

THE INTERSECTION OF ENVIRONMENTAL AND HUMAN EXPLOITATION IN PERU

Authored by:

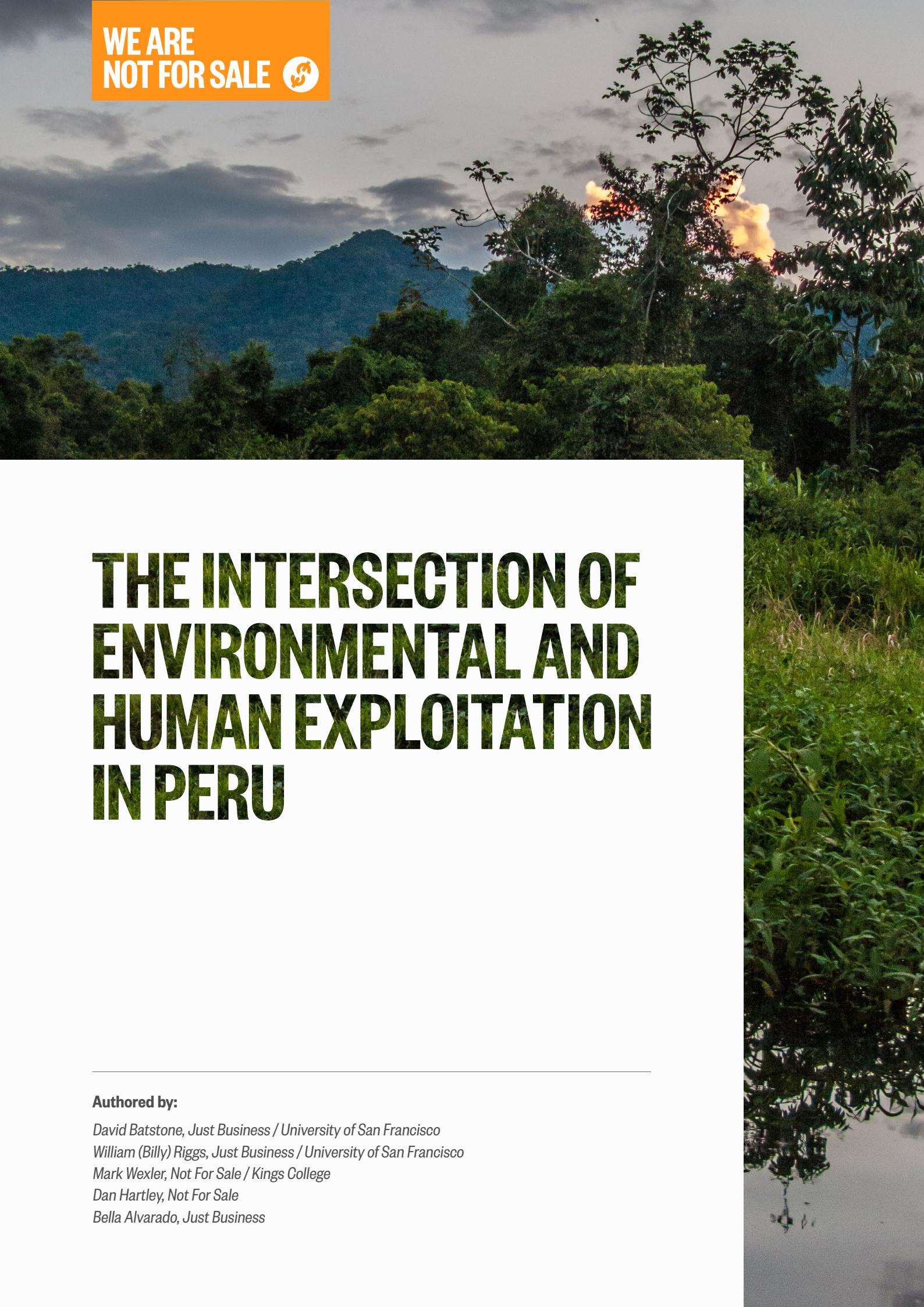
David Batstone, Just Business / University of San Francisco

William (Billy) Riggs, Just Business / University of San Francisco

Mark Wexler, Not For Sale / Kings College

Dan Hartley, Not For Sale

Bella Alvarado, Just Business





INTRODUCTION

Environmental and human exploitation are connected and occurring around the world due in large part to the mining of rare-earth metals. In places like Brazil, the Congo, and Peru, modern-day slave labor fuels mining camps, while degrading the quality of local fishing and agricultural environments. Lithium mining in the Brazilian rainforest has been responsible for 10% of deforestation in the Amazon, an area twice the size of the State of Delaware (University of Vermont, 2018). Cobalt mining in the Democratic Republic of the Congo has been linked to human rights abuses and child labor. Illegal mining in Peru has resulted in environmental devastation and human exploitation.

This report focuses on illegal mining in Peru, evaluating how poor environmental practice is connected to forced labor, human trafficking, and the ruin of indigenous food and farming systems. It highlights the issues alongside market-based solutions that can improve environmental quality, human dignity, and stable economies in these fragile ecosystems.



BACKGROUND

Peru contains approximately 783,000 km² of lush Amazon rainforest (Peru Explorer, 2020), with highly valued rare earth metals. While other metals exist in the country, the highly-valued gold market particularly attracts many men and women living in poverty who hope to improve their quality of life.

Sadly, this is far from the reality of the effect of gold mining for Peruvians. Most gold mining in Peru is illegal. **Peru is one of the world's largest gold exporters and more than 20% of its exports are estimated to originate from illegal mining** (Verité, 2016). These illegal mining camps depend upon the use of debt bondage labor and are remote hotspots for human sex trafficking. Instead of improving their quality of life, people find themselves trapped in poor living conditions with no income or escape. Peru defines trafficking broadly to include all forms of labor exploitation and illegal adoption or child selling without the purpose of exploitation. In 2017, new laws furthered sentencing for those charged with "forced labor," "sexual exploitation," or "slavery and other forms of exploitation."

Illegal gold mining poison workers and surrounding communities with mercury. The method used in illegal mining camps releases significant amounts of mercury into the air, land, and water. Mercury exposure can induce over 250 symptoms, ranging from neurological impacts to death. These severe health impacts are long-lasting when humans have chronic exposure to mercury (Rice et al, 2014).

Illegal gold mining depends upon the exploitation of human labor and the earth while also creating a remote sex trafficking hotspot and poisoning Peruvians. Combating illegal gold mining has led to the simultaneous rescuing of trafficking victims while uplifting communities from poverty is supported as a method to combat deforestation and trafficking. By ending illegal mining practices, there will be an end to the extensive mercury poisoning and exploitation of Peruvians and the planet.



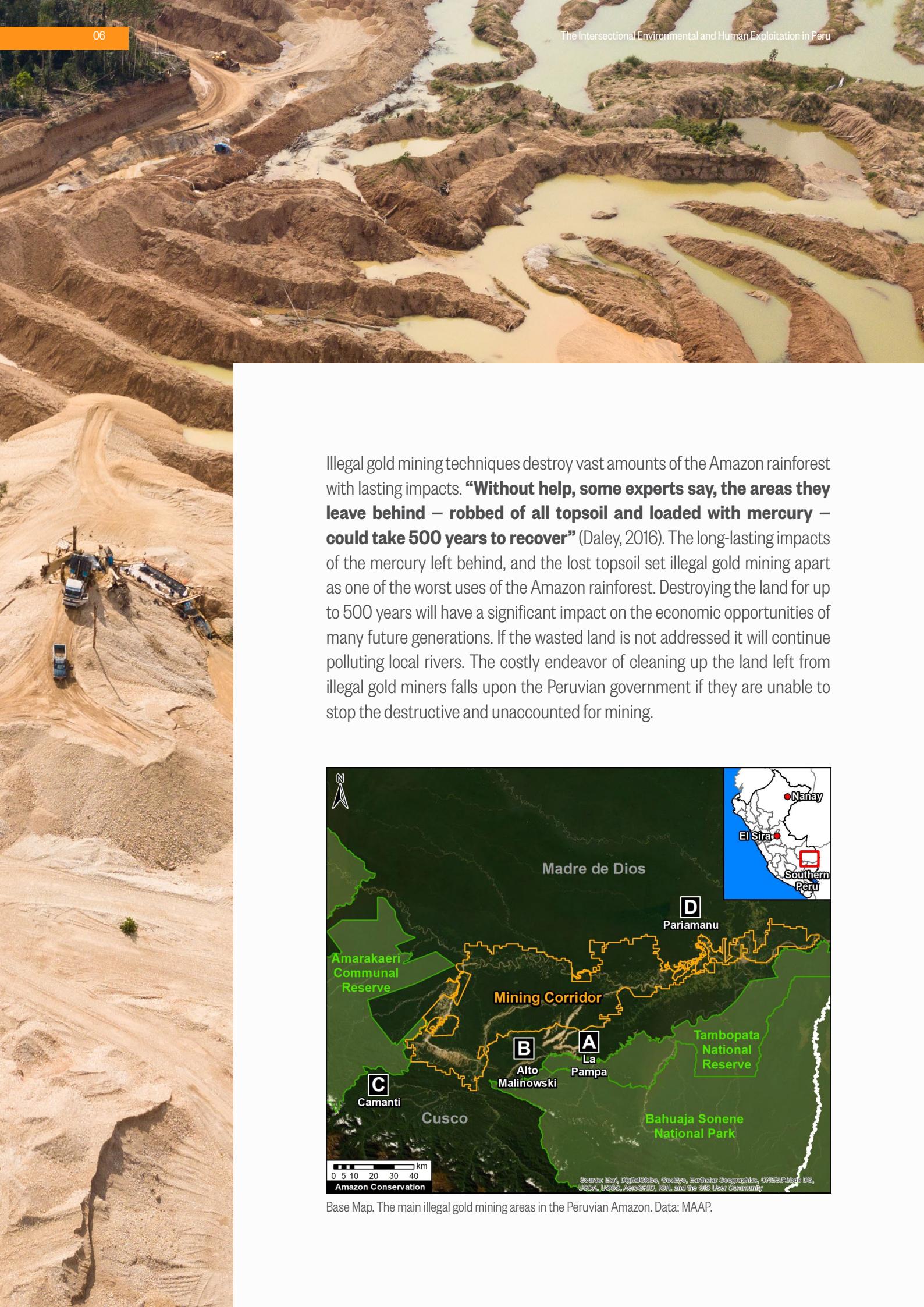
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ILLEGAL MINING IN PERU

The Madre de Dios region of southeastern Peru is called the biodiversity capital of Peru and contains the worst illegal gold mining camps in the country. The influx of people migrating to work in the mining camps has created a town of about 25,000 people called La Pampa, located in the remote jungle of Madre de Dios (Collyns, 2019). Alto Malinowski, Camanti, and Pariamanu are three other expansive illegal gold mining areas within Madre de Dios. These three camps lay between Amarakaeri Communal Reserve, Bahuaja Sonene National Park, and Tambopata National Reserve. **Satellite images show that approximately 5,300 acres have been deforested from 2017 to 2019 in those three mining areas alone** (Finer, 2020).

The scale and economic importance of illegal gold mining in Peru make the issue notably hard to combat. Gold mining is labor-intensive and requires a large workforce; “about 40,000 people were directly or indirectly dependent [on] illegal mining” (Zuñiga, 2019). Mining within the Peruvian Amazon rainforest first requires workers clear-cutting the forest. Next, miners filter out gold particles from the soil; this step, combined with the loss of plants maintaining soil structure erodes the topsoil. The loss of topsoil is noteworthy because it contains the nutrients required for new plant life. Mercury is then used to isolate gold, a technique used by Peruvians for centuries. The deforested land is then left with pools of mercury remaining while the gold and mercury mixture is transferred, burned to remove mercury, and eventually sold into the global market.





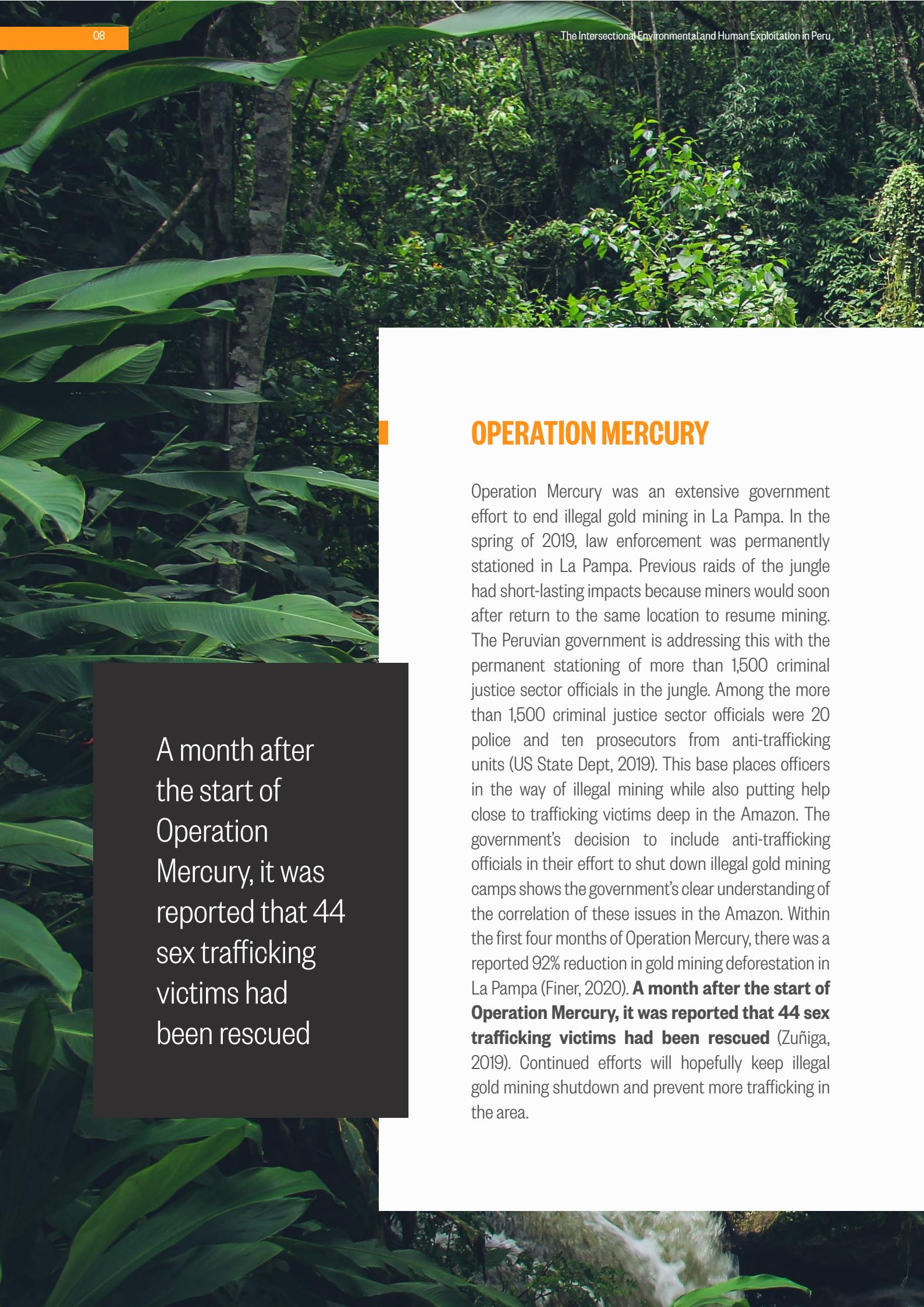
Illegal gold mining techniques destroy vast amounts of the Amazon rainforest with lasting impacts. **“Without help, some experts say, the areas they leave behind – robbed of all topsoil and loaded with mercury – could take 500 years to recover”** (Daley, 2016). The long-lasting impacts of the mercury left behind, and the lost topsoil set illegal gold mining apart as one of the worst uses of the Amazon rainforest. Destroying the land for up to 500 years will have a significant impact on the economic opportunities of many future generations. If the wasted land is not addressed it will continue polluting local rivers. The costly endeavor of cleaning up the land left from illegal gold miners falls upon the Peruvian government if they are unable to stop the destructive and unaccounted for mining.



Base Map. The main illegal gold mining areas in the Peruvian Amazon. Data: MAAP.

An aerial photograph of a steep hillside that has been stripped of its topsoil and vegetation. The exposed earth is a light tan color. A small, irregularly shaped pond of cyanide-contaminated water is visible on the right side of the hill. The top left corner of the image shows a patch of green forest that has not been cleared. In the center-right area, two small figures of people are standing on the hillside, highlighting the massive scale of the deforestation and mining operation.

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OPERATION MERCURY

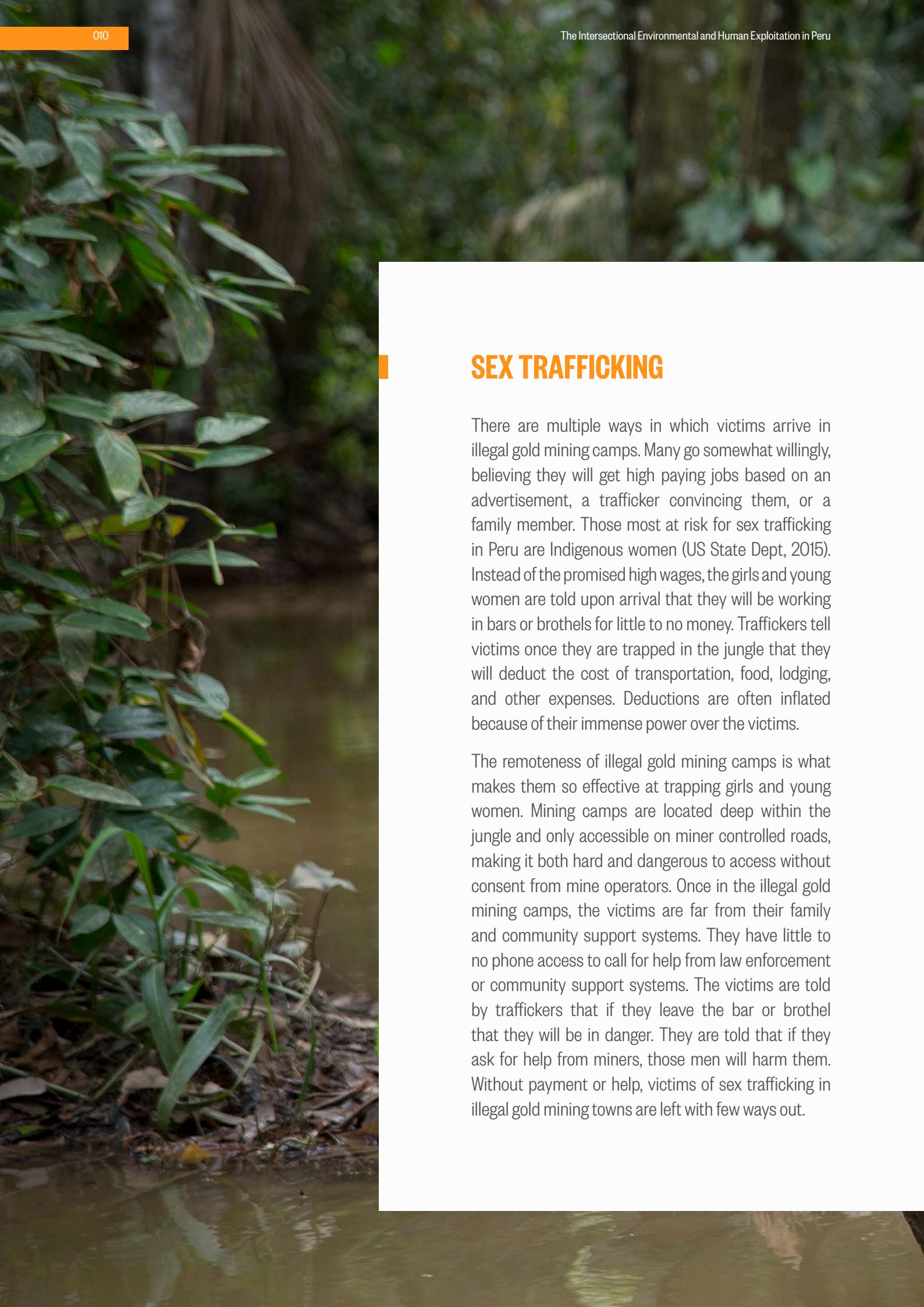
Operation Mercury was an extensive government effort to end illegal gold mining in La Pampa. In the spring of 2019, law enforcement was permanently stationed in La Pampa. Previous raids of the jungle had short-lasting impacts because miners would soon after return to the same location to resume mining. The Peruvian government is addressing this with the permanent stationing of more than 1,500 criminal justice sector officials in the jungle. Among the more than 1,500 criminal justice sector officials were 20 police and ten prosecutors from anti-trafficking units (US State Dept, 2019). This base places officers in the way of illegal mining while also putting help close to trafficking victims deep in the Amazon. The government's decision to include anti-trafficking officials in their effort to shut down illegal gold mining camps shows the government's clear understanding of the correlation of these issues in the Amazon. Within the first four months of Operation Mercury, there was a reported 92% reduction in gold mining deforestation in La Pampa (Finer, 2020). **A month after the start of Operation Mercury, it was reported that 44 sex trafficking victims had been rescued** (Zuñiga, 2019). Continued efforts will hopefully keep illegal gold mining shutdown and prevent more trafficking in the area.

LEGAL MINING VS ILLEGAL MINING

When studying the effects of gold mining it is necessary to distinguish between legal and illegal gold mining. There is a significant difference in the environmental and human impact of legal gold mining. Legal gold mines are required by law to have better workers' rights. Benefits include safety and equipment training programs and multiple medical exams for miners in legal mining operations (Forno, 2020). In comparison with illegal gold mining operations, legal mines are less likely to recruit and foster an environment for sex trafficking. Illegal gold mining operations have been found to be linked with organized crime groups. This connection leads to the increased likelihood of gold-mining profits being used to traffick Peruvians (Verité, 2015).

Legal gold mining operations cause less deforestation within the Amazon. Companies will find locations within the Amazon that have concentrated veins of gold underground to maximize efficiency. Comparatively, illegal mining camps do not have the technology to locate these gold-densities. Instead, illegal gold miners will rapidly move across many acres of land in search of any gold, leaving behind a wake of toxic soil (Daley, 2016). Not only does legal gold mining operations use less mercury, but they are also responsible for the clean up of waste products. Upon mine closure, operators must mitigate their effect on the local ecosystem to ensure development of life and preservation of the landscape is possible (Forno, 2020) which includes reforesting the land (Dupraz-Dobias, 2020).





SEX TRAFFICKING

There are multiple ways in which victims arrive in illegal gold mining camps. Many go somewhat willingly, believing they will get high paying jobs based on an advertisement, a trafficker convincing them, or a family member. Those most at risk for sex trafficking in Peru are Indigenous women (US State Dept, 2015). Instead of the promised high wages, the girls and young women are told upon arrival that they will be working in bars or brothels for little to no money. Traffickers tell victims once they are trapped in the jungle that they will deduct the cost of transportation, food, lodging, and other expenses. Deductions are often inflated because of their immense power over the victims.

The remoteness of illegal gold mining camps is what makes them so effective at trapping girls and young women. Mining camps are located deep within the jungle and only accessible on miner controlled roads, making it both hard and dangerous to access without consent from mine operators. Once in the illegal gold mining camps, the victims are far from their family and community support systems. They have little to no phone access to call for help from law enforcement or community support systems. The victims are told by traffickers that if they leave the bar or brothel that they will be in danger. They are told that if they ask for help from miners, those men will harm them. Without payment or help, victims of sex trafficking in illegal gold mining towns are left with few ways out.

DEBT BONDAGE LABOR

In addition to trafficking women and girls, these remote camps bring in men and boys to exploit. False advertisements, friends, and family will lure workers. Once the men and boys arrive at the mining camp, they are told they must pay off their debt from transportation and food before they can leave. Men's experience arriving at illegal gold mining camps is similar to women's experience; however, their work conditions are more physically grueling. Debt bondage labor victims work long hours in dangerous environments with no training and little sleep. Inexperience and hazardous living conditions create situations that can be life-threatening. Risks include falling trees, injury from equipment, and diseases from Amazon species. Workers are exposed to the sun and high amounts of mercury for all hours of the day. Mercury is in workers' water and comes in direct contact with their skin due to a lack of proper protective gear. Any days that workers miss to recover from severe injuries or illnesses exponentially increase their debt to mine operators (Verité, 2015).



MERCURY POLLUTION FROM ILLEGAL MINING

Massive amounts of mercury are polluting Peru, poisoning citizens and the environment. **“According to the Artisanal Gold Council, ... 180 metric tons of mercury are used annually in illegal gold mining in Madre de Dios”** (Dupraz-Dobias, 2020). Mercury is integral to mining gold cheaply. Since gold dissolves in mercury, miners use mercury to remove impurities. The mercury and gold mixture are then heated up. Due to its lower boiling point, mercury evaporates first and leaves behind gold. This process is a very effective way to acquire pure gold; however, the large scale seen today is endangering human and animal life when released into the environment. The heating step is extremely dangerous because, without proper equipment, the process releases mercury directly into the air. Workers and anyone in their vicinity are exposed to extremely high levels of mercury. Research in Madre de Dios found that mercury vapor levels far exceeded the **Peruvian air-quality regulations, 2,000 ng/m³ over a 24-hr measurement period, for mercury** when testing around gold shops. In 2017, and again in 2018, **mercury levels in front of gold shops exceeded 2,000,000 ng/m³** (Moody et al., 2019).

Mercury pollution has drastic health implications for those exposed. The physical harm alone done to individuals exposed to mercury is a strong reason against illegal gold mining. The mercury used for illegal gold mining is not correctly disposed of and instead ends up in the food chain and air. **MeHg that Indigenous communities downstream are being exposed to is associated with nervous system damage in adults and impaired neurological development in infants and children.** Mercury will bioaccumulate, and increase in concentration in humans, which has an increasing effect on physical impacts. Extensive research states, “Mercury has profound cellular, cardiovascular, hematological, pulmonary, renal, immunological, neurological, endocrine, reproductive, and embryonic toxicological effects” (Rice et al., 2014). All of these effects limit the success and wellbeing of the exposed communities. The economic benefit that gold presents must always be compared to its negative externalities, namely the cost of cleaning up mercury and the effect of health impacts on worker productivity.

SOLUTION-ORIENTED ACTIONS



NOT FOR SALE FISH FARMS

Chronic mercury pollution has debilitating health impacts. The local food chain plays a significant role in the consumption of mercury. Researchers found, “MeHg is easily taken up by lower organisms, tends to work its way up the food chain and exhibits a proclivity to bioaccumulate in fish. **Fish appear to be the primary source of MeHg poisoning in humans**” (Rice et al., 2014). With rivers continuing to be polluted by mercury runoff from illegal gold mining camps, Not for Sale is addressing the need for clean nutrition. Not for Sale has built a fish farm for the Santa Teresita Indigenous tribe living within the Peruvian Amazon. The fish farm feeds all 128 people in the community and employs 14 (Not For Sale, 2019). Not for Sale has the goal of funding a second fish farm so that the Santa Teresita community could go into town to sell their clean fish. The long term goal is for there to no longer be the need to farm fish but instead for Santa Teresita and other Indigenous communities to safely fish from their rivers again.





Not for Sale has supported AFIMAD by funding the organic certification of AFIMAD's Brazil nuts, which generated a 36-cent increase to the Brazil nut harvesters per kilogram

BRAZIL NUT AS AN ALTERNATIVE

While gold is highly-valued, it is a finite resource that commonly poisons and enslaves the people of Peru. Conserving the Amazon rainforest means clean and healthy air, water, and food but, conservation should also mean long-lasting economic stability for locals. The Brazil nut is a unique resource because they only grow within the Amazon; it cannot be cultivated in an agricultural setting. The Asociación Forestal Indígena Madre de Dios, AFIMAD, is capitalizing on the Brazil nut as a way to create fair paying jobs. Mr. Martin Huaypuna, the founder of AFIMAD, was a victim of debt bondage labor. During his time, he clear-cut the Amazon Rainforest and toiled in illegal gold mines. AFIMAD is a co-op of nine Indigenous communities that harvest and sell Brazil nuts from the Amazon. **Not for Sale has supported AFIMAD by funding the organic certification of AFIMAD's Brazil nuts, which generated a 36-cent increase to the Brazil nut harvesters per kilogram** (Not For Sale, 2019).

The economic success of AFIMAD conserves the Amazon rainforest. By creating a better way to generate income for local communities, the Amazon rainforest gets protected from being clear cut for any gold mining or other economic activities. The Indigenous communities reap the economic benefits of the forests while still guaranteeing future generations the same financial security that gold mining does not. Harvesting of the Brazil nut provides fair wages and safe work conditions without human or environmental exploitation. Solutions that address the economic well being of humans must be at the forefront of the fight to protect the ecological well being of the earth. Any environmental protection that does not also care for local communities is not truly a solution.



CONCLUSION

Environmental and human exploitation are connected. Forced labor of humans in the mining of rare earth metals for batteries, jewelry and other luxury goods, many times ends in the degradation of critical ecosystems. Conversely, there would not be a demand for the exploitation of Peruvians if not for the illegal mining encampments. The exploitation in Peruvian mining camps touches humans globally. Gold extracted illegally is entering the global supply chain and being used everywhere in technology and jewelry. Unknowingly, consumers may be funding the destruction of the Amazon rainforest, human trafficking, and pollution of Peru through the purchasing of products with untraced gold.

These issues are deeply intertwined; the increase in one leads to an expansion of the other. As illegal mining camps increase in size, the demand for victims of sex trafficking and debt bondage labor increase as well. At the same time as governments shut down illegal mining camps, they are able to rescue trafficking victims. Indigenous communities still living within the Amazon parole and protect their part of the rainforest.

As Indigenous communities shrink, the unguarded rainforest is vulnerable to further exploitation.

Not For Sale, particularly provides an example of an organization working to bring an end human trafficking and modern-day slavery. Through that commitment, Not For Sale has found that a healthy environment, clean food and economic stability are vital. The economic success of indigenous communities not only allows them to continue living in their homes, it makes them less vulnerable to trafficking—an example of the critical intersectionality between the environmental sustainability and human dignity as we steward the natural resources of our planet into the future.

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WORK CITED

U.S. Department of State, U.S. Department of State, June 2019. "2019 Trafficking in Persons Report: Peru.", www.state.gov/reports/2019-trafficking-in-persons-report-2/peru/.

Collyns, Dan. The Guardian, Guardian News and Media, 25 Mar. 2019.
"Inside La Pampa: the Illegal Mining City Peru Is Trying to Wipe Out.", www.theguardian.com/cities/2019/mar/25/la-pampa-the-illegal-mining-city-peru-wants-wiped-out.

Verité, 30 Jan. 2015. "Conflict Minerals, Expanded: The Nexus of Organized Crime, Human Trafficking, Corruption, and Conflict in Latin American Mining.", www.verite.org/conflict-minerals-expanded-the-nexus-of-organized-crime-human-trafficking-corruption-and-conflict-in-latin-american-mining/.

Daley, Suzanne. The New York Times, The New York Times, 26 July 2016.
"Peru Scrambles to Drive Out Illegal Gold Mining and Save Precious Land.", www.nytimes.com/2016/07/26/world/americas/peru-illegal-gold-mining-latin-america.html.

Finer, M, and N Mamani. Monitoring the Andean Amazon Project, 17 Jan. 2020.
"MAAP #115: Illegal Gold Mining in the Amazon, Part 1: Peru.", maaproject.org/2020/mining_frontiers_peru/.

Not for Sale, 2019. "Impact Around the World.", www.notforsalecampaign.org/wp-content/uploads/2019/06/NFS-2018-Annual-Impact-Deck-.pdf.

Forno, Xennia, and Miguel Ángel Soto. "Mining Law 2021 | Laws and Regulations | Peru | ICLG." International Comparative Legal Guides International Business Reports, 9 Oct. 2020, iclg.com/practice-areas/mining-laws-and-regulations/peru.

Lemke, Rebekah Kates. CRS, 8 Nov. 2019. "The Hidden Face of Human Trafficking in Peru.", www.crs.org/stories/sex-trafficking.

Moody, Keegan H., et al. Environmental Research, Academic Press, 24 Dec. 2019. "Mercury Emissions from Peruvian Gold Shops: Potential Ramifications for Minamata Compliance in Artisanal and Small-Scale Gold Mining Communities.", www.sciencedirect.com/science/article/pii/S0013935119308394?via=ihub.

U.S. Department of State, July 2015. "Peru: 2015 Trafficking in Persons Report.", 2009-2017.state.gov/j/tip/rls/tiprpt/countries/2015/243513.htm.

Rice, Kevin M et al. "Environmental mercury and its toxic effects." Journal of preventive medicine and public health = Yebang Uihakhoe chi vol. 47,2 (2014): 74-83. doi:10.3961/jpmph.2014.47.2.74

WORK CITED (CONTINUED)

Verité, 2016. "Risk Analysis of Indicators of Forced Labor and Human Trafficking in Illegal Gold Mining in Peru.", www.verite.org/wp-content/uploads/2016/11/Indicators-of-Forced-Labor-in-Gold-Mining-in-Peru_O.pdf.

Zuñiga, Laura Marcela. "Peru's Illegal Mining Hotspot Has Other Crimes to Worry About." InSight Crime, 10 Sept. 2019, www.insightcrime.org/news/brief/human-trafficking-la-pampa-peru/.

Waugh, Shapiro, University of Vermont, 2018. "New Amazon Threat? Deforestation From Mining", www.uvm.edu/gund/news/new-amazon-threat-deforestation-mining doi: 10.1038/s41467-017-00557-w

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