

IGARAPÉ INSTITUTE
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FOLLOW THE MONEY:

Environmental Crimes and Illicit
Economic Activities in Brazilian
Amazon Production Chains

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EXECUTIVE SUMMARY

In 2022, according to the National Institute for Space Research (INPE), the Brazilian Amazon experienced 11,594 square kilometers of deforestation, a reduction of just over 11% from the previous year.¹ Much of this deforestation stems from illegal activities driven by sophisticated national and transnational criminal networks that span various economic sectors, from logging to mining, land speculation, and environmental crimes, including illicit practices in the livestock sector.² It is critical to note that even companies operating within formal markets are not shielded from these illegal activities. The shadow economies in the Amazon function through a complex network of actors, covering both environmental and non-environmental issues such as corruption, fraud, money laundering, violent crime, and various types of trafficking.³

Environmental crime in the Amazon is invariably driven by the financial gain it promises those who commit it. Economic illicit activities not only make these environmental offenses possible but also ensure that the profits are efficiently secured. The Igarapé Institute is dedicated to investigating the intricate connections between environmental crimes and related illegal activities in the Amazon. This study adopts a broad definition of economic illicit activities, including economic-motivated offenses such as financial, tax, and public administration crimes. Against the backdrop of mild penalties and limited enforcement, it is essential to probe the economic illicit activities that enable and perpetuate these crimes. This includes uncovering the financial backers of criminal networks⁴ and increasing awareness among the end users of companies⁵ whose supply chains are marred by illegalities in the Amazon region.

To achieve this, we examined the Federal Police operations targeting environmental crimes in the Amazon, which were connected to economic offenses. The study explores four types of economic crimes frequently encountered in these operations: money laundering, laundering of environmental assets, fraud, and corruption. Each category is contextualized within the Amazon's illegal economies, such as unlawful timber extraction, illegal mining, and livestock practices that violate the law within their production chains. The analysis covers different stages of the supply chain, from extraction or production to transport and both national and international marketing, detailing the actions that lead to economic crimes and the methods for committing these offenses, as revealed by the operations.

The study provides a detailed account of the behaviors identified in these operations and the particularities of each production chain, revealing how criminal practices operate. The aim is to support the efforts of various agencies involved in regulating these chains and to offer insights for the development of public policies designed to prevent and curb such crimes.

Protecting the Amazon calls for a comprehensive response that actively deters the commission of environmental crimes and the associated illicit economic activities. Financial investigations play a critical role in identifying these offenses and their perpetrators, enabling rule of law and the protection of the forests and their inhabitants. Understanding and disrupting illicit economic activities is an essential condition for halting the criminal destruction of the forest.

INTRODUCTION

In 2022, INPE reported roughly 11,594 square kilometers of deforestation in the Brazilian Amazon, a drop of about 11% from the previous year.⁶ Despite this seemingly positive development, deforestation levels remain at their highest since 2009 — the area deforested in 2022 is 48.2% greater than the ten-year average for the biome.⁷

The deforestation of the world's largest tropical forest has been historically fueled by a range of illicit economic activities like illegal logging, unauthorized mining, land grabbing, and livestock with illegal practices in its production chain. Participation in formal markets does not ensure immunity from illegal activities. The Amazon's shadow economies operate through a network of environmental and non-environmental crimes, such as corruption, fraud, money laundering, violent crime, and various types of trafficking.⁸

Environmental crime is primarily committed for the financial benefit of the perpetrator. In this context, economic offenses not only enable environmental crime but also ensure the effective acquisition of the profits generated. It is important to highlight that the definition of economic offenses used in this study, which will be elaborated on further, includes various crimes all motivated by economic gain, such as financial crimes, crimes against public administration, and tax-related offenses.

Environmental crimes committed in the Amazon generate significant financial gains with low risks, limited oversight, and lenient penalties⁹ compared to the magnitude of the

environmental and social damage caused. Therefore, we must also consider crimes that enable the use of ill-gotten gains and the exploitation of environmental resources, as well as further investments in criminal activities. These crimes may occur before, during, or after the commission of environmental crime and damage to nature, and aim to facilitate, sustain, and ensure the profitability of activities that drive deforestation in the Amazon.

In 2018, the Financial Action Task Force of Latin America (GAFILAT) highlighted that only 7 of 18 member states cited "criminal exploitation of natural resources" as a threat for money laundering.¹⁰ In a 2021 report, the International Financial Action Task Force (FATF) classified environmental crime as the emerging area most exposed to money laundering, discussed common methods used by criminal networks, and advocated for enhanced mechanisms to prevent economic crimes.¹¹

Today, environmental crime generates an estimated annual profit of US\$110-281 billion for criminal organizations worldwide.¹² This scenario is exacerbated by a number of factors, such as the illegal extraction of natural resources, trade in fauna and flora, high demand for products, and a lack of effective control mechanisms. In recent years, various organizations have emphasized the need for measures to reduce money laundering related to environmental crimes. For instance, FATF made environmental crimes a priority in 2019.¹³ However, existing systems to combat money laundering in Latin American countries still do not treat environmental crimes with the urgency and decisiveness it requires.¹⁴

Despite an increase in awareness and understanding of the connection between money laundering, other economic offenses, and environmental crime in the Amazon, there is still much to be done to address this enormous challenge. Various organizations, including the Igarapé Institute itself,¹⁵ Transparency International¹⁶ and the FACT Coalition,¹⁷ have published studies to enhance knowledge and push for public and corporate policies to prevent and combat these phenomena.

With rising environmental crime driving deforestation in the Amazon, it is crucial to understand and disrupt the flows of economic illicit activities in order to positively change local socioeconomic realities and protect the forest and its inhabitants. Major environmental crimes require substantial resources and organized networks. Holding the financiers of these activities accountable, increasing the transparency of Amazon production chains, and revealing the “ultimate beneficiaries,”¹⁸ can be effective measures for discouraging and curbing these practices.

Comprehensive strategies that identify and combat economic offenses associated with environmental crimes can play a transformative role in increasing the actual and perceived risks of committing such crimes. Therefore, following the money of those who finance and benefit from environmental crime is a vital strategy for preserving the Amazon forest and those who call it home.

The Igarapé Institute is committed to generating knowledge about the scope, scale, and dynamics of environmental crimes and related issues in the Amazon, as well as about the interplay in governance between various entities that are working to prevent and combat the ecosystem of environmental crime in the region.¹⁹

In this way, this study provides an analysis of the interconnections between a series of economic offenses and illicit environmental economies related to illegal logging, illegal mining, and livestock with illegalities in the production chain. Thus, the document aims to contribute to the larger debate on the topic and shed light on economic offenses that intertwine with environmental crimes in the Brazilian Legal Amazon and in the production chains of timber, gold mining, and livestock.

To this end, we analyze 131 Federal Police (PF) operations from 2016 to 2022 that targeted environmental crimes with suspected ties to other economic offenses.²⁰ Our goal is to enhance collective understanding of the dynamics that link these types of crimes, and enable the development of mechanisms that can help to interrupt the destruction of the Amazon rainforest.

ECONOMIC OFFENSES AND ENVIRONMENTAL CRIME

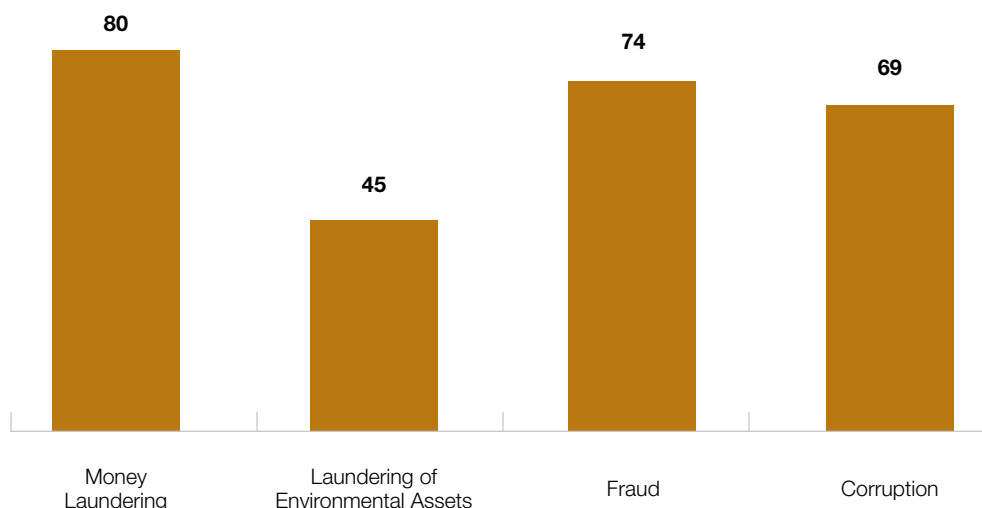
This study considers economic offenses to be criminal conduct that generates private financial gain in connection with environmental crimes, and especially in relation to timber, gold, and livestock. In Brazil, federal legal frameworks already classify these offenses as crimes such as money laundering, corruption, malfeasance, and fraud (document and procedural). These may occur within the Legal Amazon, in other parts of the country, or as part of large-scale operations carried out by transnational criminal organizations.

In using the term "economic offenses" instead of "illicit financial flows" (where the main focus is money laundering), we aim to more specifically describe criminal activities for which the primary motivation is private financial gain from environmental crimes. This term also contributes to an analytical typology centered around crimes that enable environmental crime or allow environmental assets or ill-gotten gains to be integrated into the formal economy under a facade of legality.

This typology has no direct parallel in existing legal categories, is not synonymous with the legal category of "economic crimes," and is also not limited to types of criminality that target the economic order. Furthermore, although some behaviors are analyzed separately in this report, this does not mean that they occur in isolation from one another. On the contrary, they often take place simultaneously. Indeed, criminal groups commonly employ multiple illicit methods in order to maximize profits from criminal environmental activities.

This study focuses on four categories of economic offenses that appear frequently in Federal Police operations that combat environmental crimes in the Brazilian Amazon: **Money Laundering, Laundering of Environmental Assets, Fraud, and Corruption/Malfeasance.** Additionally, we describe risk behaviors identified in these operations, such as various uses of companies (legitimate and within the same industry, shell companies, and ghost entities), the use of intermediaries (strawmen), and the illicit trade that occurs through the intentional manipulation of the market value of the environmental asset.

Graph 1. Economic offenses in operations targeting environmental crimes (2016-2022).



n = 268 (n > total operations), considering that each one can involve multiple economic offenses.

Source: Prepared by the Igarapé Institute based on original data.

GLOSSARY OF ECONOMIC OFFENSES USED IN THIS STUDY

Money Laundering: Concealing or disguising the illicit origin, nature, location, disposition, movement, or ownership of financial resources derived from environmental crime (conduct regulated under Article 1 of Law no. 9,613/98).

Laundering of Environmental Assets: Concealing or disguising the illicit origin, nature, location, disposition, movement, or ownership of environmental resources. It also involves the practice of legalizing illegally extracted, managed, or traded environmental assets or profiting from them (conduct regulated under Article 1 of Law no. 9,613/98).

Corruption and Malfeasance: Obtaining undue advantages or benefits. Often perpetrated by public officials but can also include individuals outside of government (conduct exemplified in articles 317, 317 §2, 318, 319, 321, 333, 337, 337 B, 337 C of the Penal Code, Article 3 of Law no. 8,137/90, Article 69 of Law no. 9,605/98).

Fraud: Concealing illegal activities by making them appear legal. This can occur in both the public and private sectors, and is achieved through fraudulent schemes and strategies that mislead colleagues. Fraud can be subdivided into three subcategories:

- **Document Fraud:** Altering an original document with the aim of deceiving and misleading third parties and obtaining illicit and undue advantages. Includes actions such as forgery or the fabrication of public or private documents, ideological falsehood, presentation of false certificates or attestations (conduct exemplified in Articles 293, 296, 297, 298, 299, 304, 305, 313-A of the Penal Code, Article 69-A of Law 9,605/98).
- **Procedural Fraud:** Intentionally modifying process data to mislead judges or experts (conduct exemplified in Article 347 of the Penal Code).
- **Tax Fraud:** Deceiving public authorities to avoid payment of due taxes or to pay lower amounts than would otherwise be required (conduct exemplified in Articles 1 and 2 of Law no. 8,137/90).

Tracking "dirty" money or identifying criminals and their illegal activities is a challenging task for public security officials, financial intelligence teams, and the Public Prosecutor's Office (Ministério Público). Given that agencies have traditionally prioritized drug trafficking and organized crime, significant strategic challenges persist in reallocating personnel and reorganizing priorities to understand the dynamics, scale, and reach of the economic offenses that sustain environmental crimes in the Amazon Basin, in order to effectively address them.

Although the greater visibility of environmental crimes compared to economic crimes increases the chance of catching criminals red-handed and or collecting evidence, they also entail lighter penalties and do not allow for the direct identification of those who fund and profit from these activities. In this context, it is crucial to strengthen strategies that actively deter environmental crimes, especially through economic suffocation. Both the Federal Police and Public Prosecutor's Office²¹ have adopted administrative and economic sanctions provided for in the Environmental Crimes Law as a key means to financially incapacitate criminal groups and discourage the spread of illicit activities.

Administrative sanctions include fines, suspension or cancellation of licenses and permits, seizure of equipment and vehicles.²² Economic sanctions, on the other hand, seek to impact the financial capacity of criminal organizations through measures such as the freezing of assets and bank accounts, prohibition of contracts with public agencies and suspension of access to credit.²³ In all cases, the imposition of sanctions must strictly adhere to due process to ensure justice and proportionality in the punishment of those responsible for environmental crimes.

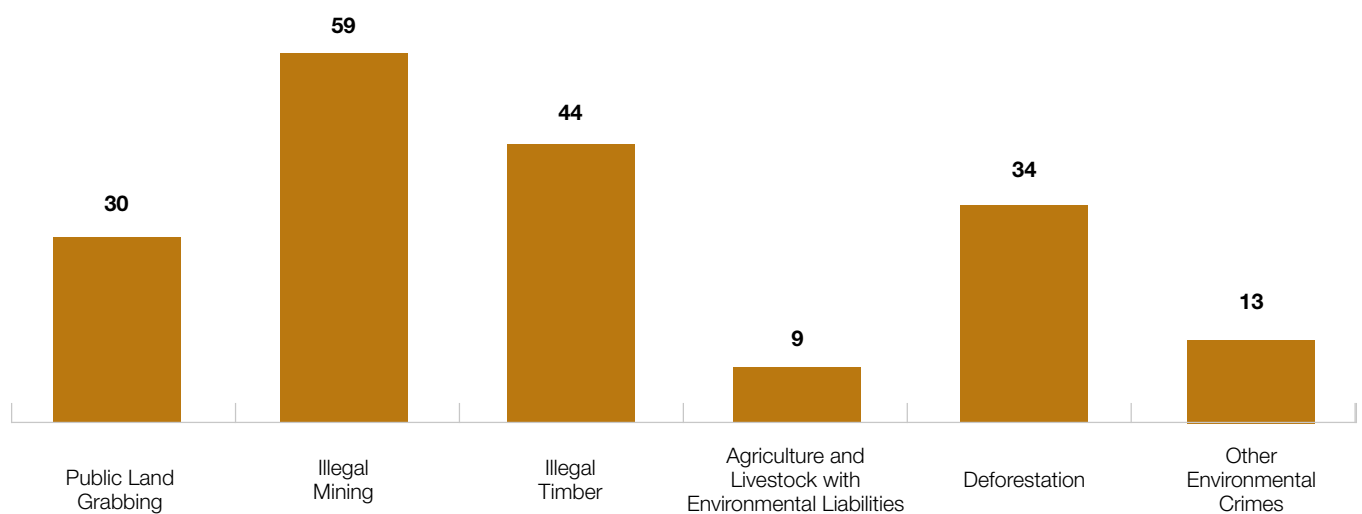
Financial investigations are essential for uncovering economic offenses as well as the tracing, seizure and eventual confiscation of products and tools used in environmental crimes. These investigations also help to identify the high-level actors who finance and profit from illegal logging, illegal mining, and livestock tainted with illegalities.

ECONOMIC OFFENSES IDENTIFIED IN AMAZON PRODUCTION CHAINS

Illicit economic activities permeate various production chains in the Amazon, forming a web of illegal practices that interconnect and reinforce each other: crimes against public administration, tax evasion, and financial crimes. Far from being secondary or marginal, these activities often facilitate environmental crime in the Amazon.²⁴ It is precisely the interconnectedness of these crimes that sheds light on the structures of organized crime that, historically and even today, threaten the preservation of the standing forest.

This section explores illicit economic activities identified in the production chains of timber, gold, and livestock. We examine three crucial aspects of these production chains: extraction (timber and gold) and breeding (livestock), transportation, and commercialization (both domestic and international). Our analysis draws from an original database of 131 Federal Police operations from 2016 to 2022 that details the practices and processes associated with each of these production chains.

Graph 2. Focus of Federal Police operations that involve economic crimes (2016-2022)



n = 189 (n > total operations), considering that each operation can have more than one focus.

Source: Prepared by the Igarapé Institute based on original data.

Timber Production Chain

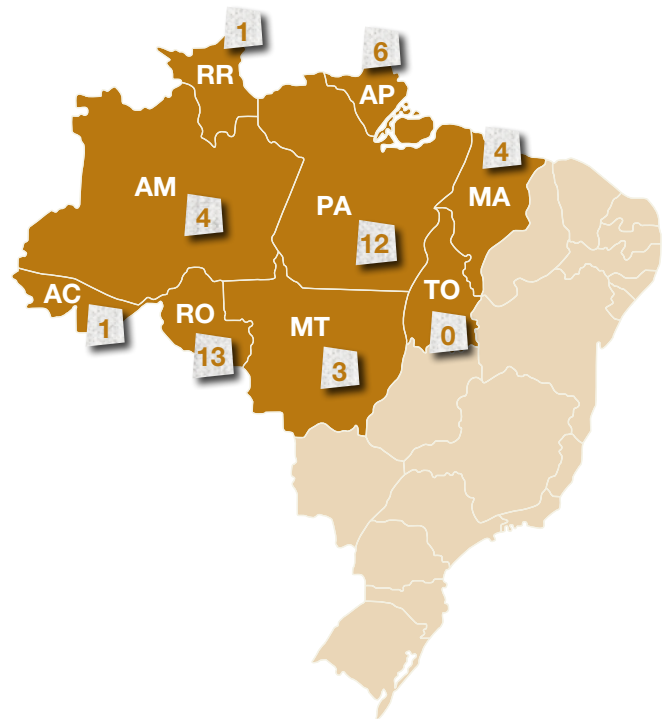
The rate of unauthorized timber exploitation in the Amazon is alarmingly high and results in serious socio-environmental damage. According to a Rede Simex study, 27% of timber extraction in the region is of irregular origin,²⁵ and over 19% of this illegal logging occurs within Indigenous Lands. Additionally, Mato Grosso stands out as the state with the highest rate of illegal timber exploitation in the region.²⁶



Upon analyzing the 44 Federal Police operations conducted between 2016 and 2022 that targeted illegal timber in the Amazon and were related to economic crimes, patterns emerge that help to understand how these correlated crimes perpetuate environmental crime. The illicit practices identified include:

- Timber exploitation in illegally deforested areas, including indigenous lands, conservation areas, or without proper environmental authorization;
- Timber exploitation in undesignated public lands that have yet to be designated, or which have been invaded or illegally occupied, often through land grabbing;
- Use of false documents to extract timber;
- Extraction of prohibited timber species.
- Extraction of timber in quantities exceeding those established in the relevant Sustainable Forest Management Plan (PMFS).²⁷

Figure 1. Location of Federal Police operations with a focus on illegal timber exploitation and economic offenses (2016-2022)



N > 44, considering that an operation can occur in more than one state simultaneously.

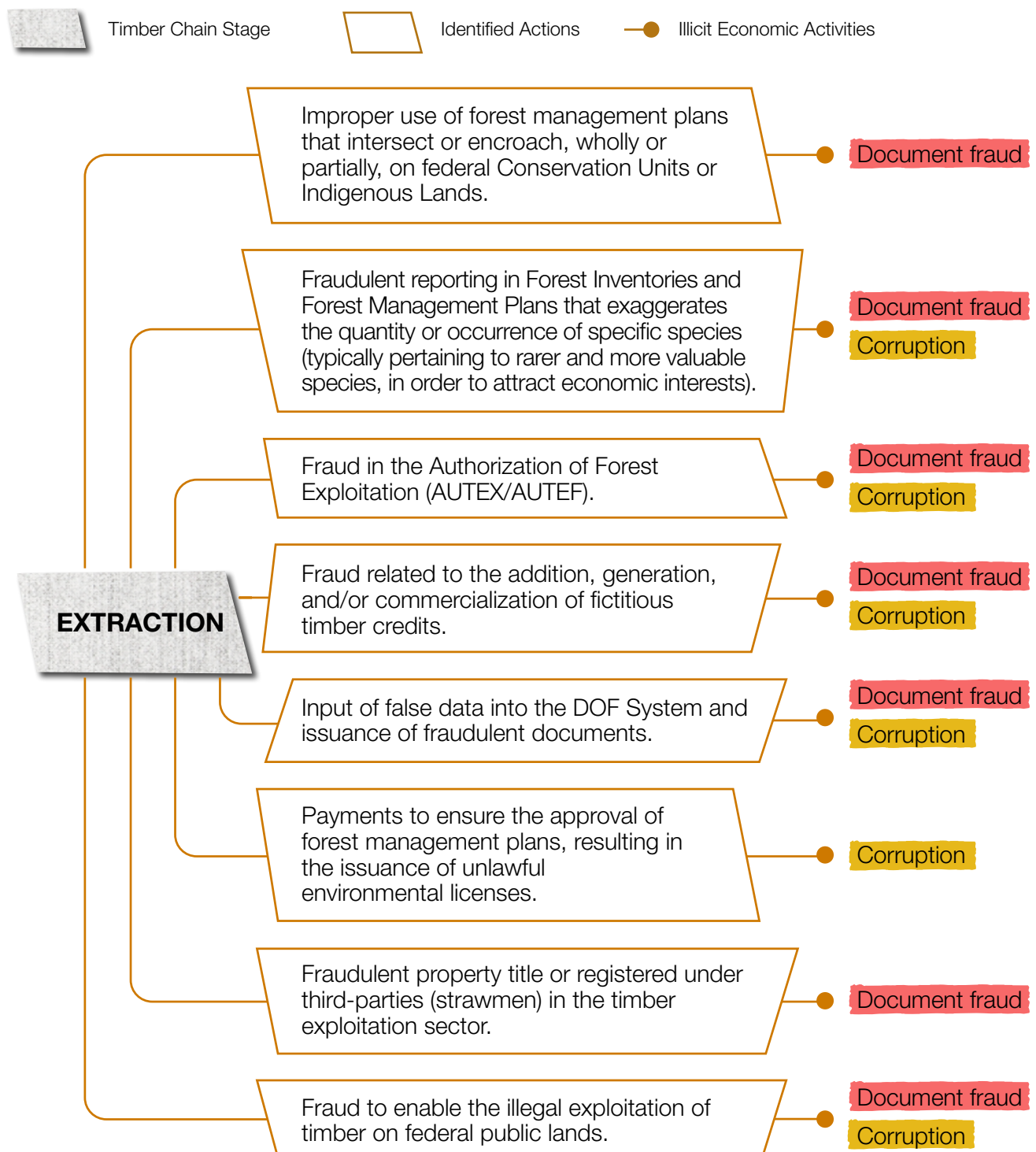
Source: Prepared by the Igarapé Institute based on original data.

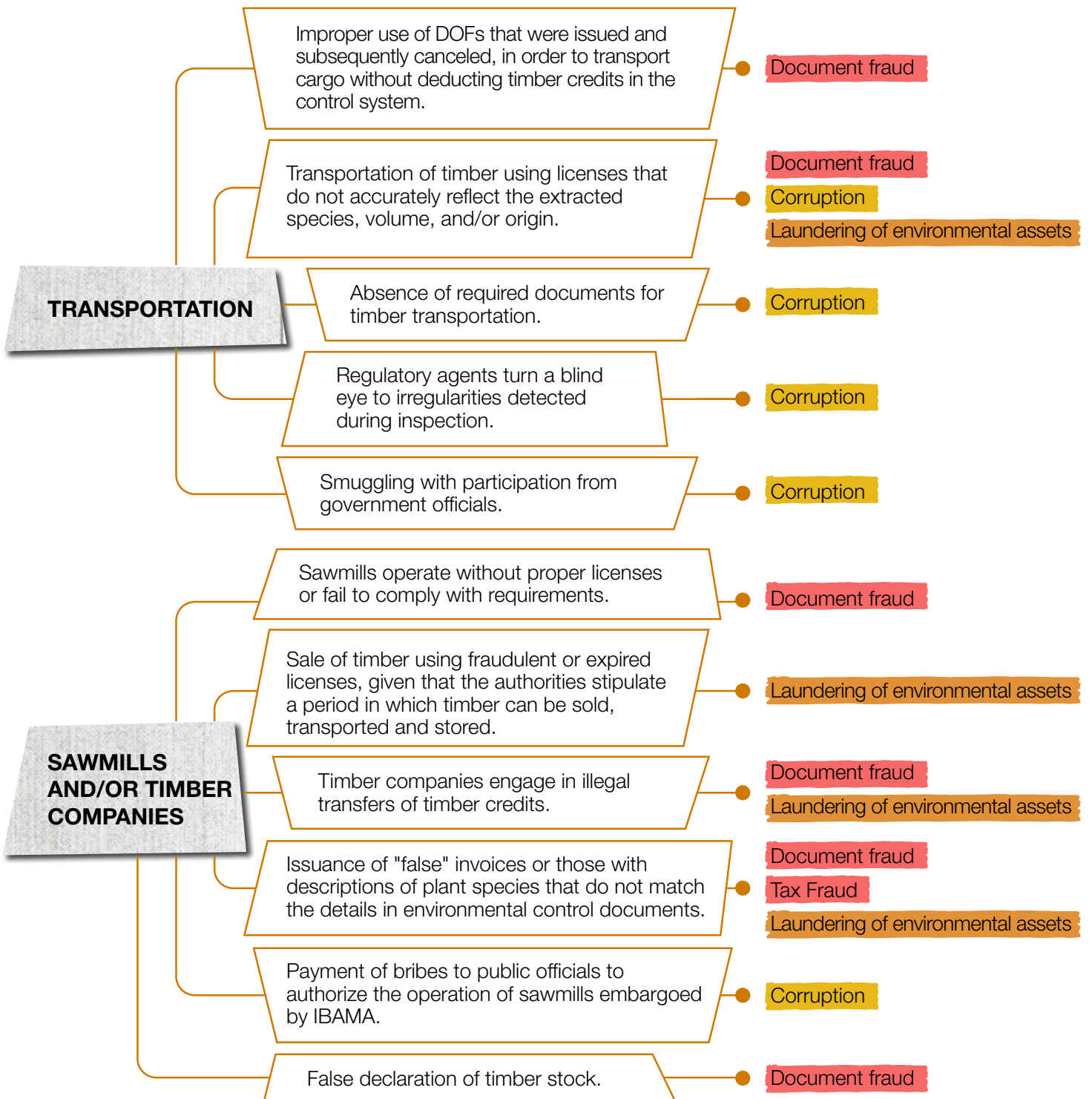
Many of the challenges related to timber exploitation in the Amazon stem from corruption involving public officials and shortcomings in monitoring and control systems.²⁸ Corruption, bribery, and collusion among authorities and environmental inspectors facilitate illegal logging or the improper issuance of logging permits, such as Authorizations of Forest Exploitation (AUTEF or AUTEX),²⁹ in exchange for payment. These actions represent corruption to the extent that only government employees can access and make changes in the system.³⁰

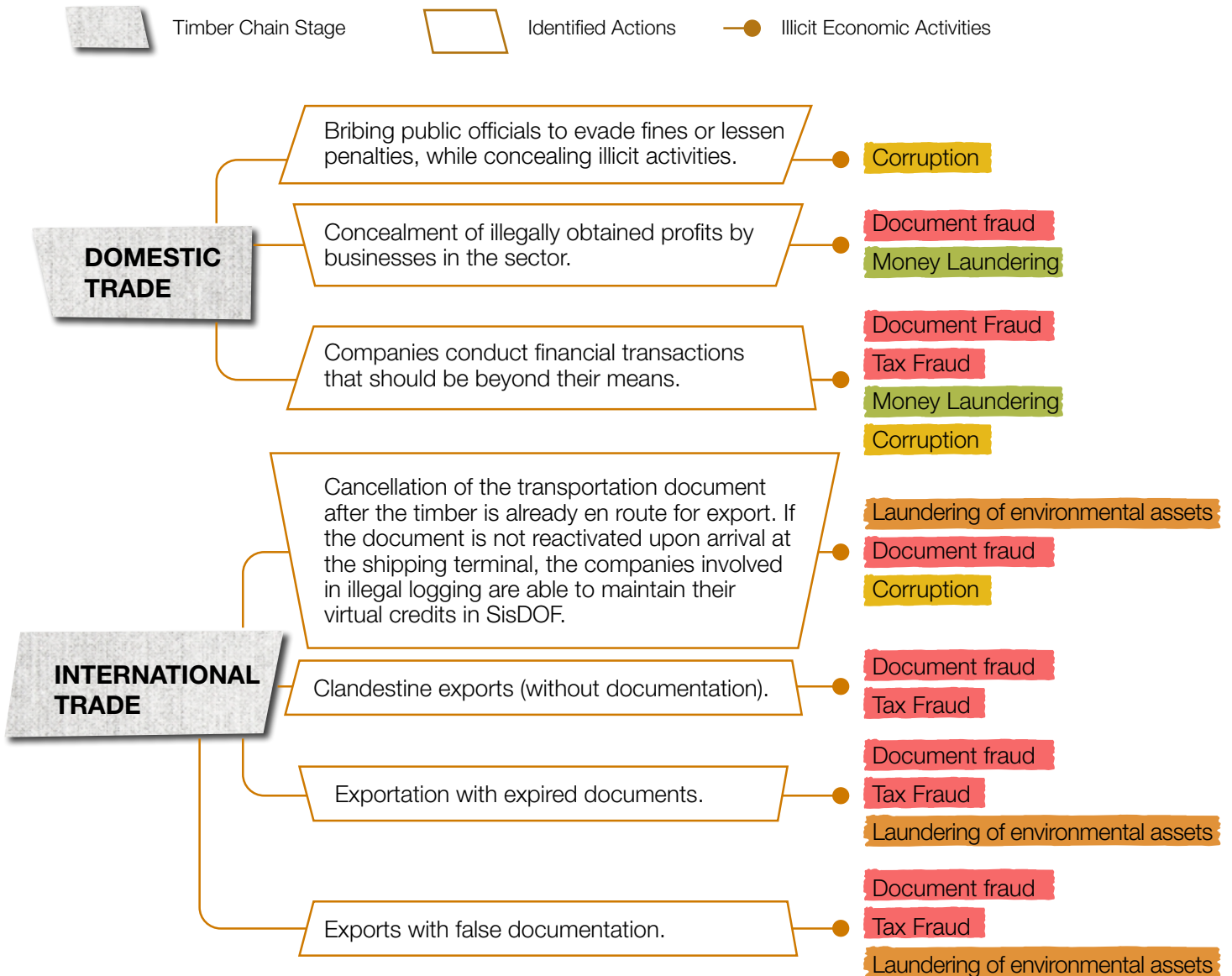
Illegals in the timber production chain occur at various stages (see Table 1) and include the fraudulent issuance of documents like forest management plans (FMP) and Forest Guides (DOF³¹ and GF³²) that create a facade of legality for illegally-sourced wood. Furthermore, even timber that has been harvested legally can still be transported and sold illegally without proper registration or the payment of required taxes.

The table below provides a detailed analysis of the activities that correspond to economic offenses identified in the Federal Police operations.

Table 1. Activities and economic offenses identified in the timber production chain during Federal Police operations (2016-2022)







Source: Prepared by the Igarapé Institute based on original data.

Both money laundering and environmental asset laundering represent processes predicated on a prior violation – assets or funds that have been obtained illegally need to be "laundered.". In the context of timber, money laundering and environmental asset laundering can be preceded by environmental offenses like unauthorized exploitation, excessive extraction of valuable species, exploitation of protected areas during the extraction phase. These violations can also occur at other moments, such as in the transportation of goods without required documentation, as well as other economic offenses such as document fraud and corruption.

Some of the illegal schemes identified in this study reveal that criminals often structure their operations to resemble legitimate businesses or use existing companies to carry out illegal activities, thus creating a diffusion of responsibility that facilitates laundering and makes oversight more challenging. For example, the Federal Police launched Operation Carranca³³ in 2020 to combat illegal logging in the state of Pará and discovered that the criminal organization in question involved four different actors:

- 1°** Small-scale loggers, responsible for manning the front line of illegal logging in targeted municipalities;
- 2°** Large-scale loggers that finance extensive networks of illegal timber extraction, processing, and distribution, including the manipulation of forest credits and forgery of documents;
- 3°** Individuals connected to public agencies – such as Municipal Secretaries of the Environment, lawyers, and forestry engineers – who use their positions to aid and cover up environmental crimes and, in some cases, participate directly in the illegal timber trade;
- 4°** Police officers that conduct inspections on the Trans-Amazonian highway, who demand illegal payments from truck drivers as a condition for passage and/or leak confidential information about road surveillance operations.

The operations analyzed in this study revealed the use of legitimate businesses, such as logging companies, sawmills, and wood depots, in order to create an illusion of legality that enabled illegal timber harvesting and the falsification of forest credits. This scheme facilitated both money laundering and environmental asset laundering. Furthermore, owners of logging companies were revealed to be involved in the illegal deforestation of large swaths of the Amazon rainforest.

The study also identified the use of intermediaries (strawmen) to act as the "directors" of logging companies that operate illegally, making it difficult to identify the real owners and beneficiaries from organized crime. These same strawmen are often used to apply for land title processes with INCRA (National Institute for Colonization and Agrarian Reform) or to register with the Rural Environment Registry (CAR),³⁴ and to register assets and values derived from criminal activities, so as to conceal the origin of the funds prior to laundering.

Another trend identified in the operations was the fraudulent transportation of timber from high-value and prohibited species, such as *maçaranduba* and *ipê*, using documents that misidentified them as less valuable, legal species. This process represents an illicit trade practice that aims to launder illegally-obtained environmental assets.

Despite challenges, significant efforts have been made in recent decades to improve timber traceability in Brazil. A major milestone was the implementation of the DOF/SINAFLOR system (Forest Origin Document)³⁵ in 2006, which made licenses mandatory for the transportation and storage of native forest products. Although this innovative initiative has had some success in improving the digital tracking of plant-based products nationwide,³⁶ its effectiveness is still hindered by various institutional shortcomings,³⁷ such as the decentralization of responsibilities across states and insufficient integration between them. For instance, Pará and Mato Grosso, the two largest timber producers, do not use SINAFLOR. In Pará, data on timber transportation and trade are not publicly accessible, and exploitation licenses are only available in PDF format, which hinders the cross-referencing of information and the timely generation of alerts regarding potential irregularities.³⁸

This scenario is further complicated by a scarcity of resources for enforcement and the prevalence of fraudulent licenses, often enabled by malfeasance or active participation by officials in these and other illegalities throughout the supply chain.³⁹ In the Amazon as in other parts of the world, the inability of official documentation to provide reliable proof of origin makes it harder for market players to distinguish between legal and illegal timber.⁴⁰

Gold mining production chain

The Amazon region has the highest concentration of mining activities, both industrial and artisanal, in Brazil.⁴¹ According to Mapbiomas, in 2020 the region accounted for over 70% of the total mining area nationwide. Alluvial gold mining (garimpo) is the most common type of mineral extraction in the biome, accounting for over 90% of all gold mined in the country.⁴²

A study by the Federal University of Minas Gerais (UFMG) traced about 30% of the gold extracted in Brazil and registered with the National Mining Agency (ANM) between 2021 and 2022 back to irregular operations that lacked permission to mine or exceeded authorized limits.⁴³ Furthermore, Instituto Escolhas used ANM and Mapbiomas data to show that 98% of the gold traded in the vicinity of indigenous lands between 2018 and 2020 showed signs of illegality, such as being sold with "ghost titles" (fraudulent registrations that appear legal) or extracted from unauthorized areas. In the areas surrounding Amazon conservation units, the proportion of gold with signs of illegality was 56%.⁴⁴



Analysis of the 59 Federal Police operations that targeted illegal mining and economic crimes revealed that illegality in the Brazilian gold mining production chain, and particularly in the Amazon, often consists of "laundering" to cover up the illegal extraction of gold in protected areas,⁴⁵ as well as fraud in applications for mining permits and in the approval of these permits.

Furthermore, small-scale gold mining in the Amazon is associated with a series of other crimes, including offenses against public administration, financial crimes, and even violence.⁴⁶ These activities involve a wide network of actors, from public officials and private sector agents to members of criminal organizations.⁴⁷

Among the trends identified in Federal Police operations, the following stand out:

- Use of illicit funds for mining operations;
- Acquisition of mining permits using fraudulent information;
- Gold mining without proper authorization or while approval is still pending;
- Gold mining in protected areas, mainly Indigenous Lands;
- Fraudulent reporting of the source of the Garimpo Mining Permit (PLG) upon selling gold to a Securities and Exchange Brokerage (DTVM).

Figure 2. Location of Federal Police operations targeting illegal gold mining and economic offenses (2016-2022)



N > 59, considering that an operation can occur in more than one state simultaneously

Source: Prepared by the Igarapé Institute based on original data

Risks and illegalities apply to gold mining in legal and illegal areas alike. In legal areas, extraction takes place in designated mining zones for which a PLG has been requested but has yet to receive ANM approval. The operations also showed that criminals may apply for multiple contiguous PLGs to circumvent the limit of 50 hectares per mine – reaching up to 10,000 hectares – which is allowed for cooperatives in the Amazon.⁴⁸ Furthermore, "ghost PLGs" may have legitimate documentation but are not actually used for mining and instead serve to conceal gold mined illegally from unauthorized locations.⁴⁹

Mining also occurs illegally in environmental protection zones (such as Indigenous Lands or Full Protection Conservation Units)⁵⁰ where mining is strictly prohibited.⁵¹ Also, criminals may mix gold from different origins and sell the ore at a lower price as "scrap metal." Another common fraud involves the use of "cooperatives" that subject workers to degrading conditions that often constitute modern slavery. One example is the Lourenço Mine in Amapá, where the Special Mobile Inspection Group of the Public Ministry of Labor rescued workers in 2015 and 2017.⁵²

The laundering of gold in the Brazilian Amazon typically occurs after the extraction phase. Gold Buying Stations (PCO)⁵³ are the initial buyers of raw gold and are contracted by nearby Securities and Exchange Brokerages (DTVMs) to serve as mercantile agents.⁵⁴ When it comes to garimpo, the Brazilian government requires that the PCO closest to the mining site makes the first purchase.⁵⁵ It is important to note that PCOs are authorized only to buy gold and issue documents related to acquisition and shipment, without making direct sales.⁵⁶

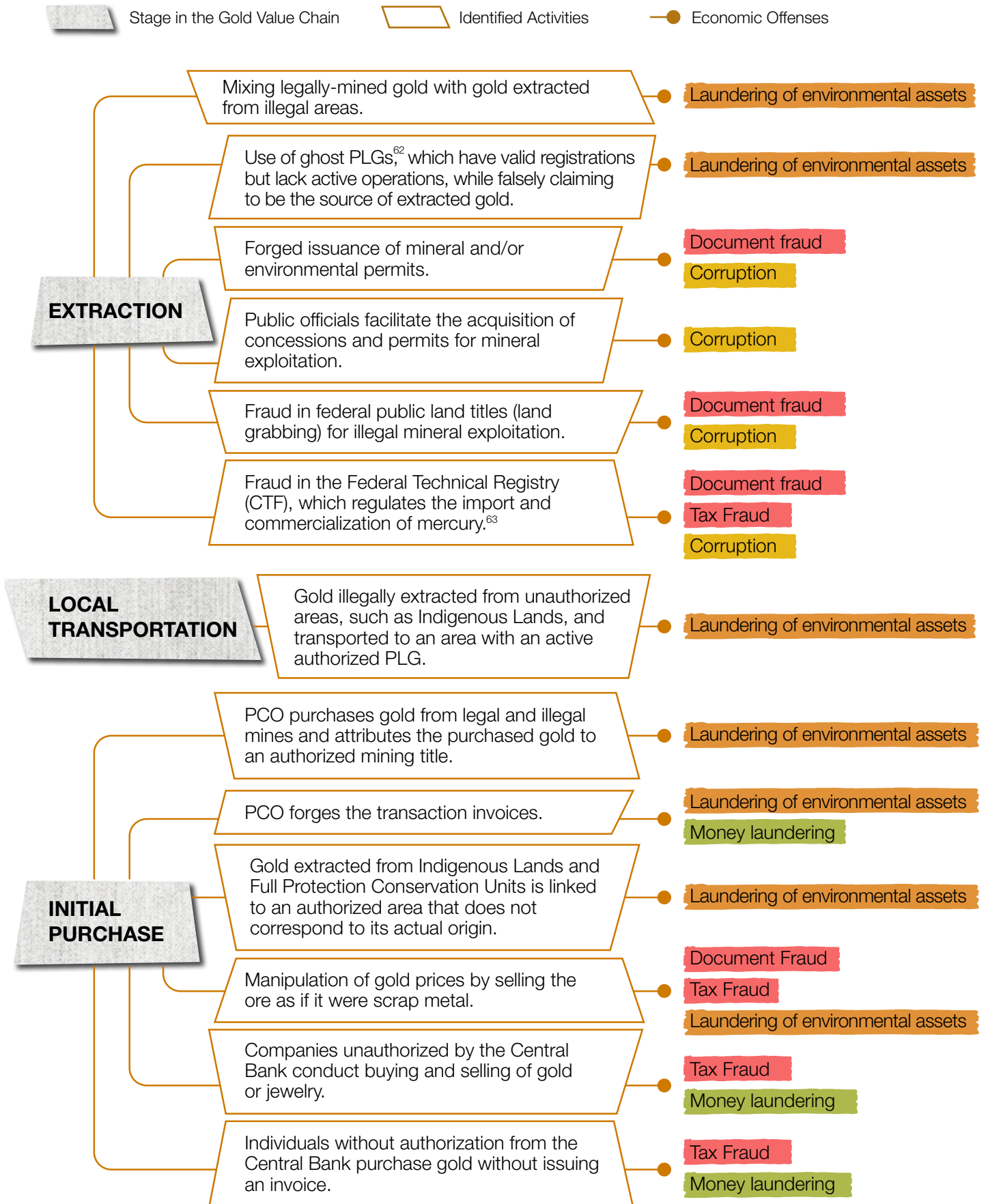
Judging from the Federal Police operations,⁵⁷ the most common way to "launder" gold is by falsely declaring its origin. PCOs are not legally required to verify the accuracy of the information provided, and can simply assume the buyer is acting in good faith.⁵⁸ Once this step is completed, gold transforms from a commodity into a financial asset.

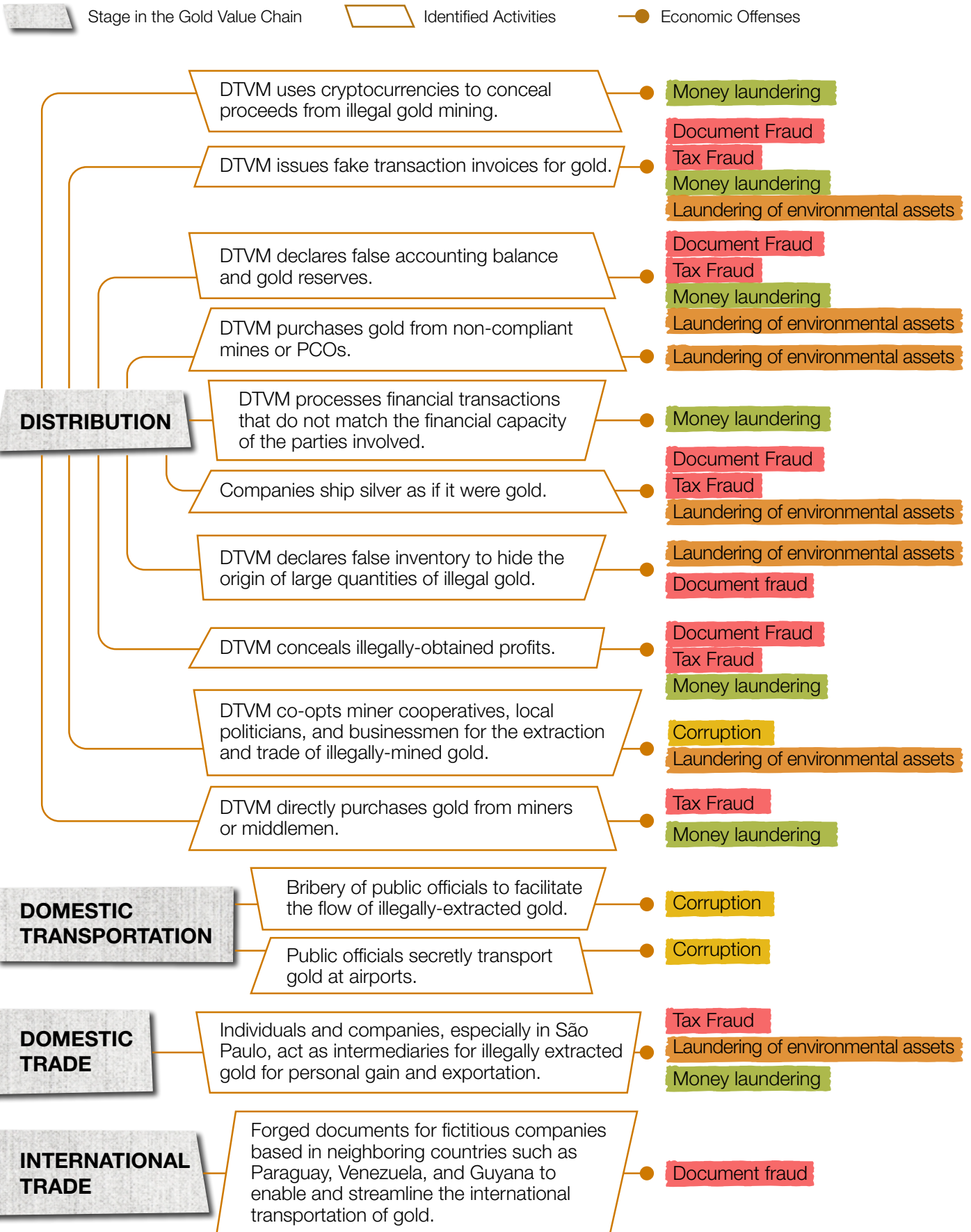
Some notable frauds that take place during this stage include false declarations by the seller of the origin PLG to the DTVM and the erroneous inclusion of the origin PLG by the DTVM. These irregularities can include the use of "strawman" PLGs to hide the illicit origin of the extracted gold, or situations where the PLG, although registered with the ANM, is operationally inactive or located adjacent or very close to protected areas where mining is prohibited.⁵⁹ Additionally, the PLG can be forged in its entirety, complete with an ANM number that does not actually exist.

Although DTVMs have adopted risk analysis and compliance procedures to prevent the entry of illegal gold into the market and combat money laundering, so far these measures have proved insufficient.⁶⁰ From 2015 to 2020, 87% of the gold (approximately 79,000 tons) traded by the four largest Brazilian DTVMs (all located in the Amazon) showed signs of illegality.⁶¹

The Federal Police operations show that these DTVMs often maintain an extensive web of relationships, particularly with other legal entities involved in various stages of gold mining in the Amazon, such as extraction, exportation, and logistical support. This could create a conflict of interest in which the same entities that purchase gold also directly benefit from its extraction, and therefore may be less committed to ensuring the legality of its origin or production.

Table 2. Activities and economic offenses identified in the gold production chain during Federal Police operations (2016-2022)





As with all crimes, money laundering and environmental asset laundering presuppose a prior infraction – assets or values that were acquired illegally need to be "laundered." In the context of gold, these offenses can be preceded by other crimes, such as environmental crimes – for instance, exploiting areas without the proper authorization or exploiting protected areas during the extraction phase – violations of ANM regulations, such as the use of contiguous PLGs,⁶⁴ or irregularities in other stages of the production chain, like selling products with forged invoices that hide the illegal origin of the extracted material. Other economic crimes, such as corruption, may also precede these efforts to launder money and environmental assets.

Illicit proceeds from illegal mining can be laundered in various ways as well as transferred to companies or even criminal organizations through technologies like cryptocurrencies. In Operation Ganância,⁶⁵ traders of illegal gold from the Amazon region were found to have conspired with the largest cryptocurrency brokerage in Brazil and globally to launder money from the sale of illegally-extracted gold. The Federal Police estimates that the group laundered BRL 16 million between 2019 and 2021.⁶⁶

Additionally, profits from other crimes like drug trafficking are used to fund mining in the Amazon. Operation Narcos Gold,⁶⁷ launched in Pará in 2021, pursued a criminal group that used gold mines to not only launder money, but also as airstrips for the transportation of drugs. The criminals are suspected to have used invoices from non-existent gold transactions to justify the wealth amassed from drug trafficking.

As seen in Table 2, the Federal Police operations implicate PCOs, DTVMs, jewelers, and shell companies in illegal mining.⁶⁸

These entities receive illegally-mined gold and sell it across Brazil, often without proper documentation or with fake invoices to make it seem legal. Moreover, mining cooperatives can be used as fronts to launder environmental assets as well as the profits from illegal mining or other crimes.

Regarding the use of strawmen, the operations highlighted cases in which assets and proceeds from illegal gold extraction were registered in the names of third parties. This also included registering PLGs in the names of strawmen to conceal the real owners of the mines, thereby making it difficult to identify the true beneficiaries of the ventures.

The operations also involved cases where assets and proceeds from illegal gold extraction were registered in the names of third parties (strawmen). PLGs were also registered to strawmen in order to hide the real owners of the mines and make it difficult to identify the true beneficiaries of the ventures.

Finally, DTVMs and mining cooperatives were also revealed to be selling gold as if it were scrap metal or silver. Manipulation market values upon purchasing and selling the "gold" allows companies to more easily justify their financial activity and avoid paying taxes by concealing the true value of the goods in question.

In summary, Federal Police operations aimed at combating illegal mining in the Amazon, which also involve economic offenses, demonstrate that irregularities in the gold production chain are complex and involve various actors and phases. Insufficient oversight and fragile or non-existent regulations for mining activities, combined with limited economic opportunities in the region and the high market value of gold, encourage the spread of illicit economic activities, such as money laundering, fraud, and corruption.

The connections to other criminal activities, such as drug trafficking, exacerbate the risks and complexities of this clandestine industry. Furthermore, the widespread acceptance of gold as a universally-valued asset for commercial exchange also fuels illegal enterprises that forgo integration into formal markets and use the gold to directly fund illicit activities.

Livestock Production Chain

The Amazon contains the largest pasture area in Brazil, driven by an approximately 200% increase in cattle farming from 1985 to 2020.⁶⁹ Livestock activity occupies about 15% of the biome⁷⁰ and contributes 8% to national GDP.⁷¹ Approximately 20% of the original forest cover has been lost in favor of agribusiness.⁷²

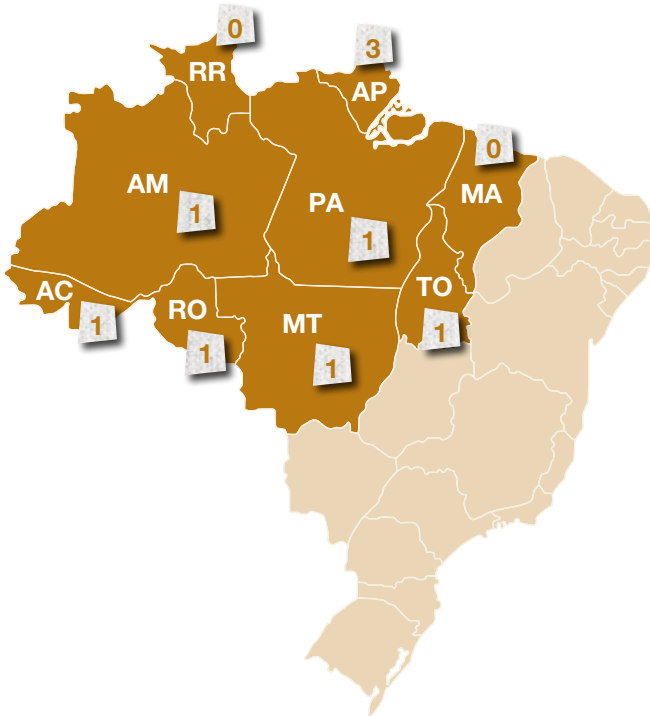
Although the livestock sector is subject to various compliance policies and sectoral agreements, including initiatives led by the Public Prosecutor's Office, such as the Conduct Adjustment Agreement (TAC) within the Carne Legal program, challenges remain. Most livestock production in Brazil is not directly linked to deforestation, with 2% of properties in the Amazon and Cerrado accounting for 62% of potentially-illegal deforestation.⁷³

Our analysis of nine Federal Police operations revealed a series of trends regarding links between the livestock production chain and economic crimes:



- Raising cattle in pastures located in illegally-deforested areas, within environmental conservation units, and on public lands occupied through illegal means (land grabbing);
- Cattle farms with irregularities, such as exploiting workers in conditions similar to slavery or violating environmental and labor laws;
- Fraudulent information on Animal Transit Guides (GTAs)⁷⁴ used in the transportation of cattle;
- Using false documents to hide the illegal origin of the cattle.

Figure 3. Location of Federal Police operations targeting illegalities in the livestock production chain and economic offenses (2016-2022)

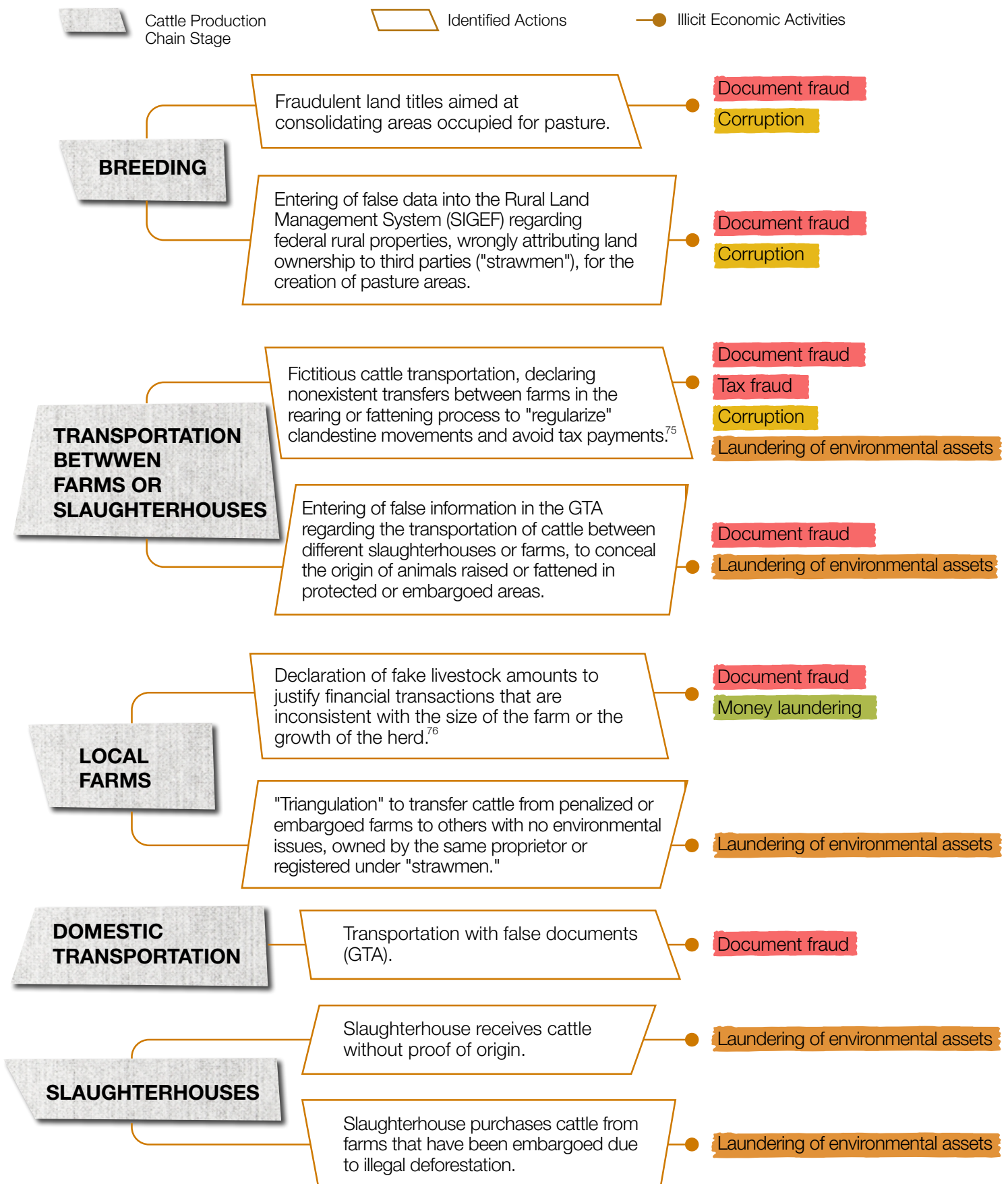


Source: Prepared by the Igarapé Institute based on original data

A strategy called "triangulation" is commonly used to "launder" cattle. In one approach, cattle raised in irregular or protected areas are moved to legitimate farms to conceal their origin and facilitate their sale in formal markets. Another form of "triangulation" involves transferring animals between farms owned by the same person or from an unregistered farm to a registered one, using "strawmen" to hide the true owners and obtain the documentation required for sale to slaughterhouses.

"Strawmen" are often individuals not directly involved in the cattle operation, and may be recruited or coerced into registering farms in their names, or they could be family members of the farmers. In any case, the goal is to hide the true identity of the farm owners, in order to avoid scrutiny from authorities and regulatory bodies that monitor cattle raising and fattening activities in restricted areas such as those embargoed by IBAMA, protected areas or public forests that have not been designated for cattle farming. This strategy makes it difficult to trace illegal activity and identify those responsible for raising and fattening cattle in prohibited locations.

Table 3. Economic offenses identified in the livestock production chain, based on Federal Police operations (2016-2022)



Source: Prepared by the Igarapé Institute based on original data.

As previously mentioned, money laundering and environmental asset laundering presuppose prior illegal conduct – assets or values that have been obtained illegally need to be "laundered." In the context of livestock, environmental asset laundering can be preceded by other crimes, such as illegal deforestation and the use of illegally occupied lands for pasture, in addition to other economic crimes, such as corruption.

Federal Police operations such as Operation Rios Voadores⁷⁷ have shown that criminal groups involved in these illicit activities tend to be highly organized. In this operation, the Federal Police and Federal Public Prosecutor's Office found that a criminal organization was involved in the illegal occupation of public lands near the Menkragnoti Indigenous Land in Altamira, Pará. After clearing and burning the land to create pasture, the criminals used strawmen to falsely register properties in the CAR system. In this way, they could potentially initiate the land regularization process and use official procedures to assume responsibility for the environmental damage. If successful, the degraded area would then be divided and sold or leased to rural producers.

The operation also uncovered fake companies created to hide the origin and payments of funds from environmental crimes, and manage and protect the criminal organization's assets.

Just as with gold, criminal organizations are using livestock enterprises, such as cattle farms, to launder the proceeds from drug trafficking. In Operation Flak (2019),⁷⁸ the Federal Police dismantled a Tocantins-based criminal organization that transported cocaine via air from drug-producing countries to other destinations in South America, Central America, and Africa. Part of the profits were reinvested in the raising, fattening, and selling of cattle to slaughterhouses.

Despite promises to improve transparency and traceability in the livestock production chain, there is still a significant lack of open environmental data across the states of the Legal Amazon,⁷⁹ regarding licenses, fines, embargoes, vegetation suppression permits, animal transit guides, and the compliance of individual farms and their owners. For example, CAR data is only available in an open format in Mato Grosso, Pará, and Acre, while GTA data is not open in any state. Mato Grosso stands out for its environmental transparency, while Tocantins, Amapá, and Acre have the least information available.⁸⁰

Corruption and Procedural Fraud: Crosscutting Economic Offenses

Beyond the specific phenomena identified in each of the timber, gold, and livestock production chains, the Federal Police operations also revealed cross-cutting economic offenses across all three:

Corruption: Influence peddling, bribery and abuse of power to hide environmental crimes were rife across various stages of the production chains for these illicit economies. There were also cases of manipulating penalties for profit, regulatory agents neglecting their duties for bribes. Some operations also involved leaks of confidential information and the use of rural militias to secure areas where environmental crimes are underway.

Procedural Fraud: The operations revealed the common practices of providing contradictory information to obstruct criminal investigations, manipulating infraction notices, and disclosing information about inspections early to help business owners defend themselves. There were also compromises in investigations, difficulties in recovering obtained values, fraud in land regularization processes, and fraudulent judicial processes related to expropriations of rural properties by public officials. Additionally, there was a practice of issuing infraction notices with lower values to benefit businesspeople.

Land Grabbing and the Use of Digital Tools

Land grabbing is the illegal or irregular appropriation of public lands by private individuals, often linked to organized crime and involving illicit activities such as money laundering, fraud, and corruption.⁸¹ Long present in the Amazon,⁸² the phenomenon currently impacts about 118 million hectares of public lands, with half of these areas being irregularly occupied.⁸³ This practice violates environmental, agrarian, civil, criminal, and tax norms, and leads to the illicit appropriation and concentration of natural and financial resources. Furthermore, land grabbing is frequently linked to other economic activities, including land speculation, illegal logging, livestock farming, and illegal gold mining.⁸⁴ These activities often serve to legitimize the illegal occupation of public land by exploiting resources or using the land for seemingly productive purposes.

Illegal land appropriation in the Amazon assumes various forms, depending on the vulnerabilities and institutional limitations in a given region. These forms, which include the issuance of forged land titles and payment for certificates from federal or state land agencies, are often associated with corruption and money laundering through the illegal sale of land. The misuse of the Rural Environmental Registry (CAR) under the 2012 Forest Code⁸⁵ has allowed for the improper recognition of property rights, despite legislation stating otherwise.⁸⁶ The CAR's self-reported nature and lack of proper verification by state environmental authorities has enabled squatters and land grabbers to falsely present themselves as legitimate owners⁸⁷ and gain access to benefits such as agricultural credits and land regularization programs. As a result, the CAR is sometimes seen as a tool for "digital land dispute" or "green land grabbing."⁸⁸

Through multiple studies, the Igarapé Institute has identified land grabbing as a key factor driving deforestation in the Amazon, and has also called attention to a new, lesser-known form of land grabbing that involves the use of digital tools and is linked to economic offenses, as detected by some Federal Police operations.

Digital technology facilitates the illegal occupation of public lands in the Amazon, which in turn leads to an increase in fraud, corruption, money laundering, and environmental asset laundering. The digital space impacts these economic offenses in the following key ways:

Fraud

Facilitation of Illegal Transactions: Digital platforms such as Facebook and OLX enable land grabbers to advertise illegally-obtained lands to a larger audience, making it easier for fraudulent ads to spread.

Anonymity and Pseudonyms: The digital environment enables sellers to use fake names or anonymous profiles, making it challenging for authorities to trace the real identities of people engaged in fraudulent transactions.

Corruption

Secretive Communication: Online communication through encrypted channels that do not log message content enables the discreet exchange of bribes, information, and influence, making it difficult to detect corrupt practices. These channels also make it easier to negotiate bribes and agreements with corrupt public officials that oversee the granting of property titles or land regularization processes.

Money Laundering

Hidden Investment: Acquiring land in the Amazon through digital platforms can be a convenient way to launder money, since it is harder to trace funds back to their illegal origin.

In conclusion, the digital environment has increased the scale and pace of illegal land grabbing in the Amazon, making it harder to monitor and enforce rule of law. Authorities need to adopt more effective strategies to address digital land grabbing, including regulation of the General Data Protection Law (LGPD) in criminal cases, implementing stricter rules for the online registration of land purchases, requiring proof of land legality,⁸⁹ and regulating marketplaces to close loopholes that enable the concealment of illicit funds and goods.

RECOMMENDATIONS

This study has shed light on the complex ecosystem of economic offenses related to environmental crimes in the Amazon, and deepened understanding of the connections – some strong, others more fragile – between different types of crime that combine across various actors and locations to perpetuate criminal deforestation.

Although it is clear that no single solution can eliminate the risks of money laundering, fraud, and corruption associated with environmental crimes, all those involved, both directly and indirectly, must join forces in environmental, economic, and criminal governance. The aim is to identify problems and solutions through different perspectives. To that end, we propose a series of general recommendations, as well as specific recommendations for each type of illicit economy analyzed in this study.

General Recommendations

- Develop a specific risk assessment for money laundering and corruption related to environmental crimes in the Amazon Basin.
- Expand the dissemination of knowledge about the interconnection between environmental crimes and economic offenses, promoting specific studies and research in control institutions.
- Provide training courses for authorities from control institutions operating in areas of the Amazon region with the highest incidence of environmental crimes and economic offenses.
- Enhance traceability and transparency mechanisms in supply chains to better identify the sources of funding for large-scale illegal environmental activities.
- Reinforce mechanisms of regional and international cooperation from technical, operational, investigative, and judicial perspectives, especially for the identification of illicit financial flows and illegal environmental assets. This cooperation is essential for enhancing technological and operational capacity to trace illegally extracted environmental assets throughout the Amazon Basin, connecting actors and processes between Brazil and neighboring countries, and strengthening investigative and prosecutorial capacities related to trafficking and financial crimes committed at different stages of regional and global chains.
- Promote interoperability between public agencies' databases and the COAF system, such as those of IBAMA and ANM, to facilitate the identification of suspicious transactions in areas without legal authorization or under embargo.

- Implement red alerts that correspond to the reality of environmental crime in the Amazon and enhance COAF's ability to generate financial intelligence, considering regions with intense mining activity or PCOs in the vicinity of Indigenous Lands or Conservation Units.
- Regulate subsection XVII, Article 9, of Law no. 9,613/1998, which defines "individuals or legal entities engaged in the trade of high-value goods of rural or animal origin or intermediating their commercialization" as one of the sectors that must report. This measure targets sectors linked to the exploitation and trade of timber and wildlife, as well as livestock, which may be associated with various environmental crimes such as land grabbing, deforestation, illegal logging, and wildlife trafficking, and suggests the inclusion of new entities in Article 9 of Law no. 9,613/1998.⁹⁰
- Under the auspices of the National Council of Justice (CNJ), organize a task force to review and investigate property records that coincide with Conservation Units, Indigenous Lands, and undesignated public lands held by registry offices (cartórios) in the Legal Amazon.
- Revise a CNJ normative that requires registry offices to use georeferencing tools prior to registering a given property, in order to check for potential overlaps with Indigenous Lands, Conservation Units, and undesignated public lands, as well as to define procedures to be implemented when an overlap is detected.
- Restrict the online sale of certain products – such as mercury,⁹¹ soil and timber – through agreements or Conduct Adjustment Terms (TAC), in order to improve consumer safety and product traceability, by requiring proof of origin for environmental goods as well as seller identification.

Specific recommendations for each economic sector covered in this report

Timber

1. Implement the DOF+ System (IN IBAMA no. 16/2022), which introduced a tracking code defined by the authorization number (Autex) generated in the National System for the Control of the Origin of Forest Products (Sinaflor) and integrated state systems. This tracking code will facilitate the monitoring of a product from its origin to its final destination.
2. Revise Article 9 of Law no. 9,613/1998 to include entities in the timber production chain that are not currently required to report suspicious transactions. This will improve oversight and traceability in the timber production chain and apply to establishments like sawmills.

Gold Mining

1. Effectively implement IN RFB no. 2138, IN Bacen no. 406, and ANM Resolution no. 129/2023.
2. Define precise and objective criteria for Individual Small-Scale Mining Permits (PLG) issued by the National Mining Agency (ANM). Establish what constitutes a small-scale venture and limit the number of PLG requests per CPF in order to avoid granting contiguous PLGs.⁹²

3. Preemptively block the registration of PLGs in protected areas such as Indigenous Lands and Full Protection Conservation Units. Conduct a thorough and individualized analysis of any request to mine in these areas.
4. Develop a specific strategy to aid COAF in monitoring financial institutions that buy and sell gold (e.g., DTVMs). Require these institutions to adopt enhanced know-your-client processes and submit periodic reports to COAF.
5. Increase the Central Bank's supervision of PCOs and DTVMs.

Livestock

1. Include slaughterhouses and certifying bodies in the list of entities that are subject to monitoring and required to report suspicious transactions in the meat production chain that are currently not covered in Article 9 of Law no. 9,613/1998. This will enhance oversight and traceability in the livestock production chain.
2. Give public access to information contained in the GTA or e-GTA, with a particular focus on the location of cattle fattening farms.
3. Make the use of cattle tracking chips (as per the Cattle and Buffalo Identification and Certification System – SISBOV) mandatory instead of voluntary.

END NOTES

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FURTHER READING



STRATEGIC PAPER 61 - **FOLLOW THE MONEY: HOW ENVIRONMENTAL CRIME IS HANDLED BY ANTI-MONEY LAUNDERING SYSTEMS IN BRAZIL, COLOMBIA, AND PERU**

(July 2023)



STRATEGIC PAPER 60 - **FOLLOW THE MONEY: CONNECTING ANTI-MONEY LAUNDERING SYSTEMS TO DISRUPT ENVIRONMENTAL CRIME IN THE AMAZON**

(June 2023)



STRATEGIC PAPER 57 - **CONNECTING THE DOTS: TERRITORIES AND TRAJECTORIES OF ENVIRONMENTAL CRIME IN THE BRAZILIAN AMAZON AND BEYOND**

(July 2022)



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