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Matthew Kleinhenz  
*Lehigh University*

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# ILLEGAL GOLD MINING IN PERU: A PUSH TOWARD FORMALIZATION?

*Matthew Kleinhenz*



## **Introduction**

Illegal gold mining in Peru is the driver of serious environmental and social issues and a root of corruption in Peru. In this article, I address the unsustainability of current illegal mining practices and ways in which Peru can make changes for the better of the country. Through analysis of the industry; the various social, environmental, and regulatory issues; and Peru's current plans going forward, I recommend ways that Peru can move illegal gold mining to a safer and more formalized legal mining industry.

In the first section of this article I give an overview of Peruvian mining as a whole and its pivotal role in the country's economy. I address the current regulation in the industry and highlight the process to becoming formalized. In the next section, I define and elaborate on illegal mining and the various issues surrounding it. I look at how mines operate without regulation and then discuss key

environmental and social issues that arise from illegal mining. I then cover what is currently being done to prevent illegal mining in Peru through various incentives and plans set out by Peru's new president, Pedro Pablo Kuczynski (PPK). I conclude by suggesting what can be done to promote and foster small-scale gold mining into a profitable, formal industry.

## **Mining Overview and Regulation**

Peru has seen a tremendous boost in GDP, growing 3.3 percent in 2015 and tripling in the last ten years. With decreasing poverty rates and a low inflation rate, Peru has one of the fastest growing economies in South America (World Bank). The main force behind this growth is Peru's large commodity market, particularly in mining. As of 2015, Peru was the third largest producer of copper, trailing only Chile and China. In addition, Peru is the third largest producer of silver and the sixth largest producer of gold. Peru also holds large

reserves of coal, iron, silver, tin, and zinc, all of which contribute to nearly 60 percent of the country's total exports ("Peru Country..." p. 1).

In addition to economic growth, the mining industry in Peru is a major driver of government revenues. With mining accounting for 24 percent of foreign direct investment in the country, the government benefits from companies paying three kinds of taxes: a corporate income tax, a royalty tax, and a concession rights tax ("Peru Country..." p. 12). Peru has lined up 34 new mining projects worth \$9.98 billion through 2019. These alone look to expand mining GDP by 24 percent and 8.3 percent in 2016 and 2017, respectively (Emery).

In Peru the mining industry is regulated by the mining laws enacted by the executive branch of the Peruvian government. The Ministry of Energy and Mines (MINEM) ultimately regulates all mining activities in the country by approving the procedures to initiate mining activities, granting concessions to beneficiaries, and approving the environmental certification of projects. In addition to MINEM, two other entities also assist in the process of regulating a mine. The Geological Mining and Metallurgical Institute (INGEMMET) is responsible for informing the public regarding mining concessions, and the National Environmental Certification Service (SENACE) oversees the environmental certification of projects. Once these entities approve, operations can begin (Pickmann).

One of the first steps toward operating a mine is the process of obtaining four different concessions from MINEM. The first concession allows activities such as exploration and extraction. The next is a beneficiation concession, which allows the holder the right to perform physical, chemical, and physical-chemical activities to purify or refine metals and concentrate the minerals, ultimately creating a higher-valued product. A general labor concession allows the operator of a mine to perform auxiliary services, such as ventilation, drainage, and lifting or extraction. The final concession is for mining transport, which grants the owner the right to provide massive and continuous transport of mineral

products through unconventional methods. To maintain these concessions, annual fees are paid and a minimum production obligation (MPO) must be met. The MPO requires holders to produce a minimum amount depending on the size of the mining operation. If this MPO is not met within 10 years, the holder is at risk of the concession expiring (Pickmann).

In addition to concessions, a social license is also required to operate a mine. A social license to operate (SLO) is "the level of acceptance or approval by local communities and stakeholders of mining companies and their operations" ("What Is the Social..."). As has been seen many times in Peru, the local, often indigenous, people oppose mining, which has led to protests and production stoppages. The SLO is considered one of the most important challenges facing the mining industry (Pantigoso et al., p. 37) because of the disputes that have arisen from various mining projects. With the large increase in mining in the past 15 years, there has been an equally large increase in conflict and violence surrounding large-scale mining operations. Protests occur when local communities do not want these operations negatively affecting the surrounding people and environment (Slack, p. 2). This in turn exemplifies the importance of having and maintaining a SLO. Concessions and SLOs are often the reason some miners prefer to mine illegally.

## **Illegal Gold Mining**

Philippe Dozolme states that illegal gold mining is characterized by the absence of land rights, a mining license or permit, or any document that could legitimize the ongoing mining operations. Often illegal mining is synonymous with artisanal and small-scale gold mining (ASGM), broadly defined as illegal (informal in some countries) mining practiced by individuals, groups, or communities in developing nations ("What Is Artisanal..."). In Peru ASGM is often illegal, but in other countries it is considered legal. Some of the key features associated with illegal mining include the use of primitive technology and machinery, operation without legal concessions or without permissions from concession owners, and a lack of safety and health standards ("What Is

Artisanal...”). In a 2014 report, Hill estimated that nearly 28 percent of all gold mining in Peru is illegal. The individuals and groups running these operations are making billions of dollars from gold shipped to developed countries. In 2014 it was estimated that 35 tons of illegal gold worth \$1 billion made its way into the United States and Switzerland (Hill).

Over the past 30 years, illegal gold mining in Peru has grown significantly due to a global increase in gold prices and a lack of government regulation and enforcement. Specifically, in the Madre de Dios area of Peru, small illegal gold mines have exploited surrounding communities. The techniques used by the miners are not regulated and are performed with equipment that can be harmful to the environment. Also, a lack of government regulation has caused degradation of the environment and other social issues that I discuss below (Langeland, p. 1).

### **Mercury Issues**

There are many mercury issues that arise due to the methods used by the illegal miners. The miners use cheap equipment along exposed river banks or clear areas of forest to mine sediment below. Once the top layer of soil is removed, extraction of the layer of earth containing gold deposits begins. Then, the sediment and minerals must be separated from the gold. To amalgamate<sup>1</sup> the gold particles, mercury is used (Langeland, p. 4). Once the mercury and gold have joined together, a ball of amalgam is formed and is then heated to evaporate the mercury, leaving a porous form of gold (Telmer and Stapper, p. 19).

Illegal gold mining has resulted in mercury contamination of the air, soil, and biota,<sup>2</sup> posing a large risk to the environment and health of humans surrounding the mine. During the process the miners are touching the mercury and then also inhaling the fumes, often in their homes, with no protection (Langeland, p. 11). Even after the process, mercury sticks to surrounding surfaces, and the wind blows the vapors around the surrounding community

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<sup>1</sup>Amalgamation is the process of bringing gold particles in contact with mercury (“About Amalgamation...”).

<sup>2</sup>Biota refers to the animals and plants in the surrounding region.

(Telmer and Stapper, p. 19). Once the mercury is burned off, it may be oxidized and deposited in local waterways. Approximately 20 percent of mercury used in the process of mining ends up in the aquatic ecosystem of the Amazon region (Langeland, p. 11). The inhabitants of this ecosystem build up mercury in tissue. As fish are poisoned by the mercury, people and various animals in the surrounding area are poisoned as well through their consumption of the fish.

In May 2016, the government declared a 60-day public health emergency to address the mercury pollution along the Madre de Dios River. It has begun the process by assessing the harm that mercury has had on the local population. The government has estimated that the mercury pollution has affected 48,000 people across 85,301 square kilometers (Fraser).

### **Social Issues**

Environmental degradation from mercury is not the only issue surrounding the lack of regulation in the gold mining industry in Peru. Around the illegal mines in Madre de Dios, there are instances of forced labor and human trafficking by organized crime groups. As of 2012, nearly 500,000 people in Peru were dependent on illegal mining operations as a source of income. The operations consist of the actual mining and related services that were associated with illegal mining (“Risk Analysis...,” p. 18). As of 2016, the U.S. Department of Labor’s “List of Goods Produced by Child Labor or Forced Labor” included gold from Peru. The U.S. Department of Labor’s recognition of this problem indicates that these issues need to be addressed.

The link between organized crime and illegal gold mining is strong. The sexual exploitation of women in mining camps is a major issue, with a case study performed by Livia Wagner and the Global Initiative Against Transnational Organized Crime revealing that as many as 1,000 girls are being exploited in the Madre de Dios area. In her report, Wagner includes a short anecdote from a miner relating that recruiters attract people of all ages through the promise of high wages working in areas surrounding the mining villages. Workers are

then transported into the mountains or rain forests where the illegal mines operate. On arrival, the workers' identification cards are collected, and they are then forced to pay for their clothing, transportation, and lodging, which they were told earlier would be provided for them (Hill). If new workers cannot pay, they often sign contracts and take out loans from the controllers of the mines. The system is called *habilitación-enganche*, a debt bondage system by which capital is provided to these workers in exchange for their work ("Risk Analysis...", p. 21). In addition to the debt bondage system, some younger workers must accept selling their virginity under harmful threats, called *el pase*. Wagner's research also reported that every weekend, incoming female workers (and sometimes male), especially virgins, were auctioned off to the highest bidders. The miners often prefer and pay more for white girls who come from the coastal areas of Peru (Hill). This hints at the serious human trafficking issues that haunt the illegal mines in Peru.

The human trafficking issues surrounding the mines have been addressed and acknowledged by the government, yet the problem still exists, as girls as young as 12 are transported on boats or cars to mining sites ("Risk Analysis...", p. 43). As stated earlier, these girls and women are attracted by false promises of jobs working in restaurants or shops around mines. It has been reported by Wagner that in the town of La Rinconada, Peru, where illegal gold mining is prominent, there are up to 2,000 sex workers, 60 percent of whom are under the age of 18 (Wagner, p. 31). These workers are coaxed into thinking they will be working at mining camps but ultimately become slaves to the operators of the mine.

### **Exports of Illegal Gold**

The government of Peru, in collaboration with its main export clients, has tried to crack down on the export of gold from illegal mines. Researchers in Peru have estimated that nearly 20 percent of gold in Peru comes from these illegal mines. This 20 percent means that some of Peru's biggest customers (United States, Canada, and Switzerland) are receiving gold that is mined with forced and child labor

(Simoes and Hildalgo). Furthermore, because illegal gold miners do not report any of their earnings to the government, the government loses around \$450 million in tax revenue ("Risk Analysis...", p. 25).

The government has attempted to reduce the export of illegally produced gold. In 2010, a law was passed that prohibits the exporting of gold that lacks a receipt. The receipt is something that can only be obtained by legal mining companies ("Risk Analysis...", p. 25). Nevertheless, the law has been ineffective due to the easily obtainable false receipts that are needed to turn illegal gold into legal gold. With these receipts, it is impossible to distinguish which gold is legal and illegal (Yagoub, 2014). In addition, researchers have found cases in which large, legal mining operations have exported over a billion dollars of illegally produced gold to Peru's largest gold trading partner, Switzerland ("Risk Analysis...", p. 26).

### **Current and Future Initiatives**

The Peruvian government has made progress in combatting the environmental, tax, and laundering issues of illegal mining. PPK has voiced his concerns with the mining industry and has laid out some initiatives as of August 2016. However, PPK will be challenged to implement them as his party only holds 18 of the 130 total congressional seats.

As of August 2016, many of the issues discussed in this article derive from bureaucratic incompetence, which has led to inefficient regulatory approval processes. In addition, widespread local community opposition has delayed extractives projects across Peru and threatened the country's competitiveness (O'Connor and Ryan). As mentioned previously, the process to obtain and maintain legal mining rights and concessions is drawn-out and inefficient. It can take prospective miners a significant amount of time and money to obtain all the concessions to begin operating. *Consulta previa* (prior consultation) is a requirement that all companies obtain approval from indigenous communities to move forward with mining projects. In addition, there is a separate environmental check that must be completed. Often the environmental issues were already addressed in the *consulta previa*,

leading to a repetitious approval process. In addition to this inefficiency, there are others, such as the lack of interaction between local and national mining registries. This causes mining operations to have to register at least two times, once with the local registry and then again with the national registry (O'Connor and Ryan). This all stems from a shortage of qualified professionals willing to work for low salaries, from corruption, and from a lack of proper technology that could prevent information duplication (O'Connor and Ryan). The opportunity cost of lost profits alone would deter miners from becoming legal miners. With rudimentary equipment, illegal miners can start their operations more quickly and begin earning profits without having to deal with the many governmental regulations.

To address these various issues, PPK has stated that one of his goals is to create a quicker approval process for potential miners by streamlining the current system. PPK also plans on formalizing the illegal mining sector (O'Connor and Ryan). Currently, the government either ignores the issue or uses aggressive tactics when shutting down illegal mining operations. An "iron fist" policy was previously implemented, which consisted of the destruction of illegal mining equipment and operations and attacks on the individuals involved (Wang). Moving away from this policy and toward a hands-off approach, PPK wishes to incentivize the illegal miners to comply with government regulations and move into the legal mining sector, discussed later (O'Connor and Ryan).

In addition to incentivizing illegal miners, the central part of PPK's formalization plan revolves around the creation of the Mining Promotion Bank (MPB), similar to a collection center that would receive minerals from small miners and pay out at a higher rate per gram of gold than selling illegally ("PPK's Peru...", p. 3). The MPB would also create trade associations to assist in the training of miners to ensure that safety and environmental regulations are adhered to. PPK claims that the banks would buy gold at 75 percent to 80 percent of the market price, which is higher than if sold in the illegal market. The plan also calls for a pension system for all miners and the implementation

of a credit system that can be accessed through compliance with environmental regulations. PPK also suggests lowering sales and income taxes to assist in the transition of small mines, which is predicted to bring in around \$305 million of added tax revenue, all while reducing crime and protecting the environment (O'Connor and Ryan).

The final part of PPK's plan is an *oro limpio* (clean gold) program, which he hopes will formalize at least 50 percent of the illegal gold miners by 2021 ("PPK's Peru...", p. 3). The program is essentially a promotion of small-scale mining through various initiatives, with the main goal of overcoming the various obstacles associated with formalization. This would involve local governments working and complying with the national government on the issues associated with formalization. The program also will help recover the severely environmentally degraded areas that have arisen from illegal mining. PPK's plan will provide resources to local governments to assist them in the process of formalizing the mining operations in their areas. The government hopes to partner with the private sector and also with international firms to commercialize clean gold, mined through legal operations ("Plan de Gobierno," p. 118).

## **Incentives**

The government of Peru must exert stronger control over the entire mining industry to receive the benefits of formalization. While there are many negatives associated with illegal mining, these miners are often doing what is necessary to provide for their families. Many of these individuals have no other choice but to avoid formalization because of the lack of incentives to operate as a legal mine. The illegal miners are constantly shown the costs and lost profits associated with operating as a legal operation, rather than understanding the long-term environmental and economic gains that both individuals and the country would see. The first step toward formalization would be educating them about the incentives and benefits of operating within the regulations set forward by the government. A complete overhaul of the illegal mining industry would not meet the initial goals. An iron fist policy

would not incentivize illegal miners to formalize their operations; rather, it would further divide the illegal miners and government. PPK's plan seems to move away from this policy, as he looks for a gradual formalization (O'Connor and Ryan). The small-scale mining industry is large in Peru and is something that should be harnessed and grown, not necessarily completely shut down. The illegal mining industry generates \$1 billion to \$3 billion per year and produced 20 percent of Peru's gold in 2015. This fact alone shows the importance of these small-scale operations (O'Connor and Ryan).

Through education of the illegal miners in Peru, the formalization process could be smoother. Operating an illegal mine can often be more expensive in some areas in comparison to a legal mine. For example, the cost of input materials will fall if bought legally. Aside from materials cost, the costs invested to become formal are quickly recovered as higher prices can be negotiated for final products. Another upside is that obtaining credit is significantly easier while operating as a formal mine. Illegal miners should be incentivized by these options and by the wage and labor benefits that would also increase (Koekkoek et al., p. 29).

### **The Importance of Small-scale Mining**

In many developing countries like Peru, ASGM has brought many positive benefits to small communities. For many of the miners, it is their only source of income. Not all these types of mines are considered illegal in other countries, even though the small projects are run in similar ways. This type of work is common in low-income areas of commodity-rich countries. Rather than the government shutting down illegal mines and driving out small-scale mining, it should help keep the small-scale mining industry alive through better regulation. The "Guidelines for Development of Small- and Medium-scale Mining" international seminar in February 1993 asserted that small-scale mining operations make important contributions to national economies and provide for the economic stability of indigenous people in the areas surrounding the mines. Not only

is this true but also ASGM can be a driver of entrepreneurial spirit in low-income areas (Hilson, p. 6).

Aside from employment, the promotion of small-scale mining operations and better regulations in Peru would help the country's mineral markets. In some ways, small-scale mining is more financially viable than large-scale operations. For example, Ghana has a strong ASGM industry, which the government has supported and promoted. To ensure that all mines receive fair prices for metals, the Ghanaian government invested \$1.4 million to build regional buying stations that offered small-scale miners fair world prices for their gold. The result of these centers was a collection of over \$140 million in revenues that would have been lost otherwise. By the early 1990s, these operations had contributed to over \$70 million in foreign exchange earnings to the government (Hilson, p. 7). Peru could benefit from establishing a more defined marketplace for these illegal mining operations to foster and grow.

### **State Gold-buying Programs**

PPK's MPB is a step in the right direction of a regional buying station. If Peru can mimic Ghana's plan and deal with its challenges, this could be a key step in moving toward a more formalized and legal mining industry. Yet to be effective, state gold-buying programs (SGBPs) must be designed correctly. Ultimately, the three main goals of SGBPs are the collection of revenues, raising the current standards of ASGM, and reforming ASGM to enforce regulations in this sector (Garrett and Enslava, p. 3). A case study was conducted by RCS Global in 2015 that analyzed SBGPs in Côte d'Ivoire, Ghana, the Philippines, Bolivia, and Colombia.

The case study first addresses the challenges that surround SGBPs, with one of these the recurring problem of the lack of incentives to operate legally. This is an issue in Peru as well. SGBPs need to be the main market for selling gold for Peru's illegal miners, or else these miners will find better prices elsewhere. While pricing is crucial, it is also important that too great a price incentive can cause gold to be smuggled into the country. Proper management of an SGBP is key to avoiding

conflict with surrounding countries (Garrett and Enslava, p. 3).

For an SGBP to be successful, there are some initiatives that must be tackled by the government. One of the main initiatives in creating an SGBP is a gradual raise in standards and rules surrounding state-bought gold (Garrett and Enslava, p. 4). The implementation of an SGBP must be eased into the illegal mining environment so miners can adapt at their own pace. By working closely with small-scale miners and building confidence in SGBPs, incentives would grow with the miners' easing into the program. In addition, local support must be gained from the stakeholders in the community. If portions of the revenues are reinvested by the SGBP into the local community in which it operates, pressure is put on miners to sell to the SGBP instead of to other illegal buyers. Furthermore, for an SGBP to operate effectively, the government must implement a decentralized approach. The programs should be located in the areas directly surrounding the mining operations (Garrett and Enslava, p. 4). If the SGBP is not near the actual mine, it may further incentivize small-scale miners to sell their gold illegally to more accessible buyers.

Another factor for success is an effective taxation system. Taxes are what often lead miners to continue to operate in the illegal sector, where higher margins are made because taxes are not paid. Incentives need to be put in place, financial and non-financial, to encourage miners to use the SGBP. With local support, communities can encourage miners to sell to the programs, which in turn leads to tax payments. If the small-scale mining sector receives something tangible in return for taxes paid, such as equipment, training, or community stability, that will further incentivize miners to pay to the SGBP (Garrett and Enslava, p. 3).

Ultimately, the goals of PPK's MPB can be accomplished with strong political backing, foreign support, and gradual implementation. By starting on the lowest scale possible, within communities, the illegal middlemen would be cut out, thereby allowing for a more gradual adjustment for current illegal miners. The implementation of a task force to run the

banks in small communities would allow the government to keep out corruption. This decentralized approach would eventually lead to the growth of ASGM mining and an overall reduction in poverty (Garrett and Enslava, p. 5).

### **Assisting Small-scale Operations**

By recognizing the importance of its small-scale mining, Peru would very much benefit from assisting such operations. Current laws, however, make it challenging for ASGM miners to obtain equipment to assist in their operations. Large mining operations are free of restrictions on acquiring essential infrastructure to assist in their operations, whereas Peru has placed restrictions on ASGMs in order to limit illegal mining. Fernando Pickmann, in his article "Mining 2016: Peru," says that small operations, whether operating legally or illegally, are prohibited from acquiring or using equipment such as dredges, front-loaders, and dumper trucks. It seems that this could further exacerbate the problem that Peru has with illegal mining. By preventing smaller mines from acquiring these assets, these mines are forced to use unconventional methods. If small mining operations cannot obtain the proper equipment, they then have less reason to operate as a legal operation, which has them operating outside the boundaries of government regulation. Not only is the government pushing away potential operations, which could contribute to small, low-income communities, but also it is assisting in the environmental degradation that is occurring. If the government were to open up these assets to smaller operations, there would be a greater incentive to be a legal entity, the government would have more control over the processes used in the extraction of minerals, and some of the health and safety issues could be eliminated.

### **Conclusion**

Illegal gold mining in Peru has led to the death of humans and wildlife, destruction of habitats, and problems of forced labor. Yet these problems continue to be overlooked by much of the society and the government of



Peru. A push toward formalization is key to a more peaceful and richer country. Current government initiatives are having little effect on illegal gold miners, who are continually finding new ways to beat the system and avoid government regulation. In the commodity-based economy of Peru, the current practices of gold mining could be detrimental to the entire country.

To avoid these problems, sustainable initiatives need to be put in place. PPK

has taken a step in the right direction, but SGBPs must be run in a way to incentivize sellers. Small-scale gold mining operations are the key to moving up the social ladder for many individuals, and that idea should be important in looking forward to what Peru can accomplish. By a gradual formalization process and with the support of small-scale miners, Peru can create a sustainable and lucrative gold mining environment.

## REFERENCES

- "About Amalgamation and the Use of Mercury." Nevada Outback Gems. 2017. [nevada-outback-gems.com/Reference\\_pages/Amalgamation.htm](http://nevada-outback-gems.com/Reference_pages/Amalgamation.htm). Accessed January 18, 2017.
- Dozolme, Philippe. "What Is Illegal Mining and How Significant Is It?" *The Balance*. August 4, 2016. [www.thebalance.com/what-is-illegal-mining-and-how-significant-is-it-2367443](http://www.thebalance.com/what-is-illegal-mining-and-how-significant-is-it-2367443). Accessed October 2016.
- Emery, Alex. "Peru Lines up US\$34bn in Infra, Mine Projects." *BNamericas*. June 21, 2016. [www.bnamericas.com/en/news/infrastructure/peru-lines-up-us34bn-in-infra-mine-projects1](http://www.bnamericas.com/en/news/infrastructure/peru-lines-up-us34bn-in-infra-mine-projects1). Accessed Fall 2016.
- Fraser, Barbara. "Peru's Gold Rush Prompts Public-Health Emergency." *Nature*. Vol. 534, No. 7606, 2016, p. 162.
- Garrett, Nicholas, and Nicolas Enslava. "State Gold-Buying Programmes." International Institute for Environment and Development (UK). 2016.
- Hill, David. "Gold-Mining in Peru: Forests Razed, Millions Lost, Virgins Auctioned." *The Guardian*. May 1, 2016. [www.theguardian.com/environment/andes-to-the-amazon/2016/may/01/gold-mining-in-peru-forests-razed-millions-lost-virgins-auctioned](http://www.theguardian.com/environment/andes-to-the-amazon/2016/may/01/gold-mining-in-peru-forests-razed-millions-lost-virgins-auctioned). Accessed September 2016.
- Hilson, Gavin. "Small-Scale Mining and Its Socio-Economic Impact in Developing Countries." *Natural Resources Forum*. Vol. 26, No. 1, 2002, pp. 3–13.
- Koekkoek, Brenda, Ludovic Bernaudat, Patrick Schein, Susan Keane, Samuel Spiegel, Maria Laura Barreto, Usman Tariq, and Alliance for Responsible Mining. "Analysis for Stakeholders on Formalization in the Artisanal and Small-Scale Gold Mining Sector Based on Experiences in Latin America, Africa, and Asia 'UNEP Paragraph 29 Study.'" United Nations Environment Programme. August 2011.
- Langeland, Aubrey L. "Impact of Alluvial Artisanal and Small-Scale Gold Mining in the Madre de Dios River Basin, Peru: Total Mercury Levels in Human and Farmed Fish Populations." Master's Thesis, University of Michigan, August 2015.
- O'Connor, Rebecca, and Gleeson Ryan. "PPK's Dilemma: Balancing Business & Social Protections in Resource-rich Peru." *The Inter-American Dialogue*. June 14, 2016. [www.thedialogue.org/blogs/2016/06/ppks-dilemma-balancing-business-social-protections-in-resource-rich-peru/](http://www.thedialogue.org/blogs/2016/06/ppks-dilemma-balancing-business-social-protections-in-resource-rich-peru/). Accessed November 2016.
- Pantigoso, Paulo, Marco Antonio Zaldivar, Jorge Acosta, Beatriz Boza, Victor Burga, Marcial Garcia, Enrique Oliveros, Elizabeth Rosado, and Mayerling Zambrano. "Peru's Mining & Metals Investment Guide." Ernst & Young and Ministry of Foreign Affairs (Peru). 2016.
- "Peru Country Mining Guide." KPMG Global Mining Institute, February 2016.
- Pickmann, Fernando. "Mining 2016: Peru." *Latin Lawyer*. July 13, 2016. [gettingthehealththrough.com/area/22/jurisdiction/19/mining-peru/](http://gettingthehealththrough.com/area/22/jurisdiction/19/mining-peru/). Accessed October 2016.
- "Plan De Gobierno." *Peruanos Por el Cambio*. 2016.
- "PPK's Peru: Extractives." *Southern Pulse*. July 28, 2016.
- "Risk Analysis of Indicators of Forced Labor and Human Trafficking in Illegal Gold Mining in Peru." Verité. January 2013.
- Simoes, Alexander J.G., and César A. Hidalgo. "Where Does Peru Export Gold To?" *Observatory of Economic Complexity*. 2014. [atlas.media.mit.edu/en/visualize/tree\\_map/hs92/export/per/show/7108/2014/](http://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/per/show/7108/2014/). Accessed January 2017.
- Slack, Keith. "Mining Conflicts in Peru: Condition Critical." Oxfam America. March 2009.
- Telmer, Kevin, and Daniel Stapper. "A Practical Guide: Reducing Mercury Use in Artisanal and Small-Scale Gold Mining." United National Environmental Programme Global Mercury Partnership. 2012.
- United States Department of Labor. "List of Goods Produced by Child Labor or Forced Labor." September 30, 2016.
- Wagner, Livia. "Organized Crime and Illegally Mined Gold in Latin America." The Global Initiative Against Transnational Organized Crime. April 2016.
- Wang, Sam. "Illegal Gold Mining in Peru." Council on Hemispheric Affairs. July 29, 2016. [www.coha.org/wp-content/uploads/2016/07/Sam-Wang-Illegal-Mining\\_Final.pdf](http://www.coha.org/wp-content/uploads/2016/07/Sam-Wang-Illegal-Mining_Final.pdf). Accessed December 2016.
- "What Is Artisanal and Small-Scale Mining?" Fraser Institute. [www.miningfacts.org/communities/what-is-artisanal-and-small-scale-mining/](http://www.miningfacts.org/communities/what-is-artisanal-and-small-scale-mining/). Accessed January 18, 2017.
- "What Is the Social License to Operate (SLO)?" Fraser Institute. [www.miningfacts.org/Communities/What-is-the-social-licence-to-operate/](http://www.miningfacts.org/Communities/What-is-the-social-licence-to-operate/). Accessed January 18, 2017.
- World Bank. "Peru - Overview." The World Bank Group. September 30, 2016. [www.worldbank.org/en/country/peru/overview](http://www.worldbank.org/en/country/peru/overview). Accessed November 2016.
- Yagoub, Mimi. "Growth in Peru Money Laundering from Illegal Gold Outstrips Drug Trade." *InSight Crime*. May 13, 2014. [www.insightcrime.org/news-briefs/growth-in-peru-money-laundering-from-illegal-gold-outstrips-drug-trade](http://www.insightcrime.org/news-briefs/growth-in-peru-money-laundering-from-illegal-gold-outstrips-drug-trade). Accessed January 2017.