations in price over a few decades and the links to world-ecological shifts. These cannot be seen when looking at fluctuations only a few years at a time.

The 2008 financial crisis, and the subsequent land and resource boom, were world-systemic moments that were synchronic with rising gold-mining-spurred deforestation in the Amazon, which is also suggested by Peru's increase in gold deforestation in 2009. The global extractivist character of the financialized world-ecology gained momentum, including through the growth of informal/illegal economies and international trade, which explains to great degree how extractivist RDPEs have further expanded their grip and control. This phenomenon of extractivist RDPEs consolidating their grip on regional territories and national policymaking is global, these RDPEs creating an ever-larger part of global capitalism, which is extractivist.

The importance of extractivist RDPEs in global capitalism is highlighted by the overall rise in the price and relative value of commodities in relation to capital goods since 2005. Although there was a relative drop in commodity prices between 2014 and 2018 in relation to the boom of the commodity consensus years of 2008–2013, the figures stayed higher than they were prior to 2005. For gold, the global price was less than USD 300 per ounce in 2001, rising to USD 600 in 2005, and then skyrocketing to USD 1,800 in 2011. The price came down to about USD 1,200 in 2015 but rose to above USD 1,900 in 2020 during the COVID-19 pandemic (Heubl, 2021). The rise from USD 300 to over USD 2,000 is dramatic. Gold is not alone in this change as similar drastic changes in commodity prices for other goods have occurred since 2005, for example, iron ore (Kröger, 2020a). We are facing a new pushing or driving forces of regional extractivist sectors that are locally and even nationally dominant, but then join forces to form a new global race for resources. To make matters worse, this is occurring at precisely the same moment when the socioecological-climatic havoc that extraction creates should

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be avoided at all costs due to the closeness of breaching global climate tipping points. These RDPEs need to be studied in detail for their sectorial and contextual specificities, to understand the factors that drive and enable them, but also which factors can resist them.

The extracted gold from the Amazon has found its way into leading global technologies, electronics, and the production lines of electric car companies. Yet, it is practically impossible to trace the origins of this "blood gold," as an Amazon Watch (2022) report details. An estimated 47 percent of the gold mined in Brazil between 2015 and 2020 was illegal, a total of approximately 229 tons. Organizations like Amazon Watch argues that the key buying countries (Canada, Switzerland, the United Kingdom, Italy) and global companies should consider and label Brazilian gold as a "conflict mineral," which warrants much stronger regulation and inspection on the ground.

Gold mining explains most deforestation in parts of the Amazon, rather than ranching, soybeans, or other forms of deforestation. RDPEs have path dependencies, where they can block the entrance of other forms of capital, by several means. First, they already offer possibilities and channels for capitalist accumulation in a systemic manner, having many vested interests, for example, the routine use of specific machinery sellers. Clearly, these sectors can coexist in several places and support each other, as is visible in areas like the BR-163 in Pará, around Itaituba, and to the south until Castelo dos Sonhos. In this area, gold mining could be said to still be more dominant than soybean plantation complexes, as it runs alongside logging and ranching-grabbing schemes, which are also strong deforesting extractivisms operating in the region. However, in Peru's Madre de Dios and Venezuela's Orinoco Delta, illegal gold mining is clearly *the* dominant sector, regionally. This indicates that the polities and existing ties of politics and rooted economies can also resist the entrance of unrooted or foreign types of deforesting extractivisms. When Brazilian ranchers tried to enter Bolivia from Acre, the Bolivian government drove them out; however, the same government has not, in any meaningful way, curbed the gold mining in the Amazon along the border between Bolivia and Peru. Amazon gold mining is a cross-border system, crossing polities more easily than ranching. In fact, the Brazilian gold miners were essential in "transferring their knowledge of alluvial mining and dredges" to the local miners in Madre de Dios, and they also offered important financing (Cortés-McPherson, 2019: 386). It is likely that the Peruvian authorities did not meddle with this impact due to the already-strong pro-mining attitudes within the government, as the sector was already becoming an RDPE and was much stronger than other sectors. Meanwhile, the Brazilian state would like to see illegal gold mining stopped in the Peruvian Amazon, a diplomat from the Brazilian Embassy in Lima told me in 2017. One reason is because mercury from these sites flows to Brazil and is consumed by

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and travels with the fish. However, these health considerations might not show the whole picture because in international relations many other aspects may be associated with such a wish. In Venezuela, gold-mining expansion has been related to closer ties with Russia, the arms trade, money laundering, the drug trade, and organized crime expansion. Other parts of the Amazon are also in the same situation, with growing links to the latter three.

Gold Mining in the Triple Frontier between Brazil, Venezuela, and Colombia

Since 2017, illegal gold mining in the Amazon has grown rapidly, especially during the Bolsonaro era, the COVID-19 pandemic, and the political chaos in Peru, Bolivia, and Venezuela. In Brazil, between January 2021 and June 2022, the area of mining expanded by approximately 16,000 hectares, while an estimated 158 tons of gold, worth about 44.6 billion reais (about USD 9.4 billion), were extracted during that period (Manzolli & Rajão, 2022). Bolsonaro strongly promoted mining, even signing several decrees that facilitated the entrance to areas like Indigenous lands. These actions led to a threefold increase during his term of miners invading Munduruku and Yanomami lands (Indriunas, 2022). Bolsonaro was the first president of Brazil to visit an illegal mine, even more shockingly, this was located inside the Indigenous land of Raposa Serra do Sol in Roraima. During this visit he defended the approval of new laws in October 2021 that allowed mining (Indriunas, 2022). This visit, along with other factors, signaled that the relevant government and state apparatuses had been captured by mining interests during the Bolsonaro regime.

Meanwhile, the rise of Maduro in Venezuela has also led to a dramatic increase in illegal gold mining in the Orinoco Delta and other parts of the Venezuelan Amazon (Lindberg, 2020; SOS Orinoco, n.d.) There are an estimated 4,472 points of illegal extraction in the Amazon, of which 1,432 are in Venezuela according to a georeferencing analysis (McDermott et al., 2023). After Brazil, this is the highest number of illegal gold-mining operations. The problems with this illegal mining started in early 2000s, when President Hugo Chávez offered FARC a safe haven in the Yapacana National Park, which is next to the triple frontier with Colombia and Brazil. Since then, the Colombian ex-guerillas have started mining gold extensively in the park, making it the most heavily mined region of Venezuela. In addition, according to a report by InSight Crime, Maduro has allowed ex-FARC (such as Frente Acacio Medina) and other operators (such as Frente ELN, with whom ex-FARC have a pact of nonaggression and division of territories and tasks) to expand further along the Orinoco Delta to provide funds for the regime (McDermott et al., 2023). The ELN, a faction of whose leaders entered the region in 2017 after

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the Colombian peace deal, has an especially strong control of the ports and extorts money along the access rivers to the region. The same report found that the FARC leader Miguel Diaz Sanmartín, known as Julián Chollo, refused the 2016 peace deal, and later became the de facto leader of illegal gold mining in Yapacana. In this role, he demanded significant extortion money from gold miners (for example, with fixed bribes, such as 5 grams of gold for each backhoe in operation, 3 grams to maintain a business, and 1 gram for a boat to pass to bring in workers and goods). There are about 25,000 workers involved in gold mining in the region, if you include the workers in the supporting tasks, for example transport, cooking, selling goods, and so on. The biggest mines and machineries belong to persons who are ex-FARC and from the ELN. A local Indigenous informant explained that the guerilla groups have total control of the area, and Indigenous people have had to make pacts with them to receive donations for allowing operations. The situation may be a bit better for these Indigenous groups than those on the Brazilian side of the border, where the PCC and other drug-trafficking groups have a huge share of the control of gold mining and engage in extreme brutalities that amount to genocide against the Yanomami. According to the InSight Crime report on the Venezuelan side, some Indigenous people see Chollo as a kind of "Robin Hood" distributing goods for those in need, but in practice they must involuntarily submit to his power and violent presence. The illegal/clandestine airstrips are also used for drug trafficking and other illegal activities (see Figure 5.5).

The most important RDPE of this triple frontier, which causes the most deforestation, is the conglomerate of various gang-based violent and armed criminal organizations. Local key authorities, such as intelligence and army officers, also seemed to be involved in the gold mining in these areas in 2022, offering arms and security against other public authorities' attempts to enter and control the region. This is a heavily dominant sector, as it has even imposed its own currency, with gold accepted locally for practically all transactions. In addition, the borders are controlled by criminal groups, with miners and support workers moving frequently to other sides. In this context, available jobs are announced on social media and paid only in gold.

The Uraricoera River is the key access route to the gold mines that lie within the Yanomami lands in Brazil. The river is controlled by organized crime lords, with their *pistoleiros* attacking the Yanomami villagers with lethal force as they try to block other miners and gangs from accessing the area. The drug gangs extort the miners, and earn money by organizing brothels and selling goods and drugs to the miners. Mine owners – or the de facto controllers – organize everything under their grip, trafficking women with false promises about the conditions of the sex work. In this setting, rape is typical, as is extortion of the workers in the fashion of the established Latin American rural patrons, who first operated rubber estates and

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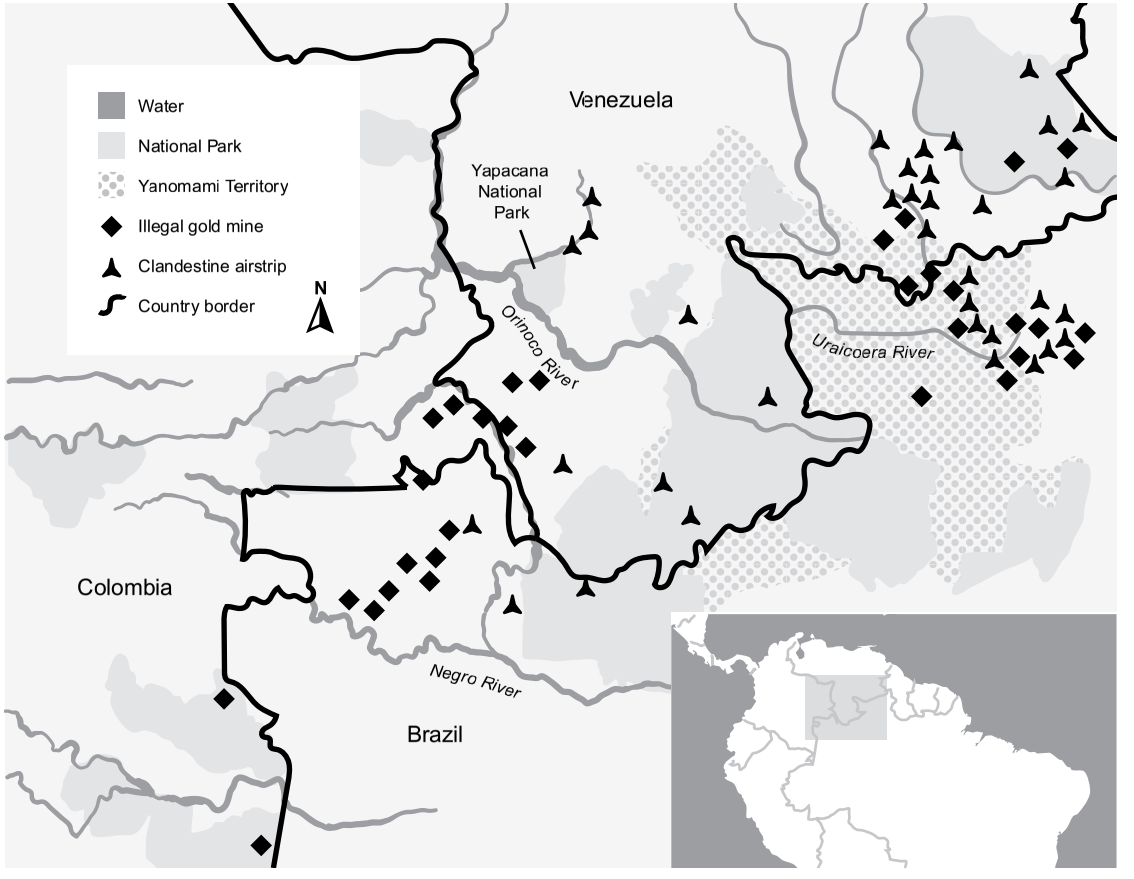


Figure 5.5 Inspired by a map from InsightCrime.org, this map shows the proximity of illegal gold mines and crucial clandestine airplane landing strips on the triple border between Brazil, Colombia, and Venezuela.

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then later were involved with cocaine production. The gold interactions are used to launder all the money and even offer the possibility to launder illegal gold. This setup helps to explain the benefits of the mergers between the illegal gold, drug, and other businesses.

The creation of Pan-Amazonian police and official investigative institutional frameworks could help, but realistically this will not happen anytime soon, given the existence and political power of the RDPEs where profit making is deeply linked to environmental crime. Many reports focus on governance and policy-setting improvements, without recognizing the deeper, systemic causes of the illegalities, such as RDPEs. The lack of resources, corruption, and insufficient intergovernmental cooperation to tackle Amazon deforestation should not be primarily seen as obstacles that can be overcome by better policymaking and governance (as e.g. in the report on Amazon's triple frontiers' illegalities by McDermott et al., 2023). These are some of the ways in which current key political economic powerholders in different regions retain, accumulate, and expand their fortunes and power. The rapid rise since 2011 of illegal gold mining in protected and Indigenous lands in the Amazon is a result of the "complete decontrol of the economic chain of gold" by states, which are too fragile in the regulatory, judicial, and institutional spheres, but have many institutions driving the mining, as found in 2023 by a large report on gold mining (Senra et al., 2023: 87).

The setting of illegality is essential because it allows the illegal gold to be turned into legal money capital. This laundering takes place practically by small airplanes and a long chain of different companies mediating the gold trail. Once the gold has passed through all these hands it is melded and the illegal gold cannot be distinguished from legal (McDermott et al., 2023). Given the high costs of getting gold-mining equipment, such as barges, to remote regions, organized crime's financial flows have become ever more essential as more remote areas are targeted. A single barge can produce about 14 kilograms of gold per year, which can fetch 150 to 200 million dollars locally and almost 900 million dollars internationally (McDermott et al., 2023). These figures, showing the relatively much higher profit accumulation up the international chain, explain the availability of local financing. Given the high value, and proximity to frontiers, armed groups control the operations. Organized crime and guerilla and paramilitary organizations are participating both in drug trafficking and gold mining, which are used to launder money. In Chapter 6, I will discuss the Peruvian dynamics in more detail, and then in Chapter 7, Brazil.

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