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## The Ecosystem of Illegal Gold Mining

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A photograph of a man wearing a purple baseball cap and a white t-shirt, leaning over a wooden sluice box in a stream. The water is muddy and turbulent. The background shows a lush, green forest with ferns. The image is partially obscured by a dark blue diagonal overlay.

# THE ECOSYSTEM OF ILLEGAL GOLD MINING

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ORGANIZED CRIME DYNAMICS IN THE  
ARTISINAL AND SMALL-SCALE GOLD  
MINING SECTOR OF PERU

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# TABLE OF CONTENTS

<b>3</b>	Executive Summary
<b>4</b>	Introduction: Illegal Gold Mining in the Peruvian Amazon
<b>4</b>	“Globalization” of the Gold Economy: Impact on Local, Regional, and Global Level <ul style="list-style-type: none"><li>- Informal vs Illegal Mining</li><li>- From London to La Pampa: Gold Pricing Changing Mining Dynamics in Madre de Dios</li></ul>
<b>6</b>	Criminal Exploitation of the ASGM Sector and Intersection with Illicit Markets <ul style="list-style-type: none"><li>- Drug Trafficking</li><li>- Gold and Money Laundering and Criminal Culpability along the Gold Supply Chain</li></ul>
<b>8</b>	Human and Environmental Costs of Illegal ASGM <ul style="list-style-type: none"><li>- ASGM and Human Trafficking for sexual exploitation and forced labor</li><li>- Deforestation and mercury contamination</li><li>- Violence, Displacement and assassinations of indigenous communities</li></ul>
<b>11</b>	Illegal Gold Mining During the Pandemic
<b>12</b>	Current Responses and Their Weakness <ul style="list-style-type: none"><li>- Overview of Current Policies and Enforcement</li><li>- Weaknesses of Current Policies</li></ul>
<b>15</b>	Recommendations
<b>17</b>	Endnotes
<b>24</b>	About the Author

## EXECUTIVE SUMMARY

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Criminal groups quickly recognized that controlling large swaths of land and illicit and legitimate enterprises linked to illegal gold mining in the Peruvian Amazon enabled them to generate larger profit margins with fewer risks due to the lack of a government law enforcement presence. Gold constitutes an ideal medium for criminal groups to launder proceeds obtained from other illegal activities. Compared to other natural resources and illicit goods, gold is valuable by volume.

Licit and illicit supply networks are continually reconstituted through micro-level daily processes in which people labor under diverse conditions to move money and goods toward the end goal of enrichment. Therefore, flows of gold, labor, and capital are part of broader social, regulatory, and bio-geophysical ecologies in which labor is not a static variable but instead refers to specific agents within diverse populations that span multiple jurisdictions. The nexus between illegal mining and other organized crime complicates the design of strategies to address this problem effectively. Specifically, intersections with human trafficking and forced labor, migrant smuggling, and the drug trade have been identified. However, the form and degree can vary significantly.

Gold's traceability is challenging, especially for gold from alluvial mining in Peru's Madre de Dios region. It possesses high levels of liquidity, holds its value, and becomes a legitimate consumer commodity once laundered, so criminal groups often prefer it to other currencies, especially as efforts to freeze criminal assets have increased.

While artisanal and small-scale gold mining (ASGM) is a critical livelihood for hundreds of thousands of miners in the region, it also presents an opportunity for criminal exploitation due to the informal nature of extraction activities. Illicit activities in the ASGM sector can range from direct control of mining operations and supply chains to collecting "quotas" for mining development and operation flows to engaging in the illegal trade of mercury, gasoline, and other commodities. However, it is important to highlight that ASGM is not creating new criminal exploitation of the ASGM sector but in-

ducing a shift or diversification of existing illicit activities.

Despite the gold price volatility, the expansion of illegal gold mining at the cost of human rights and the environment has reached record highs of destruction.<sup>1</sup> The devastating effects of informal and illegal gold mining are known, above all, for the impact on the environment and human rights of victims of sexual and labor exploitation. Hence, violence; intra and intercommunal conflicts; high levels of organized crime, such as drug trafficking, mercury and cyanide smuggling; hit men, and the production and commercialization of illegal gold are part of the same socio-criminal problem. One of the major environmental impacts of illegal mining in Peru is massive deforestation, the loss of biodiversity, and the leak of tons of toxic mercury into rivers and lakes. It takes illegal mining a week to destroy a habitat that took millions of years to evolve. Illegal gold mining is not only affecting people that live in the area, but also the most biodiverse area on the planet. Thus, it affects everyone worldwide.

In February 2019, the Martin Vizcarra administration introduced Operation Mercurio 2019, the largest intervention in Peruvian history against illegal gold mining in the Peruvian Amazon, in which 1,800 police and military forces raided more than 800 illegal mining camps in two years and destroyed approximately US\$300 million in equipment in Madre de Dios, thus breaking up business in La Pampa, the epicenter of illegal mining and other criminal activities.

In addition, COVID-19 is not only having an impact on the global economy and surging unemployment. It is driving gold prices to historical record highs since 2012 at US\$2,071 per ounce in August 2020, leading to an influx of illegal miners to (unlicensed) gold mining sites where they invade protected indigenous lands, stripping swaths of forest bare, poisoning rivers with mercury, and laundering illegal gold through mineral shops.

It is a significant challenge to design effective responses addressing informal and illegal mining that do not further alienate vulnerable populations while also sanctioning illegal miners and gold smugglers operating outside the law. Peruvian existing normative and institutional frameworks, developed since 2002, are inef-

fective in achieving formalization and combating the crime of illegal mining in a sustainable and long-term way. It is necessary to consider this complex issue's social, political, and environmental dimensions to design and implement a serious, comprehensive multisector strategy with an action-related set of indicators for compliance.

## **INTRODUCTION: ILLEGAL GOLD MINING IN THE PERUVIAN AMAZON**

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The gold sector is highly vulnerable to criminal exploitation, such as illicit financial flows, money laundering, and environmental crime. Gold, sourced through artisanal and small-scale gold mining (ASGM), is treated with particular suspicion due to its association with a host of criminal enterprises, including crime syndicates, money laundering, environmental degradation, corruption, and human trafficking for labor and sexual exploitation. The sourcing of gold from geographically remote locations and often complex supply chains easily conceal illicit activities upstream from downstream suppliers and, ultimately, consumers, allowing gold to be easily laundered into formal supply chains and used to launder money. Illegal mining<sup>2</sup> is one of the easiest and most profitable ways to launder proceeds from drug trafficking, human trafficking, or other criminal activities and is sometimes used to finance criminal and insurgent groups.

In 2019, the Peruvian National Society for Mining, Petroleum and Energy (Sociedad Nacional de Minería, Petróleo y Energía or SNMPE) identified the continuation of and expansion of illegal mining in up to 13 regions, amongst them are the regions of Madre de Dios, Piura, La Libertad, Puno, Ica, Ancash, Cusco, Apurímac, Tumbes, Lima, and Arequipa.<sup>3</sup> One of the main centers for informal and illegal gold mining is the province of Madre de Dios, where approximately 90 percent of the gold produced is extracted illegally or through informal structures. In addition, roughly 90 percent of the population in this area directly or indirectly depends on the mining sector.<sup>4</sup> According to the Peruvian Ministry of the Environment, 16 to 18 tons of gold are extracted annually from Madre de Dios alone.<sup>5</sup> The

SNMPE estimates that up to 500,000 informal and illegal miners are active in Peru (focusing on Madre de Dios),<sup>6</sup> and that in 2017 and 2018, illicit activity expanded at the highest rate on record, by 18,440 hectares (equivalent to 34,400 American football fields) in two years.<sup>7</sup>

While ASGM is an important source of income for hundreds of thousands of miners in the region, the significant profits to be made and pervasive informality surrounding this sector—combined with political fragility—has made ASGM and the associated gold trade a highly attractive and lucrative enterprise for criminal groups managing illegal gold mining exploration sites and other illicit markets connected to the gold sector.

Related activities are environmental crimes, such as illegal deforestation of protected lands in the Amazon basin and pollution of rivers with mercury and other chemicals used in the extraction process. Another prominent form of organized crime tied to illegal gold mining is human trafficking for labor and sexual exploitation in the mining areas, a gross human rights violation. In addition, other illicit activities, such as the invasion of indigenous lands and national parks as well as drug trafficking and arms trafficking, are related to illegal mining.

This paper aims to provide an overview of illegal gold mining, particularly of ASGM in the Peruvian Amazon. It will highlight the connected forms of organized crime and their impacts on the environment, humans, and the country of Peru, as it faces detrimental economic losses.

## **“GLOBALIZATION” OF THE GOLD ECONOMY: IMPACT AT THE LOCAL, REGIONAL, AND GLOBAL LEVELS**

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Peru is the leading gold producer in Latin America. It has dropped from the fifth-largest producer worldwide in 2014 to the 12th largest,<sup>8</sup> with an official production volume of 87 tons<sup>9</sup> in 2020.<sup>10</sup> It is difficult to estimate the illegal gold production, but the Artisanal Gold Council attempted to calculate the amount of illegal gold production compared to formal production. In 2016, Peruvian gold production—both informal and illegal—was 148.77 tons. Comparing the

production records of the 2016 Mining Yearbook of the Ministry of Energy and Mines, actual gold production was at 263.07 tons, of which 41.8 percent (110.07 tons) was not registered and mainly from illegal mining from the Madre de Dios region.<sup>11</sup> The head of SNMPE estimates that between 25 percent and 30 percent of all the gold Peru produces is generated by informal and illegal mining, representing approximately US\$2 billion per year and doubling the income from the remaining drug trafficking in Peru.<sup>12</sup>

One challenge in tracing illegally extracted gold is identifying its illegal provenance. However, independent experts reveal that alluvial gold has a lower ore purity of approximately 93 percent. Therefore, it can most likely be assigned to its origin of the alluvial mining region of Madre de Dios and must be refined in an additional process to reach the commercial purity of 99.7 percent.<sup>13</sup>

Intertwined with the extraction and processing of gold are the concession owners and a network of intermediaries known as “middlemen” who buy and sell gold and the “billers” who provide false receipts for the gold produced in illegal mines. Miners sell the illegally extracted gold to these middlemen in the three main Madre de Dios trading centers, Puerto Maldonado, Mazuko, and Huepetuhe. From there, traders sell the illegal gold to larger Peruvian refining companies in Lima, where it is processed (again) and through international brokers bought by global refining companies, who have local branches in Lima.

### **Informal vs. illegal mining**

Gold production in Peru is a complex mosaic of mines, mining, and processing plants of various types, sizes, and levels of legality.<sup>14</sup> The Peruvian government established a multisectoral task force in 2010 to initiate the formalization process of ASGM and passed the first law against illegal mining in March 2012.<sup>15</sup> In the same year, Peru passed Legislative Decree 1106, which was the first time illegal mining was included in the framework of organized crime. In 2013, due to the strong influence of miners’ lobbies and the former president of congress, it was modified, and a new law on organized crime was passed, excluding illegal mining from the new organized crime law.<sup>16</sup> Nevertheless, illegal mining is defined in the criminal code.

Informal structures are very common in ASGM and are therefore often confused with illegal mining. Legislative Decree 1105<sup>17</sup> defines the distinction between *informal* and *illegal* mining,<sup>18</sup> establishing the framework of the formalization process in six stages. As a result of its implementation in December 2012, approximately 74,000 individuals and legal entities were introduced to the formalization process, of whom 5,500 were from Madre de Dios. The process has been delayed by its complexity and the lack of governmental resources; it was supposed to be completed by April 2014 and was extended until the end of 2021.<sup>19</sup> Of a total of 88,000 registered miners in the formalization process, according to the MINEM portal, until October 12, 2020, only 1,562 were formalized.<sup>20</sup> The Peruvian government has defined the so-called mining corridor (*corredor minero*) only for Madre de Dios, where mining activities are allowed, and workers exploring gold are in the formalization process.

### **From London to La Pampa: Gold pricing changing mining dynamics in Madre de Dios**

The impact of the global gold economy on the social, environmental, and illicit market structures in Peru manifested itself after the financial crisis in 2008 when gold prices increased exponentially and fueled a new gold rush: The value escalated by 138 percent from US\$800 per ounce in early 2009 to above US\$1,900 in fall 2011. This “gold rush” led to increased illegal mining in Madre de Dios, Puno, and other areas. Aided by deep political fragility, organized crime groups were able to expand their illicit activities.

A direct correlation between gold prices and increased human trafficking for sexual and labor exploitation could be observed locally at mining sites in Madre de Dios. This is evident from 307 identified cases of human trafficking in 2017, primarily in mining areas.<sup>21</sup>

According to a study by the Amazon Network for Geo-Referenced Socio-Environmental Information (RAISG), due to increased mining activities between 2000 and 2018, more than 500,000 square kilometers (km) of the forested area estimated for the year 2000 (6,381,276 km<sup>2</sup>) were deforested, equivalent to 8 percent of its territory.<sup>22</sup>

Global drivers such as COVID-19 show that gold price volatility has a direct impact on the diversification of illegal and informal mining structures. In August 2020, for example, gold prices soared to a historical record high of US\$2,070 an ounce for the first time in New York trading and, with that, induced the return of illegal mining in areas like La Pampa (Madre de Dios) that were considered controlled.<sup>23</sup>

## CRIMINAL EXPLOITATION OF THE ASGM SECTOR AND ITS INTERSECTION WITH ILLICIT MARKETS

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ASGM is especially attractive as its legal status is often dubious, straddling the line between informal and illicit activity and carrying less severe punishment than other forms of organized crime. Peruvian experts also observe that the production and commercialization of the illegal mining sector share the same complex scenarios and logistical channels as products trafficked from adjacent illicit markets such as narcotics, smuggling of contraband goods, and illegal logging.<sup>24</sup>

According to unofficial reports from the Peruvian National Police and statements by the National Society of Mining, Petroleum and Energy, the gold trade is a mechanism for money laundering. Basically, the drug profits are used to buy gold, which is moved across borders and sold through export transactions. At the same time, the resulting profit is used to launder gold and therefore increases the use of illegal gold in the drug trafficking process.<sup>25</sup> However, according to illegal mining experts, it appears that organized crime groups do not cooperate with illegal mining groups but use the same drug and gold-trafficking routes, especially between Madre de Dios and Bolivia.<sup>26</sup> One of the few organized crime groups actively merging the two crime forms is the Sanchez-Paredes clan, which operates in La Libertad, owning formal gold mines used to launder drug trafficking revenue. The clan controls the regional mines using violence against workers and concessioners to increase their profit when gold prices decline. In October 2020, a member of the Sánchez-Pare-

des clan was sentenced to five years of imprisonment for tax fraud.<sup>27</sup>

*“Nothing competes with gold like nothing competes with cocaine.”*

- Regional state representative when judged by immediate earnings<sup>28</sup>

### Drug trafficking

For more than a decade, illegal mining has become the “new cocaine” of Latin America. However, both illegal economies (illegal mining and drug production/trafficking) are in a constant race to become the most profitable in the region; it is now challenging to identify which generates the largest revenue. According to the U.S. Office of National Drug Control Policy (ONDCP), Peru had a coca cultivation and potential cocaine production of 88,200 hectares and 810 metric tons in 2020.<sup>29</sup> Since around 2005, a change in the dynamics and structure of criminal organizations has been perceived. In part, this change was initiated by drug trafficking, which devised a “neural” system rather than a “pyramid” system to structure its businesses and chain of command by outsourcing tasks and making the business model more agile.<sup>30</sup>

The Peruvian Superintendency of Banking, Insurance and AFP (SBS)<sup>31</sup> identifies risks of financing illegal gold mining and infiltration of drug trafficking in areas such as Madre de Dios and Puno for the procurement of backhoes and dredgers, among other heavy machinery, and their rapid replacement after they are destroyed in interdiction operations.<sup>32</sup> Another troubling association between drug trafficking and the growing forces of criminal groups is related to collecting quotas for the “development” of this operation in different areas of illegal mining production.<sup>33</sup>

According to interviews with miners in the region of La Pampa in 2016, they acknowledged the parallel and sometimes overlapping structures of illegal mining and cocaine production. Depending on gold prices, miners move from mining to cocaine production or vice versa.<sup>34</sup>

Since 2019, the *Comando Vermelho*, the second largest organized crime group in Brazil, has expanded its operations to Madre de Dios. In-



stalled in Puerto Maldonado (the capital), the newly-formed cartel *Los Malditos del Comando Vermelho* controls the drug trafficking routes that pass through the region from the drug production epicenter VRAEM<sup>35</sup> and the drug route from Puno, leading to the Interoceanic Highway that connects Peru and Brazil. Local reports claim that arms were trafficked between illegal mining actors in La Pampa and members of the new cartel.<sup>36</sup>

The laundering of illegally sourced and refined gold is a useful way for criminal actors to launder drug revenue because, unlike cocaine, once gold is “laundered,” it becomes a legal commodity and can find its way into the formal consumer market using front companies.

### **Gold and money laundering and criminal culpability along the gold supply chain**

The origin of gold from illegal or informal sources is often falsified and makes its way into Peru’s exports and the global supply chain. Therefore, it is difficult to depict a comprehensive figure of illegally mined gold smuggled across borders or laundered into formal supply chains. However, specialized organizations and experts attempt to produce projections based on gold seizures from the Peruvian SUNAT (National Customs and Tax Administration) and triangulate official data on gold production, export, and import.

In 2019, the National Police identified 65 “financial centers” linked to the trafficking of gold extracted from Madre de Dios and groups establishing protection and quota systems along the Interoceanic Highway, mostly organized by an individual known as *El Venado* who charged for security in the transfer of machinery, chemicals, and gold.<sup>37</sup> About 3,000 foremen invested small amounts in gold mining by purchasing dredges, boats, hoses, fuel, smuggled mercury, and necessary supplies. Through third parties, they hired mining workers from Cusco, Puno, and Arequipa, paying them the equivalent of two grams of gold per day (about 290 Peruvian Soles, approximately US\$80). The foremen transported the gold to towns along the Interoceanic Highway. In addition to venues for the sale of mercury and machinery, there are still what the police call “financial centers” or “exchange houses.”

In addition, government officials draw on data, revealing the relationship between illegal gold mining, illicit financial flows, and money laundering from the Superintendence of Banking and Insurance’s Financial Intelligence Unit. Its data shows a volume of suspicious financial transactions between January 2010 and July 2019 totaling US\$14.8 million: 45 percent corresponds to illegal mining, followed by presumed transactions related to illicit drug trafficking (22 percent), tax fraud (10 percent), corruption (9 percent), and other (14 percent). Moreover, the total amount investigated for money laundering in 2019 amounted to US\$3.263 million. Of this, US\$2.217 million was related to illegal mining.<sup>38</sup>

In 2017, the Artisanal Gold Council estimated that 110 tons of unregistered gold are extracted per year and that more than half—57.4 percent—comes from the illegal mining region of La Pampa in Madre de Dios. With that assumption, illegal mining would move more money than drug trafficking.<sup>39</sup> Due to the lack of police and, therefore, weaknesses of control of import and export of goods, contraband gold has increasingly been smuggled out of Madre de Dios and Puno to Bolivia and then, passing through Lima, shipped to the United States, Europe, and other places. The alleged increased Bolivian production is due to contraband gold exported to the United States and Europe.<sup>40</sup>

Nonetheless, the involvement of political elites and the entanglement of the illegal mining sector with state-owned entities further contributes to the gold laundering of presumably illegally extracted gold. In 2012, the government of Ollanta Humala chose *Activos Mineros S.A.C.*, a state company (but under private law and the supervision of the National Fund for Financing State Enterprise Activity), to delegate a group of companies to sign gold purchase agreements for small-scale mining companies. Since then, *Activos Mineros* authorized three companies from Madre de Dios, Cusco, and Puno (Minersur, Veta de Oro, and E&M company, respectively);<sup>41</sup> owners of the three companies have been investigated for money laundering of illegal mining in reserved areas of the Amazon and tax evasion.<sup>42</sup>

The extent of illegal gold seizures shows the tip of the iceberg of presumed circulation of illegally sourced gold on the market:

Since 2011, the international airport of Lima had been the main transshipment center for gold laundering: Between 2011 and 2013, approximately one ton of gold from Bolivia passed through Lima. Between February and October 2014, SUNAT reported a record figure of 35 tons of gold,<sup>43</sup> and before June 2015, SUNAT seized US\$37 million in 35 interventions.<sup>44</sup>

In March 2018, SUNAT seized 91 km of gold in Callao/Lima and began an investigation against one of the aforementioned Peruvian trading companies for money laundering from illegal mining. In the same month, SUNAT had another ongoing investigation against the second Peruvian trader for confiscating 47 km of minerals of suspected suspicious origin. The third trading company, chosen from state company *Activos Mineros*, has been investigated for money laundering since 2014.<sup>45</sup>

As for the gold supply chain and its illicit segments of production and commercialization, one reason why criminal culpability remains at the low level of the supply chain is the small number of prosecution cases of crimes related to corruption and money laundering. Moreover, those captured are usually at the bottom of the (illegal) gold supply chain, such as miners or local gold traders rather than the summit of the illicit gold mining supply chain, such as large or international gold trading companies, members from other supplying private sector entities, or political elites facilitating the impunity of illegal gold mining in particular regions.

Until 2019, Swiss refineries were the largest buyers of Peruvian gold. Between 2001 and 2018, Metalor, one of the largest Swiss refineries, bought more than 100 tons of gold valued at US\$3,519 million.<sup>46</sup> In 2014, the refinery was singled out for the alleged purchase of tons of gold of suspected suspicious origin from traders in Madre de Dios.<sup>47</sup> In 2016, of 120 gold exporters, around 60 companies had money laundering investigations, five had exported gold from Madre de Dios. The SUNAT also revealed that none of the 71 suppliers of the gold Minersur was sending to Switzerland was listed in the register of controlled suppliers, which is key to the formal mineral production process. In addition, SUNAT found companies with a history of money laundering cases among the Minersur suppliers.<sup>48</sup> In June 2019, Metalor announced it would stop buying from small artisanal pro-

ducers to avoid the unintentional acquisition of illegally mined gold.<sup>49</sup>

Between 2017 and 2020, three Peruvian trading companies, based in Madre de Dios and Cuzco (with a high probability of trading illegally sourced gold from Madre de Dios), shipped a total of 5,283 kilograms (kg) to India; 1,272 kg to the United Arab Emirates (UAE); and 753 kg to the United States.<sup>50</sup> The Indian refinery from Kundan Group has provided gold to at least 40 U.S. trading companies since 2018, including General Electric, Halliburton, IMAX Corporation, and Stryker Corporation.<sup>51</sup> The three Peruvian trading companies and their managers have been accused and investigated for money laundering.<sup>52</sup> India has become a key gold buyer for Peruvian gold, almost surpassing Swiss imports of Peruvian gold in 2020 (worth US\$1.02 million and US\$1.3 million, respectively). Another major actor in this system is the UAE; in 2020, it was the fifth largest importer of Peruvian gold.<sup>53</sup>

Other key players involved in the exploration and commercialization of illegally mined gold are private sector companies from the construction and banking sectors. The strong presence of construction machinery companies, banking companies, telecom corporations, and beverage businesses in illegal mining areas and the city of Puerto Maldonado illustrates that those corporations failed to conduct due diligence and contribute to an illicit exploration process.

## HUMAN AND ENVIRONMENTAL COSTS OF ILLEGAL ASGM

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In Peru, ASGM is a profitable livelihood option. Compared to agricultural work, for example, farmers typically earn less than one-third of the profit of illicit mining activities. The conditions for human trafficking are closely related to ASGM's labor-intensive activity, which tends to attract impoverished, vulnerable populations. At the same time, male-dominated mining communities generate sex trafficking of women and minors into mining regions. Thus, there is a heightened risk of labor and sexual exploitation crimes occurring at or around ASGM operations, which often occur in remote locations with weak law enforcement and a strong presence of

armed and criminal groups. This increases the vulnerability of trafficked persons, particularly those lacking documentation, making it more challenging to identify potential victims of human trafficking and provide support.

### **ASGM and human trafficking<sup>54</sup> for sexual exploitation and forced labor<sup>55</sup>**

The most visible forms of exploitation are human trafficking for sexual and labor exploitation. Reports of human trafficking have been on the rise since 2014, with trafficking for sexual exploitation as the most commonly identified form; Lima and Madre de Dios are the provinces with the highest numbers of reported cases.<sup>56</sup> Women and female minors from all over the country, as young as 14 years old, are being trafficked to the mining areas of La Pampa, Mazuko, and the province's capital of Puerto Maldonado to work in *prostibares* (a mixture of a bar and brothel), which also constitute their residences.

According to data from the Ministry of Justice, 60 percent of identified traffickers are men and 40 percent women. They often come from the same provinces as their victims or are former victims themselves (female traffickers). The profile of identified victims shows an alarming high number of minors, with almost 40 percent being underage.<sup>57</sup> The national prosecutor from Madre de Dios, who specializes in human trafficking cases, estimated that 67 percent of unrecorded cases of trafficked women and girls are between 13 and 17 years old.<sup>58</sup> According to local non-governmental organizations (NGOs) in Madre de Dios, most of the girls were deceived by false job offers and promises of high wages for restaurant work as a cook or waitress. Women and young girls are being transferred to mining and gold trading areas, their IDs confiscated and face threats if they try to leave. NGOs also report that many victims are drugged to make them compliant (even while pregnant). For these women, the secluded nature of mining areas makes it even more difficult to escape due to physical confinement or social control in the mining camp.

Although official numbers of identified victims of human trafficking for sexual exploitation are much higher than those for labor exploitation, labor inspectors estimate that forced labor in

the mining sector could be much higher than current figures show.

According to the U.S. Department of State's 2021 Trafficking in Persons report, gold is produced with forced labor or child labor in Peru.<sup>59</sup> Indicators of labor trafficking identified in illegal ASGM in Madre de Dios include: deceptive recruitment, withholding wages and identity documents, induced indebtedness, isolation, physical confinement, forced participation in illicit activities, induced addiction to illegal substances, physical and sexual violence, and denunciation to authorities.<sup>60</sup>

Since the gold rush, low-skilled workers migrate to mining sites, drawn by perceived opportunities. However, workers are unaware that their income will derive from one day in a seven-day workweek, with no contract or fixed salary nor regulation of shifts, which can last up to 24 hours.<sup>61</sup> In cases of irregular payments or conflicts with the mine owners or other miners, workers are unlikely to file complaints with authorities due to the illegal nature of their work. In addition, the presence of criminal groups managing the mines or businesses in the mining area can significantly limit freedom of movement and the ability to seek support.

In Madre de Dios, adolescents and, in isolated cases, children between 10 and 14 years of age work in mining activities along with family members, clearing dredges, carrying sand, and being exposed to hazards, including mine collapses, landslides, and exposure to elemental mercury and harmful mercury gases.

Another enabling driver of increased illicit activities is the alleged involvement of government officials with organized crime groups managing sex trafficking in the region. In 2019, the head of the Criminal Investigation Division of the Police Region of Madre de Dios was arrested and accused of being involved in the alleged crime of human trafficking and corruption of officials. The operation led to the arrest of 15 people linked to this illegal activity, including the aforementioned officer. He reportedly provided support and information to a criminal group of traffickers regarding anti-human trafficking operations in exchange for money.<sup>62</sup>

Experts claim that labor and sexual exploitation differ substantially since informal miners are controlled by *soft coercion* through infor-

mal entertainment, such as the abundance of *prostibares*. Those mining camps, encompassing up to thousands of miners, create a parallel market of bars and canteens with drug and heavy alcohol consumption. In contrast, victims of sex trafficking are exploited through fraudulent recruitment practices and coercive means, including physical and psychological violence, which prevents victims from leaving their exploitative situation.<sup>63</sup>

Peruvian government officials claim the anti-illegal mining Operation Mercurio 2019 has not dismantled the human trafficking networks dominating the mining region in Madre de Dios but facilitated a shift of the exploitation routes to neighboring regions, such as the province of Manu. There, the number of bars has doubled, and a similar situation is registered in the Sarayacu area at the Interoceanic Highway, in front of the buffer zone of the Tambopata National Reserve.<sup>64</sup>

### **Deforestation and mercury contamination**

The Amazon basin, spanning approximately 5.5 million square km (twice the size of India), is virtually unique in scale, complexity, and biodiversity. Not only does the Amazon encompass the single largest remaining tropical rainforest in the world, but it also houses at least 10 percent of the world's known biodiversity, and its river accounts for 15 percent to 16 percent of the world's total river discharge into the oceans. Deforestation is also directly related to the lack of carbon dioxide sinks (i.e., the destruction of forests contributes to global warming).

During the last 17 years, the country has lost more than two million Andean Amazonian forests. In this sense, Peru, compared to Colombia and Ecuador, had the highest average deforestation rate between 2009 and 2016, and illegal mining is one of its main causes.<sup>65</sup> The mining activity in Madre de Dios over three decades led to the deforestation of 95,750 hectares, of which 64,586 hectares (or 67.5 percent) of the destruction occurred in the last eight years. Therefore, at the level of the entire Peruvian Amazon basin (the provinces of Cusco, Puno, and Madre de Dios), mining deforestation already exceeds 100,000 hectares.<sup>66</sup>

According to the Monitoring of the Andean Amazon Project (MAAP), in 2018, despite the

2017-2021 Strategy to Combat Illegal Mining in Protected Natural Areas in the Amazon basin,<sup>67</sup> 9,280 hectares were cleared for mining in Madre de Dios, making it the worst year on record.<sup>68</sup> According to information from the Peruvian Society of Environmental Law (SPDA), until 2012, illegal mining deforested 32,000 hectares of forests, producing 16 tons of gold, and 67 tons of mercury were used, which ended up in the environment of Madre de Dios, polluting lands, rivers, animals, and human beings.<sup>69</sup>

The alarming amount of mercury that goes into gold mining in Madre de Dios is estimated to be up to 181 tons per year, burned off after amalgamation—generally without using rudimentary technology to protect workers' health or capture waste or fumes.<sup>70</sup> Mercury also concentrates and magnifies throughout the food chain, traveling long distances through waterways, negatively affecting river quality and fish and wildlife, and exposing broader populations to mercury.

The Carnegie Institution for Science has conducted research in Madre de Dios since 2008 and found the levels of mercury have increased because of the amount of gold production. A 2013 study reveals that in Puerto Maldonado, 60 percent of the species sold in its food markets exceeds international mercury concentration limits for consumption.<sup>71</sup>

A government official revealed that until 2015, 12 Spanish companies were the main mercury exporters, providing 160 tons per year with 90 percent destined for Madre de Dios. After the EU Mercury Export Ban Regulation,<sup>72</sup> Spain was prohibited from selling mercury, and China and Mexico filled the void. Criminal groups linked to the mining sector control mercury flows and smuggle the liquid for illegal mining activities via Puno, at the Peruvian-Bolivian border to Madre de Dios.<sup>73</sup>

### **Violence, displacement, and assassinations of indigenous communities**

The illegal mining areas in the Amazon basin are intrinsically related to a climate of violence. For reasons specific to mining activity, large amounts of money and raw gold circulate, attracting criminal groups and organized networks to sustain the continuous gold extraction.

According to the 2018 homicides report from the National Institute of Statistics and Information, Madre de Dios is the province with the highest homicide rate since 2013 of 34.7 per 100,000 inhabitants in 2018 (almost four times higher than the annual homicide rate of 7.6 deaths per 100,000 inhabitants),<sup>74</sup> and the second highest in hired assassinations. Madre de Dios has the highest femicide rate in Peru, recording 3.5 deaths per 100,000 residents in 2017, almost five times the national rate of 0.73 deaths.<sup>75</sup> In addition to cases of human trafficking for sexual and labor exploitation, homicides and disappearances have become commonplace. High levels of impunity enable criminal groups to continue their activities.

In the entire Amazon basin, approximately 143,000 square km of indigenous land overlaps with active mining concessions, and, therefore, Indigenous communities face the threat of illegal mining.<sup>76</sup> According to a study by RAISG, of the 6,207 indigenous territories identified, 180 have illegal mining activity within their territory or at its borders. Sixty-four of these are in Peru.<sup>77</sup>

The conflict and violence generated by illegal gold mining, coupled with the environmental devastation it creates, can also lead to forced displacement of local populations and assassinations of Indigenous community leaders. In Peru, 20 environmental activists trying to protect natural resources have been murdered since 2013, of which 12 were Indigenous leaders from the Amazon basin provinces of Amazonas, San Martín, Madre de Dios, Loreto, and Ucayali. Since the State of Emergency was declared in Peru due to the COVID-19 pandemic in early March 2020, five Indigenous leaders have been killed in the Peruvian Amazon, indicating the risks they continue to face for opposing illegal logging, mining, and drug trafficking.<sup>78</sup> After the murder of environmental defender Roberto Carlos Pacheco Villanueva in September 2020 in Madre de Dios, the Peruvian Ombudsman's Office requested a series of urgent measures from the state to protect the lives of people who receive threats from unscrupulous criminal groups that coexist in the illicit world of illegal logging, informal mining, and land trafficking.<sup>79</sup>

## ILLEGAL GOLD MINING DURING THE PANDEMIC

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COVID-19 is having an impact on the global economy and surging unemployment, driving gold prices to record highs since 2012 at US\$2,071 per ounce in August 2020, thus leading to an influx of illegal miners to (unlicensed) gold mining sites invading protected indigenous lands, stripping swaths of forest bare, poisoning rivers with mercury, and laundering illegal gold through mineral shops. The global political and economic instability caused by the pandemic continues to drive investors to bet on gold, increasing its price and driving the temptation for new miners to enter the trade, thus exposing and deepening the structural problems made more evident by the pandemic's economic impact. For example, in April 2020, Peru's economy contracted by 40 percent compared to the same month in 2019. Some 72 percent of the population already depends on the informal economy to make a living, COVID-19 restrictions have had a detrimental impact on low-skilled and migrant workers, particularly those with low or no labor and social protections, thus making them even more vulnerable to human trafficking and labor exploitation.<sup>80</sup>

Victims of labor and sexual exploitation in mining areas are also exposed to a higher probability of increased abuse and a reduced chance of being identified and rescued during the pandemic due to decreased labor inspections and enforcement of laws on labor trafficking, which were already lax for victims in exploitative situations prior to the pandemic.<sup>81</sup>

During the state of emergency, formal gold production decreased by 17 percent in comparison to 2019.<sup>82</sup> <sup>83</sup> Yet, illegal mining has continued to operate in the Amazon basin, despite concerns about the potential spread of COVID-19 to Indigenous groups. In July 2020, the Madre de Dios region was confirmed as having the highest COVID-19 infection rate. Indigenous communities living near mining sites decided to isolate themselves to avoid the spread of the pandemic.<sup>84</sup>

General Raúl del Castillo, head of the country's environmental police, claims that the fight against illegal gold mining has been more diffi-

cult during the pandemic. Almost 1 percent of the Peruvian gross domestic product has been invested in public resources redirected toward the general fight against the pandemic.<sup>85</sup> Now, the withdrawal of police and army forces to enforce lockdowns and attend to the health crisis has allowed illegal mining to return to Madre de Dios, to the illegal mining areas of La Pampa through the Interoceanic Highway, despite the checkpoints. Victor Zambrano, president of the Peruvian Management Committee of the Tambopata National Reserve (Department of Madre de Dios), confirmed that during the last two weeks of the state of emergency, the return of people dedicated to illegal mining increased by large numbers.<sup>86</sup>

The Andean Amazon Monitoring Project (MAAP) recorded an increase in deforestation due to illegal mining in several areas and a migration of miners from La Pampa to other gold-rich points in Madre de Dios. However, the increase in deforestation in these areas does not reach the critical level that occurred in La Pampa before the Operation Mercurio. In the first two months of Peru's quarantine against COVID-19, illegal miners cleared 80 hectares of the Amazon rainforest. In the Apaylon area, an average of 2.9 hectares deforested per month increased to four, an increase of 41 percent since the start of Operation Mercurio.<sup>87</sup>

However, the Peruvian government has not developed a comprehensive response to address the COVID-19 induced increase in illegal mining. In August and September 2020, the Ministry of Environment coordinated multisectoral debates to identify the need to strengthen both the fight against the pandemic in the Amazon basin region and actions against illegal economies, such as illegal mining and illegal logging.<sup>88</sup>

Experts claim it is a problem solved not only by the work carried out by the Prosecutor's Office and Armed Forces but with a comprehensive intervention at all levels. Since the implementation of Operation Mercurio has removed illegal mining and related illicit activities from La Pampa, the need for alternative income has driven miners to move to other regions and, with that, environmental degradation and human exploitation have shifted elsewhere.

## CURRENT RESPONSES AND THEIR WEAKNESSES

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The liquidation of the Miners' Bank in 1992 and a gold rush starting in 2005 led to an alarming increase in informal and illegal mining. Consequently, the Peruvian government established a multisectoral task force in 2010 to initiate the formalization process of ASGM, passed the first law against illegal mining in March 2012—which included nine provisions on illegal mining in connection with organized crime activities and related crimes, such as money laundering—and introduced a registry portal for gold traders.<sup>89</sup>

Based on law 075-2012- PCM in 2012, the Office of the High Commissioner on Matters of Formalization of Mining, Interdiction of Illegal Mining and Environmental Remediation (*Oficina del Alto Comisionado en Asuntos de Formalización de la Minería, Interdicción de la Minería Ilegal y Remediación Ambiental* or ACAFMIRA) was established to implement the National Strategy Against Illegal Mining.<sup>90</sup> Any mining activities outside the corridor in Madre de Dios or in non-authorized zones, including communal areas, natural protected areas and their buffer zones, archaeological sites, and Indigenous communities, were countered through periodic raids during the administrations of Presidents Ollanta Humala and Pedro Pablo Kuczynski. Yet, most of these raids had proven ineffective since mining activities were resumed after because of a permanent absence of governmental institutions, guaranteeing a minimum level of law enforcement. Due to the lack of substantial achievements in their fight against illegal mining, the ACAFMIRA was closed in 2016. The governmental absence has led to a rampant new level of organized crime and assassinations, with rumors of the insurgent group Sendero Luminoso moving into mining.

A lesson learned for the Peruvian government was to increase the law enforcement presence on the ground addressing illegal mining activities and the financial flows related to illegal mining and associated illicit activities and their actors.

## Overview of current policies and enforcement

In February 2019, the Vizcarra administration introduced Operation Mercurio 2019, the largest intervention in Peruvian history against illegal gold mining in the Peruvian Amazon. In two years, more than 1,800 police and military forces raided over 800 illegal mining camps and destroyed approximately US\$300 million in equipment in Madre de Dios, breaking up business in La Pampa, the epicenter of illegal mining and other criminal activities, such as human trafficking and sexual exploitation.<sup>91</sup> As a consequence, deforestation decreased by 92 percent during the operation's first five months.<sup>92</sup> Operation Mercurio also initiated the declaration of a state of emergency in six districts of the Madre de Dios region as part of the actions to confront illegal mining and has been renewed every 60 days since it was first announced, most recently on February 5, 2021.<sup>93</sup>

In the same year, three military bases were established in La Pampa, where violence had escalated out of control. And to better control the trading routes of illegally mined and laundered gold, enhanced control checks for air, sea, and land routes were strengthened. As part of a more coordinated strategy against illegal mining and to better address the illicit flows of illegally mined gold, a task force was created to improve surveillance at the airport. Detectors were installed in X-ray machines at the cargo areas of Jorge Chávez International Airport in Lima to find high-density metals carried by passengers in Lima and also in the domestic airports of Cusco, Puno, Arequipa, and Madre de Dios.<sup>94</sup>

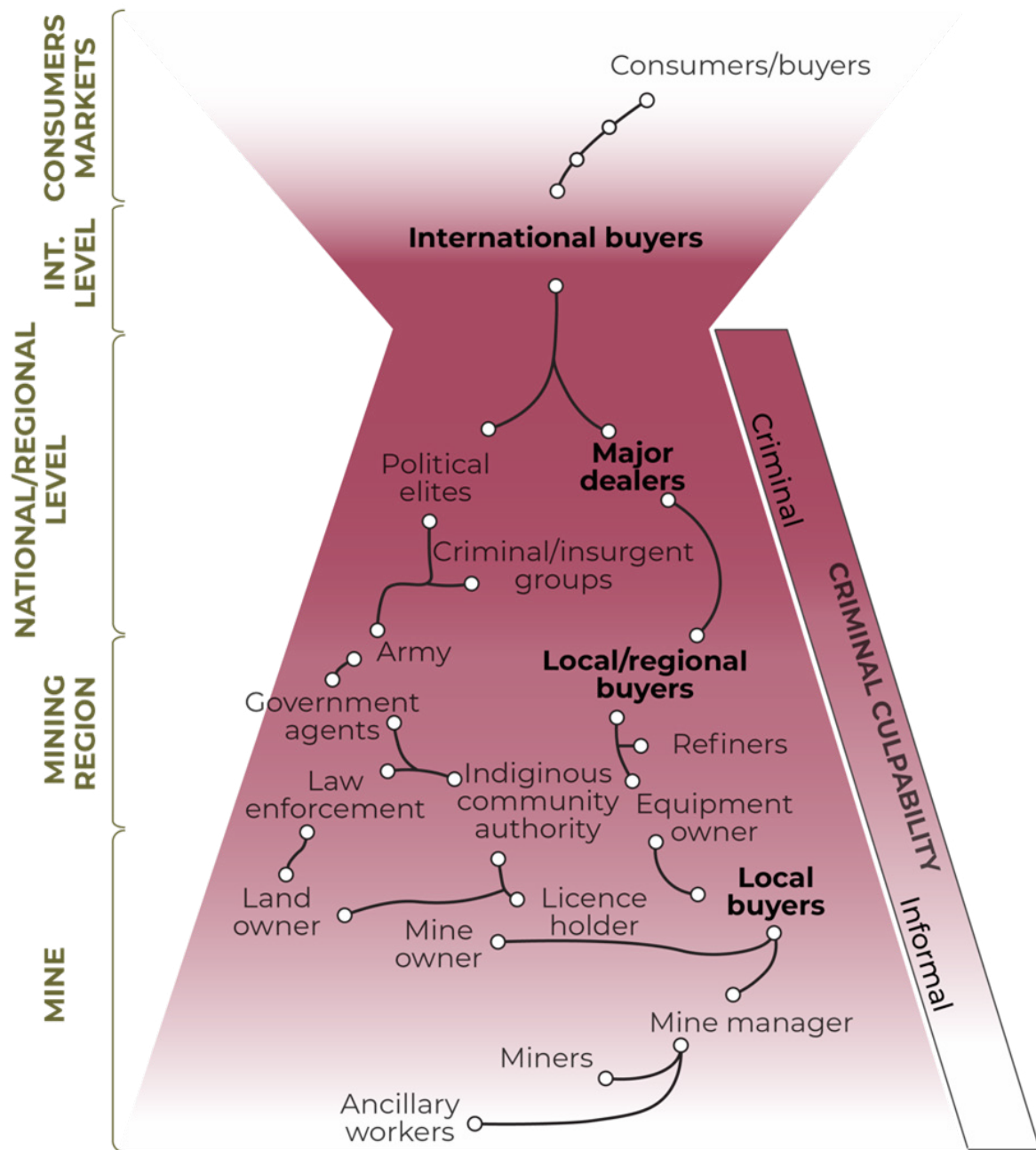
Peru's special prosecutor's office for environmental affairs (*Fiscalía Especializada en Materia Ambiental or FEMA*), established in 2010 with supranational jurisdiction across all 25 provinces of Peru, is also supported by the alliance of organizations<sup>95</sup> that make up the "Observatory of Illegal Mining and Related Activities in Key Biodiversity Areas."<sup>96</sup> In response to reports of an uptick in early 2020, the Peruvian government has continued to carry out operations to combat illegal mining in a state of emergency due to the COVID-19 pandemic. FEMA carried out more than 75 interventions against illegal mining operations in Madre de Dios between March 2020 and early June 2020, breaking up mining sites and destroying machinery.<sup>97</sup> In

September 2020, within the framework of the Mercurio operation, the Prosecutor's Office, with the support of the Armed Forces and the National Police, carried out a helicopter operation in the Amarakaeri Communal Reserve, which includes the departments of Cusco and Madre de Dios. The Specialized Prosecutor for Environmental Matters of Madre de Dios also conducted an operation in various sectors affected by illegal mining that contaminated the Paríamanu River and put the health of the Indigenous Amahuaca population of the Boca Paríamanu native community at risk. The patrols carried out by the Indigenous community along the river have made the issue visible but exposed them to death threats from illegal miners.<sup>98</sup>

## Weaknesses of current policies

The gold sector is of utmost importance to the Peruvian economy. The Peruvian government encourages foreign investment in the gold mining sector, claiming that the local population would benefit from job opportunities and social development programs from larger mining companies. Comparing poverty levels of mining provinces,<sup>99</sup> such as Cajamarca (with the largest formal industrial gold mine Yanacocha in Latin America), and Madre de Dios, reveals that the regions are at the extremes of national poverty rates (Cajamarca with the lowest and Madre de Dios with the highest). Precarious economic circumstances appear to be one of the main drivers attracting low-skilled workers into illicit markets. Sustainable strategies against illegal mining must consider long-term development plans.

Current policies addressing the fight against illegal mining have concentrated on the criminalization of miners in focal regions, interdictions, and analysis of the environmental impact (with support from specialized environmental organizations). But to understand the complete supply chain and criminal culpability of the key actors of the ecosystem of illegally mined gold (see graph<sup>100</sup>), it is necessary to (1) analyze actors further up the chain of the gold mining sector who facilitate illicit financial flows, and (2) evaluate the business model of gold trading from the mine site to larger trading centers in the country and abroad and the interrelations between them.



It is also essential to enhance the involvement of non-traditional actors, such as those from the private sector, including construction, banking, mercury, telecom, and beverage. Such key players in the mining sector are facing increasing pressure from governments to conduct rigorous supply chain due diligence, disclose their sourcing practices, respect human rights, and comply with environmental standards. There is a need to involve private sector representatives on a

larger scale in comprehensive and multisectoral approaches to address challenges when putting the guidelines into practice.

The increasing use of technology, such as satellite images and remote sensing techniques, has proven an efficient measure for Peruvian specialized entities to detect the impacts from deforestation, illegal logging, and illegal mining in Madre de Dios.<sup>101</sup> In February 2020, the National



Attorney's Office Resolution No. 413-2020-MP-FN approved new FEMA Regulations seeking to regulate the structure and functions of the Specialized Environmental Prosecutor's Office at the national level. One of the main benefits of this new norm is that the Satellite Georeferenced Monitoring Units for Environmental Crimes (UMGSDA) can issue official expert reports that strengthen the fiscal investigation's evidentiary level in prosecuting environmental crimes. The UMGSDA is part of the National Coordination of FEMA, and before the new regulations were issued in 2020, it only issued technical reports. Additionally, these units will continue to generate early warning reports of deforestation and the progress of illegal mining activities nationwide. Currently, FEMA National Coordination has four UMGSDAs units nationwide. Two were inaugurated in Madre de Dios and Lima. One of the weaknesses, however, is that there are only four prosecutors in environmental crime matters in Madre de Dios, which has a procedural burden of more than 650 cases per year.<sup>102</sup>

Measures taken by the state to formalize ASGM and prosecute and punish illegal mining have become insufficient, mainly due to the lack of financial and personnel resources, dearth of technical expertise for operators and officials of the regional governments, and the absence of incentives to fully comply with the requirements for formalization.<sup>103</sup>

Experts also claim that Operation Mercurio was a necessary measure to address illegal mining. Yet activities continue and are shifting to other areas and further endangering natural protected areas. With the latest technological advances, the Peruvian state has used new tools that detect illegal activities. But a more comprehensive strategy is necessary for a substantial and long-term reduction of illegal mining activities, landscape restoration, and the creation of alternative livelihoods for low-skilled miners that can rival small-scale mining.<sup>104</sup>

### **Shift of illegal mining activities in the Amazon basin: from bad to worse**

A change in administration, paired with disjointed responses to illegal mining, led again to an increase of illegal mining in the buffer zone of La Pampa, with higher levels of violence, sex trafficking, labor exploitation and homicides from

2016 until 2019. As a response, Operation Mercurio was introduced specifically for the Madre de Dios region. Illegal mining dynamics on the ground have shifted significantly over the past two years. Before 2019, extensive illegal mining activities were detected in the Tambopata National Reserve, and after expanding to the buffer zone (La Pampa) of that protected natural area, miners were operating at the banks of the Malinowski River and already approaching the limit of the reserve, one of the places with the highest biodiversity in the world.<sup>105</sup> Peruvian civil society organizations provided conservative estimates that before 2019, approximately 45,000 miners were operating in various places in the Tambopata and Manu provinces in Madre de Dios.<sup>106</sup>

The 2019 Operation Mercurio had unintended consequences as the displaced illegal miners from La Pampa moved to neighboring areas of the province del Manu, particularly in the Amarakaeri Communal Reserve and Andean regions where they continued to mine illegally. According to MAAP, the most alarming hotspot is located along the Pariamanu River, northeast of La Pampa; more than 15 hectares of forest between October 2020 and March 2021 have been destroyed, in addition to the illegal deforestation of 204 hectares during the past four years.<sup>107</sup>

## **RECOMMENDATIONS**

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It is necessary to consider the social, political, and environmental dimensions of this complex issue to design a multisectoral strategy with an action-related set of indicators for compliance.

### **Need to develop multisectoral strategies**

Coordinate investigations and joint operations between prosecutors with a multisectoral and holistic approach to illegal mining. Address human trafficking, labor exploitation, illicit financial flows, environmental crime (as part of organized crime), and the formation of criminal groups.

The government must:

- Simplify and better fund the process by which informal miners may gain legal status and ensure that labor inspectors and other relevant institutions have sufficient resources and capacity to protect, remediate, and rehabilitate victims of labor exploitation and any other form of exploitation related to gold mining.
- Provide increased financial resources for entities analyzing illicit financial flows and corruption and hold companies and criminal organizations involved in the extraction and export of illegally mined gold accountable.
- Promote the expansion of strategic partners to create new development projects in such regions as Madre de Dios, Puno, and San Martín before taking action that incites violence.
- Design a comprehensive policy instrument that addresses the phenomenon of illegal mining that includes prevention, control, and supervision; investigation and criminal sanctions; environmental remediation, and, if applicable, reparation of the damage caused. Said instrument must be prepared within the National Strategic Planning System framework to allow its implementation at the three levels of government and guarantee the budget for its execution.

### **Addressing organized crime in illicit supply chains**

Increase investment in research and analysis on the form and extent to which criminal expansion has occurred in the ASGM sector. Target actors and hot spots in illicit supply chains, seek crime-sensitive and crime-proof responses, and address corruption and access to profits.

Strengthen coordination spaces at the national, sub-national, and intergovernmental (vertical) level, so regional and local governments have the necessary support and technical assistance.

### **Addressing the environmental impact of illegal mining**

Increase financial and personnel resources for prosecutors in environmental crime matters and develop technical expertise to investigate environmental impacts, such as illegal deforestation.

Develop national plans to identify where to limit ASGM activities geographically. Peru is the only country in Latin America with an established body to review and approve detailed environmental impact studies of public, private, or mixed investment projects. These reviews address activities, buildings, operations, and other commercial services and investment activities that could cause significant environmental impacts.

## END NOTES

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