

Hernando de Soto, the Lone Prospector and the Formalization of Artisanal and Small-Scale Mining: A Case Study from La Rinconada, Peru

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“The incentive to the pioneer held out by the reward of a gold or silver mine, if he can find one, is magical upon the sanguine temperament of the prospector. For near a quarter of a century a race of men, constituting a majority by far of all the miners of the West, patient of toil, hopeful of success, deprived of the associations of home and family, have devoted themselves, with untiring energy, to sinking deep shafts, running tunnels thousands of feet in solid granite, traversing deserts, climbing mountains, and enduring every conceivable hardship and privation, exploring for mines, all predicated upon the idea that no change would be made in this system, that would deprive them of their hard-earned treasure.”

Senator William Morris Stewart, 1866²

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² Cong. Globe 39th Cong., 2nd Session 3226 (1866).

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INTRODUCTION

Josmell Ilasaca is 30 years old.³ He left his hometown of Azangaro, Peru, when he was 12 to join his father in La Rinconada, an unplanned gold rush village located at 17,000 feet above sea level. Josmell is one of 50,000 miners who have flocked to this settlement in recent decades, inspired by stories of gold nuggets

³ This story is adapted from William Finnegan, *A Fortune at the Top of the World*, NEW YORKER (Apr. 20, 2015), <https://www.newyorker.com/magazine/2015/04/20/tears-of-the-sun> (last visited Jan. 23, 2019).

the size of a horse's head inside the mine shafts.⁴ But miners like Josmell are not paid salaries for their labor. In La Rinconada, mining is hard work with uncertain reward. Mine owners recompense the workforce using an ancient oral contract called *cachorro*. In this system, miners work without pay for 28 days, followed by two days during which miners may keep *whatever* ore they extract from the shafts. This is what passes for a paycheck: a sack of rocks that may contain a small fortune—or nothing at all.⁵

Before starting his 8-hour long *cachorro* day, Jospell pays the mountain deities with liquor and asks them to return him home alive. While chewing coca leaves to fight exhaustion and hunger, he uses hand tools and dynamite to extract the rocks from the mine shaft. Later, he crushes the rocks into ground ore and mixes it with mercury to produce a gold-mercury amalgam, which he sells at a local gold smelter's shop. The shopkeeper weighs the gold nugget, uses a cellphone app to check the international price of gold, and hands Jospell forty dollars. He still must pay for the equipment he rented and send some money back to Azangaro to support his three-year-old daughter. He did not get much on his *cachorro* day, but like most inhabitants of this gold rush village he believes his luck will change.

Jospell is one of forty million people who are directly engaged in artisanal and small-scale mining (ASM) in all corners of the developing world—a sector that attracts rural families escaping poverty and seeking opportunity. The ASM sector has expanded significantly since the early 2000s as a result of rising international gold prices and few alternative employment activities. Today, twenty percent of the world's gold production comes from ASM sources,⁶ but the associated social and environmental costs pose significant challenges for sustainable development. Peru illustrates this worldwide expansion. La Rinconada, in particular, exemplifies not only the dreadful living and working conditions in ASM settlements, but also the idiosyncratic and spontaneous nature of the sector.⁷

Despite these concerns, many scholars believe that ASM can contribute to economic progress and the reduction of rural poverty. Besides creating jobs, ASM

⁴ See Marie Arana & Gina Nemirosky, *Dreaming of El Dorado: In La Rinconada, Peru, the highest human habitation in the world, legions of miners seek gold and one young girl seeks an education*, 88 VA. Q. REV. 26, 32 (2012).

⁵ Brook Larmer, *The Real Price of Gold*, NAT'L GEOGRAPHIC (Jan. 2009), <https://www.nationalgeographic.com/magazine/2009/01/gold/>.

⁶ See INTERGOVERNMENTAL F. ON MINING, MINERALS, METALS AND SUSTAINABLE DEV., GLOBAL TRENDS IN ARTISANAL AND SMALL-SCALE MINING (ASM): *A Review of Key Numbers and Issues*, iv, iv (Morgane Fritz et al., 2017) <https://www.iisd.org/default/files/publications/igf-asm-global-trends.pdf> (*Hereinafter* "IFM").

⁷ La Rinconada is an unplanned gold rush village erected in the foothills of Mount Ananea, in the Apolobamba Cordillera, in Puno, Southern Peru. Located at 17,000 feet above sea level, as high as the Everest basecamp, it is the highest permanently inhabited town in the world. Celebrated for its rich lode gold deposits, once considered 'extraordinary' and 'idyllic', La Rinconada also owns a dreadful reputation due to its extreme poverty, hazardous working conditions, and lawlessness.

offers opportunities for services such as food and equipment supply, security, or gold trading. However, most of this activity takes place in the informal economy outside legal frameworks.⁸ Consequently, there is a growing consensus that government recognition of informal miners' right to mine is necessary to unleash the potential of ASM.⁹

Although formalization has become a cornerstone of today's ASM governance, title is only one element required for effective regulation of this sector. In fact, according to Hilson et al., lackluster and bureaucratic government programs designed to formalize ASM have been ineffective.¹⁰ These programs fail because they are unable to implement other "enabling conditions" besides title (i.e. overcoming dysfunction in governance or unequal labor relations), to integrate local perspectives into the program, and to create the appropriate incentives for miners to apply for and stay in the program. Rather, some governments, including Peru, criminalize and vilify informal mining, which has led to further resistance and marginalization in and amongst ASM communities.

The influential economist Hernando de Soto has vociferously attacked the government of Peru's formalization efforts. According to de Soto's Institute of Liberty and Democracy ("ILD"), the typical informal miner spends up to 1,260 days and more than \$87,000 to comply with formalization paperwork.¹¹ He argues that red tape is therefore locking out thousands of miners from legal title, preventing them from accessing collateral-backed credit, secure contracts or limited liability vehicles. In response, de Soto proposes a comprehensive titling program that integrates miner's informal rules already on the ground into one unified property rights system.¹²

De Soto looks to the California Gold Rush ("CGR") to examine the tension between top-down and bottom-up governance. Upon the discovery of gold in California in 1848, absent government regulation, thousands of miners eventually improvised their own rules to distribute rights to the gold deposits and avoid chaos.¹³ In a process lionized as "the noblest experiment in self-government ever attempted,"¹⁴ miners organized themselves around mining districts or camps and created their own mining codes. These codes set up a claim system based on two

⁸ See Gavin Hilson et al., *Artisanal and Small-Scale Mining (ASM) in Sub-Saharan Africa: Re-conceptualizing Formalization and 'Illegal' Activity*, 83 *GEOFORUM* 80 (2017).

⁹ See Shefa Siegel & Marcello M. Veiga, *Artisanal and Small-Scale Mining as an Extralegal Economy: De Soto and the Redefinition of "Formalization"*, 34 *RESOURCES POL'Y* 51 (2009).

¹⁰ See Hilson, et al *supra* note 8, at 84.

¹¹ See Institute for Liberty and Democracy (ILD) & Federacion Nacional de Minero Artesanales Del Peru (Fenamarpe), *President Humala: Would You Like to Create More Jobs for the Youth?* (2014).

¹² See Institute for Liberty and Democracy (ILD), *Conga va pero vamos todos* (2014), <https://www.scribd.com/document/248188762/Programa-Para-Integrar-a-Los-2-Perus>.

¹³ See *infra* note 36.

¹⁴ John C. Lacy, *Historical Overview of the Mining Law: The Miner's Law Becomes Law, in THE MINING LAW OF 1872: A LEGAL AND HISTORICAL ANALYSIS*, 20 (1989).

main tenets: first, standardized claim sizes and, secondly, an obligation to work the claim continuously.¹⁵ Seventeen years after the discovery of gold, and after long debates on the future of the federal mineral lands, the U.S. Congress finally ratified the local customs of miners by passing the Lode Law of 1866¹⁶ (later amended by the Placer Act of 1870¹⁷ and the Mineral Law of 1872¹⁸), which was built on the miner's *extralegal* arrangements. From then on, the California mining codes became the "American system of mining law."¹⁹

In his controversial best-seller *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (hereinafter "*Mystery*"),²⁰ de Soto puts forth the CGR as an archetypical example of a legal system built up from ground level conditions. This process was remarkable, claims de Soto, in that the U.S. Congress did not aim to destroy informal mining codes—evidence of the miner's "legal acumen" and "genius"²¹—but strengthened them by regulating the way miners held and worked their claims.²² He argues that the mining codes served as temporary "rest stops" on the road to legal recognition,²³ which came about when Congress converted "what seemingly were disruptions of [the law] into a social contract that brought property rights to everybody."²⁴ Hence, the conquest of the Western frontier by the U.S. is a how-to lesson for developing nations on creating more legitimate and representative formalization frameworks rather than top-down approaches.²⁵

De Soto's provocative analogy of the CGR has rippled through within the ASM literature, creating vigorous debate about the process of legal integration of miner's informal and customary rules into conventional law systems. For example, Siegel & Veiga cite de Soto's example to propose that the "[l]aw is not created; rather, it adapts to the arrangements and systems that people have already

¹⁵ See UMBECK *infra* note 72.

¹⁶ Act of July 26, 1866, ch. 262, 14 Stat. 251 (repealed 1872).

¹⁷ Act of July 9, 1870, ch. 235, 16 Stat. 217.

¹⁸ General Mining Act of 1872, ch. 152, 17 Stat. 91 *amended* at 30 U.S.C. §§ 22-24, 26-30, 33-35, 37, 39-43, 47 (2000).

¹⁹ See CHARLES HOWARD SHINN, *MINING CAMPS: A STUDY IN AMERICAN FRONTIER GOVERNMENT* 4-5 (1885).

²⁰ See HERNANDO DE SOTO, *THE MYSTERY OF CAPITAL: WHY CAPITALISM TRIUMPHS IN THE WEST AND FAILS EVERYWHERE ELSE* 140 (2000).

²¹ See *id.* at 137-47.

²² See *id.* at 146.

²³ See *id.* at 140.

²⁴ Hernando De Soto, *Rethinking Liberalism: An Interview with Hernando de Soto*, 10 *WHITEHEAD J. DIPL. & INT'L REL.* 9, 12 (2009).

²⁵ See HERNANDO DE SOTO, *How Peru's Poor Defeated Terrorism* 5 (2016), https://www.ild.org.pe/pdf/2016-10-27_WEB-ILD-How-Peru's-Poor-Defeated-Terrorism.pdf ("So I studied American history and found parallels to the Peruvian situation in the United States of the eighteenth and nineteenth centuries: Issues such 'manifest destiny,' the Louisiana Purchase, the gold rush, and rapid westward expansion all informed my understanding of what was occurring in Peru").

established.”²⁶ While recognizing that the contemporary political landscape makes the CGR’s bottom-up approach impractical today, Hilson et al. contend that de Soto’s bottom-up model, “. . . would undoubtedly yield more representative policy and regulatory frameworks for ASM.”²⁷ Finally, in his discussion of current challenges with ASM formalization, Van Bockstael refers to de Soto’s reading of the CGR as an illustration of how “. . . to absorb existing informal practices into a country’s official legal framework.”²⁸

Despite de Soto’s influence, this article challenges his proposal of a bottom-up property rights program—built on the American tradition—as an effective answer to the expansion of contemporary ASM. I use the La Rinconada Gold Rush as a case study to question de Soto’s romantic depiction of the CGR lone prospector and frontier democracy ethos, and problematize de Soto’s extrapolation from the CGR to contemporary ASM. Furthermore, I expose the conceptual assumptions and practical implications behind de Soto’s (new) strategy to tackle ASM through conventional property rights, arguing that his ideas would not create more wealth nor improve the environmental and labor conditions of the sector, but contribute to the exclusion of vulnerable groups and the legalization of a right to pollute.

Although de Soto’s ideas have been criticized,²⁹ engaging with his recent analysis of Peru’s ASM sector is relevant and timely. While others have cited de Soto’s selection of the CGR period and the passing of U.S. federal mining laws as a paradigmatic case, the relevance of this historical episode has been taken for granted. Furthermore, this article not only revisits de Soto’s arguments in *Mystery* as applied to contemporary ASM, but also unpacks his more recent diagnosis of Peru’s formalization program. Precisely, Hilson et al. argue that the role of de Soto’s work in the ASM sector “. . . must [still] be revisited, unpacked, dissected very carefully and, if necessary, refined for use in this specific context. [His formalization] ideas may be old; but they have yet to be interrogated in the context of ASM, a sector with a unique ‘informal’ dimension.”³⁰ Thus, this article makes new contributions to the ASM literature in this direction.

²⁶ Siegel & Veiga, *supra* note 9, at 53.

²⁷ Hilson et al., *supra* note 8, at 84.

²⁸ Steven Van Bockstael, *The Persistence of Informality: Perspectives on the Future of Artisanal Mining in Liberia*, 62 *FUTURES* 10, 17 (2014)

²⁹ Over the last two decades, de Soto’s ideas have been challenged on several grounds, such as lack of academic integrity and originality; the portrayal of formalization programs as a ‘magic bullet’; the assumption that property empowers the poor; the correlation between title and access to credit; the correlation of title and investment in home improvements; the conception of individual property as the ultimate form of tenure, ignoring customary property systems; the fact that formalization is unnecessary when existing informal arrangements are perceived as fair and secure; and the exclusion of the most vulnerable groups from formalization programs. *See, e.g.*, Jan Michiel Otto, *Rule of Law Promotion, Land Tenure and Poverty Alleviation: Questioning the Assumptions of Hernando de Soto*, 1 *HAGUE JOURNAL ON THE RULE OF LAW* 173–194 (2009); Edesio Fernandes, *Una lectura crítica a Hernando de Soto*, in *IRREGULAR* 213–240 (Clara Eugenia Salazar ed., 2012).

³⁰ Hilson et al., *supra* note 8, at 89.

Section I discusses the evolution of property rights during the CGR and critiques its normative image of a frontier democracy. Section II provides necessary background on the ASM sector both globally and in Peru. Section III describes La Rinconada mining settlement and the emergence of the *cachorro* system under which thousands of miners like Josmell are hired. This section also draws parallels between the CGR and La Rinconada Gold Rush. Finally, Section IV unpacks de Soto's proposal of making property rights available to ASM and claims that the ASM sector is unlike any other informal sector where his titling ideas have been applied (i.e. shantytowns, public transportation, or street vending).

I. THE CALIFORNIA GOLD RUSH AND THE FRONTIER DEMOCRACY

The CGR is one of the most famous chapters in U.S. history.³¹ Not only did the gold rush reshape California's territory and its inhabitants forever, but it also changed the destiny of the United States in its conquest of the West frontier,³² bringing about profound social, economic, and ecological transformation.³³ Still, the expansive wave of gold discovery transcended the United States' boundaries, prompting a massive wave of international human migration and world inflation.³⁴ Providing an exhaustive account on the CGR episode is beyond the scope of this article. Instead, the aim of this section is to question its use as a paradigmatic case of a frontier democracy in light of contemporary ASM.

A. *The Early Years of the California Gold Rush*

California gold was first discovered in John Sutter's mill in January 1848 towards the end of the Mexican-American War. The resulting peace treaty turned California territory—then occupied by prominent Mexican families (the 'Californios') and Native Americans³⁵—into U.S. federal land. However, the U.S. government did not immediately replace such laws, nor regulate access to federal lands. In fact, the California state government was installed only 2 years later, in 1850, and it would still take many years for it to fund its law enforcement

³¹ See, e.g. Karen Clay & Gavin Wright, *Order Without Law? Property Rights During the California Gold Rush*, 42 EXPLORATIONS IN ECON. HIST. 155-83 (2005).

³² See MALCOLM J. ROHRBOUGH, DAYS OF GOLD: THE CALIFORNIA GOLD RUSH AND THE AMERICAN NATION 12 (1997).

³³ See ANDREW C. ISENBERG, THE CALIFORNIA GOLD RUSH: A BRIEF HISTORY WITH DOCUMENTS 7-8 (2018).

³⁴ See DUANE A. SMITH, THE TRAIL OF GOLD AND SILVER MINING IN COLORADO, 1859-2009 7 (2009) (arguing that the Forty-niners almost upset the world's economic system as never before had so much gold been produced in such a short period).

³⁵ See Sucheng Chan, *A People of Exceptional Character: Ethnic Diversity, Nativism, and Racism in the California Gold Rush*, 79 CAL. HIST. 44, 50 (2000).

agency.³⁶ Hence, the gold rush sparked at times of ‘political vacuum,’³⁷ when California territory was devoid of any basic public authority or property rights,³⁸ leaving the newcomers free to devise their own institutions.³⁹

By March of 1848, prospectors from all over crowded Sutter’s land in the hope of finding gold, including Sutter’s own workers.⁴⁰ Soldiers, sailors, shopkeepers, Californios, and Native Americans were the first to rush to the site of discovery to the point that “the whole male population of San Francisco was gone.”⁴¹ Traveling by ship, wagon or horse,⁴² the first stampeders from outside California came from Oregon and Hawaii, while the first international immigrants came from Chile, Mexico, and Peru.⁴³ By the end of 1848, immigrants as far as Australia and New Zealand found their way to California, followed by the first contingent of Chinese miners in early 1849.⁴⁴ Clearly, the gold rush “. . . brought together the most diverse societies in the nation, and probably in the world.”⁴⁵ By the end of 1849, more than 100,000 men established in California.⁴⁶

The majority of the early ‘Argonauts’ were young males with no previous experience in mining,⁴⁷ in search of fortune, adrenaline and adventure. Some brought with them Native American and Mexican laborers at peon wages,⁴⁸ though some Native Americans made their own claims and worked for their own benefit.⁴⁹ Perceived by Anglo-Americans as obstacles to their prosperity⁵⁰ and to

³⁶ See JOHN R. UMBECK, *A THEORY OF PROPERTY RIGHTS: WITH APPLICATION TO THE CALIFORNIA GOLD RUSH* 4 (1st ed. 1981).

³⁷ See ROHRBOUGH, *supra* note 32, at 10.

³⁸ See Richard O. Zerbe & C. Leigh Anderson, *Culture and Fairness in the Development of Institutions in the California Gold Fields*, 61 J. ECON. HIST. 114, 115 (2001); RODMAN W. PAUL, *CALIFORNIA GOLD: THE BEGINNING OF MINING IN THE FAR WEST*, 210–211 (1947).

³⁹ See Terry L. Anderson & P. J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 106 (1975).

⁴⁰ See LEONARD L. RICHARDS, *THE CALIFORNIA GOLD RUSH AND THE COMING OF THE CIVIL WAR* 50 (1st ed. 2007).

⁴¹ See *id.* at 123.

⁴² See PAUL, *supra* note 38, at 22–29.

⁴³ See Chan, *supra* note 35, at 50–51.

⁴⁴ See *id.* at 56.

⁴⁵ ROHRBOUGH, *supra* note 32, at 221.

⁴⁶ ISENBERG *Supra* note 33, at 1.

⁴⁷ See generally GARY NOY, *GOLD RUSH STORIES: 49 TALES OF SEEKERS, SCOUNDRELS, LOSS, AND LUCK* 50 (2017); ROHRBOUGH, *supra* note 32, at 11, 123; ANNIE KEELER WILLIAMS, *EARLY CALIFORNIA GOLD RUSH DAYS* 10 (1948) (“Often I tried panning without any success but some of the men, who had been there before I came, had grown quite expert at it. They kindly showed me how to separate the gold from the gravel . . .”).

⁴⁸ See ROHRBOUGH, *supra* note 32, at 12; EDWARD DOLNICK, *THE RUSH: AMERICA’S FEVERED QUEST FOR FORTUNE, 1848-1853*, 264 (1st ed. 2014).

⁴⁹ See CLIFFORD E. TRAFZER & JOEL R. HYER, *EXTERMINATE THEM: WRITTEN ACCOUNTS OF THE MURDER, RAPE, AND ENSLAVEMENT OF NATIVE AMERICANS DURING THE CALIFORNIA GOLD RUSH* 2, 17 (1999) (as many as four thousand Native Americans worked in the gold fields in 1850).

⁵⁰ See *id.* at 17.

the exploitation of wilderness,⁵¹ violence and animosity against Native Americans escalated and they were eventually ordered off the mines.⁵² Though they represented one percent of the total population in California, African Americans also traveled westward to work in the mines both as slaves and free men.⁵³

During the early years of the fever, gold was found in “placer deposits” along rivers and was easily accessible.⁵⁴ Gold-seeking did not require capital expenditures given that it relied on miners’ time and labor.⁵⁵ Miners used old and inefficient processing methods, such as panning⁵⁶ and cradling,⁵⁷ but in 1850 the introduction of the sluice⁵⁸ allowed working previously unprofitable deposits or reworking areas already processed.⁵⁹ These were times of unmatched success and fortune.⁶⁰

Yet, prospecting soon involved deeper digging and harder work. As early as 1851 the easily accessible placer deposits gave out and generated only a fraction of what they used to.⁶¹ Consequently, mining shifted from a labor-intensive activity to a more industrial and capital-intensive one.⁶² Industrial hydraulic extraction methods, which involved the use of powerful jets of water (rockets) to wash hillsides away and into sluices, were introduced by the mid-1850s⁶³ and

⁵¹ See Allan Lonngberg, *The Digger Indian Stereotype in California*, 3 J. CAL. & GREAT BASIN ANTHROPOLOGY, 215, 219 (1981).

⁵² See JOHN WALTON CAUGHEY, GOLD IS THE CORNERSTONE 197 (1948).

⁵³ See, e.g., RUDOLPH M. LAPP, BLACKS IN GOLD RUSH CALIFORNIA 3–4 (1977); Rudolph M. Lapp, *Negro Rights Activities in Gold Rush California*, 45 CAL. HIST. SOC’Y Q. 3, 81–82 (1966).

⁵⁴ See, e.g., CAUGHEY, *supra* note 52, at 27 (“Placer deposits” refers to the accumulation of gold particles (in the form of nuggets or flakes) eroded from the host rock and deposited in stream-bed gravel.); Malcolm J. Rohrbough, *The California Gold Rush as a National Experience*, 77 CAL. HIST. 16, 19 (1998) (“[This wealth] lay on all sides for the gathering.”).

⁵⁵ See KENNETH N. OWENS, RICHES FOR ALL : THE CALIFORNIA GOLD RUSH AND THE WORLD 16 (2002).

⁵⁶ See UMBECK, *supra* note 36, at 74 (a tin pan was filled in with dirt and submerged in water. Circular movements would allow the lighter dirt to wash away leaving the gold flaked in the bottom.); See WILLIAMS, *supra* note 44, at 10 (this process was inefficient considering part of the gold was washed down the river by careless or inexperienced men at panning).

⁵⁷ See UMBECK, *supra* note 36, at 74 (a wooden box that allowed the processing of more dirt).

⁵⁸ See *id.* at 74 (a stationary trough large enough that could be used for days without cleaning up. The dirty caught was mixed with mercury, collecting very small gold flakes).

⁵⁹ See *id.* at 76.

⁶⁰ See Caughey, *supra* note 52, at 28 (in the first half decade of the gold rush the Argonauts harvested a total of \$300 million).; see also DOLNICK, *supra* note 45, at 29 (claiming that during the 1850s miners dug gold worth \$12 billion, in today’s money).

⁶¹ See generally PAUL, *supra* note 38, at 117; ROHRBOUGH, *supra* note 32, at 187; Andrea G. McDowell, *From Commons to Claims: Property Rights in the California Gold Rush*, 14 YALE J.L. & HUMAN. 1, 10 (2002); Carl J. Mayer, *The 1872 Mining Law: Historical Origins of the Discovery Rule*, 53 U. CHI. L. REV. 624, 639 (1986).

⁶² See Chan, *supra* note 35 at 50.

⁶³ See Zerbe & Anderson *supra* at 38.

sidelined artisanal mining.⁶⁴ All told, the CGR lasted roughly six years (1848-1854). While some miners prospered, especially those of the earlier years who were lucky or resourceful enough, most did not.⁶⁵ Rather, fortunes were amassed through entrepreneurship and commerce.⁶⁶

B. *The Emergence of Property Rights*

1. From open access to private property

Although the federal government was the “official” owner of the mineral lands, it exercised no control over them.⁶⁷ When miners flocked to the gold fields, they believed that the land belonged to them as the “land’s new masters,”⁶⁸ and that gold was free for the taking on a first-come, first-served basis.⁶⁹ As Andrea McDowell puts it, “. . . this was as close to a state of nature as Americans would ever come.”⁷⁰

Despite the lack of a functioning authority, anarchy and violence did not prevail during the early days.⁷¹ While rich diggings lured other miners into the same spot, the discoverer was left with enough space to work his finding⁷² because there was a general belief that there was enough gold for everyone.⁷³ Nonetheless, as the immigration flow increased, miners understood that social controls were

⁶⁴ See Deborah Fahy Bryceson, *Artisanal Gold Rush Mining and Frontier Democracy: Juxtaposing Experiences in America, Australia, Africa and Asia*, in BETWEEN THE PLOUGH AND THE PICK: INFORMAL, ARTISANAL AND SMALL-SCALE MINING IN THE CONTEMPORARY WORLD 31, 36 (Kuntala Lahiri-Dutt ed., 2018).

⁶⁵ See Lonngberg, *supra* note 51, at 220.

⁶⁶ See *id.* at 220; see also John F. Burns, *Taming the Elephant: An Introduction to California’s Statehood and Constitutional Era*, 81 in TAMING THE ELEPHANT: POLITICS, GOVERNMENT, AND LAW IN PIONEER 1, 4 (2003) (“[S]carcity became the rule. Everything, including much food, had to be imported Prices were bizarre; items could cost twenty or more times what they did in the East, such as a dollar for a mere egg”).

⁶⁷ See Clay and Wright, *supra* note 28, at 160; see also McDowell, *supra* note 61, at 46 (claiming that miners were officially trespassers since the mineral lands were public property of the federal government, which could have well chosen to evict them at any time or chosen to sell the mining rights to others); ROHRBOUGH, *supra* note 32, at 12.

⁶⁸ See Chan, *supra* note 35, at 59.

⁶⁹ See generally DAVID SCHORR, THE COLORADO DOCTRINE: WATER RIGHTS, CORPORATIONS, AND DISTRIBUTIVE JUSTICE ON THE AMERICAN FRONTIER 5 (2012); McDowell, *supra* note 61, at 12 (describing miners lack of interest in remaining stationary, favoring ignoring property rights to pocket accessible gold as fast as possible); Andrew P. Morriss, Roger E. Meiners & Andrew Dorchak, *Homesteading Rock: A Defense of Free Access under the General Mining Law of 1872*, 34 ENVTL. L. 745, 761 (2004) (explaining that for miners in the west, acquiring gold swiftly without much afterthought was necessary to prevent others from taking it first).

⁷⁰ McDowell, *supra* note 61, at 12.

⁷¹ *Id.* at 20.

⁷² See *id.* at 15.

⁷³ See SHINN, *supra* note 19, at 112.

necessary.⁷⁴ A *customary* “law of the diggings” emerged, by which each miner was allowed to “claim” a specific area for himself, provided that it was reasonable in size, he marked it (i.e. by leaving his tools on the ground), and developed it.⁷⁵ If, however, the claim went unworked, or if the miner quit his claim for a given time, other miners were allowed to “jump in” and seize it. In short, miners developed a claim system based on standardized claim sizes and an obligation to continuously work the claim.⁷⁶

These rules, however, were broad and did not tackle practical matters. Miners opted to organize themselves around mining districts or camps—around five hundred of them—to convert these customary norms into more detailed and written codes. The mining codes were voted by majority rule in miners’ meetings that were open to U.S. citizens (but Native Americans were forbidden), including those who had just arrived or held no claim.⁷⁷ Among other features, the mining codes specified the boundaries of each mining district, set limits to the claim size, and restricted the number of claims one miner could hold at the same time (the ‘one-claim’ rule).

In practice, the ‘one-claim’ rule prevented the concentration of multiple claims in the hands of few rich miners⁷⁸, preserving high levels of equality and anti-monopolism.⁷⁹ It also meant, though, that a miner could only hold the area in which he was actively digging.⁸⁰ According to David Schorr, this “. . . represented the best judgement of the miners as to the amount of the resource that could be worked by one person”⁸¹ and reflected an idea of “sufficiency.”⁸²

⁷⁴ See James I. Stewart, *Cooperation when N is large: Evidence from the Mining Camps of the American West*, 69 J. ECON. BEHAV. & ORG. 213, 215 (2009) (pointing out that when prospectors crowded the area and competition emerged, miners understood the need for a regulation system); DE SOTO, *supra* note 17 at 141 (postulating that “land-hungry settlers” and the absence of federal mining law created the need for extralegal arrangements); SHINN, *supra* note 19 at 115 (arguing that when the gold fields got crowded, miners were forced to organize themselves to safeguard their property and prevent disputes).

⁷⁵ See McDowell, *supra* note 61, at 15; ROHRBOUGH, *supra* note 32, at 126 (“The presence of a pick or shovel retained rights while the owner went to the nearby camps for supplies and mail or had to be absent for other reasons, presumably for brief periods, but under the regulations generally accepted in most camps, claims had to be worked on a regular basis to maintain the right of ownership”).

⁷⁶ See Bryceson, *supra* note 64, at 36; SCHORR, *supra* note 69, at 22 (claiming that the obligation to work was not an arbitrary rule but reflected the “producer ethic”).

⁷⁷ McDowell, *supra* note 61, at 31 (arguing that miners believed foreigners should not be allowed to mine so several mining codes barred non-Americans from the camps); ROHRBOUGH, *supra* note 32 (a detailed account on xenophobia during the California Gold Rush).

⁷⁸ See LACY, *supra* note 14, at 22.

⁷⁹ See SCHORR, *supra* note 69, at 25-26; Richard White, *The Gold Rush: Consequences and Contingencies*, 77 CALIFORNIA HISTORY 42, 48 (1998) (arguing that the California Gold Rush exalted labor over property and capital).

⁸⁰ See McDowell, *supra* note 61, at 35.

⁸¹ SCHORR, *supra* note 69, at 16.

⁸² See *id.*

The codes also established the type of notice required (i.e. leaving a pick or other tool in the hole, posting a notice containing the name of the claimant or stacking the center of the claim) and set up recording mechanisms for claims.⁸³ Many codes contemplated the election of a law enforcement agent and other related adjudication rules. The codes were posted on each mining camp and were enforced rapidly and effectively.⁸⁴ In actuality, these codes did not create completely new rules but adapted familiar legal institutions to the miners, including Spanish and Mexican laws.⁸⁵ As Malcom Rohrbough puts it, miners adopted “a long-standing principle espoused by trespassers in the East, that the land and its resources belongs to those there on the spot and in physical possession of it.”⁸⁶ A mix of legal principles derived from other places was the essence of the codes.

The idyllic early days of the gold rush would soon come to an end. During the winter of 1848-1849, the influx of miners arrived and the competition for a good mining location intensified, leaving newcomers with fewer spots to dig.⁸⁷ Some miners chose to work as laborers on someone else’s claim, while others moved to new areas, bought claims, or went home.⁸⁸ Other miners resorted to violence. The harassment started against Native Americans, Latin Americans and French miners, but soon turned into racism against African Americans and Chinese workers.⁸⁹ The enactment of the 1850 Foreign Miner’s Tax by the California state legislature—which charged \$20 a month to all foreign-born miners on the placer mines—echoed this sentiment.⁹⁰

⁸³ McDowell, *supra* note 61, at 33, 43.

⁸⁴ See Terry Lee Anderson & Peter J. Hill, THE NOT SO WILD, WILD WEST: PROPERTY RIGHTS ON THE FRONTIER 111 (2004).

⁸⁵ See, e.g., Clay & Wright, *supra* note 31, at 161–162 (pointing out that the miners were influenced by Spanish and Mexican laws, by which property to a mine depends both on discovery and development. Yet he admits that some features are not alien to U.S. values, such as the first-come, first-served rule, first possession, or adverse possession); PAUL, *supra* note 38 at 212 (“[T]he codes were the product of the common experience of miners in several parts of the world in dealing with the typical problems that were likely to arise wherever men sought mineral wealth”); see also LACY, *supra* note 14, at 21.

⁸⁶ ROHRBOUGH, *supra* note 32, at 11; see also Burns, *supra* note 66, at 6 (claiming that “[U]nderlying [the mining codes] was pragmatic American frontier self-government, coupled with “vigilance” promptly laid upon alleged lawbreakers.”).

⁸⁷ See ROHRBOUGH, *supra* note 32, at 20; see also John Umbeck, *A Theory of Contract Choice and the California Gold Rush*, 20 J.L. & ECON. 421, 435 (1977) (“It was not unusual to read reports of hundreds or even thousands of newcomers converging on a riverbank where previously there had been only four or five members”).

⁸⁸ See STEVE BOGGAN, GOLD FEVER : ONE MAN’S ADVENTURE ON THE TRAIL OF THE GOLD RUSH 191 (2015).

⁸⁹ See Chan, *supra* note 35, at 67.

⁹⁰ See White, *supra* note 79, at 50.

The California legislature recognized the mining codes legal status, existence, and vitality in 1851.⁹¹ At the federal level, the U.S. Congress long debated the future of the federal mineral lands and whether they should be leased, sold or awarded to the mining settlers.⁹² Finally, the 1866 Lode Law declared that all mineral lands of public domain were open to exploration by citizens of the United States (and aliens who had the intent to naturalize). Further, the Lode Law recognized that the rights that had been acquired subject to the regulations and local customs or rules of miners in the several mining districts would be respected.⁹³ In addition, the Lode Law allowed the filing of patents to the mining veins after any person had invested \$1,000 in actual labor or improvements on a claim.⁹⁴

Although the Lode Law, had significant flaws,⁹⁵ it incorporated the core principles of the miner's laws and, more importantly, "... the right of the discoverer of a mine to purchase the title from the government at a reasonable price."⁹⁶ The legislation of the mining codes was perceived at the time as a "... simple act of justice. Any other course of action would have involved a practical confiscation of property acquired and developed by the tacit consent of the government."⁹⁷ The law's deficiencies, however, were subsequently addressed by the passing of the 1870 Placer Act and the 1872 General Mining Law—but did not alter the basic principles of the Lode Law. In sum, the California mining codes transformed American mining law forever⁹⁸ and its essence is still part of the "American system of mining law."⁹⁹

⁹¹ See LACY, *supra* note 14, at 27; see generally CURTIS H. LINDLEY, TREATISE ON THE AMERICAN LAW RELATING TO MINES AND MINERAL LANDS WITHIN THE PUBLIC LAND STATES AND TERRITORIES AND GOVERNING THE ACQUISITION AND ENJOYMENT OF MINING RIGHTS IN LANDS OF THE PUBLIC DOMAIN 78 (3rd. ed. 1914).

⁹² See, e.g., Clay & Wright, *supra* note 31, at 159-160 (while there were different government attempts to regulate the licensing, leasing or sale of mineral lands during the California Gold Rush, all of these failed. Colonel Mason, the first governor of California, proposed to Congress in 1848 the *sale* of the parcels to the highest bidder.); LINDLEY, *supra* note 91, at 86.

⁹³ See LINDLEY, *supra* note 91, at 91.

⁹⁴ LACY *supra* note 14 at 37-40.

⁹⁵ For example, the law only applied to lodes deposits (not placer deposits) and it did not establish a continuous working requirement (other than the \$1,000). See John C. Lacy, *supra* note 14 at 37-40; see also GORDON MORRIS BAKKEN, THE MINING LAW OF 1872 PAST, POLITICS, AND PROSPECTS 27 (2011); LINDLEY, *supra* note 91, at 90.

⁹⁶ LACY, *supra* note 14, at 37-38.

⁹⁷ LINDLEY, *supra* note 91, at 92.

⁹⁸ See Morriss, *supra* note 69, at 748.

⁹⁹ See SHINN, *supra* note 19, at 6; See also David Gerard, *The Mining Law of 1872: Digging a Little Deeper* (Dec. 1, 1997), <https://www.perc.org/1997/12/01/the-mining-law-of-1872-digging-a-little-deeper/>.

2. Contested Property

The transition from the *customary* law of the diggings to individual and exclusive claims is remarkable for several reasons. First, the mining codes emerged from the ground up and very quickly.¹⁰⁰ Classic property rights scholars have long used the CGR as a seminal example to describe how secure property rights can emerge from the bottom-up.¹⁰¹ Indeed, what began as an open access resource soon evolved into a rigid grid of private and exclusive claims,¹⁰² reinforcing Harold Demsetz's classic theory on the evolution of property rights.¹⁰³ It is important not to overlook the significance of the CGR as scholars have traced the evolution of property rights.

Second, the codes were respected by *both* miners and newcomers alike. Surprisingly, newcomers did not fight the codes—but rather, showed some deference to them.¹⁰⁴ Third, the precise choice of rules is intriguing for another reason: the gold-diggers assumed they were alone to determine the rules—simply put, they could have come up with *any other* system.¹⁰⁵ Miners forwent stronger property rights to mineral lands (i.e. fee-simple rights) and voted instead for a series of restrictions to their own exclusive rights.¹⁰⁶ The reason for this is that miners aspired to obtain rights to their current claim as much as to their next claim.¹⁰⁷ Yet scholars do not agree on why property rights emerged this way—I will introduce and briefly discuss a few diverging viewpoints on why property rights evolved to draw out the disagreement.

According to Demsetz's classic thesis, “the cost of organizing and enforcing a [property] rights regime become worthwhile in the face of scarcity.”¹⁰⁸ Building on this account, Charles Umbeck argues that, as long as the gold fields remained abundant, small groups of miners did not require assigning exclusive rights.¹⁰⁹ Yet, as the population and the value of mineral lands increased, miners moved

¹⁰⁰ See, e.g., UMBECK, *supra* note 36, at 132 (“The length of time in which this took place was not centuries, but days”); Zerbe & Anderson, *supra* note 38, at 115 (“It is curious how soon a set of crude regulations sprung into existence, which everybody seemed to abide by”).

¹⁰¹ See, e.g., Clay & Wright, *supra* note 31, at 56; Anderson & Hill, *supra* note 39; UMBECK, *supra* note 36 at 5.

¹⁰² See McDowell, *supra* note 61, at 17; see also Morriss, *supra* note 69, at 762.

¹⁰³ See Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347–359 (1967).

¹⁰⁴ See McDowell, *supra* note 61, at 22.

¹⁰⁵ See Anderson & Hill, *supra* note 84, at 106.

¹⁰⁶ See UMBECK, *supra* note 87, at 435.

¹⁰⁷ Sara Geenen, *A Dangerous Bet: The Challenges of Formalizing Artisanal Mining in the Democratic Republic of Congo*, 37 RESOURCES POL'Y 322, 323 (2012).

¹⁰⁸ David A. Dana and Hannah Jacobs Wiseman, *Fracking as a Test of the Demsetz Property Rights*, Unpublished Thesis (March 19, 2019). Available at SSRN: <https://ssrn.com/abstract=3356079> or <http://dx.doi.org/10.2139/ssrn.3356079>.

¹⁰⁹ See UMBECK, *supra* note 36, at 87.

away from common to exclusive property.¹¹⁰ Moreover, according to Umbeck, violence and the threat of violence were used to take and maintain such exclusive rights, as well as to keep outsiders away.¹¹¹

Challenging Umbeck's account, Richard Zerbe and Leigh Anderson emphasize that between 1848 and 1850, there was little or no violence in California, so property rights were not "imposed by the strong to the weak."¹¹² In contrast, Zerbe and Anderson posit that shared cultural norms among the miners enabled the development of new legal institutions. The cultural viewpoint suggests that norms were enforced based on shared values. Indeed, the early miners were a homogenous group that shared basic principles of fairness and democracy—such as majority vote, trial by jury, and men's right to what they produce (producerism).¹¹³ Consequently, culture worked as a 'focal point' that lowered the costs of bargaining, prevented opportunistic behavior, and promoted group cooperation.¹¹⁴

Furthermore, Zerbe and Anderson contend that newcomers did not resist the codes because the first-come, first-served rule did not 'tyrannically' exclude them from accessing property and appeared to be a 'fair rule.'¹¹⁵ Nonetheless, by 1851, these familiar institutions dissipated as a result of the massive wave of incoming miners from different cultures and countries, which increased the pressure to access a claim.¹¹⁶ Eventually, the mining codes could no longer solve disputes among miners, giving way to violence and litigation.¹¹⁷

Building on this cultural interpretation from Zerbe and Anderson, McDowell postulates that shared norms of "egalitarianism" and "anti-capitalism" among the miners help explain the peculiar selection of codes and restrictions. In other words, the spirit of freedom and equality of the time fostered a restricted system of property rights that not only rewarded miners with the fruits of their own labor (producerism), but also prevented rich capitalists from concentrating multiple claims.¹¹⁸ McDowell underscores that, had miners opted for fee-simple property, they could not have moved from one claim to another as quickly as possible when

¹¹⁰ See *id.* at 48.

¹¹¹ See *id.* at 90–91 ("The sight of a six-shooter strapped to the hip of each miner [was] sufficient to maintain exclusive rights.").

¹¹² See Zerbe & Anderson, *supra* note 38, at 117; see also ROHRBOUGH, *supra* note 32 (claiming that miners were generally unarmed).

¹¹³ See Zerbe & Anderson, *supra* note 38, at 119–124.

¹¹⁴ See *id.*

¹¹⁵ See *id.* at 126.

¹¹⁶ See *id.* at 138.

¹¹⁷ See *id.*

¹¹⁸ See McDowell, *supra* note 61, at 48–66; see also SCHORR, *supra* note 69, at 25–26 ("Mid-nineteenth-century reform elements built on the Jeffersonian ideology favoring small, family-sized farms, arguing that every person should hold some land, both as a matter of right and in order to preserve the individual self-sufficiency and independence necessary for democracy to function Anti-monopolism went hand in hand with a desire for limits to the private accumulation of land and the yeoman ideal of wide distribution to actual settlers.").

their claim was either not rich enough or ran out.¹¹⁹ Simply put, California gold-seekers “opted for restricted property rights now in exchange for the possibility of securing a new claim when their own had been exhausted.”¹²⁰

Finally, Karen Clay and Gavin Wright suggest a radically different interpretation. Instead of promoting strong property rights, shared cultural values, or avoiding concentration of rights, they argue that the codes put in place an “institution for the orderly turnover of claims.”¹²¹ Unlike most scholars’ assumptions, Clay and Wright contend that ‘claim jumping’ was not a violation of the mining codes; rather, claim jumping was part of the institution that miners had created.¹²² Consequently, the code’s provisions on abandonment and repossession of claims should be considered just as crucial as those protecting existing claimholders.¹²³ In short, Clay and Wright posit that the codes created an institution that promoted discovery and production in a context of uncertain (unknown) location of gold deposits,¹²⁴ rather than private property rights.

The discussion above evinces how the nature of the mining codes is still contested in legal scholarship. Although the CGR is portrayed as the seminal example of the Demsetzian evolution of property rights towards stronger legal rights, in actuality miners discarded full ownership schemes (i.e. fee-simple rights) since the very inception of the mining codes. For example, when patents were made available upon the enactment of the Lode Law, almost no one applied for them.¹²⁵ Contrary to the principle that private property enhances the value of the resource,¹²⁶ and against what the drafters of the Lode Law had anticipated would happen, gold production was not boosted upon the legal recognition of the mining codes.¹²⁷

¹¹⁹ A rich claim could be worked in two or three weeks and then miners had to move on. *See* McDowell, *supra* note 61 at 63; *see also* Caughey, *supra* note 52, at 168–69 (claiming that the Forty-Niners were “incorrigible prospectors” that constantly abandoned their claims in the hope of finding better claims and that they were convinced that mining was a temporary activity so they needed to grab as much as possible, as quickly as possible); ROHRBOUGH, *supra* note 32 (“From its beginning, the exercise of mining demanded that miners plan for the next claim even as they labored so intensely on their present claim”).

¹²⁰ McDowell, *supra* note 61, at 65.

¹²¹ Clay & Wright, *supra* note 31, at 163.

¹²² *Id.* at 157.

¹²³ *See id.*

¹²⁴ *See id.* at 178.

¹²⁵ *See* UMBECK, *supra* note 36, at 97 (four claims were patented by 1867 and six in 1869 and 1870).

¹²⁶ *See* DE SOTO, *supra* note 20, at 140 (for example, de Soto argues that the miner’s regulations added value to the land miners claimed).

¹²⁷ *See* UMBECK, *supra* note 36, at 97.

C. *A Frontier Democracy?*

Idealized as places of rich and endless endowments of lands and natural resources, frontiers have constantly been a cause of optimism, adventure, and mobility.¹²⁸ Frontiers represent “. . . a metaphor for national development in its material and ideological senses, as well as in terms of spatial expansion and delimitation.”¹²⁹ Frederick Jackson Turner’s frontier thesis, albeit contentious, prompted the myth of America’s western conquest of nature and its connection with the development of democratic ideals:¹³⁰

“American social development has been continually beginning over again on the frontier. This perennial rebirth, this fluidity of American life, this expansion westward with its new opportunities, its continuous touch with the simplicity of primitive society, furnish the forces dominating American character. . . . The existence of an area of free land, its continuous recession, and the advance of American settlement westward, explain American development.”¹³¹

During the nineteenth century, the accidental discovery of gold sparked massive stampedes of gamblers and dreamers wishing to strike it rich overnight, traveling thousands of miles in brutal and expensive voyages.¹³² In the United States, the gold rushes of Georgia (1829), California (1848), Colorado (1858) and Alaska (1896) mythicized the figure of the individual prospector who, “. . . given the right mix of determination and luck, prevailed against the challenges of a harsh, untamed wilderness.”¹³³ Often regarded as the incarnation of “pioneer individualism,”¹³⁴ the CGR is indisputably the most glorified example of a frontier democracy. That is, a remote, wild and unruly place prone to the emergence of new democratic societies,¹³⁵ under the principles of equality, self-governance, and

¹²⁸ See LEE J. ALSTON, *TITLES, CONFLICT, AND LAND USE: THE DEVELOPMENT OF PROPERTY RIGHTS AND LAND REFORM ON THE BRAZILIAN AMAZON FRONTIER* 1 (1999).

¹²⁹ Niels Fold & Philip Hirsch, *Re-Thinking Frontiers in Southeast Asia: Editorial*, 175 *GEOGRAPHICAL J.* 95, 95 (2009).

¹³⁰ Cf. Harold P. Simonson, *Frederick Jackson Turner: Frontier History as Art*, 24 *ANTIOCH REV.* 201, 207 (1964).

¹³¹ FREDERICK JACKSON TURNER, *FRONTIER AND SECTION; SELECTED ESSAYS* 38–39 (1961).

¹³² See CHARLOTTE GRAY, *GOLD DIGGERS: STRIKING IT RICH IN THE KLONDIKE* xii (2010).

¹³³ DEB VANASSE, *WEALTH WOMAN: KATE CARMACK AND THE KLONDIKE RACE FOR GOLD* x (2016); See also Patricia Nelson Limerick, *The Gold Rush and the Shaping of the American West*, 77 *CAL. HIST.* 30, 41 (1998).

¹³⁴ Cf. M. R. REDCLIF, *FRONTIERS HISTORIES OF CIVIL SOCIETY AND NATURE* 206 (2006); SCHORR, *supra* note 69, at 5.

¹³⁵ See Boris Verbrugge & Sara Geenen, *The Gold Commodity Frontier: A Fresh Perspective on Change and Diversity in the Global Gold Mining Economy*, 6 *EXTRACTIVE INDUSTRIES & SOC’Y* 413, 414 (2019); Deborah Epstein Popper, Robert E. Lang & Frank J. Popper, *From Maps to Myth: The Census, Turner, and the Idea of the Frontier*, 23 *J. AM. & COMP. CULTURES* 91, 97 (2000); Simonson, *supra* note 125, at 202, 208; Deborah Fahy Bryceson & Sara Geenen, *Artisanal Frontier Mining of*

“laissez-faire individualism.”¹³⁶ Next I argue that the CGR is far from a frontier democracy, but rather represents an obscure story for several reasons. First, the gold fields were opened for white U.S. citizens only, excluding foreign-born miners; second, the image of the lone prospector only corresponds to the first few years of the CGR, before the gold fields were opened to large mining corporations; third, the miners displaced and annihilated Native Americans in order to prospect the lands for gold; finally, the ecological cost of the CGR is generally untold.

First, the frontier democracy narrative associated with the CGR is flawed. While the rules of open access to the gold, *producerism*, and social mobility represent the American dream of economic democracy—in actuality the mining codes were not open to everyone, but linked to U.S. citizenship (it excluded Native Americans and international immigrants alike).¹³⁷ In fact, what had started as an egalitarian society in the early years of the gold rush, where miners of any descent worked shoulder to shoulder, soon gave way to exclusion and the replication of traditional hierarchical class relations reinforced by violence.¹³⁸ As Limerick illustrates,

“... mining, throughout the West as in California, rested on the white American talent for claiming legitimacy: that is, white Americans in mining rushes were clearly, unmistakably, newcomers themselves, and yet, even the recentness of their own arrival did not cause them a moment’s hesitation when it came to claiming status as the legitimate occupants, the people who had the right to claim and use the local resources, and to exclude, and to brand as illegitimate and undeserving, people of other nationalities, particularly Mexican or Chinese.”¹³⁹

In contrast to the mythic portrait of frontier democracy, the way in which an unequal society emerged “is one of the darker legacies of the Gold Rush.”¹⁴⁰

Second, although the CGR is associated with the iconic figure of the individual prospector—alone, using simple tools, living away from his family—this image corresponds exclusively to the first years of the gold rush (1848 and 1849) when operations were still artisanal and individual.¹⁴¹ In the 1850s, however, politically influential lode miners in California favored the removal of the one-claim rule and changes in the allowable size of claims, allowing speculators and mining

Gold in Africa: Labour Transformation in Tanzania and the Democratic Republic of Congo, 115 AFR. AFF. 296, 302 (2016); SCHORR, *supra* note 69, at 25.

¹³⁶ See DAVID GOODMAN, GOLD SEEKING: VICTORIA AND CALIFORNIA IN THE 1850S 49 (1994).

¹³⁷ See, e.g., Bryceson, *supra* note 64, at 41–42 (“[T]he democracy narrative of artisanal mining can only be recounted with the proviso that it was deeply flawed, not unlike Greek democracy’s indifference to the rights of women and slaves”).

¹³⁸ See Chan, *supra* note 35, at 67; ISENBERG, *supra* note 33, at 8.

¹³⁹ See Limerick, *supra* note 133, at 32.

¹⁴⁰ See Chan, *supra* note 35, at 79.

¹⁴¹ See ISENBERG, *supra* note 33, at 20.

corporations to hold larger claims.¹⁴² Thus, by the time the Lode Law was enacted, mining corporations had already replaced the artisanal miners in the mining operations, and the miners who remained on the fields were waged laborers rather than self-employed.¹⁴³ Contrary to de Soto's account, Carl Mayer convincingly contends that the Lode Law was not passed to benefit individual prospectors but mining corporations.¹⁴⁴ Thus the predominant image of the lone miner in the CGR is fictional given prevalent corporate mining operations.¹⁴⁵

Third, the Native American historical narrative during the CGR has generally been left out,¹⁴⁶ despite the fact that they were displaced, removed, and relocated.¹⁴⁷ Out of all other actors, Native Americans were the most marginalized¹⁴⁸ as a consequence of disease, starvation, and murder.¹⁴⁹ Although the early gold rush miners relied on Native American skills, knowledge, and work labor necessary for their quest,¹⁵⁰ this understanding ceased as a consequence of competition for mining claims and the mechanization of work.¹⁵¹ So, unlike the Californios, the gold-seekers simply wanted Native Americans gone.¹⁵²

Finally, Californian miners externalized the cost of their activities, as shown by the environmental devastation that the CGR prompted.¹⁵³ Although some environmental changes had started decades earlier,¹⁵⁴ the Forty-Niners leveled roads, built bridges, and cut timber to improve accessibility and provide food, housing, and fuel to the growing mining population.¹⁵⁵ The population of grizzly bears, elk, pronghorn, and other animals abundant at the time plummeted as a

¹⁴² See Mayer, *supra* note 61, at 638, 645–646.

¹⁴³ See, e.g., Bryceson, *supra* note 64, at 36–37.

¹⁴⁴ See Mayer, *supra* note 61, at 638, 645–646 (For example, it recognized the “extralateral right” to follow the lode or vein through all its angles, even onto adjacent property. Also, the \$1,000 expenditure requirement did not benefit the lone prospector).

¹⁴⁵ See Mayer, *supra* note 61, at 638.

¹⁴⁶ See GOODMAN, *supra* note 136, at 14.

¹⁴⁷ Limerick, *supra* note 133, at 31.

¹⁴⁸ See Bryceson, *supra* note 64, at 41.

¹⁴⁹ The Native American population of California decreased from 150,000 when the CGR started to 30,000 when it ended. See BOGGAN, *supra* note 88, at 5 (the Native American population of California decreased from 150,000 when the CGR started to 30,000 when it ended.); see also BENJAMIN MADLEY, *An AMERICAN GENOCIDE: THE UNITED STATES AND THE CALIFORNIA INDIAN CATASTROPHE 1846-1873* (2009); see, e.g., MADLEY, *supra* (in fact, the massacre of Native Americans amounted to genocide or holocaust.); *ENCYCLOPEDIA OF AMERICAN INDIAN HISTORY* 229 (Bruce E. Johansen & Barry M. Pritzker eds., 2008).

¹⁵⁰ See Lonnberg, *supra* note 51, at 218.

¹⁵¹ See *id.* at 217.

¹⁵² See DOLNICK, *supra* note 48, at 263; Caughey, *supra* note 52, at 198 (“[Native Americans were] a nuisance to be cleared away to make room for the oncoming whites”).

¹⁵³ See ISENBERG, *supra* note 33, at 15.

¹⁵⁴ See Raymond F. Dasmann, *Environmental Changes before and after the Gold Rush*, 77 *California History* 105, 105 (1998)

¹⁵⁵ See ISENBERG, *supra* note 33, at 18.

result of the growing demand for meat or the destruction of natural habitats.¹⁵⁶ On the other hand, hydraulic mining polluted streams, produced silt, and changed the course of rivers,¹⁵⁷ affecting downstream communities.¹⁵⁸ In only two years, the gold-miners made profound changes to California's landscape and environment.¹⁵⁹

It is clear that the master narrative of the CGR is inconsistent with the realities at the time. The narrative de Soto and other ASM scholars have relied on—a romanticized image of the small, artisanal, plucky and creative miner to expand on their theories—is, at best, an over-simplification. More importantly, these theories are created at the expense of untold stories of social marginalization and exclusion, as well as environmental pollution.¹⁶⁰

II. THE ASM SECTOR

The ASM sector has experienced an explosive growth over the past decades due to the growing value of precious minerals and the lack of alternative economic opportunities.¹⁶¹ While ASM has the potential to alleviate poverty for millions, it is mostly conducted outside legal circles. In this section, I explore the main features, opportunities and challenges that ASM activities pose to developing countries worldwide and, more specifically, in Peru. I end this section describing the shortcomings of Peru's governmental attempts to regularize ASM.

A. *The World Context*

ASM activities are complex, unique, and diverse.¹⁶² Although its definition varies from country to country, artisanal mining is related to more rudimentary methods,¹⁶³ whereas small-scale mining involves the use of more advanced equipment and larger plots of land. Today, ASM miners are responsible for the extraction of a wide range of materials, including precious and semi-precious gemstones, metals, metal ores, and construction materials, all of which are found

¹⁵⁶ See Dasmann, *supra* note 154, at 109–111.

¹⁵⁷ See Rohrbough, *supra* note 54, at 123 (claiming that people describe the Sierra Nevada Mountains “as looking like it had been dug up by giant moles”).

¹⁵⁸ See Limerick, *supra* note 133, at 32.

¹⁵⁹ See ROHRBOUGH, *supra* note 32, at 123.

¹⁶⁰ Cf. REDCLIFT, *supra* note 134, at viii.

¹⁶¹ See Intergovernmental Forum on Mining, Minerals and Sustainable Development (IGF), Global Trends in Artisanal and Small-Scale Mining (ASM) A Review of Key Numbers and Issues, 4 (Jan. 2018).

¹⁶² See Gavin Hilson, Halima Goumandakoye & Penda Diallo, *Formalizing Artisanal Mining ‘Spaces’ in Rural Sub-Saharan Africa: The Case of Niger*, 80 LAND USE POL’Y 259, 259 (2019).

¹⁶³ See Dolores Cortés-McPherson, *Expansion of Small-scale Gold Mining in Madre de Dios: ‘Capital Interests’ and the Emergence of a New Elite of Entrepreneurs in the Peruvian Amazon*, THE EXTRACTIVE INDUSTRIES AND SOC’Y, 3 (2019) (in general, artisanal mining is associated with low-tech and subsistence activities, many times family-run).

in products we consume every day.¹⁶⁴ Gold is the preferred mineral due to its high market value, low production cost, and ease of extraction.¹⁶⁵ Indeed, it is likely that your own mobile phone holds illegally mined gold from a developing country.¹⁶⁶

Since the early 2000s, ASM has experienced a massive worldwide expansion,¹⁶⁷ often uncontrollable, as a result of the rising value of mineral prices.¹⁶⁸ This expansion may be attributed to the price of gold, which increased six-fold between 2001 and 2011. ASM has flourished in Africa, Asia, and Latin America alike,¹⁶⁹ where there are few alternative employment activities or the returns of mining are far higher than those of traditional agriculture, fishing, or forestry.¹⁷⁰ Not surprisingly, ASM is expected to continue growing in the future.¹⁷¹

Although miner's motivations may vary according to time and context, the ASM sector is generally composed of (a) gold-rush miners ('get rich quick' mentality), (b) seasonal miners, (c) permanent miners, and (d) poverty-driven miners.¹⁷² As Hilson points out, miners do not belong statically to one category, but may move to a different category at different points in their lives.¹⁷³ Whatever miner's motivation may be, there is a general understanding in the literature that ASM provides emergency relief and daily support, rather than a quick route to riches.¹⁷⁴

¹⁶⁴ See EMMA BLACKMORE, ABBI BUXTON & CAREN HOLZMAN, *Scaling-up Certification in Artisanal and Small-scale Mining: Innovations for Inclusivity* 9 (2013), <https://pubs.iied.org/16545IIED/> (LAST VISITED 01/29/2020).

¹⁶⁵ See generally Kuntala Lahiri-Dutt, *Introduction*, in BETWEEN THE PLOUGH AND THE PICK: INFORMAL ARTISANAL AND SMALL-SCALE MINING IN THE CONTEMPORARY WORLD, 11 (2018); Verbrugge and Geenen, *supra* note 130, at 555.

¹⁶⁶ Cf. BRENT MCDONALD, *Episode 12: 'Apple's Gold'*, N.Y. TIMES (Aug. 30, 2019) <https://www.nytimes.com/2019/08/30/the-weekly/gold-apple-iphone-colombia.html> (last visited Sep 3, 2019).

¹⁶⁷ See, e.g., Boris Verbrugge & Beverly Besmanos, *Formalizing Artisanal and Small-scale Mining: Whither the Workforce?*, 47 RESOURCES POL'Y 134, 134 (2016).

¹⁶⁸ See, e.g., Siegel & Veiga, *supra* note 9.

¹⁶⁹ See, e.g., Heidi Hausermann et al., *Land-grabbing, Land-use Transformation and Social Differentiation: Deconstructing "Small-scale" in Ghana's Recent Gold Rush*, 108 WORLD DEV. 103, 104 (2018); Samuel J. Spiegel & Marcello M. Veiga, *International Guidelines on Mercury Management in Small-scale Gold Mining*, 18 J. CLEANER PRODUCTION 375, 377 (2010).

¹⁷⁰ See BLACKMORE, BUXTON & HOLZMAN, *supra* note 158, at 9.

¹⁷¹ See Siegel & Veiga, *supra* note 9, at 51.

¹⁷² See Gavin Hilson, *'Once a Miner, Always a Miner': Poverty and Livelihood Diversification in Akwatia, Ghana*, 26 J. RURAL STUD. 296, 299 (2010); Beth J. Maclin et al., *Moving to the Mines: Motivations of Men and Women for Migration to Artisanal and Small-scale Mining Sites in Eastern Democratic Republic of the Congo*, 51 RESOURCES POL'Y 115–122, 115–116 (2017) (arguing that ASM attracts rural families seeking economic refuge, including marginalized groups such as women, youth, and displaced persons).

¹⁷³ See Hilson, *supra* note 172, at 299.

¹⁷⁴ See Sadia Mohammed Banchirigah, *How Have Reforms Fuelled the Expansion of Artisanal Mining? Evidence From sub-Saharan Africa*, 31 RESOURCES POL'Y 165, 167 (2006); Hilson, *supra* note 172, at 297; *Contra* Lahiri-Dutt, *supra* note 165, at 14.

Today, at least forty million people around the world, women and children included,¹⁷⁵ are directly engaged in ASM activities, while 150 million depend on it across eighty countries,¹⁷⁶ which account for fifteen to twenty percent of the world's mineral and metal production.¹⁷⁷ Yet, the socio-political cost of this extraction poses significant challenges for sustainable development and governance.¹⁷⁸ This is because ASM is viable when labor and environmental costs are externalized to society in the form of pollution,¹⁷⁹ poor working conditions,¹⁸⁰ and other social ills.¹⁸¹

Notwithstanding the social-costs, scholars acknowledge that ASM has potential to help economic progress and the reduction of poverty in rural areas.¹⁸² Besides creating direct jobs—ASM is often considered a “magnetic force” and an “employment engine”¹⁸³—it offers employment opportunities for numerous service roles, such as food and equipment supply, entertainment, security, or gold

¹⁷⁵ See Natalia Yakovleva, *Perspectives on Female Participation in Artisanal and Small-scale Mining: A Case Study of Birim North District of Ghana*, 32 *RESOURCES POL'Y* 29, 30 (2007) (women represent fifty percent of the ASM workforce worldwide, but only 10-20% in Latin America).

¹⁷⁶ See *supra* note 6 (however these numbers can be speculative); M. Hoadley & D. Limpitlaw, *The Artisanal and Small Scale Mining Sector and Sustainable Livelihoods* 1 (2004).

¹⁷⁷ See Kuntala Lahiri-Dutt, *supra* note 165, at 5–6.

¹⁷⁸ See Ciaran O'Faircheallaigh & Tony Corbett, *Understanding and Improving Policy and Regulatory Responses to Artisanal and Small Scale Mining*, 3 *THE EXTRACTIVE INDUSTRIES AND SOC'Y* 961, 962 (2016).

¹⁷⁹ See, e.g., BLACKMORE, BUXTON AND HOLZMAN, *supra* note 164, at 9; Spiegel & Veiga, *supra* note 169, at 46 (environmental impacts are especially deleterious. Mercury amalgamation is the most common technique used by ASM miners to process gold due to its simplicity and low-cost. Poor practices result in the release of one thousand tons of mercury every year from ASM sources, the largest source of mercury emission. River siltation, diversion of rivers, deforestation, encroaching to national parks, habitat destruction, biodiversity loss, and landscape degradation represent other environmental threats.).

¹⁸⁰ See Kuntala Lahiri-Dutt, *supra* note 165, at 372 (arguing that cheap labor makes ASM possible and productive).

¹⁸¹ Roy Maconachie & Gavin Hilson, *Safeguarding Livelihoods or Exacerbating Poverty? Artisanal Mining and Formalization in West Africa*, 35 *NAT. RESOURCES F.* 293–303 (2011) (social ills associated with ASM include neglect of human rights, child labor, human trafficking, HIV/AIDS, neglect of traditional livelihoods, increased alcohol consumption, gambling, and tax evasion. Researchers have also found links between ASM and organized criminality, civil wars, money laundering, and terrorist activities.); Sarah Katz-Lavigne, *Artisanal Copper Mining and Conflict at the Intersection of Property Rights and Corporate Strategies in the Democratic Republic of Congo*, 6 *EXTRACTIVE INDUSTRIES & SOC'Y* 399–406 (2019); Hoadley and Limpitlaw, *supra* note 176; Anthony W. Persaud et al., *Artisanal and Small-Scale Gold Mining in Senegal: Livelihoods, Customary Authority, and Formalization*, 30 *SOC'Y & NAT. RESOURCES* 980–993 (2017).

¹⁸² See Maconachie & Hilson, *supra* note 175, at 293; SAMUEL J. SPIEGEL, *Analysis of Formalization Approaches in the Artisanal and Small-Scale Gold Mining Sector Based on Experiences in Ecuador, Mongolia, Peru, Tanzania and Uganda: Tanzania* (2012).

¹⁸³ See SAMUEL J. SPIEGEL, *Formalisation Policies, Informal Resource Sectors and the De-/Re-Centralisation of Power* 9 (2012).

trading, boosting local economies.¹⁸⁴ What is more, miners tend to exploit lower-grade mineral deposits or uneconomically to mine.¹⁸⁵

Yet, the ASM sector takes place mostly outside legal frameworks¹⁸⁶ and in (rural) areas outside state control.¹⁸⁷ Well-embedded in traditional and cultural norms,¹⁸⁸ *informality* is thus one of ASM's defining features.¹⁸⁹ Informality spawns legal and political instability for miners because they can be dispossessed at any time, have to rebuild after evictions or raids, or are forced to pay bribes to corrupt government officers.¹⁹⁰ In addition, informality deprives miners from access to legal protection, such as employment rights, health insurance, retirement programs, financial and technical support, or the (legal) acquisition of explosives and other feedstock.¹⁹¹ On the other hand, informality prevents governments from collecting taxes and imposing additional duties on miners (i.e. fulfillment of employment or environment, health and safety (EHS) regulations and basic respect of human rights).¹⁹²

Putting aside the benefits of informality, there is a growing consensus that to unleash all of ASM's potential, but to minimize the risks associated with informal mining, governments need to formalize miners through rights recognition.¹⁹³ "Legal and transferable titles are essential to organize and transform this informal industry . . . and must be understood as a pre-requisite to change and transform

¹⁸⁴ See *id.* at 9.

¹⁸⁵ See IFM *supra* note 6, at 33.

¹⁸⁶ See, e.g., IFM *supra* note 6; see also Verbrugge & Geenen, *supra* note 130, at 418.

¹⁸⁷ See Siegel & Veiga, *supra* note 9, at 52.

¹⁸⁸ See Natalia Yakovleva & Diego Alfonso Vazquez-Brust, *Multinational Mining Enterprises and Artisanal Small-scale Miners: From Confrontation to Cooperation*, 53 J. WORLD BUS. 52, 56 (2018).

¹⁸⁹ See Boris Verbrugge, *The Economic Logic of Persistent Informality: Artisanal and Small-Scale Mining in the Southern Philippines*, 46 DEV. & CHANGE 1023, 1023 (2015).

¹⁹⁰ See John Hollaway, *Small-Scale Mining: How to Combine Development With Low Environmental Impact*, 20 INDUSTRY & ENV'T. 44, 44 (1997); see also Hilson et al., *supra* note 8, at 82.

¹⁹¹ See, e.g., Gavin Hilson et al., *Formalizing Artisanal Gold Mining Under the Minamata Convention: Previewing the Challenge in Sub-Saharan Africa*, 85 ENV. SCI. & POL'Y 123, 259 (2018); CESAR IPENZA, *Manual para entender la pequeña minería y la minería artesanal y los decretos legislativos vinculados a la minería ilegal* 17–18 (2013), <https://spda.org.pe/wpfb-file/manual-de-mineria-3ra-edicion-pdf/>; Interview with Iris Olivera and Ciro Salazar, *Representatives of Peru-based DAR NGO* (May 23, 2019).

¹⁹² See, e.g., Siegel & Veiga, *supra* note 9, at 52; Matti Salo et al., *Local Perspectives on the Formalization of Artisanal and Small-Scale Mining in the Madre de Dios Gold Fields, Peru*, 3 EXTRACTIVE INDUSTRIES & SOC'Y 1058, 1058 (2016); Bruce G. Marshall & Marcello M. Veiga, *Formalization of Artisanal Miners: Stop the Train, We Need to Get Off!*, 4 EXTRACTIVE INDUSTRIES & SOC'Y 300, 301 (2017); Louis Putzel et al., *Formalization as Development in Land and Natural Resource Policy*, 28 SOC'Y & NAT. RESOURCES 453, 461 (2015).

¹⁹³ See Siegel & Veiga, *supra* note 9, at 51.

... underprivileged people into citizens.”¹⁹⁴ Although formalization has become the ‘holy grail’ of today’s ASM governance,¹⁹⁵ the meaning of formalization is not clear.¹⁹⁶

On the one hand, politicians and regulators have preferred the expansion of the mid- and large-scale mining sector (LSM)—considered in most developing nations as the main or real game¹⁹⁷—through the granting of tax benefits and large mining concessions.¹⁹⁸ LSM is easier to regulate, tax, and monitor for environmental and labor relations. But ‘LSM-bias’ has awarded LSM companies political muscle to access and accumulate vast mineral deposits and, at the same time, contain ASM expansion.¹⁹⁹ Animosity has also emerged as governments, media, and other groups portray the ASM sector as inefficient, primitive, or devoid of moral value.²⁰⁰

On the other hand, government-backed formalization attempts have been largely ineffective²⁰¹ and lackluster.²⁰² In general, formalization procedures have followed bureaucratic models in the form of concessions, permits, or licenses,²⁰³ but these have proven to be tedious, time-consuming, complex, and expensive.²⁰⁴

¹⁹⁴ Marcello M. Veiga & Christian Beinhoff, *UNECA Centres: A Way to Reduce Mercury Emissions from Artisanal Gold Mining and Provide Badly Needed Training*, 20 *INDUSTRY & ENV’T.* 49, 5 (1997).

¹⁹⁵ See Christoph Vogel, Josaphat Musamba & Ben Radley, *A Miner’s Canary in Eastern Congo: Formalisation of Artisanal 3T Mining and Precarious Livelihoods in South Kivu*, 5 *EXTRACTIVE INDUSTRIES & SOC’Y* 73, 78 (2018).

¹⁹⁶ See Siegel & Veiga, *supra* note 9, at 52.

¹⁹⁷ See Corbett, O’Faircheallaigh, & Regan, *supra* note 178, at 399.

¹⁹⁸ See, e.g., Gerardo H. Damonte, *The “Blind” State: Government Quest for Formalization and Conflict with Small-Scale Miners in the Peruvian Amazon*, 48 *ANTIPODE* 956, 957 (2016) (arguing that Peruvian governments have relied on LSM companies to control rural and remotes areas of the country where they operate); Gavin Hilson & Roy Maconachie, *Formalising Artisanal and Small-scale Mining: Insights, Contestations and Clarifications*, 49 *AREA* 443, 443 (2017); Yakovleva & Vazquez-Brust, *supra* note 182, at 52.

¹⁹⁹ See Verbrugge & Besmanos, *supra* note 167, at 135; Verbrugge & Geenen, *supra* note 135, at 413; see also Interview with Juana Kuramoto, *Subsecretary of Territorial Development at the Prime Minister’s Office of Peru* (May 17, 2019) (arguing that in Peru “almost all” the country has been titled under a mining concession, leaving no room for new ASM entrepreneurship).

²⁰⁰ See Vogel, Musamba, & Radley, *supra* note 195, at 73–74; Persaud et al., *supra* note 181, at 981.

²⁰¹ See Hilson et al., *supra* note 8, at 84 (“[O]verall, the interventions made to date to bring ASM operators into the legal domain have been ad hoc, lacking the necessary ‘buy in’ to make a noticeable impact in landscapes where again, the expansion of exported large-scale resource extraction has been prioritized”); Marshall & Veiga, *supra* note 192, at 302 (furthermore, in Latin America the number of formalized miners amounts to one percent).

²⁰² See Steven Van Bockstael, *Land Grabbing “from below”? Illicit Artisanal Gold Mining and Access to Land in Post-Conflict Côte d’Ivoire*, 81 *LAND USE POL’Y* 904, 904 (2019).

²⁰³ See, e.g., Salo et al., *supra* note 192, at 1059; Verbrugge, *supra* note 189; Eleanor Fisher, *Occupying the Margins: Labour Integration and Social Exclusion in Artisanal Mining in Tanzania*, 38 *DEV. & CHANGE* 735, 749 (2007).

²⁰⁴ See, e.g., Salo et al., *supra* note 192, at 1059; Verbrugge, *supra* note 189, at 1033; Marshall & Veiga, *supra* note 192, at 301; Siegel & Veiga, *supra* note 9, at 53; Fabian Clausen, Maria Laura

Informal miners are rarely part of ASM policymaking processes,²⁰⁵ so governments have little understanding of the realities and complexities on the ground.²⁰⁶ Moreover, top-down formalization programs risk altering pre-existing leadership structures and social order,²⁰⁷ discourage legalization,²⁰⁸ or spark fierce resistance.²⁰⁹ Worse still, miners that have transitioned from the extralegal to the legal have often found little benefits from this move.²¹⁰

Finally, some countries have chosen bans, moratoriums, military raids and evictions.²¹¹ This punitive approach has been ineffective. Miners are highly resilient,²¹² tend to move somewhere else²¹³ or go further underground.²¹⁴ Rather, to the contrary, punitive measures have marginalized informal miners and created conflict, resistance, and deadlock.²¹⁵

Barreto & Amir Attaran, *Property Rights Theory and the Reform of Artisanal and Small-Scale Mining in Developing Countries*, 4 J. POL. & L. 15, 20 (2011); Verbrugge & Besmanos, *supra* note 167, at 135; *see also, supra* note 6, at 52.

²⁰⁵ See Ton Salman, Felix Carrillo & Carola Soruco, *Small-Scale Mining Cooperatives and the State in Bolivia: Their Histories, Memories and Negotiation Strategies*, 2 EXTRACTIVE INDUSTRIES & SOC'Y 360, 361 (2015).

²⁰⁶ See Ton Salman, *The Intricacies of "Being Able to Work Undisturbed": The Organization of Alluvial Gold Mining in Bolivia*, 29 SOC'Y & NAT. RESOURCES 1124, 1128 (2016) ("[G]overnments have not incorporate[d] the specific constellation in which different mining processes, in different regions, and operated by different mining groups with different stories and skills take place").

²⁰⁷ See Hilson, Goumandakoye, & Diallo, *supra* note 162, at 263 (For example, informal miners in Niger share a strong sense of belonging and collective identity that the state does not take into account); O'Faircheallaigh & Corbett, *supra* note 178, at 964 (In Ghana, ASM operators are comfortable with simple customary rules and are reluctant to collaborate with state bureaucracy); Salman, *supra* note 206, at 1134–1135 (In Bolivia, cooperatives of miners have developed a discourse around the concept of "being able to work undisturbed from government control").

²⁰⁸ See Phyllis M. Duff & Timothy J. Downs, *Frontline Narratives on Sustainable Development Challenges/Opportunities in the 'Illegal' Gold Mining Region of Madre de Dios, Peru: Informing an Integrative Collaborative Response*, 6 EXTRACTIVE INDUSTRIES & SOC'Y, 8 (2019).

²⁰⁹ See O'Faircheallaigh & Corbett, *supra* note 178, at 966 (arguing that informal miners have resisted such policies or changes therein in Tanzania, Bolivia, Ecuador, Peru, the Philippines and Myanmar).

²¹⁰ See Hilson and Maconachie, *supra* note 198, at 447.

²¹¹ See, e.g., Sadia Mohammed Banchirigah, *Challenges with Eradicating Illegal Mining in Ghana: A Perspective from the Grassroots*, 33 RESOURCES POL'Y 29, 33 (2008); Jocelyn T. D. Kelly, "This Mine has Become Our Farmland": *Critical Perspectives on the Coevolution of Artisanal Mining and Conflict in the Democratic Republic of the Congo*, 40 RESOURCES POL'Y 100, 100 (2014).

²¹² Interview with Alicia Abanto, Environmental Director at Peru's Ombudsman Office (May 23, 2019).

²¹³ See, e.g., IFM *supra* note 6; T. Zvarivadza & A. S. Nhleko, *Resolving Artisanal and Small-Scale Mining Challenges: Moving from Conflict to Cooperation for Sustainability in Mine Planning*, 56 RESOURCES POL'Y 78–86, 85 (2018); Cortés-McPherson, *supra* note 157, at 3.

²¹⁴ See Lizzie Wade, *Gold's Dark Side*, 341 SCI. 1448–1449 (2013).

²¹⁵ See, e.g., Damonte, *supra* note 198, at 958; Cortés-McPherson, *supra* note 163, at 3; Putzel et al., *supra* note 192, at 463 (arguing that temporary or permanent bans on exports may worsen poverty and negatively impact local economies).

B. ASM activities in Peru

From the Inca Empire to the Spanish conquistadors, mining has shaped Peru's landscape and economy.²¹⁶ Following the public ownership model of natural resources, the 1993 Peruvian Constitution states that mineral resources vest in the State which, in turn, can award mining concessions to private corporations for mining development.²¹⁷ A mining concession is a well-defined, transferable and recordable property right that grants title to all minerals located within its vertical boundaries.²¹⁸ In addition to a mining concession, companies must secure surface rights to the area and file dozens of permits to operate. Since the economic liberalization reforms undertaken of the 1990s, mining operations in Peru have been conducted by the private sector through LSM corporations (including multinational corporations). The *formal* mining sector coexists, and often overlaps, with *informal* ASM activities.²¹⁹

Traditionally, Peru's mining law distinguishes between *artisanal mining* (PMA) and *small-scale* mining (PPM) according to the production capacity and land extension thresholds shown in Table 1.²²⁰ Additionally, both PMA and PPM

²¹⁶ See YALINA CRISPIN & FRANCISCO GRIPPA, *Peru Sector Minero* (2017), https://www.bbvaesearch.com/wp-content/uploads/2017/11/Sector-Minero-en-Peru_2017.pdf (Peru is one of the world's top producers of gold, silver, and copper. The formal mining sector represents 59% of Peru's annual exports, 10% of national GDP, and 12% of private investment.); ANTHONY BEBBINGTON, GOVERNING EXTRACTIVE INDUSTRIES: POLITICS, HISTORIES, IDEAS 37 (2018); see also ANTONIO RAIMONDI, MINERALES DEL PERU Y LA BUSQUEDA DE UNA IMAGEN REPUBLICANA 103 (2007) ("It can be argued that there is no region in Peru without a gold mine. Using intelligence and capital, these mines could be exploited to produce enormous benefits").

²¹⁷ CONSTITUCIÓN, Art. 66 (Peru) (translation by author) ("Natural resources, renewable and non-renewable, are patrimony of the Nation. The State is sovereign in their utilization. The Act determines the conditions of their use and granting to private individuals. Such concession grants the title-holders a real right [in rem right] subject to those legal regulations.")

²¹⁸ See, for example, Patrick Wieland, *Going Beyond Panaceas: Escaping Mining Conflicts in Resource-Rich Countries Through Middle-Ground Policies*, 20 N.Y.U. ENVTL. L.J. 199–276 (2012) for a discussion on the ownership model of natural resources in Peru.

²¹⁹ ASM is an ancestral activity. It expanded in the 1970s following the provision of credit to miners through the state-owned mining bank (*Banco Minero*). During the 1980s, thousands of rural families shifted to ASM livelihoods as a refuge from poverty and terrorist violence. Neoliberal reforms undertook in the 1990s resulted in the promotion of LSM activities through investment protection and tax incentives. The first attempt to regularize ASM came about in through Law 27651 (*Ley de Formalización y Promoción de la Pequeña Minería y la Minería Artesanal*), but this policy was discontinued. Besides, the passing of this law coincided with the early years of the gold fever, which further undermined the government's attempts to control the ASM sector. See generally CÉSAR MOSQUERA, EL DESAFÍO DE LA FORMALIZACIÓN EN LA MINERÍA ARTESANAL Y DE PEQUEÑA ESCALA. ANÁLISIS DE LAS EXPERIENCIAS EN BOLIVIA, COLOMBIA, ECUADOR Y PERÚ 74 (2006); Carmen Heck (ed.), *La realidad de la minería ilegal en países amazónicos*, SOCIEDAD PERUANA DE DERECHO AMBIENTAL 247, 15 (2014), <https://spda.org.pe/wpfb-file/la-realidad-de-la-mineria-ilegal-en-paises-amazonicos-spda-pdf>; BEBBINGTON, *supra* note 216, at 48; John Crabtree, *The Politics of Extractive Industries in the Central Andes*, in SOCIAL CONFLICT, ECONOMIC DEVELOPMENT AND THE EXTRACTIVE INDUSTRY: EVIDENCE FROM SOUTH AMERICA (Anthony Bebbington ed. 2011).

²²⁰ Adapted from Carmen Heck, *La realidad de la minería ilegal en países amazónicos*, SOCIEDAD PERUANA DE DERECHO AMBIENTAL.

activities are proscribed from using certain machinery, equipment, and feedstock or operating in certain ecosystems. When adequately registered, PMA and PPM have access to different incentives, such as: exemption from payment of royalty taxes, reduced rate of good standing fees, fast-track environmental permitting procedures, and smaller fines. The ASM individuals and LSM corporations fall under the regulatory umbrella of the Ministry of Energy and Mines (MEM), while regional governments are in charge of implementing and enforcing ASM regulation.

Table 1. Mining categories

Category	Maximum extension of mining concessions (in hectares)	Maximum production capacity (in metric tons per day)	Governing authority
Large-scale	Unlimited	> 5000	MEM
Mid-scale	Unlimited	350 < 5000	MEM
Small-scale (PPM)	< 2000	< 350	Regional government
Artisanal (PMA)	< 1000	< 25	Regional government

Peru's ASM sector has experienced an unprecedented expansive wave due to a combination of factors. First, it has become one of the few subsistence activities in depressed areas, where agriculture or grazing are not possible or have disappeared.²²¹ Second, weak governance and poor law enforcement have reinforced a widespread culture of evasion or informality.²²² Third, favorable geological conditions allow easy access to mineral deposits (what Cesar Mosquera calls "Peru's geological fatality").²²³ Finally, the record-breaking price of gold has turned gold-seeking into a very lucrative activity for those in quest of economic and social mobility.²²⁴

²²¹ See JUANA KURAMOTO, *Artisanal and Informal Mining in Peru* 53 (2001), <http://pubs.iied.org/pdfs/G00730.pdf>; see also Ricardo Valdes, Carlos Basombrio and Dante Vera, *La Minería no Formal en el Perú*, Realidades, tendencias y soluciones, Ed Capital Humano y Social, December 2019, P. 7.

²²² See, e.g., Putzel et al., *supra* note 186, at 463; see also Interview with Luis Carlos Rodrigo, *Mining Law Expert* (May 17, 2019) ("Informality is the natural way of conducting oneself for many people in Peru").

²²³ MOSQUERA, *supra* note 212, at 17.

²²⁴ See Heck (ed.), *supra* note 212, at 175; Damonte, *supra* note 192, at 963; see also Jönsson & Fold, *supra* note 30, at 254 ("[F]or the lucky and knowledgeable ones, a mineral rush presents an opportunity to earn relatively large amounts of money"); Interview with Elsa Galarza (May 29, 2019),

Although official surveys are unavailable, there are between two-hundred and five-hundred thousand people engaged in ASM throughout all twenty-five regions of Peru,²²⁵ producing twenty percent of the country's gold.²²⁶ In fact, as of 2014, the main source of illegal revenues produced in Peru is not attributed to drug trafficking anymore—but to illegal gold mining.²²⁷ The negative externalities are substantial as miners invade forests,²²⁸ national parks,²²⁹ employ children,²³⁰ and pour mercury into watercourses.²³¹

Over the past decades, mining rents have lured capital and machinery suppliers to what used to be a subsistence activity.²³² Supported with excavators, front loaders, dump trucks, and other equipment (all of them forbidden in PMA or PPM operations), miners have managed to expand their operations,²³³ which no longer conform to the legal definition of *artisanal* or *small-scale*.²³⁴ This emerging group

Former Minister of Environment of Peru (“[For the government] to compete with the price of gold is very difficult. It is intrinsically perverse”).

²²⁵ See, e.g., Cortés-McPherson, *supra* note 157; Heck, *supra* note 219, at 175. Interview with Gustavo Marini, *Senior Researcher and Project Manager at Institute for Liberty and Democracy (ILD)* (June 11, 2019) (“ASM in Peru is a stationary activity. Our guess is that there are between 100,000 and 600,000 people embarked on ASM according to the time of the year, the price of gold, and status of military raids”). Sixty-five percent of ASM activities are concentrated in Southern Peru; see Lenin Valencia, *Formalización ayudaría a resolver los delitos conexos a la minería*, PERU21 (2019), <https://peru21.pe/politica/formalizacion-ayudaria-resolver-delitos-conexos-mineria-video-458706> (last visited Feb 13, 2019); see also Valdes *supra* note 221, at 9, 11-12.

²²⁶ See Cortés-McPherson, *supra* note 163, at 2.

²²⁷ See Vanessa Valverde & Diego Collantes, *Alcances para una respuesta jurídica integral al comercio ilegal de oro*, 55 IUS ET VERITAS 128, 132 (2017).

²²⁸ See generally Jorge Caballero Espejo et al., *Deforestation and Forest Degradation Due to Gold Mining in the Peruvian Amazon: A 34-Year Perspective*, 10 REMOTE SENSING 1903, at 5 (2018) (arguing that between 1982 and 2011, Peru lost 235,000 acres of forest to informal gold mining in the southern Peruvian Amazon); *Gold Mining Deforestation at Record High Levels in Southern Peruvian Amazon*, 96 MONITORING OF THE ANDEAN AMAZON PROJECT (2019), <https://maaproject.org/2019/peru-gold-mining-2018/> (claiming that in 2017 and 2018 alone, Peru lost 45,565 acres in the Southern Amazon, which are the highest deforestation rates ever recorded); Interview with Elsa Galarza, *supra* note 224 (“The level of devastation in the Amazon is moving and infuriating. How can humans go against their own existence?”).

²²⁹ To date, ASM has encroached 17 national parks and buffer zones. See Carmen Heck (ed.), *supra* note 219, at 12–15.

²³⁰ In Peru, 50,000 children are reported to work in the ASM sector. See *id.* at 12–15.

²³¹ Over the last 20 years, 3000 tons of mercury have been poured into the Amazonian rivers of Peru. See *id.* at 190; see also Duff & Downs, *supra* note 208.

²³² See Cortés-McPherson, *supra* note 163, at 5.

²³³ See, e.g., Damonte, *supra* note 198, at 963 (arguing that miners in Madre de Dios, in the Peruvian Amazon, are no longer poor or indigenous peoples); Jose de Echave, *La minería en el Perú. Entre la formalidad y el delito*, 263 NUEVA SOCIEDAD 131, 143 (2016) (arguing that many ASM communities have shifted from the operation of abandoned mines or easily accessible deposits, to more complex endeavors).

²³⁴ See, e.g., Ramón Escobar, *La otra cara del oro: La minería informal e ilegal. Un problema aun por resolver*, Sociedad Peruana de Derecho Ambiental 2 (2013), http://www.actualidadambiental.pe/wp-content/uploads/2013/12/La-otra-cara-del-oro_Ramon-Escobar_Primer-Puesto.pdf; Cortés-McPherson, *supra* note 163, at 2.

of ‘opportunistic entrepreneurs’ has accumulated extraordinary wealth²³⁵ and gained substantial political influence during the gold rush years.²³⁶ Consequently, the contemporary Peruvian ASM sector is characterized by “. . . a dominant stratum of ASM entrepreneurs and a massive workforce.”²³⁷ As Kuntala Lahiri-Dutt describes, the ‘ennobling’ connotation of the term artisanal mining is now a misnomer.²³⁸

The resulting environmental devastation, especially in the Amazon region, along with pressure from the international community,²³⁹ forced President Ollanta Humala (2011-2016) to revise Peru’s extant ASM policy. In 2012, his government launched a new formalization strategy purporting to, on the one hand, eradicate *illegal mining*, and on the other hand, formalize *informal mining*.²⁴⁰

Illegal mining refers to mining activities that do not conform to the definition of small-scale *and* operate in environmentally sensitive areas (i.e. national parks, river banks, watersheds, or archaeological sites). *Illegal mining*, and the provision thereto of capital, machinery, and feedstock, were therefore criminalized. Accordingly, during the early years of the program, the government launched spectacular military raids to destroy illegal mining camps and evict miners.²⁴¹

Informal mining, in contrast, refers to mining activities that do not conform to the definition of small-scale *but* do not operate in environmentally sensitive areas. Consequently, the 2012 program fosters the ‘regularization’ of informal activities within a two-year window (2012-2014, later extended to 2016), requiring miners to fulfill a six-step preclusive process: (a) submit an explicit intent of

²³⁵ See de Echave, *supra* note 233, at 140; See also Cortés-McPherson, *supra* note 163, at 4 (claiming that Peruvian ASM entrepreneurs are not only well connected to international markets and foreign actors, but also linked organized criminality and drug trafficking).

²³⁶ Although they are not organized under a unique political platform, informal miners have funded political parties for decades now. At least one national congressman and one governor from Madre de Dios were previously informal miners. See de Echave, *supra* note 133, at 142; see also Gerardo Damonte, *Mining Formalization at the Margins of the State: Small-Scale Miners and State Governance in the Peruvian Amazon*, 49 DEV. & CHANGE, 1328 (2018) (“[M]iners have resorted to ‘buying’ votes while in others they pay to access key positions in the regional bureaucracy”).

²³⁷ Cf. Verbrugge, *supra* note 189, at 1024.

²³⁸ Cf. Kuntala Lahiri-Dutt, *supra* note 165, at 3.

²³⁹ See Cortés-McPherson, *supra* note 163; Interview with Iris Olivera and Ciro Salazar, *supra* note 185 (“The international scandal fostered regulatory change in Peru”).

²⁴⁰ CONGRESO DE LA REPÚBLICA DE PERU 2012, DECRETOS LEGISLATIVOS 1099-1107 (Peru).

²⁴¹ In February 2019, the government launched ‘Operacion Mercurio’, an unprecedented operation against illegal mining that not only comprised military raids and the installation of permanent military posts in Madre de Dios, but also government-funded social programs to provide alternative livelihoods for miners and victims of human trafficking. This operation has allegedly allowed a 92% reduction in deforestation. See El Comercio, *Madre de Dios: la deforestación por minería ilegal en La Pampa se redujo en 92%* (2019), <https://elcomercio.pe/peru/madre-de-dios/madre-dios-deforestacion-mineria-ilegal-pampa-redujo-92-noticia-ecpm-662034>. Yet, experts claim it is too early to assess the results of this new policy. Interview with Pedro Solano, Executive Director, SPDA NGO, in Peru (May 20, 2019).

formalization (affidavit);²⁴² (b) negotiate an exploitation agreement with the owner of the mining concession; (c) obtain a surface right; (d) file a water authorization; (e) conduct a rapid environmental impact assessment; and (f) secure an operation license.²⁴³

In addition, the program created a bureaucratic traceability system that spans all the life of gold, from extraction to processing and trade. Accordingly, actors involved in the production (i.e. contractors, informal miners, suppliers of machinery and feedstock) and trade of gold (i.e. buyers, traders, exporters) must register and periodically report their operations to MEM. Buyers and traders are also required by law to verify the licit origin of the gold they buy or they could be subject to criminal prosecution.²⁴⁴

President Pedro Pablo Kuczynski (2016-2018) ratified the same strategy, but in 2017 his government prolonged the formalization deadline to 2020.²⁴⁵ Finally, in a controversial decision, the Kuczynski administration liberalized the use of previously proscribed machinery and equipment (i.e. excavators, front loaders, dump trucks, tank trucks, and pneumatic compressors).²⁴⁶ More recently, President Martin Vizcarra (2018-present) relaxed environmental requirements and set up a one-stop-shop to streamline the delivery of ASM permits.²⁴⁷ In October 2019, President Vizcarra granted an additional extension to the formalization deadline to December 2021, bringing about great criticism from civil society organizations.²⁴⁸

According to MEM, out of the 54,721 informal miners who submitted the affidavit in 2012-2016 (step *a* above), only 7,266 (i.e. thirteen percent) have completed all steps of the formalization process.²⁴⁹ As depicted in Figure 1, the

²⁴² *Informal* miners that did not initiate the formalization process within the time window became *illegal* miners and therefore subject to eradication. To protect informal miners from evictions or prosecution, the government extended identification cards to those miners that had filed an intent of formalization (step *a* above). In other words, informal miners who initiated the formalization process are deemed legal, even if they have not completed all six formalization steps. See Valverde & Collantes, *supra* note 227, at 132.

²⁴³ See generally Salo et al., *supra* note 192, at 1060; Duff & Downs, *supra* note 208, at 555.

²⁴⁴ See Ministry of Energy & Mines of Peru, Registro Especial de Comercializadores y Procesadores de Oro, <http://intranet2.minem.gob.pe/ProyectoDGE/Mineria/registro%20especial%20de%20comercializado%20y%20procesadores%20de%20oro.pdf>.

²⁴⁵ Legislative Decrees 1244, 1293, 1336, and 1351.

²⁴⁶ See Valverde & Collantes, *supra* note 227, at 147.

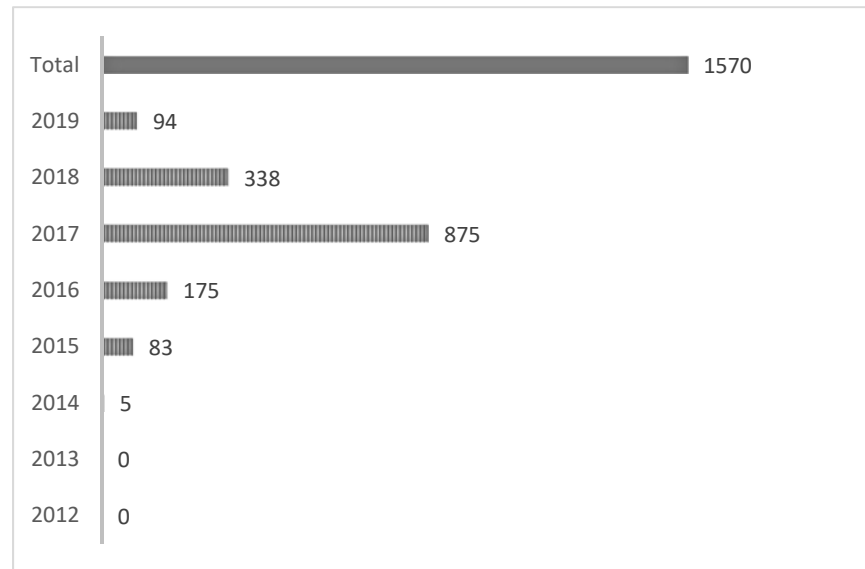
²⁴⁷ Legislative Decree 1451. The current director of formalization of MEM suggests that “the government cannot set the bar too high for informal miners so we need to make rules more flexible to accommodate them” (author’s translation). Lenin Valencia, *supra* note 225. Interview with Alicia Abanto, *supra* note 212.

²⁴⁸ Publicia Ley N° 31007, en 18 en Octubre en 2019, EL PERUANO (Peru).

²⁴⁹ See Ministry of Energy and Mines, *Registro Integral de Formalizacion Minera (REINFO)*, http://www.minem.gob.pe/_detalle.php?idSector=20&idTitular=8049&idMenu=sub8048&idCateg=1442; MINISTRY ENERGY AND MINES, *Respuesta a la Solicitud de Acceso a la Información Pública - Expediente N° 2966854* (2019).

government did not issue any formalization permits until 2014, when five miners were formalized. In 2017, following the relaxation of some requirements, the largest number of people accessed legal status. It is worth noting that, as of 2017, the formalization permit comprises not only the individual miner who files the permit, but also his associates under association or cooperative vehicles.

Figure 1. Number of formalization permits issued by the government (2012-2018)



(Source: MEM)²⁵⁰

C. *Formalizing from Nowhere?*

Peru's formalization strategy is considered legalist, overly bureaucratic, and slow.²⁵¹ The results of formalization affirm this, both in terms of the number of miners that have accessed formalization title, and prosecution of illegal mining (only one case has resulted in imprisonment since the raids and evictions took place in 2012).²⁵² While experts believe that the government's formalization

²⁵⁰ MINISTRY OF ENERGY AND MINES, *supra* note 240.

²⁵¹ See Marc Dourojeanni, *Las propuestas de Hernando de Soto sobre la minería informal*, SPDA ACTUALIDAD AMBIENTAL (2015), <http://www.actualidadambiental.pe/?p=27796> (last visited Feb. 13, 2019); Interview with Elsa Galarza (May 29, 2019), *supra* note 224.

²⁵² See Valentina Ruiz, *Illegal Miners Sentenced to Jail in Peru*, MINING (2019), <http://www.mining.com/illegal-miners-sentenced-jail-peru/> (last visited Feb 13, 2019); Guillermo Reaño, *Minería ilegal en Madre de Dios: Operación Mercurio 2019, el baile de los que faltan*,

program is doomed to failure,²⁵³ the Peruvian government claims that the formalization results constitute a ‘good starting point.’²⁵⁴ Next I address some of the program’s shortcomings to dissect whether the formalization program will be a success or failure.

First, it is important to recognize that the program is focused on regularizing gold production, not gold trade. The informal miner is the main protagonist of the policy design (production), even if “. . . he is the weakest link in the formalization process because he has no easy access to state bureaucracy or resources to mobilize.”²⁵⁵ However, experts suggest tackling gold trading instead, thus shifting the (regulatory) burden from the weakest to the strongest player.²⁵⁶ In this regard, the world’s emerging middle class—whose appetite for gold has skyrocketed over the last decades²⁵⁷—needs to take part of the responsibility.

Second, Peru’s regulatory model is not attuned to the miner’s idiosyncrasies.²⁵⁸ Ada Alegre contends that the government has simply extrapolated the LSM permitting framework to ASM, “and it simply makes no sense to force ASM miners to retain EIA consultants.”²⁵⁹ Without the adequate incentives for miners to invest in EHS and technological improvements,²⁶⁰ fulfilling the government’s program simply provides a ‘façade of formality.’²⁶¹ Given the miner is an individual, any legal framework that analogizes from LSM to ASM is imperfect at best.

Third, the formalization program has not been backed-up with the necessary budget and manpower. The MEM and the Ministry of Environment have shown poor coordination and dissimilar visions over the ASM sector.²⁶² Moreover,

ACTUALIDAD AMBIENTAL (2019), <http://www.actualidadambiental.pe/?p=54930> (arguing that between 2013 and 2016, the government conducted 103 raids in Madre de Dios against illegal miners).

²⁵³ Interview with Juana Kuramoto, *supra* note 199; *see also* Valdes *supra* note 221.

²⁵⁴ Telephone interview with Lucia Ruiz, *former Minister of the Environment of Peru* (Sept. 14, 2019).

²⁵⁵ Interview with Juana Kuramoto, *supra* note 199.

²⁵⁶ *See id.*

²⁵⁷ Verbrugge & Geenen, *supra* note 135, at 415; *see also* Jingting Liu, *Covered in Gold: Examining Gold Consumption by Middle Class Consumers in Emerging Markets*, 25 INT’L BUS. REV. 739–747 (2016).

²⁵⁸ Interview with Alicia Abanto, *supra* note 212; Interview with Jaime Cuzquen, *Labor Law Expert* (May 22, 2019).

²⁵⁹ Interview with Ada Alegre, *Environmental expert* (2019); *See also* Interview with Reiner Paredes, *Public Servant of the Ministry of Energy and Mines of Peru Based in Puno* (May 20, 2019) (arguing that environmental consultants charge between USD 12,000 and 15,000 for drafting an environmental permit for ASM).

²⁶⁰ Interview with Maximo Gallo, *Former Director of ASM Formalization Office at the Ministry of Energy and Mines of Peru* (May 14, 2019); Interview with Jesus Alvarez, *Public Servant of the Regional Government of Puno* (June 19 2019) (“Miners apply for formalization process only to maintain the status quo and keep working”).

²⁶¹ Interview with Ada Alegre, *supra* note 259.

²⁶² *See* Gerardo Damonte, *supra* note 236, at 1330; Interview with Miguel Inchaustegui, *Former Vice Minister of Mines of Peru* (May 19, 2019). Nonetheless, the current Peruvian Minister of the

regional governments lack the budget, staff, technical capacity, and political will to implement the program.²⁶³ Sadly, the government has created a complex system of data recording and reporting (i.e. acquisition of explosives and feedstock, as well as gold transactions and exports), but is incapable of contrasting it or using it for decision-making.²⁶⁴

Fourth, it seems unlikely that informal miners and owners of mines would enter into agreements with one another. Eighty-eight percent of informal miners work on someone else's mining concession.²⁶⁵ For them to access the formalization program, the law requires those two conflicting parties—the formal owner of the mining concession and the squatter—to enter into a *voluntary exploitation agreement* together. From a practical standpoint, this mechanism is overly-simplistic and naïve.²⁶⁶ Not surprisingly, many concession owners refuse to negotiate with squatters. And when they finally do, the “government simply disappears, leaving us to deal with future encroaching or violations to the terms of our exploitation agreement.”²⁶⁷ This is why, according to the former Minister of MEM, without solving this overlap issue “there is not much more you can do.”²⁶⁸ In any event, the prospect of a voluntary agreement seems highly unlikely.

Finally, ASM develops in countries with high tolerance to informality²⁶⁹ and corruption,²⁷⁰ which hinders any legalization attempt. In Peru, people tend to embrace informality and are willing to accept the rules of the game.²⁷¹ One reason is that informality grants immediate access to cash.²⁷² If, given the financial

Environment contends that, unlike the Kuczynski government, the current ministers work in a coordinated and articulated manner. Telephone interview with Lucia Ruiz, *supra* note 254.

²⁶³ See Gerardo Damonte, *supra* note 236, at 1320; BEBBINGTON, *supra* note 216, at 48; Interview with Jesus Alvarez, *supra* note 260 (reporting that the regional office of Puno has fifteen public servants to deal with 280 formalization applications. To date only 23 informal miners have completed the process); see also Interview with Yuri Coaila, *Manager of OEFA Puno Office* (May 20, 2019) (claiming that on top of a problem of lack of staff, there is a high turnover in Puno Regional Government); Interview with Jesus Alvarez, *supra* note 260 (“There is no coordinated work. The Regional Government of Puno is left alone with the problem”).

²⁶⁴ Interview with Juana Kuramoto, *supra* note 199.

²⁶⁵ Interview with Gallo, *supra* note 260.

²⁶⁶ See DEFENSORIA DEL PUEBLO, GESTIÓN DEL ESTADO FRENTE A LA MINERÍA INFORMAL E ILEGAL EN EL PERÚ. SUPERVISIÓN A LA IMPLEMENTACIÓN DE LOS DECRETOS LEGISLATIVOS PROMULGADOS AL AMPARO DE LA LEY N.º 29815 159 (2013), <https://www.defensoria.gob.pe/wp-content/uploads/2018/05/informe-defensorial-160.pdf>; Cortés-McPherson, *supra* note 163, at 3; see also Valdes *supra* note 221, at 26.

²⁶⁷ Interview with Eva Arias, CEO, Poderosa Mining Corp. (July 3, 2019).

²⁶⁸ Telephone interview with Gonzalo Tamayo, Former Minister of Energy and Mines of Peru (June 13, 2019).

²⁶⁹ Interview with Solano, *supra* note 233; Interview with Abanto, *supra* note 212; Interview with Jorge Toyama, Labor Law Expert, (May 14, 2019).

²⁷⁰ See, e.g., El Comercio, *El 78% de los Peruanos son Tolerantes con la Corrupción* (2015), <https://elcomercio.pe/politica/actualidad/78-peruanos-son-tolerantes-corrupcion-389838>.

²⁷¹ Interview with Kuramoto, *supra* note 221.

²⁷² See BLACKMORE, ET AL., *supra* note 164, at 9.

incentive, there are no perceived benefits from becoming formal,²⁷³ it comes as no surprise why most informal miners prefer to stay informal. This is why Peru's Minister of the Environment contends that "the battle against informality is also a battle against corruption."²⁷⁴

At first, the Peruvian government's leadership on the "war on illegal mining" was celebrated.²⁷⁵ Today this ambition has become rhetorical—the program's stagnation and failure remain uncontested in academic circles.²⁷⁶ The political will to tackle informality is dissipating and becoming erratic, to the extent that the Peruvian formalization program is now a 'paper tiger.'²⁷⁷

IV. LA RINCONADA GOLD RUSH



Photo Credit: Patrick Wieland. One of La Rinconada's Roads.

²⁷³ Interview with Galarza, *supra* note 224.

²⁷⁴ Telephone interview with Ruiz, *supra* note 252.

²⁷⁵ See DEFENSORIA DEL PUEBLO, *supra* note 266, at 159.

²⁷⁶ See, e.g., Cortés-McPherson, *supra* note 163, at 3; Salo et al., *supra* note 192, at 1061; Duff & Downs, *supra* note 208, at 4; Damonte, *supra* note 192, at 957; Damonte, *supra* note 236, at 1315; DEFENSORIA DEL PUEBLO, BALANCE DE LA DESTIACIÓN ESTATAL FRENTE A LA MINERÍA INFORMAL E ILEGAL EN EL PERÚ 2012-2014, (Supervisión a las entidades de alcance nacional y regional 251 (2014)), <https://www.defensoria.gob.pe/wp-content/uploads/2018/05/Informe-Defensorial-N-167-2.pdf>.

²⁷⁷ Interview with Abanto, *supra* note 212.

La Rinconada is an unplanned gold rush village²⁷⁸ erected in the foothills of the Apolobamba Cordillera, in Puno, Southern Peru (see Figure 4). Located at 17,000 feet above sea level, as high as the Everest basecamp, it is the highest permanently inhabited town in the world.²⁷⁹ Except for a small health facility, a police station, and a primary school, the settlement lacks any evidence of formal government.²⁸⁰ Over the past two decades, gold prices have lured thousands of dreamers into the village, men and women alike.²⁸¹ Although the 2017 national census reports 12,000 inhabitants, the unofficial population estimate is between 50,000 and 70,000.²⁸²

Most families live in single-room dwellings made of rock or corrugated metal, which provide little protection from low temperatures.²⁸³ In La Rinconada, the temperature can drop to as low as -26 °C (-14.8 °F).²⁸⁴ Electricity is available, but dwellings lack running water, sewage, or heating.²⁸⁵ The town produces thirty-six tons of waste daily, but in the absence of infrastructure, waste is dumped anywhere.²⁸⁶ While low temperatures prevent the proliferation of vectors and epidemics, they affect the health and living conditions of the population.²⁸⁷ Gold extraction itself is an extremely risky livelihood requiring intensive physical effort

²⁷⁸ Bryceson & Geenen, *supra* note 135, at 313 (arguing that there are three artisanal frontier: the rush site, the boom settlement, and the permanent settlement).

²⁷⁹ See John B. West, *Highest Permanent Human Habitation*, 3 HIGH ALTITUDE MED. & BIOLOGY 401–07 (2002).

²⁸⁰ See Arana & Nemirofsky, *supra* note 4.

²⁸¹ See MINISTRY OF LABOR OF PERU, PRINCIPALES RESULTADOS DE LA RINCONADA Y CERRO LUNAR 107 15 (2015) (on file with author) (reporting a population distribution of 56% men and 44% women).

²⁸² See Miguel Ego Aguirre, *Evaluación Ambiental Inicial del Área de Influencia de las Actividades Mineras de La Rinconada - Perú* (2017); See also Martin Enserink, *Hypoxia City*, SCIENCE (Sept. 13, 2019), <https://science.sciencemag.org/content/365/6458/1098>; See also Oscar Espinoza, *La Rinconada, el 'dorado' helado*, EL PAIS (Sept. 9, 2017), https://elpais.com/elpais/2017/09/06/planeta_futuro/1504706117_915831.html.

²⁸³ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 14 (reporting 5,940 houses, 88% of which are made of corrugated metal, wood, and cardboard); see Gilmar Goyzueta & Ciria Trigos, *Riesgos de salud pública en el centro poblado minero artesanal La Rinconada (5200 msnm) en Puno, Perú*, 26 REVISTA PERUANA DE MEDICINA EXPERIMENTAL Y SALUD PÚBLICA (2009), <https://rpmesp.ins.gob.pe/index.php/rpmesp/article/view/1331> (last visited Jan. 22, 2019).

²⁸⁴ See Federico Gamarra Chilmaza, *Estudio sociolaboral de La Rinconada y Cerro Lunar* (2005), at 21, <http://www.papelesdesociedad.info/IMG/pdf/sociolaboral-rinconada-cerro-lunar.pdf>.

²⁸⁵ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 14 (reporting that 99% of dwellings lack sewage but 96% have electricity); Green Building Company & Urbes, *Estrategias para la Mejora de la Habitabilidad, Centro Poblado La Rinconada*. Propuesta para el Ministerio de Energía y Minas 53 20 (2017).

²⁸⁶ See Green Building Company & Urbes, *supra* note 285, at 27.

²⁸⁷ See INT'L LAB. ORG., *La Rinconada: Realidad Minera Artesanal Emblemática* 56 (2004), http://white.lim.ilo.org/ipcc/boletin/documentos/sist_rinconada_pe.pdf; Interview with Roberto Zegarra, Professor at Universidad Nacional del Altiplano and mining entrepreneur (June 19, 2019) (“Workers prefer to take night shifts to work at night because the cold does not let you sleep. Workers resort to alcohol to fight the cold weather.”).

and exposes miners to toxic substances and danger.²⁸⁸ Night clubs and bars have mushroomed, as well as violent crimes²⁸⁹ and prostitution.²⁹⁰ For Puno inhabitants, La Rinconada is “no man’s land.”²⁹¹ While eighty-three percent of the La Rinconada population is engaged in the extraction of gold,²⁹² in actuality, “the whole town is obsessed with gold.”²⁹³



Photo by Patrick Wieland.

²⁸⁸ See Christopher H. Gammons et al., *Mercury Concentrations of Fish, River Water, and Sediment in the Río Ramis-Lake Titicaca Watershed, Peru*, 368 *SCI. OF THE TOTAL ENV.* 637–648 (2006); see also Finnegan, *supra* note 3, at 13 (claiming that every year accidents in the mines caused by explosives, collapses or asphyxiation kill around 30 people).

²⁸⁹ Seventy people die every year as consequence of robberies and bar fights. See Finnegan, *supra* note 3; see also Interview with anonymous cachorro worker #3, in Puno, Peru (June 18, 2019) (claiming that during the first semester of 2019 twenty-eight people were killed).

²⁹⁰ See César Mosquera, *Trabajo infantil en la minería peruana*, CENTRO DE TECNOLOGIA MINERAL 111–134 (2006), http://mineralis.cetem.gov.br/bitstream/cetem/1308/1/genero_e_trabalho_infantil7.pdf.

²⁹¹ Interview with Trinidad Carlos, Legal Counsel of Puno’s Ombudsman Office (June 19, 2019).

²⁹² See Aguirre, *supra* note 282, at 13.

²⁹³ Larmer, *supra* note 5.

Figure 2. Location Map²⁹⁴

A. Mining Operations

Mining activities in La Rinconada date back to the Inca and Spanish colonial period, but were abandoned by end of the nineteenth century.²⁹⁵ Gold is found in quartz veins (veins are encased in hard rock) at the heart of Mountain Ananea, known by locals as the *Sleeping Beauty*, and is thus difficult to mine.²⁹⁶ The discovery of today's mineral deposit is attributed to Tomas Cenzano Caceres, a Huancavelica native and the son of artisanal miners himself.²⁹⁷ Cenzano arrived to the region in 1946²⁹⁸ and, in spite of disbelief from his peers, he erected a campsite and a laboratory to test drilling samples.²⁹⁹ In 1952, Cenzano filed several mining claims to the area, becoming the legal owner of the gold deposit. In 1979, following the granting of a bank loan, he managed to mechanize his

²⁹⁴ Directions from La Rinconada, Peru to Puno, Peru, GOOGLE EARTH, <http://earth.google.com> (follow directions to either download program or launch in web browser; search for La Rinconada, Pura; bookmark location; repeat steps for searching Puno, Peru; use the measure distance and area tool to draw a measured line between the two points).

²⁹⁵ See, e.g., Mario Serafin Cuentas Alvarado, *Evaluación Cualitativa del Impacto Ambiental Generado por la Actividad Minera en La Rinconada Puno*, (July 27, 2009) (unpublished M.S. thesis, Universidad de Piura, Peru); 1 Carlos E. Velarde, LA MINERÍA EN EL PERÚ 236–37 (1908); Alberto Regal, *Las Minas Incaicas*, REVISTA DE LA UNIVERSIDAD CATOLICA, 1946 at 43, <http://repositorio.pucp.edu.pe/index/handle/123456789/53553>.

²⁹⁶ See Bernard Robert-Charrue, *La Rinconada: El Oro del Glaciar* (2003), <https://www.youtube.com/watch?v=Y1eiQ9GhGzU>.

²⁹⁷ Interview with Liliana Cenzano, in Lima, Peru (July 2, 2019).

²⁹⁸ *Id.*; Rosa Delgado, *Riqueza Aurifera de San Antonio de Poto es Palanca Para el Desarrollo Integral del Sur*, DIARIO EL PERUANO, December 24, 1990, at B12.

²⁹⁹ Interview with Cenzano, *supra* note 297.

operations for the first time by installing a small processing plant, employing around four hundred workers.³⁰⁰ Cenzano and his family ran the business until the 1990s, when he transferred his shares and mining rights.³⁰¹ Corporacion Minera Ananea S.A. (CMA) is the current owner of the mining property.

Today, the mineral deposit comprises five mining concessions³⁰² and one processing plant.³⁰³ CMA has the legal status of small-scale mining producer (PPM) before MEM,³⁰⁴ retains around one hundred workers,³⁰⁵ and its operations are considered professional, mechanized, and safe.³⁰⁶ Thus, CMA operations provide a ‘halo’ of formality to an otherwise informal mining town.³⁰⁷ CMA declared official production of 2,500 gold ounces in 2018 (\$3.2 million).³⁰⁸ Nonetheless, given that CMA only exploits a small portion of its mining concessions, this figure does not reflect the rest of the production which remains off-the-books.³⁰⁹ The remaining sections of the mining concessions are outsourced to 478 contractors through individual exploitation agreements, which are notarized and recorded in the public registry.³¹⁰ These agreements assign an exclusive working area to each contractor in exchange for an upfront fee of twenty

³⁰⁰ See Corporacion Minera Ananea S.A., *Estudio de Impacto Ambiental - Unidad Economica Administrativa Ana Maria de Puno y Planta de Beneficio de 25 Ana Maria de 25 tm/dia. Puno, San Antonio de Putina, Ananea*. (On file with author) (1999).

³⁰¹ Tomas Cenzano Jr., *Representative of Cooperativa San Francisco* (2019) (Discusses how one of his sons became a Congressman, which allowed him to lobby in favor of paving roads and deploying power lines to upgrade the mining settlement.).

³⁰² “Ana Maria N° 1” (13006374X01), “Ana Maria N° 2” (13006904X01), “Ana Maria N° 3” (13006905X01), and “Ana Maria N° 4” (13007079X01), [http://www.minem.gob.pe/minem/archivos/Reinfo_Total_171215\(1\).pdf](http://www.minem.gob.pe/minem/archivos/Reinfo_Total_171215(1).pdf).

³⁰³ “Ana Maria” (P0000206).

³⁰⁴ Registry No. 0046-2017. However, on June 27, 2019, the MEM denied CMA the renewal of its PPM registry questioning the composition of its shareholders. MEM argued that to qualify as a PPM, CMA’s shareholders cannot be made up of natural persons, juridical persons and, now, mining cooperatives. Although CMA can appeal or reapply for the permit, the repercussions of CMA losing its PPM status are tremendous (i.e. it would now have to comply with LSM standards). Yet, it is still too early to conduct a full assessment of this event. See Ministry of Energy and Mines of Peru, *Informe 078-2019-MEM/DGFM-PPM*. (2019) (on file with author).

³⁰⁵ These workers are under the payroll of CMA, but they are allegedly awarded *cachorro* days as a ‘bonus’ to compensate for low wages. Interview with Alvarez, *supra* note 260.

³⁰⁶ See Anna Ensing, *Hazardous Child Labour in Peru: Lessons from Research* (2008), <http://www.ucw-project.org/attachment/ensing.pdf>. For example, CMA operations have EIA approved by the government in 1998 (Resolucion No. 298-2001-EM/DGAA).

³⁰⁷ Interview with Alvarez, *supra* note 251.

³⁰⁸ See Ministry of Energy and Mines, *Produccion Minera, ESTADISTICA*, http://www.minem.gob.pe/_estadisticaSector.php?idSector=1&idCategoria=10. For calculations in this Article, I use the average 2018 gold price, namely \$1,268 per ounce. See London Bullion Market Association, <http://www.lbma.org.uk/home>. The exchange rate used is 3.3 soles per 1 US dollar.

³⁰⁹ See Memorandum addressed to Minister of Energy and Mines (2002) (on file with author) (Memorandum estimated La Rinconada’s production is 2.7 tons of gold per year (\$120 million)).

³¹⁰ Interview with Reiner Paredes, Public servant of the Ministry of Energy and Mines of Peru based in Puno, (June 25, 2019).

grams of gold and a ten percent royalty.³¹¹ Besides bounding all contractors to respect the limits of their exploitation area, the agreement requires them to comply with applicable labor and EHS regulations.³¹² In theory CMA is jointly liable for contractor's treatment of employees, though in practice there is no enforcement or adjudication mechanisms.

Each contractor appoints a supervisor called the *capataz*, who oversees the mining operation and is responsible for recruiting the all-male workforce.³¹³ The contractors are grouped under three associations (*cooperativas*).³¹⁴ Each contractor is an independent entity responsible for the construction of shafts, for which it must secure capital, machinery, feedstock, explosives, and personnel.³¹⁵ "You need a lot of capital to open a mine shaft, as there are more than two hundred meters of sterile rock before you can even see the gold vein," admits one contractor.³¹⁶ Two of the three cooperatives have initiated the mining formalization program, but have not yet completed it.³¹⁷

B. *The Cachorro System*

1. The oral agreement

The number of miners working in the shafts varies according to season, prices of gold, and fluctuations of veins.³¹⁸ Because miners are not in the contractors' payroll, they do not receive a fixed salary. Instead, they are retained through a unique, oral agreement called *cachorro*.³¹⁹ Accordingly, miners must work for twenty-eight consecutive days for a specific contractor and, in exchange, they get the opportunity to mine the deposit for one or two days and keep the ore to themselves.³²⁰ The oral nature of the agreement bypasses any liability for the

³¹¹ See Exploitation Agreement between CMA and Josefina Ramos de Vilca, signed Dec. 10, 2003 (on file with author). The agreement establishes that should the deposit contain a high ore concentration, the royalty will increase to 20%.

³¹² See Gamarra, *supra* note 284.

³¹³ See *id.*

³¹⁴ Cooperativa Minera Lunar de Oro Ltda, Cooperativa Minera San Francisco de Rinconada Ltda, and Cooperativa Minera Cerro San Francisco Ltda. All three cooperatives are grouped under Central de Cooperativas Mineras Rinconada y Lunar de Oro Ltda. See Gamarra, *supra* note 284, at 30.

³¹⁵ See Chilmaza, *supra* note 284.

³¹⁶ To become a contractor in 1991, a source indicated that he had to pay \$1,500 to his *cooperativa*. Yet, this fee significantly increased to \$4,500 in the mid-2000s. Interview with anonymous contractor #2, in Puno, Peru (June 24, 2019).

³¹⁷ Cooperativa Minera Lunar de Oro Ltda and Cooperativa Minera San Francisco de Rinconada Ltda. Ministry of Energy and Mines, *supra* note 249.

³¹⁸ See Chilmaza, *supra* note 284, at 4.

³¹⁹ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 61 (reporting that 96% of miners claim to have oral agreements).

³²⁰ Other variants of *cachorro* have emerged over time. They include *cachito* or *cachetada* (12 hours of extraction for every 15 days of work) and *cuñaqueo* or *rataqueo* (1 or 2 hours of extraction

workers, as it is expected that no one will seek to have enforcement actions brought: they carry no insurance, EHS training, or retirement program.³²¹ Miners can work simultaneously for multiple contractors or move from one vein to another under a new contractor.³²² The *cachorro* regime relies not only on the skills and physical effort of each worker, but also on luck because he could simply receive nothing.³²³ Indeed, even miners themselves acknowledge that this is a highly risky and uncertain enterprise.³²⁴

The supervisor determines who can access the shafts and when during the *cachorro* day. Such control allows the supervisor to spare the best areas for himself or his close workers.³²⁵ The supervisor may enforce other rules: he may save a particular vein for *cachorro* (i.e. an overexploited area of the mine),³²⁶ establish a particular timeframe (i.e. maximum of four hours), or put forward a sharing regime (i.e. four to ten miners must share the vein at the same time, which reduces the final yield).³²⁷ Moreover, contractors may delay the payment of *cachorro* days.³²⁸ CMA may mediate between *cachorro* workers and contractors, however, it does not carry a register of the investment, production, technology, or number of workers retained by each contractor.³²⁹

Outsourced mining operations use intensive labor force, low capital, and poor technology. Ore from the shafts is extracted using picks, drill rods, explosives, and compressors.³³⁰ Each contractor operates under its own technology and

for every day of work). See, e.g., María del Carmen Piazza, *Niños que Trabajan en la Minería Artesanal de oro en el Perú* (2001); CHILMAZA, *supra* note 315, at 31; see also Finnegan, *supra* note 3 (“I found so many variants of the scheme, however—and so many miners passionately attached to their variant—that the traditional description of *cachorro* seems to me inadequate. It’s a lottery, but, because of pilfering, it runs every day, not once a month”). During my visit to La Rinconada, I found other alternatives of *cachorro*, such as two days of extraction for every five, fifteen or eighteen days of work. Also, a contractor explained that at times of lower yields, he compensated his workers differently: the first twenty meters drilled correspond to the contractor and the next ten correspond to *cachorro* workers. Interview with anonymous contractor #2, *supra* note 316.

³²¹ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 23 (reporting that 77% of miners lack medical insurance and 99% lack retirement program).

³²² See Chilmaza, *supra* note 284.

³²³ Interview with anonymous *cachorro* worker #3, *supra* note 278 (Anonymous *cachorro* worker stated “I once spent eight months without payment. I had to live out of my savings”).

³²⁴ Interview with Paredes, *supra* note 310.

³²⁵ The supervisor can also give worse areas to those miners who they personally dislike. See Chilmaza, *supra* note 284, at 43.

³²⁶ Interview with anonymous *cachorro* worker #1, in Juliaca and La Rinconada, Peru (June 24, 2019).

³²⁷ See Manuel Glave & Juana Kuramoto, *Minería, Minerales y Desarrollo Sustentable en Perú, MINERÍA, MINERALES Y DESARROLLO SUSTENTABLE EN AMÉRICA DEL SUR 529–591* (Equipo Minería, Minerales y Desarrollo Sustentable (MMDS) America del Sur ed., 2002).

³²⁸ See Chilmaza, *supra* note 284, at 44.

³²⁹ See *id.* at 28–29, 41.

³³⁰ See Gammons, et al., *supra* note 288, at 640; see also Chilmaza, *supra* note 284.

rules,³³¹ so work is conducted with varying gradients and directions, exposing workers to insecure tunnels, flooding, and collapse.³³² Additionally, overlapping sections and trespassing among contractors is frequent, often requiring the mediation of CMA.³³³

The ore is then transported out of the shafts in a wheelbarrow, sometimes by children,³³⁴ and later crushed with small sledgehammers or electric ball mills (known by locals as *molinos* or *trapiches*).³³⁵ The ground ore is then mixed with mercury and water in a large stone mortar (an ancient instrument called *quimbaleta*) and agitated manually by someone standing on a stone pestle and rocking back and forth.³³⁶ There are approximately one thousand *quimbaletes* spread around the mining settlement. The amalgamated mercury is separated by panning and then squeezed by hand through a fine cloth to separate the liquid mercury from the semi-solid gold-mercury amalgam.³³⁷ Mercury is highly toxic, which adds to the danger already present by the physical mine operations.

In addition to the toxicity, mercury amalgamation is inefficient—miners recuperate forty percent of gold particles contained in the ore.³³⁸ Mining tailings containing residual mercury (and gold) are discarded into settling ponds, uncontrolled drainages, or sold to nearby processing plants for additional processing with cyanide.³³⁹ Another externality created by liquid mercury in water, which transforms into a series of highly toxic compounds that contaminate fish and humans downstream.³⁴⁰

The gold-mercury amalgam is heated to drive off the mercury and produce a gold ball.³⁴¹ The heat is applied at gold smelter shops located in town (called *acopiadores*) or in Juliaca (a large city one hundred miles away from La Rinconada),³⁴² contaminating indoor areas and the vicinity.³⁴³ Although it is

³³¹ Interview with Miguel Ego Aguirre, Environmental Consultant (May 23, 2019).

³³² See Kuramoto, *supra* note 221, at 4.

³³³ CMA has constituted an executive committee to adjudicate boundary problems among artisanal miners. Report to the CMA Board prepared by General Manager Adalberto Rivadeneira (2003) (on file with author). Interview with anonymous contractor #2, *supra* note 305; Interview with anonymous cachorro worker #3, *supra* note 289; see also Exploitation Agreement between CMA and Josefina Ramos de Vilca, *supra* note 311.

³³⁴ See Kuramoto, *supra* note 221.

³³⁵ See Gammons, et al., *supra* note 288, at 640.

³³⁶ See *id.* at 571; Kuramoto *supra* note 221, at 23-24.

³³⁷ See *id.* at 132.

³³⁸ Interview with Aguirre, *supra* note 331.

³³⁹ See Gammons, et al., *supra* note 288, at 639; Kuramoto, *supra* note 221, at 22; Interview with Aguirre, *supra* note 331.

³⁴⁰ See Kuramoto, *supra* note 221, at 28.

³⁴¹ See Gammons, et al., *supra* note 288, at 639.

³⁴² See Chilmaza, *supra* note 284, at 571; Finnegan, *supra* note 3 (claiming that buyers use a mobile app to stay current with London and New York gold prices).

³⁴³ See Olaf Malm, *Gold Mining as a Source of Mercury Exposure in the Brazilian Amazon*, 77 ENVIRONMENTAL RESEARCH 75 (1998).

possible to capture and recycle the mercury vapors by using a retort, ASM bypasses this step.³⁴⁴ Families that burn mercury at home have high levels of mercury in their blood³⁴⁵ and children present nervous impairment attributable to the mercury.³⁴⁶ Mercury has been found in surface water, soils, and stream sediment near La Rinconada and Lake Titicaca.³⁴⁷

The gold ball is sold at market price to the *acopiadores*, who supply gold to clients in Juliaca, Bolivia, or Brazil.³⁴⁸ Although official data is unavailable or unreliable, each *cachorro* worker produces an estimated ten grams of gold per month during his reward day (around \$420),³⁴⁹ which is higher than Peru's minimum monthly wage (\$280). Yet, he still must pay for his own equipment, feedstock, and tools, and pay the *molino* and *acopiador* fees.³⁵⁰ Furthermore, many intermediaries during the processing and trading of gold limit his final cut.³⁵¹ Of course, all these transactions remain off-the-books.

Miners complement their income by pocketing some small rocks on their way out of the shafts, a practice tolerated by most operators.³⁵² Additionally, women and children must contribute to the household income. Local custom forbids the entrance of women into the mining shafts; however, women and children work by manually sorting out the discarded ore from piles of debris extracted from tunnels (an activity called *pallaqueo*), washing the material, or recollecting ore with a brush.³⁵³ *Pallaqueo* involves selecting and crushing interesting looking rocks, which is extremely dangerous work since it is carried out in very steep hills covered with snow.³⁵⁴ Women then take the ore for further processing, yielding two to seven grams of gold per month.³⁵⁵ Women and children also work in small

³⁴⁴ See, e.g., Gammons et al., *supra* note 288, at 638; Veiga & Beinhoff, *supra* note 194.

³⁴⁵ See Kuramoto, *supra* note 221, at 31.

³⁴⁶ See Arana & Nemirofsky, *supra* note 4, at 36 (reporting that 70% of La Rinconada children suffer chronic malnutrition and 95% exhibit some form of nervous impairment).

³⁴⁷ *Id.* at 40 (reporting that mercury levels in public spaces are 5,000% higher than permissible levels).

³⁴⁸ See Finnegan, *supra* note 3; see also Interview with anonymous *cachorro* worker #3, *supra* note 289 (arguing that each *acopiador* risks his life coming down to Juliaca with gold nuggets on him, since he can get robbed or killed on the way down).

³⁴⁹ See Aguirre, *supra* note 282. *But see* MINISTRY OF LABOR OF PERU, *supra* note 272 (claiming that the average miner's monthly income is approximately \$300, though 23% of miners make more than \$500).

³⁵⁰ See Chilmaza, *supra* note 284.

³⁵¹ Interview with Aguirre, *supra* note 331.

³⁵² Interview with Alvarez, *supra* note 260.

³⁵³ See, e.g., Mosquera, *supra* note 290; Int'l Labor Org., *supra* note 287, at 10.

³⁵⁴ See Ensing, *supra* note 306. (According to Enrique Tandeter, during the Colonial period, *pallaqueo* referred to workers that sift through the debris of abandoned mines in Potosí.); See also, Coercion and Market: Silver Mining in Colonial Potosí, 1692-1826 5 (1992).

³⁵⁵ See Chilmaza, *supra* note 284; MINISTRY OF LABOR OF PERU, *supra* note 281, at 22 (reporting that women work 42% more hours per week than miners, but only make \$225 per month on average); Olinda Orozco Zevallos, Guadalupe Eto Chero & Franco Arista Rivera, *Pallaqueras entre piedras y*

shops or street vending. In practice, women work more hours than men but receive lesser compensation.³⁵⁶ Children work full time on weekends, during their school vacation, or after school,³⁵⁷ even though Peruvian law prohibits children labor in mines. For many inhabitants of La Rinconada the tasks performed by children in the mines are not considered “actual work.”³⁵⁸

Given that *cachorro* and *pallaqueo* were not originally mapped as part of the 2012 formalization program, they risked falling under the category of illegal mining. In 2012, after social turmoil in La Rinconada, the government created a roster of ‘manual gatherers of gold’ that entitled registered adult miners to trade up to sixty-six grams of gold per month (amended in 2018).³⁵⁹ Almost twelve thousand *cachorreros* and *pallaqueras* registered before MEM.³⁶⁰ However, locals claim that this system is not working and all operations remain off-the-books.³⁶¹

2. Understanding *cachorro*

The origin and nature of *cachorro* is understudied in Peru. However, *cachorro* is not an exclusive creation of La Rinconada settlers, nor an isolated institution in the Peruvian Altiplano.³⁶² The *cachorro* system is a *mélange* of ancient and familiar practices readily available to Andean miners, which entails the direct appropriation of ore by the mass working force or the mobilization of whole families to mining regions as a working unit.³⁶³

Cachorro can be characterized as an atypical employment agreement,³⁶⁴ albeit an exploitative one. Indeed, both CMA and the contractors are in breach of their employment obligations, including: (a) the right to fair compensation (payment is uncertain and at times non-existent); (b) EHS regulations (miners are responsible

oro. Diagnostico participativo en las regiones de Arequipa, Ayacucho y Puno 69 (2017) (estimating that 70% of *pallaqueras* make less than \$300 per month).

³⁵⁶ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 22, 61.

³⁵⁷ See Piazza, *supra* note 320.

³⁵⁸ See INT’L LABOR ORG., *supra* note 287, at 14.

³⁵⁹ MINISTRY OF ENERGY AND MINES, MODIFICAN EL DECRETO SUPREMO NO 027-2012-EM, QUE DICTA NORMAS COMPLEMENTARIAS AL DECRETO LEGISLATIVO NO 1105 PARA LA COMERCIALIZACIÓN DE ORO, DECRETO SUPREMO N° 018-2018-EM (2018).

³⁶⁰ MINISTRY OF ENERGY AND MINES, PADRON DE TERCERAS PERSONAS NATURALES Y SELECCIONADORES MANUALES DE ORO, http://www.minem.gob.pe/_detalle.php?idSector=20&idTitular=8820&idMenu=sub8819&idCateg=1611 (last visited Aug 24, 2019).

³⁶¹ Interview with anonymous *cachorro* worker #3, *supra* note 289.

³⁶² For example, similar working arrangements exist in nearby mining communities in the Sandia and Carabaya provinces of Puno, but also in Secocha (Arequipa) and La Libertad.

³⁶³ See Carmen Cazorla Zen, *Las Pallaqueras o Cori Capa Koya*, ARQUEOLOGIA Y SOCIEDAD 343–352 (2012).

³⁶⁴ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 13.

for their own equipment and have no training in mining activities³⁶⁵); (c) the prohibition of unhealthy or dangerous working conditions (miners do not have risk insurance or adequate equipment); and (d) the right to rest, leisure and vacations. Lastly, the contractors have employed children in the past.³⁶⁶

This employment arrangement is appealing to miners because, like a lottery, it provides them with the opportunity—whether real or imaginary—to strike it rich. This lottery component would be absent in any waged labor relationship.³⁶⁷ As mentioned previously, the typical amount *cachorreros* obtain as compensation is *higher* than Peru’s minimum wage—so they have an incentive to keep the Ministry of Labor off the mines. In fact, as one miner in La Rinconada contends, “without [*cachorro*] in the equation, the job [is] not worth doing.”³⁶⁸ The element of reward outweighs the risk.

Cachorro is a peculiar employment contract with several main features. First, there is a high component of informality (it is a verbal agreement); second, the risk-sharing occurs between the contractors and the miners (as opposed to waged labor); third, it connotes a deep sense of independence (as opposed to labor subordination or proletarianization). Another salient feature is mobility (miners can move from contractor to another); in addition, a ‘get rich quick’ mentality (miners claim this is a temporary job until they save enough money to buy a house or pay for their children’s education). Furthermore, Andean reciprocity culture includes the idea of mutual collaboration among community members or business partners; moreover, trust underlies the relationships between contractors, who will only retain as *cachorreros* people they personally know or that have been recommended to him by someone close. Finally, superstition is invoked, as miners ‘pay’ the mountain deities in exchange for protection (and good luck).

C. California Gold Rush vs. La Rinconada

In this section, I draw a parallel between the CGR and La Rinconada Gold Rush. In general, both episodes entailed frantic human migration into hazardous and remote areas where gold deposits were located, adopting “a lifestyle of hard work and hard play.”³⁶⁹ Overall, the migration required long and dangerous expeditions to the site of discovery. In California, travelers risked cholera and

³⁶⁵ See *id.* at 58 (reporting that 88% of miners in La Rinconada have received no training or courses).

³⁶⁶ See *id.* (reporting that 83% of miners declared to have started working in the settlement between the age of 15 and 29).

³⁶⁷ In this Article I refer to waged labor relationships as equivalent to full-employment status in the United States.

³⁶⁸ Finnegan, *supra* note 3.

³⁶⁹ Bryceson, *supra* note 64, at 51.

starvation,³⁷⁰ whereas in La Rinconada extreme altitude and weather conditions pushed human health to its limits. Miners in both episodes shared a similar risk-taking mindset, inexperience in mining, and an obsession with gold.

In La Rinconada, the dream of becoming rich overnight pushes miners to work for as many contractors and as many shifts as possible. This also means enduring the worst imaginable living and working conditions, while widespread stories of random fortunes feed miners' imagination and reinforce their confidence. In California and La Rinconada, migrants underwent similar shortcomings in terms of home life,³⁷¹ physical and mental health, which included high rates of alcoholism. Both were unattached to their new settlement—they did not perceive it a permanent destiny, which translated into little interest in civic affairs.³⁷² The poetic manner in which gold rush miners tended to profess loyalty is encapsulated in this statement: “not to any nation but to gold, wherever it might be found.”³⁷³ In California, miners referred to home as “making their pile,”³⁷⁴ similarly, in La Rinconada, miners refer to their shacks as “campsites,” not as their home.³⁷⁵

Similarly, gold recovery relied on intensive labor force and demanded long hours of physical activity under extreme weather conditions, exposing them to injury and death.³⁷⁶ In California, as much as in La Rinconada, the absence of modern prospecting technology or geological data meant that miners could not know *ex ante* if a claim or vein was worth exploiting until they had already started mining it, leading to inefficient and wasteful outcomes (i.e. poor yields or excessive effort).³⁷⁷ Both scenarios involved the use of rudimentary methods, even though some improvements were introduced later.

Both gold rushes are characterized by the absence of a functioning government, either due to the lack of state bureaucracy (California) or the lack of political will or capability to enforce the law (Peru). As a result, miners had to improvise their own informal rules to allocate access to gold. Though different in many ways, such rules tended to reward hard work and reject proletarianization.³⁷⁸

³⁷⁰ See DOLNICK, *supra* note 48, at 47; PAUL, *supra* note 38, at 34–35 (describing that the journey to California was so severe that miners never forgot it, if they managed to survive it).

³⁷¹ See DOLNICK, *supra* note 48, at 46 (“[G]reat stretches of the once bucolic American River looked like shantytowns, home to scores of ragged tents and scruffy men).

³⁷² See Burns, *supra* note 66, at 5.

³⁷³ ISENBERG, *supra* note 33, at 20.

³⁷⁴ See Burns, *supra* note 66, at 5.

³⁷⁵ Interview with anonymous cachorro worker #3, *supra* note 289.

³⁷⁶ See generally Noy, *supra* note 47, at 329 (arguing that twenty percent of all Forty-Niners died within six months after arriving in California); ROHRBOUGH, *supra* note 32, at 191 (arguing that miners suffered constant injuries, from blistered hands to crushed fingers, sprained ankles, and back aches).

³⁷⁷ In La Rinconada, as miners dig in the tunnels, they select mineralized veins in the walls and discard scrap rock (which is then selected by women engaged in *pallaqueo*).

³⁷⁸ See, e.g., Caughey, *supra* note 52, at 168 (“The idea that any miner would strike it rich anytime was a powerful influence against the application of big-business methods in the diggings”); Chan,

Nevertheless, in both cases most fortunes were made through the servicing of miner's needs rather than mining.³⁷⁹

Both gold rushes triggered significant ecological and landscape modifications. Hydraulic mining and mercury use in California affected downstream agricultural activities and sparked conflicts. Similarly, polluted lakes, mismanagement of wastes, and soil alteration are but a few examples of La Rinconada's environmental damage.³⁸⁰ Moreover, the uncontrolled use of mercury configures a case of transboundary pollution between Peru and Bolivia.

Despite the similarities sketched out above, there are distinguishable features between both gold rushes. First, the miners' profiles do not match. Like most nineteenth century gold rushes, the CGR was an almost all-male enterprise,³⁸¹ especially conducted by youngsters who escaped poor-paying jobs in search of adventure, adrenaline, fortune, better social status, and self-respect.³⁸² Gold-digging was a paradigmatic *masculine* activity, which relied on men abandoning their families to pursue wealth.³⁸³ What is more, the CGR migrants constituted a close-knit group made up of higher-than-average educated Americans,³⁸⁴ often sharing democratic and individualistic ideals.

Conversely, the family is the engine behind La Rinconada's migration forces, as most settlers travel with their wives and children. Their main motivation is not adventure or social status, but economic need.³⁸⁵ Unlike the CGR, in La Rinconada the household income is not produced exclusively by men, but by women and children. Most settlers to La Rinconada are also young and only half

supra note 35, at 60 (arguing that capitalists and their cheap labor were perceived by the miners as enemies of 'American working men').

³⁷⁹ See, e.g. Bryceson, *supra* note 64, at 36 ("The average earnings of non-mining service sector providers, in fact, superseded those of miners").

³⁸⁰ See Aguirre, *supra* note 282.

³⁸¹ See ISENBERG, *supra* note 46, at 13. Yet, women would increase their participation in the Gold Rush as towns and cities grew. They undertook household work, ran boardinghouses, took care of children, cooked and washed clothes, worked in dancehalls, gambling tables, or bar tending. There were also women who worked mining along with their husbands and children. But in general men would "resist" their wife's calls to accompany them to California. See generally ROHRBOUGH, *supra* note 32, at 176–182.

³⁸² Eighty percent of the migrants were young males. See, e.g., Burns, *supra* note 66, at 4. The miner's motivations were diverse and deeply rooted in personal and familial responsibilities; see also GRAY, *supra* note 132, at xii (arguing that gold rushes represented an opportunity to reinvent oneself, to escape social rank, and "to share the adrenaline rush of mother lode fantasies and frontier adventure"). For a description of what motivated the Forty-Niners, see, e.g., Noy, *supra* note 47 at 5–10; DOLNICK, *supra* note 48, at 50–60.

³⁸³ See GOODMAN, *supra* note 136, at 151, 153.

³⁸⁴ Yet, as noted earlier, some years later the stampede of immigrants turned the mining camps into a kaleidoscope of cultures. See Zerbe and Anderson, *supra* note 35, at 119.

³⁸⁵ See MINISTRY OF LABOR OF PERU, *supra* note 281, at 52 (reporting that 85% of miners are motivated to migrate into La Rinconada because of economic need).

of them attended high school.³⁸⁶ Instead of an individualistic and democratic mindset, in La Rinconada miners share a culture based on community and reciprocity principles. Considering the fact that La Rinconada is a family enterprise, we can speculate about the role women play in the decision-making process to move into the village (and to move out),³⁸⁷ unlike the CGR where the decision to flee to the goldfields was self-propelled.³⁸⁸

Second, in California the gold deposits were open exclusively to U.S. citizens, locking natives and foreigners out. In La Rinconada, all newcomers legally had access to gold through *cachorro* rights. While there was no apparent impediment for foreigners to enter into the *cachorro* system, there is no record of international workers in the village.³⁸⁹ Considering that La Rinconada was more socially and ethnically embracing than the CGR, it can be argued that the latter's exclusionary social impact was more profound.³⁹⁰

Third, the stories of success (and failure) are also divergent. Historians have well documented stories of Forty-Eighters and Forty-Niners that made fortunes overnight,³⁹¹ which lured mining corporations into the gold fields.³⁹² Conversely, LSM companies in Peru have shown little interest in taking over La Rinconada, especially due to social instability.³⁹³ More importantly, strokes of luck are exceptional—if not imaginary—and usually involve contractors, not workers.³⁹⁴ Perhaps a common nostalgia for the early days of gold abundance is a shared trait in these gold rushes.³⁹⁵

³⁸⁶ See MINISTRY OF LABOR OF PERU, *supra* note 281 (reporting that 60% of La Rinconada's population is 30 years old or younger, and that 52% went to high school, whether or not they completed it); CORPORACION MINERA ANANEA S.A., *supra* note 300, at 38; CHILMAZA, *supra* note 284, at 13; INT'L LABOR ORG., *supra* note 287.

³⁸⁷ One source told me that he fled to the mine in 1989 alone and his wife would only follow him a few years later when he had secured a place to live. Interview with anonymous *cachorro* worker #3, *supra* note 289. Other source claimed that he would never bring his wife and kids to the village since it is not a safe place for them. Interview with anonymous contractor #2, *supra* note 316.

³⁸⁸ See Bryceson, *supra* note 64, at 32.

³⁸⁹ It is unlikely that ASM nations today would encourage immigration when they can absorb the demand for jobs internally. *See id.* at 160; *But see* Cortés-McPherson, *supra* note 163, at 5 (claiming that South Koreans, Chinese and Russians invest in Madre de Dios mining camps).

³⁹⁰ See Bryceson, *supra* note 64, at 55. ("Twenty-first-century artisanal mining has been more socially and ethnically inclusive [than the California Gold Rush], engaging larger numbers of the working population, mostly nationals").

³⁹¹ *See generally* ROHRBOUGH, *supra* note 32, at 16–18; Jönsson & Fold, *supra* note 129, at 250 ("The rags to riches stories that emanated from this migration reinforced America's frontier ethos of prosperity for those who headed West").

³⁹² *See* McDowell, *supra* note 61, at 10; *but see* ROHRBOUGH, *supra* note 32, at 26 (claiming that many stories and editorials published bordered with fantasy and exaggeration).

³⁹³ Telephone interview with Ruiz, *supra* note 252 (arguing that La Rinconada is "socially inaccessible" for the State to regulate and control).

³⁹⁴ Besides the Cenzano family, other names of contractors that 'stroke it rich' are Francisco Cardenas or Percy Torres.

³⁹⁵ *Cf.* GOODMAN, *supra* note 136, at 2–3.

Fourth, the CGR lasted six years, when gold deposits ran out or became unprofitable to exploit, and had worldwide implications.³⁹⁶ By contrast, La Rinconada Gold Rush started in the early 2000s and there is no indication that it will come to an end anytime soon.³⁹⁷ Here, it is worth noting the difference between today's price of gold (approximately US\$1,500 per ounce) and that of 1850 (US\$20 per ounce) when the CGR took place (*see* Figure 3). Weighting for inflation, US\$20 (1850) is equivalent in purchasing power to about US\$658 (2019). An ounce of gold's purchasing power has thus increased from US\$658 to approximately US\$1,500. This difference gives us a rough idea of the transformative power that contemporary ASM can have for millions of people.

On the other hand, while ASM in La Rinconada employs thousands and is key for the region's economy, the profits remain off-the-books, so their impact to the national (or international) economy is unaccounted for.³⁹⁸ To be sure, even if gold smuggling across Bolivian and Brazilian borders have an important economic effect in these countries, this also remains understudied.

Figure 3. Gold price 1800-2012³⁹⁹



Fifth, during the CGR the press and public opinion were favorable to the gold-seekers, often portraying miners as role models.⁴⁰⁰ As some suggest, the California gold-seekers became a “hall of masculine national heroes.”⁴⁰¹ By

³⁹⁶ See Noy, *supra* note 47, at 18 (claiming that the discovery in Coloma revolutionized California and the course of world history).

³⁹⁷ *Contra* Bryceson, *supra* note 64, at 53 (arguing that the duration of contemporary gold rushes tends to be short-lived).

³⁹⁸ See CHILMAZA, *supra* note 284 (arguing that La Rinconada represents 55% of Puno's total mining production); Interview with Zegarra, *supra* note 287.

³⁹⁹ See Gold Silver Worlds, *Gold and silver prices over 200 years: long term gold and silver charts*, <http://goldsilverworlds.com/gold-and-silver-prices-over-200-years-long-term-gold-and-silver-charts/> (last visited Sep 12, 2019).

⁴⁰⁰ See Bryceson, *supra* note 64, at 51–52.

⁴⁰¹ GOODMAN, *supra* note 136, at 3.

contrast, in contemporary ASM, miners are ignored or vilified. The LSM bias perhaps best resembles the capitalist miners of California, who lobbied for *ad hoc* mining laws.⁴⁰²

Finally, and perhaps the most important difference between both gold rush stories is how miners organized themselves around the resource. While miners in California designed mining districts and voted for exclusive and enforceable rights over individual claims, in La Rinconada access to gold was mediated by both CMA and the contractors. I explore this difference in the next section.

D. An 'Artisanal Frontier Democracy'?

Frontiers in the twentieth century are important for economic and social reasons, particularly for disadvantaged populations and risk-takers.⁴⁰³ Extensive literature on frontiers covering numerous disciplines and approaches has developed.⁴⁰⁴ Rather than engaging with this literature, I employ Deborah Bryceson's provocative notion of 'artisanal frontier democracies' and apply it to La Rinconada. Bryceson argues that gold rushes (since the nineteenth century) encourage the evolution of artisanal frontier democracies, which she conceptualized as:

“[T]he realization of economic opportunity, class levelling, trust and cooperative interaction amongst manual laborers, arising from their occupational solidarity as migrant artisanal miners and, in some cases, their engagement in collective political protest against external agents seen to be standing in the way of the manifest destiny of their search for gold.”⁴⁰⁵

By Bryceson's account, three conditions define the existence of an artisanal frontier democracy.⁴⁰⁶ First, miners voluntarily enter and exit the mining site “on a relative egalitarian basis.”⁴⁰⁷ Second, there is a strong collective identity as artisanal miners in the process of acquiring skills, cooperating with each other and devising their own professional norms.⁴⁰⁸ Third, miners are self-employed and not subject to “waged, bonded or enslaved labor arrangements imposed by pre-existing property ownership and power structures.”⁴⁰⁹

I argue that La Rinconada cannot be framed as an artisanal frontier democracy for several reasons. First, even though miners can enter and exit the mining site

⁴⁰² See Bryceson, *supra* note 64, at 52; Mayer, *supra* note 61 at 641, 646, 653.

⁴⁰³ See ALSTON, *supra* note 128, at 2.

⁴⁰⁴ See Michael Eilenberg, *Frontier Constellations: Agrarian Expansion and Sovereignty on the Indonesian-Malaysian Border*, 41 THE JOURNAL OF PEASANT STUDIES, 161, <https://www.tandfonline.com/doi/full/10.1080/03066150.2014.885433> (last visited Sep 13, 2019).

⁴⁰⁵ Bryceson, *supra* note 64, at 54.

⁴⁰⁶ See *id.* at 32–33.

⁴⁰⁷ See *id.* at 33.

⁴⁰⁸ See *id.*

⁴⁰⁹ See *id.*

voluntarily and can shift from one contractor to another, their freedom of movement is frozen. In the context of few alternative economic opportunities in Puno, miners are actually not entirely free to leave the mining settlement. As a *cachorro* worker discussed, “I cannot leave. Being a miner is all I can do. I prefer staying here than going somewhere else.”⁴¹⁰ On the other hand, however, even though changing to contractor is theoretically possible, in actuality, it is impractical. According to a *cachorrero* worker, “[o]nce you start working for a contractor, you can always abandon him and leave your job, but you would lose the days of work you have accrued. If you go somewhere else, you start from zero.”⁴¹¹ Thus, in La Rinconada, miners’ mobility is illusory.

Second, while there is some sense of cooperation and solidarity among miners (i.e. seasoned miners teach novice miners), *cachorro* is typically an individual endeavor. Comradeship and mutual support are important, but *cachorro* work relies on individual expertise, hard work, and good luck. On the other hand, mining jobs are segmented and mobility is limited. As a *cachorrero* worker explains, “you start off as a *saquero* [transporting sacks of discarded rocks on their backs]. Then become a watchman or a drilling assistant. But in order to escalate you have to become like a sycophant to the supervisor or contractor.”⁴¹² Additionally, even though *cachorrero* workers have organized themselves around a guild and even won some political battles (i.e. in 2012 they pushed for the creation of a roster of ‘manual gatherers of gold’),⁴¹³ the guild does not work as a monolithic force.

Finally, and most importantly, *cachorreros* are not self-employed individuals. Instead, they are subject to exploitative labor arrangements imposed by pre-existing property ownership and power structures. As mentioned earlier, CMA and the contractors have been able to recruit and maintain the mass workforce by outsourcing and subcontracting without complying with basic employment laws (i.e. the right to paid labor, health insurance, compliance with EHS regulations, etc.) and capturing most of the mining rents. Indeed, they have “successfully evaded . . . state regulations by actively creating and taking strategic advantage of a ‘new’ type of labor: the unprotected informal worker.”⁴¹⁴

In turn, the informal miners do not have equal opportunities to discover and seize gold—proof of how flawed the lottery system is. The *supervisor* can determine arbitrarily where, when, and for how long can the miners extract ore in their *cachorro* day. In the absence of an adjudication mechanism, albeit informal, the miner has only two options: exit the contract by changing to another contractor

⁴¹⁰ Interview with anonymous *cachorro* worker #6, (June 26, 2019).

⁴¹¹ Interview with anonymous *cachorro* worker #3, *supra* note 278.

⁴¹² *Id.*

⁴¹³ MINISTRY OF ENERGY AND MINES, *supra* note 289.

⁴¹⁴ Cf. Olabisi Sherifat Yussuf, *A Theoretical Analysis of the Concept of Informal Economy and Informality in Developing Countries*, 20 EUR. J. SOC. SCI., 634 (2011).

or resort to informal self-help mechanisms.⁴¹⁵ However, the miner's income is not the result of his hard work or good luck solely, but of a complex chain of production and trading intermediaries. The intermediaries include the owners of stone or electric mortars, smelters, or gold buyers, in which miners hold little information and bargaining power. Hence, while "contemporary gold rushes for minerals remind us of those of the past, examining the finer details reveals them as somewhat different."⁴¹⁶ La Rinconada Gold Rush demonstrates that, unlike Bryccesson's suggestion, contemporary ASM frontiers in Peru are seldom artisanal democratic frontiers.

V. DE SOTO AND THE FORMALIZATION OF ASM

Why is the ASM sector so *persistently* informal? This question has puzzled ASM scholars for the past decade. The dominant explanation is that the state bureaucracy has locked out informal miners due to formalized barriers of entry, such as red tape and high fees.⁴¹⁷ De Soto best incarnates this 'legalistic' school of thought. In this section, I unpack and analyze his proposal to tackle informality in the Peruvian ASM sector.

A. *The Property Rights Approach*

The world-renown work of de Soto has been both influential and controversial.⁴¹⁸ He has devoted his career to showing how well-functioning property rights systems increase economic performance, promote investment, and reduce the transaction costs of credit.⁴¹⁹ In *Mystery*, he claims the poor in developing countries hold their assets in defective ways (i.e. customary, unrecorded, and unrecognized) because of legal closure.⁴²⁰ To solve this problem, he recommends making property rights widely available to all by integrating the

⁴¹⁵ See, e.g., Lisa Bernstein, *Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. OF LEGAL STUD. 115–157 (1992); ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 143–144 (1991).

⁴¹⁶ Lahiri-Dutt, *supra* note 165, at 371.

⁴¹⁷ See Boris Verbrugge, Beverly Besmanos & Abbi Buxton, *Artisanal and Small-Scale Mining: Protecting Those "Doing the Dirty Work,"* IIED BRIEFING PAPERS (2014), <https://pubs.iied.org/17262IIED/>; Duff & Downs, *supra* note 202, at 555.

⁴¹⁸ See generally Carol M. Rose, *Invasions, Innovation, Environment*, HERNANDO DE SOTO AND PROPERTY IN A MARKET ECONOMY 21–40 (Barros, Benjamin D. ed. 2010); Ray Bromley, *A New Path to Development? The Significance and Impact of Hernando De Soto's Ideas on Underdevelopment, Production, and Reproduction*, 66 ECON. GEOGRAPHY 346, 328–348 (1990).

⁴¹⁹ See Benito Arruñada & Nuno Garoupa, *The Choice of Titling System in Land*, 48 J. LAW & ECON. 709, 709–727 (2005).

⁴²⁰ DE SOTO, *supra* note 24.

existing informal social or customary norms—what he calls the ‘people’s law’—into one unified legal system.⁴²¹

“The systematization of the laws that underpin modern property rights systems was possible only because authorities allowed preexisting extralegal relationships among groups on the ground sometimes to supersede official laws. . . . By rooting formal property law in social contracts to which people were already committed, the governments of the West achieved the widespread popular acceptance required to overcome any resistance. The result was one legal system for property.”⁴²²

Over the past decades, de Soto and the influential Institute for Liberty and Democracy (ILD)⁴²³ have lobbied governments and politicians to extrapolate the template of *Mystery* to other social calamities, including the impoverishment of indigenous peoples in the Peruvian Amazon,⁴²⁴ the augmentation of coca leaves plantations in Peru and Colombia,⁴²⁵ the increasing social unrest around LSM projects,⁴²⁶ the sparking of the Arab Spring,⁴²⁷ and the war on terror.⁴²⁸

More recently, de Soto has condemned the Peruvian government’s 2012 formalization program on the following grounds: first, according to his own calculations, compliance with the program takes informal miners up to 1,260 days and costs more than \$87,000.⁴²⁹ This is why de Soto states, “the cost of accessing legality is too high. . . . The program is leaving without jobs a good portion of Peruvians.”⁴³⁰ Second, instead of promoting the creation of property rights, the

⁴²¹ Hernando De Soto, *Law and Prosperity Outside the West: A Few New Ideas about Fighting Poverty*, 29 in F. DEV. STUD. 355, 349–361.

⁴²² DE SOTO, *supra* note 24, at 173.

⁴²³ See Fernandes, *supra* note 29, at 216 (claiming that in 2007 the ILD was considered the second most influential thinktank worldwide).

⁴²⁴ See, e.g., Hernando de Soto, *The Mystery of Capital among the Indigenous Peoples of the Amazon* (2009), <https://vimeo.com/6582274>.

⁴²⁵ See Steven E. Hendrix, *Myths of Property Rights*, 12 ARIZ. J. INT’L & COMP. L. 199, 183–224 (1995).

⁴²⁶ See Hernando de Soto, *De Soto Propone Referéndum Para Resolver Conflicto de Conga* (2012), <https://rpp.pe/economia/economia/de-soto-propone-referendum-para-resolver-conflicto-de-conga-noticia-521010>.

⁴²⁷ See Hernando de Soto, *Opening Remarks: How Property Rights Even Stop Wars The Role of Property in Secure Societies: Panel 1: Land Titling, Inclusion, and the Role of Property Rights in Secure Societies*, 6 BRIGHAM-KANNER PROP. RTS. CONF. J. 7, 1–8 (2017).

⁴²⁸ See generally DE SOTO, *supra* note 24; Hernando de Soto, *Hernando de Soto: Gracias a la Titulación se Atrapó a Osama Bin Laden* (2011), <https://www.youtube.com/watch?v=cnsP-DP7DvE>; Hendrix, *supra* note 415, at 201, 206.

⁴²⁹ See ILD & Fenamarpe, *supra* note 11.

⁴³⁰ See Radio Programs of Peru (RPP), *Debate del Ministro del Ambiente, Manuel Pulgar-Vidal, con Hernando de Soto, Presidente del ILD*, ENFOQUE DE LOS SABADOS (2014), <https://www.youtube.com/watch?v=A-x8qX01i9o>.

program “refers to compliance with legal regulations regarding job quality.”⁴³¹ Third, the program does not enable informal miners to explore new mineral deposits, increase their production capacity, or place their products in international markets. Rather, “it intends that they shall remain small-scale or be absorbed as cheap labor force in LSM operations.”⁴³²

To showcase his ideas and promote a new, all-encompassing titling program, the ILD sided with different ASM organizations under a so-called *First Civic Commission to Formalize Informal Mining*.⁴³³ After “traveling throughout Peru to meet with the hundreds of thousands of miners,”⁴³⁴ in 2014, the Commission published a manifesto, demanding the following: (a) an immediate suspension of the 2012 formalization program, including raids and evictions to illegal miners,⁴³⁵ and (b) the crafting of new legal tools—drawn from miners’ own traditions and customs—to empower them⁴³⁶ (see Table 3).

⁴³¹ ILD, *supra* note 12; see also ILD & FENAMARPE, *supra* note 11; Correo, *Hernando De Soto: Formalización de Mineros es un Fracaso* (2014), <https://diariocorreo.pe/economia/hernando-de-soto-formalizacion-de-mineros-es-un-fracaso-546631/>.

⁴³² RPP, *supra* note 430; Gestion, *Hernando de Soto: “Solo Siete de 70,000 Mineros Reconocidos Han Logrado Formalizarse”* (2015), <https://gestion.pe/economia/hernando-soto-siete-70-000-mineros-reconocidos-han-logrado-formalizarse-75889>.

⁴³³ See Institute for Liberty and Democracy (ILD), *The Property Rights Project: Peruvian Miners*, <https://www.ild.org.pe/our-work/ild-projects/the-blockchain-bitcoin-property-rights-project>.

⁴³⁴ See *id.* (“At the request of thousands of Peruvian miners, in July 2014, we began traveling throughout Peru to meet with the hundreds of thousands of miners—who were fighting against what today is recognized as absurd government regulations by both informal and formal extractive industries”). According to a source in ILD, “we reached an agreement with ASM organizations based on broad principles and prepared a broad diagnose; it was not a specific regulatory proposal”. Interview with Marini, *supra* note 225.

⁴³⁵ See ILD & FENAMARPE, *supra* note 11 (“[Miners] need to have the persecutions stopped [there have already been 12 dead, 59 maimed and wounded, numerous facilities bombed, 56 leaders facing persecution] in order to have the time and peace to create more opportunities for all Peruvians”).

⁴³⁶ See ILD, *supra* note 12. Further, de Soto claims that the formalization process should be carried out in direct consultation with citizens (archived version of ILD, on file with author); see also RPP, *supra* note 430; Gestion, *supra* note 433.

Table 3. The Commission's Manifesto⁴³⁷

- ✓ To suspend the application of the government's formalization process
- ✓ To stop persecuting and harassing informal miners
- ✓ To put in place a new formalization process based on informal miners' traditions and customs
- ✓ To make available widely-recognized corporate structures
- ✓ To grant access to property rights to land. Property rights will grant informal miners access collateral-backed credit, contract securely, and reduce risks through limited-liability
- ✓ To allow them to participate in supply chains and market expansion
- ✓ To allow them to prospect other mineral deposits and compete in the market
- ✓ To reduce income tax withholding for small-scale miners from 4% to 1.5%⁴³⁸

According to the Commission, fulfilment of these steps will allow informal miners “to develop new projects, explore mineral deposits, and optimize and increase their production capacity, thereby creating more jobs.”⁴³⁹ Although the manifesto was finally abandoned and never put in place,⁴⁴⁰ de Soto still has a very active involvement in the ASM sector, participating as speaker in different conferences⁴⁴¹ and giving interviews on the subject.⁴⁴² Furthermore, in 2016 the University of Colorado Boulder Leeds Business School launched the *Hernando de Soto Capital Markets Program*, an academic initiative to showcase de Soto's ideas and train students in how to use property rights to “enact positive change through capitalist ideas.”⁴⁴³

⁴³⁷ In multiple interviews, de Soto promised to release an 800-page exhaustive report that unpacked his diagnose and proposal. This has not been published to date. See ILD *supra* note 11; RPP, *supra* note 430.

⁴³⁸ In 2013, the Peruvian Tax Agency increased the amount income tax that gold buyers were obliged to withhold in gold trading transactions (from 1.5% to 4%) and eliminated the exemption for operations below \$200. See Gestion, *La Sunat Aumenta de 1.5% a 4% Retención de Impuesto a la Renta a Venta de Oro* (2013), <https://gestion.pe/economia/mercados/sunat-aumenta-1-5-4-retencion-impuesto-renta-venta-oro-30332-noticia/>. These changes directly affected *acopiadores* in La Rinconada. But instead of promoting formality, as envisioned, they incentivized *acopiadores* to work off the books. Interview with anonymous *acopiador*, (June 26, 2019).

⁴³⁹ ILD & FENAMARPE, *supra* note 11.

⁴⁴⁰ In 2016, de Soto joined Keiko Fujimori's presidential campaign as technical advisor to lead the formalization strategy. However, in a 2019 interview de Soto admitted that his alliance with informal miners was abandoned upon Fujimori's defeat in the presidential elections. Hernando De Soto, *El Nuevo Sendero* (2019) (on file with author).

⁴⁴¹ For example, on June 6, 2019 de Soto spoke at the *Primera Convención Internacional y VIII Congreso de la Pequeña Minería y Minería Artesanal*, organized by a federation of informal miners in Arequipa.

⁴⁴² See, e.g., Hernando De Soto, *supra* note 431 (suggesting undertaking blockchain tools to combat illegal gold trade).

⁴⁴³ See University of Colorado Boulder, *Gifts establish new CU-Boulder capital markets program*, <https://www.colorado.edu/today/2016/05/17/gifts-establish-new-cu-boulder-capital-markets-program> (last visited Sep. 12, 2019).

In the remaining section of this Article, I dissect the conceptual assumptions and practical implications behind the Commission's manifesto.

B. *Demystifying de Soto and the Commission's Manifesto*

1. Political transaction costs

Although the Commission's manifesto does not address what type of property rights would be distributed as part of its purported titling program (i.e. land rights, mining concessions, or operation permits),⁴⁴⁴ it is likely they envisage both land and mining rights because they are both indispensable to conduct mining operations under the public ownership model of natural resources in Peru.⁴⁴⁵ Nonetheless, the political transaction costs associated with this distribution of property rights are problematic to implementation.

First, the Commission's plan would legalize the squatting of valuable resources, not wastelands.⁴⁴⁶ Unlike the perception of the Western United States during the nineteenth century, squatted mineral lands in Peru have a 'true owner,' which can be either formal (i.e. a mining concession held by an LSM company or a tract of land held by a private or public landowner) or informal (i.e. farmers, herders or fishermen that hold customary rights to a resource).⁴⁴⁷ The Commission does not address how to consider the redistribution from customary informal owners to the miners. Also, the Commission's proposal would entail the redistribution of property rights from formal users (LSM) to informal users (ASM), which would be tantamount to a government's takings of private property without compensation.⁴⁴⁸ The Commission, however, does not say how many companies or landowners need to be compensated or how much would it cost.⁴⁴⁹ When asked about the externalities produced by squatting, de Soto suggests

⁴⁴⁴ An ILD representative commented that their "proposal with ASM miners did not enter into the small details. One option is to group all miners into a big area and grant them a mining concession, though internally they can distribute smaller rights among them". Interview with Marini, *supra* note 225.

⁴⁴⁵ See Keith Barney, *Reassembling Informal Gold-Mining for Development and Sustainability? Opportunities and Limits to Formalisation in India, Indonesia and Laos*, BETWEEN THE PLOUGH AND THE PICK. INFORMAL, ARTISANAL AND SMALL-SCALE MINING IN THE CONTEMP. WORLD 339, 335–369 (Kuntala Lahiri-Dutt ed. 2018) (arguing that formalization is a process that entails three elements: a right to land title, a right to minerals and a right to mine).

⁴⁴⁶ See, e.g., Rose, *supra* note 419; James C. W. Ahiakpor, *Mystifying the Concept of Capital: Hernando de Soto's Misdiagnosis of the Hindrance to Economic Development in the Third World*, 13 INDEP. REV. 66, 57–79 (2008).

⁴⁴⁷ See, e.g., Otto, *supra* note 29, at 193; Christopher Woodruff, *Review of de Soto's "The Mystery of Capital"*, 39 J. ECON. LITERATURE 1218, 1215–1223 (2001).

⁴⁴⁸ See Gary D. Libecap, *Review of The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*, 61 J. ECON. HISTORY 1168, 1166–1168 (2001).

⁴⁴⁹ See, e.g., *id.* at 1168; Woodruff, *supra* note 447, at 1218.

compensating the affected parties or relocating miners, but does not provide an effective solution.⁴⁵⁰

Second, the Commission also assumes that formal LSM companies will surrender their mining rights peacefully, ignoring that powerful ‘true owners’ hold political and economic power to resist such invasions.⁴⁵¹ In actuality, many LSM companies have already refused sitting down at the negotiating table with the trespassers of their own property.⁴⁵² In fact, Peru’s largest LSM guild has publicly and repeatedly supported the government’s use of force to evict illegal miners.⁴⁵³ For all the above, granting property rights to squatters would encourage waves of population to resettle.⁴⁵⁴

2. Granting rigid property rights is impractical

Tackling informality using rigid, formal property right (i.e. fee-simple) would prove impractical. First, as evidenced by the two gold rushes studied in this Article, mining is a transient activity and has ‘hit and run’ character.⁴⁵⁵ Therefore, when a claim runs out or contains low-grades of ore, miners aspire to move quickly into a new area. The Commission’s proposal of rigid property rights seems disconnected with ASM and alters miners’ capacity to exit.⁴⁵⁶

Second, if each miner is granted title to a piece of the mineral deposit or a tract of land, the Commission fails to explain how 50,000 miners will work together, shoulder to shoulder, in dynamic and fluctuating mining shafts and tunnels. In this case, it seems that too many private property rights to the same resource have the potential to create a tragedy of the ‘anti-commons.’⁴⁵⁷ Unlike placer mining, where it may well be possible to allot plots of land to specific miners, underground

⁴⁵⁰ See RPP, *supra* note 430.

⁴⁵¹ See generally Otto, *supra* note 29, at 193; Rashmi Dyal-Chand, *Exporting the Ownership Society: A Case Study on the Economic Impact of Property Rights*, 39 RUTGERS L.J. 69, 59–110 (2007); GARY D. LIBECAP, *CONTRACTING FOR PROPERTY RIGHTS* 18 (Cambridge University Press, 2010).

⁴⁵² As mentioned before, one of the reasons why informal miners have not formalized is because they have not been able to sign an exploitation agreement with LSM companies, which evidences that LSM will not surrender their mining concessions that easily.

⁴⁵³ See Sociedad Nacional de Minería, Petróleo y Energía (SNMPE), *Minería Ilegal en el Perú Mueve Mas US\$900 Millones que no Pagan Impuestos ni Regalías* (2011), <http://www.snmpe.org.pe/prensa/notas-de-prensa/notas-de-prensa-de-la-snmpe/1276-snmpe-mineria-ilegal-en-peru-mueve-mas-de-us-900-millones-que-no-pagan-impuestos-y-regalias.html> (last visited Feb 13, 2019).

⁴⁵⁴ See, e.g., Rose, *supra* note 419; Winter King, *Illegal Settlements and the Impact of Titling Programs*, 44 HARV. INT’L L.J. 445, 433–472 (2003).

⁴⁵⁵ See Kuntala Lahiri-Dutt, *supra* note 165, at 9; Verbrugge, *supra* note 189, at 1032.

⁴⁵⁶ See, e.g., Verbrugge, *supra* note 189, at 1029, 1032; Verbrugge & Besmanos, *supra* note 167, at 135; Veiga & Beinhoff, *supra* note 194, at 51; see also Hilson et al., *supra* note 8, at 83 (claiming that mining titling should be a flexible and empowering process).

⁴⁵⁷ This refers to cases when “too many private owners can block access to a resource”. Michael Heller, *The Tragedy of the Anticommons: A Concise Introduction and Lexicon*, 76 MOD. L. REV. 10, 6–25 (2013).

mining requires an *ad hoc* approach. On the contrary, the proposal ignores the social consequences that may arise if a particular piece of the mineral deposit or a tract of land awarded to a miner does not yield the expected gold as there might not be enough gold for all to assure a livelihood.

Finally, the Commission assumes that informal miners would benefit from strong property rights. In actuality, as La Rinconada demonstrates, ASM miners benefit from their *own* informal arrangements, which are deemed fair, legitimate, and secure,⁴⁵⁸ and are more deeply rooted in local structures.⁴⁵⁹ As Verbrugge notes, “ASM operators may not necessarily be interested in acquiring a formal license, and may well be satisfied with access that is negotiated informally [O]perating without a license offers many gold miners greater mobility and flexibility.”⁴⁶⁰ Therefore, the Commission fails to explain what incentives miners have to apply for a mining title, especially if legality would bring about taxes, reduce their household income, and ban children from the mining operations.⁴⁶¹

3. Asymmetries of power

De Soto’s world-renown work offers a romantic and idealized version of the informal sector,⁴⁶² in what has been considered an “apologia of the little man in slums.”⁴⁶³ The poor squatter, he argues, is an ingenious and plucky entrepreneur struggling against the state bureaucracy and the indifference of local elites. As shown earlier, de Soto has now transplanted his famous apologia into the ASM arena, arguing that informal miners are starving and unemployed due to state’s

⁴⁵⁸ See, e.g., Geenen, *supra* note 107, at 329-330; see also Fisher, *supra* note 203; Jonathan Manders, *Sequencing Property Rights in the Context of Development: A Critique of the Writings of Hernando de Soto Note*, 37 CORNELL INT’L L.J. 198, 177–198 (2004) (“[De soto is] missing a crucial point; namely that it is far cheaper [figuring in transaction costs, the extent of political, legal, and economic change required] for the people to remain informal in some instances”); Otto, *supra* note 29, at 179 (arguing that the poor people may prefer informality due to social, economic and political reasons”); Putzel, et al., *supra* note 192, at 463 (“Informal collective institutions and social cohesion are often more important than formal documentation in maintaining possession and regulating use”).

⁴⁵⁹ See Verbrugge & Geenen, *supra* note 135, at 419.

⁴⁶⁰ Verbrugge, *supra* note 189, at 1029; see also Nancy Lee Peluso, *Entangled Territories in Small-Scale Gold Mining Frontiers: Labor Practices, Property, and Secrets in Indonesian Gold Country*, 101 WORLD DEV. 401, 400–416 (2018).

⁴⁶¹ See, e.g., Alan Gilbert, *On the Mystery of Capital and the Myths of Hernando de Soto: What Difference Does Legal Title Make?*, 24 INT’L DEV. PLAN. REV. 9, 1–19 (2002); Libecap, *supra* note 438, at 1166–67.

⁴⁶² See generally Gilbert, *supra* note 461, at 2; Carmen G. Gonzalez, *Squatters, Pirates, and Entrepreneurs: Is Informality the Solution to the Urban Housing Crisis?*, 40 UNIV. MIAMI INTER-AM. L. REV. 244, 239–259 (2009); Bromley, *supra* note 419, at 339 (“[De Soto] has idealized his informal sector, creating an image of plucky entrepreneurs desperately struggling to make a living in the face of stifling governmental regulation and the horrific mismanagement of public enterprises, and he has depicted the informal sector as the real heart and human resource of the Nation”).

⁴⁶³ Francisco Panizza, *Neopopulism and Its Limits in Collor’s Brazil*, 19 BULL. LAT. AM. RES. 188, 177–192 (2000).

exclusionary policies,⁴⁶⁴ in what can be catalogized an “apologia of the little man in the *shafts*.” According to him, “the problem is not that Peruvian [miners] are bad [people]; the problem is bad regulation.”⁴⁶⁵

Yet, as the La Rinconada case illustrates, not all informal miners conform to the *Mystery* profile of the poor, ingenious, and plucky entrepreneur. The gold rush years and the resource windfall associated to it have reconfigured power relations in ASM. Consequently, the Commission’s envisaged property rights system overlooks that titling programs can produce security for some, but insecurity for others.⁴⁶⁶ The ASM literature further evidences how better-positioned miners have influenced or captured government officials,⁴⁶⁷ whereas vulnerable and marginalized miners may not even afford to pay the fees to access title.⁴⁶⁸ In this vein, the Commission *does not* phrase out how the distribution of property rights will prevent the exclusion of the mass workforce or neutralize the political muscle of the entrepreneurial miner.⁴⁶⁹

⁴⁶⁴ RPP, *supra* note 430.

⁴⁶⁵ Hernando De Soto, *¿Cuál es la Propuesta de Hernando De Soto Para Formalizar la Minería? (Free Translation)* (2016), <https://gestion.pe/peru/politica/propuesta-hermano-soto-formalizar-mineria-120192>; see also HERNANDO DE SOTO, *THE OTHER PATH: THE INVISIBLE REVOLUTION IN THE THIRD WORLD* 11 (c1989) (“[The migrants’] illegality was not antisocial in intent, like trafficking in drugs, theft, or abduction, but was designed to achieve such essentially legal objectives as building a house, providing a service, or developing a business.”).

⁴⁶⁶ See Celestine Nyamu Musembi, *De Soto and Land Relations in Rural Africa: Breathing Life into Dead Theories about Property Rights*, 28 *THIRD WORLD Q.* 1470, 1457–1478 (2007); see also Lan Cao, *Informal Institutions and Property Rights Comparative Property Rights: Panel 4: Culture and Property*, 1 *BRIGHAM-KANNER PROP. RTS. CONF. J.* 264, 263–279 (2012).

⁴⁶⁷ See, e.g., Salo et al., *supra* note 192, at 1064; Verbrugge and Besmanos, *supra* note 167, at 135; Putzel et al., *supra* note 192, at 464; Salman, *supra* note 205, at 1130 (claiming that in Peru and Bolivia, well organized miners have lobbied in favor of their own agenda before politicians); Hilson, et al., *supra* note 162, at 266 (arguing that in Niger miners admit to bribe local officials to use explosives and mercury); Boris Verbrugge, Jeroen Cuvelier & Steven Van Bockstael, *Min(d)ing the Land: The Relationship Between Artisanal and Small-Scale Mining and Surface Land Arrangements in the Southern Philippines, Eastern DRC and Liberia*, 37 *J. RURAL STUD.* 52, 50–60 (2015); Verbrugge and Geenen, *supra* note 130, at 419.

⁴⁶⁸ See, e.g., Verbrugge, *supra* note 189, at 1030; Putzel et al., *supra* note 192, at 464; INTERGOV’L F. ON MINING, MINERALS, METALS AND SUSTAINABLE DEV. (IGF), *supra* note 6, at 27; Hilson, et al., *supra* note 162, at 265 (pointing out that in Ghana, Uganda and Zambia informal miners remain barred from the legal sector because of the costs associated with the permitting process); Hilson, et al., *supra* note 7, at 87 (arguing that in Niger formalization costs up to nine times a miner’s yearly income); Barney, *supra* note 445, at 340 (noting formalization’s unintended exclusionary consequences).

⁴⁶⁹ See Samuel J. Spiegel, *Shifting Formalization Policies and Recentralizing Power: The Case of Zimbabwe’s Artisanal Gold Mining Sector*, 28 *SOC’Y & NAT. RESOURCES* 544, 543–558 (2015).

Women engaged in ASM activities are vulnerable,⁴⁷⁰ as they do not hold decision-making positions and almost never work underground.⁴⁷¹ In fact, women are under-represented in mining communities because women do not have access to mineral deposits themselves.⁴⁷² The sexualization of work relations due to cultural and social taboos leads to sex-segregation and gender-typing of mine jobs.⁴⁷³ The Commission's manifesto makes women engaged in ASM completely invisible. In sum, by overlooking existing power asymmetries in the ASM sector, the Commission's program would legalize potentially exploitative (labor) arrangements in detriment of vulnerable groups.

4. Discovering (and codifying) the 'people's law' is unrealistic

De Soto is concerned with legitimacy and representativeness. His book's recipe is to turn dead capital into living capital demands, on the one hand, discovering the 'real' social contract underlying in the extralegal world. On the other, de Soto posits "designing 'bridges' to connect, harmonize and integrate those [informal] rules with the formal legal system."⁴⁷⁴ However, the extrapolation of this overall recommendation is problematic.

First, discovering the 'people's law' is expensive, time-consuming, risks falling short,⁴⁷⁵ and faces enormous difficulties on the ground.⁴⁷⁶ Additionally, the Commission does not flesh out how the new titling program will surmount the existing dysfunction in governance that characterizes developing countries (i.e. remote, underfunded agencies, lacking inter-agency coordination and

⁴⁷⁰ See generally Bernadette Atuahene, *Legal Title to Land as an Intervention against Urban Poverty in Developing Nations*, 36 GEO. WASH. INT'L L. REV. 1127, 1109–1180 (2004) ("Non-gender-sensitive titling procedures can especially marginalize female-headed households and unmarried women in consensual unions"); Hendrix, *supra* note 426, at 214; Fernandes, *supra* note 29, at 231; Cao, *supra* note 466, at 273; Musembi, *supra* note 466, at 1470.

⁴⁷¹ See Yakovleva, *supra* note 175, at 30.

⁴⁷² See Fisher, *supra* note 203, at 741; *Contra* Cortés-McPherson, *supra* note 163 at 1 (describing the story of Gregoria, or the "Queen of Gold", in Madre de Dios, Peru, who in decades has appropriated more than 42,000 hectares of mining land and machinery worth millions).

⁴⁷³ See Gavin Bridge, *Contested Terrain: Mining and the Environment*, 29 ANN. REV. OF ENV. & RESOURCES 205–259 (2004).

⁴⁷⁴ Janine Ubink, *Legalising Land Rights in Africa, Asia and Latin America: An Introduction* LEGALISING LAND RIGHTS. LOCAL PRACTICES, STATE RESPONSES AND TENURE SECURITY IN AFRICA, ASIA AND LATIN AMERICA 10, 7–32 (Janine M. Ubink, Andre' J. Hoekema, and Willem J. Assies Ed. 2009).

⁴⁷⁵ For example, de Soto assumes that the Lode Law was attuned with the Californian mining traditions, but the fact that few miners applied for fee-simple proves him wrong. On the other hand, mining traditions in La Rinconada are quite different from that of Madre de Dios, which is only 70 miles away. What is more, the original 2012 formalization program ignored *cachorro* and *pallaqueo* activities and an amendment was necessary after protests in La Rinconada.

⁴⁷⁶ See, e.g., Ubink, *supra* note 474, at 10.

personnel).⁴⁷⁷ Second, even if we accept that codifying informal or customary rules in a “written legal canon accepted by the State”⁴⁷⁸ was possible, it may alter pre-existing social order and leadership structures.⁴⁷⁹ “Formalization of property rights is . . . not neutral with respect to existing rights; it does and will transform and alter both the nature of the rights and the social relations and identities that underlie them.”⁴⁸⁰ In this line, the Commission fails to address how his program differentiates from assimilation policies of the past.⁴⁸¹

Third, the codification of informal laws would result in hundreds of idiosyncratic mining codes across Peru’s twenty-five regions. Ironically, this possibility contradicts one of *Mystery*’s foremost points: that the fragmentation of property in customary systems renders assets rigid, non-standard, and non-fungible.⁴⁸² Thus, the codification of the ‘people’s law’ into multiple legal systems would bring about anarchy⁴⁸³ because, in de Soto’s view, the coexistence of multiple legal forms (i.e. legal pluralism) is simply not efficient.⁴⁸⁴

⁴⁷⁷ See, e.g., Siegel and Veiga, *supra* note 8, at 52 (arguing that in many ASM nations there is just one public servant managing thousands of square miles of land containing thousands of people to formalize); see, e.g., DEFENSORIA DEL PUEBLO, *supra* note 278, at 255 (claiming that subnational governments in Peru destined less than one percent of their total budget to the formalization of ASM); Zvarivadza & Nhleko, *supra* note 213, at 82; see, e.g., O’Faircheallaigh and Corbett, *supra* note 178, at 966; Fisher, *supra* note 203, at 753 (claiming that in Tanzania, few miner officers have no capacity to handle miners’ demands); Hilson et al., *supra* note 7, at 86 (claiming that in Niger the authorities lack the capacity to manage the 450,000 people engaged in ASM); Agatha Siwale & Twivwe Siwale, *Has the Promise of Formalizing Artisanal and Small-Scale Mining (ASM) Failed? The Case of Zambia*, 4 EXTRACTIVE INDUSTRIES & SOC’Y 198, 191–201 (2017) (describing that in Zambia government officials do not have the resources to travel to the mining sites).

⁴⁷⁸ See generally Putzel et al., *supra* note 192, at 467.

⁴⁷⁹ Informal miners in Niger share a strong sense of belonging and collective identity that the state does not take into account. See Hilson, et al., *supra* note 162, at 263. In Ghana, ASM operators are comfortable with simple customary rules and are reluctant to collaborate with state bureaucracy. See O’Faircheallaigh & Corbett, *supra* note 178, at 964. In Bolivia, miners’ *cooperativas* have developed a discourse around the concept of “being able to work undisturbed from government control.” See Salman, *supra* note 200 at 1134–1135; see also Hendrix, *supra* note 415, at 190; Brian Z. Tamanaha, *The Rule of Law and Legal Pluralism in Development*, 3 HAGUE J. ON RULE OF L. 11, 1–17 (2011).

⁴⁸⁰ Cao, *supra* note 467, at 274.

⁴⁸¹ See generally Otto, *supra* note 29, at 183 (“In essence, this perspective is not very different from the late colonial policies of ‘integration’ and the post-colonial legislative policies informed by the principles of unification, modernization and liberalization”); Musembi, *supra* note 456, at 1462.

⁴⁸² See DE SOTO, *supra* note 24, at 47.

⁴⁸³ See Musembi, *supra* note 455, at 1460 (“According to [de Soto], the absence of formal legality means anarchy. The existence of plural informal legal orders [legal pluralism] is equated with extra-legality, meaning being outside the law. De Soto therefore uses ‘legality’ when he really means formal legality”); Hernando de Soto, *Robin Hood y los Liliputienses. Por que Tanta Cortesia con el Movadef*, DIARIO EL COMERCIO, November 11, 2012, at A-24.

⁴⁸⁴ See generally Musembi, *supra* note 455, at 1462; David Lea, *Tully and de Soto on Uniformity and Diversity*, 19 JOURNAL OF APPLIED PHILOSOPHY 60, 55–68 (2002); Tamanaha, *supra* note 479, at 11; Patrick Wieland & Thomas F. Thornton, *Listening to (Some) Barking Dogs: Assessing Hernando de Soto’s Recipe for the Development of the Amazon Natives of Peru*, 30 HARV. J. RACIAL & ETHNIC JUST. 131–150 (2014).

Fourth, from a human rights perspective, codifying traditions and customs that overtly contradict Peru's international human rights obligations concerning children's rights and exploitative employment agreements is particularly troublesome.⁴⁸⁵ For children, the cost of working in the mines is too high: absent from school, poor school performance, and exposure to accidents and health problems. Thus, working in the mines is far from "a standard of living adequate for the child's physical, mental, spiritual, moral and social development."⁴⁸⁶

Finally, the Commission ignores that once formal property rights are in place, they are hard to maintain and enforce.⁴⁸⁷ Indeed, they require expensive and technical public administrative systems, which are sometimes prohibitive for developing countries.⁴⁸⁸ Many governments have already failed to implement proper policing and follow-up strategies of newly formalized actors.⁴⁸⁹

5. Property does not secure access to credit

The idea that better property rights improves access to collateral—what Besley et al. refer to as the 'de Soto effect'⁴⁹⁰—is perhaps one of the seminal arguments of *Mystery*. Yet, critics have long pointed out that, in the land context, the 'de Soto effect' is narrow.⁴⁹¹ Although the correlation between title and credit in the ASM sector requires more empirical evidence and is beyond the scope of this Article, Hilson et. al. comment that in Ghana, banks have decided not to provide loans to ASM miners because "they do not have the geological and technical

⁴⁸⁵ See, e.g., International Labour Organization (ILO), *Forced Labour Convention*, C29 (June 28, 1930), <https://www.refworld.org/docid/3ddb621f2a.html>; International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 U.N.T.S. 171, <https://www.refworld.org/docid/3ae6b3aa0.html> (last visited Feb. 11, 2019).

⁴⁸⁶ UN General Assembly, *Convention on the Rights of the Child*, 20 November 1989, United Nations, Treaty Series, vol. 1577, p. 3, <https://www.refworld.org/docid/3ae6b38f0.html> [last visited 4 November 2019].

⁴⁸⁷ See ALSTON, *supra* note 128, at 4.

⁴⁸⁸ See Daniel Fitzpatrick, *Evolution and Chaos in Property Right Systems: The Third World Tragedy of Contested Access Essay*, 115 YALE L.J. 1039, 996–1049 (2005); see also Hendrix, *supra* note 415, at 210; Geoffrey Payne, Alain Durand-Lasserve & Carole Rakodi, *The Limits of Land Titling and Home Ownership*, INT'L INST. ENV. DEV. 457, 443–462 (2009).

⁴⁸⁹ See Putzel, et al., *supra* note 192, at 463; Siwale & Siwale, *supra* note 478, at 194.

⁴⁹⁰ See Timothy J. Besley, Konrad B. Burchardi & Maitreesh Ghatak, *Incentives and the de Soto Effect*, 127 Q. J. ECON. 238, 237–282 (2012).

⁴⁹¹ See generally Gilbert, *supra* note 461 (arguing that legal title makes little difference or no difference at all in the poor accessing private bank loans); Sebastian Galiani & Ernesto Schargrotsky, *Property Rights for the Poor: Effects of Land Titling*, 94 J. PUB. ECON. 711, 700–729 (2010) ("We only find a modest but positive effect of land titling on access to mortgage credit, and no impact on access to other forms of credit"); Fernandes, *supra* note 29, at 224 (arguing that banks rarely give credit to the poor); Besley, et al., *supra* note 479, at 238; Woodruff, *supra* note 447, at 1219; Timothy Mitchell, *The Work of Economics: How a Discipline Makes its World*, 46 EUROPEAN JOURNAL OF SOCIOLOGY / ARCHIVES EUROPÉENNES DE SOCIOLOGIE / EUROPÄISCHES ARCHIV FÜR SOZIOLOGIE 300, 297–320 (2005); Ahiakpor, *supra* note 447, at 63; Ezra Rosser, *Immigrant Remittances*, 41 CONN. L. REV. 47, 1–62 (2008); PAYNE, ET AL. *supra* note 489, at 455; Musembi, *supra* note 467, at 1465.

expertise in-house.”⁴⁹² As far as Peru goes, I consulted two leading banks in Lima whether they provided loans to ASM miners—the response was negative.⁴⁹³

6. Formalization is only one dimension

De Soto’s scholarship maintains that the absence of property rights favors the plundering and depletion of natural resources.⁴⁹⁴ Without property rights, informal owners tend to ‘strip-mine’ the land by maximizing its short-term production over its long-term value.⁴⁹⁵ This is why, he contends, formalization would create the right incentives for informal miners to invest in their land and preserve the environment.⁴⁹⁶

Yet, de Soto regards formalization as an end-result, rather than the initial step in a long transition process from the extralegal to the legal.⁴⁹⁷ He assumes that title itself will internalize miners’ externalities, including the environmental cost of pouring mining tailings into rivers and invading national parks, rainforests, indigenous lands, or archaeological sites.⁴⁹⁸ Furthermore, many of the informal settlements are located in dangerous locations (floodplains, steep slopes) or in environmental sensitive areas, rendering the formalization process much more complex, risky⁴⁹⁹ and perhaps impracticable.

Scholars agree that, “formalization is a multidimensional and multi-actor process that requires the integration of policies, and strong coordination between institutions and other stakeholders.”⁵⁰⁰ Either titling or legalization is thus just one dimension of a problem that requires other ‘enabling conditions’⁵⁰¹ and “a broad set of complementary reforms.”⁵⁰² Therefore, in the absence of aforementioned conditions and reforms, formalization titles “are but a hollow gift that cynical governments can hand out as it happens to suit their urgent political needs”.⁵⁰³

One of the main challenges in addressing informality in ASM is the fact that, as an “employment magnet,” it provides economic support to significant numbers

⁴⁹² Hilson et al., *supra* note 7, at 88.

⁴⁹³ Correspondence with representatives of Banco de Credito del Peru and Interbank (on file with author) (May, 2019).

⁴⁹⁴ See Hernando de Soto, *The Amazon is Not Avatar*, in OECD DEVELOPMENT CO-OPERATION REPORT 2011, 86, 79-90, (2011).

⁴⁹⁵ See Hernando de Soto, *Dead Capital and the Poor*, 21 SAIS REVIEW 33, 13–43 (2001).

⁴⁹⁶ See *id.* at 86.

⁴⁹⁷ See, e.g., Daniel W. Bromley, *Formalising Property Relations in the Developing World: The Wrong Prescription for the Wrong Malady*, 26 LAND USE POL’Y 21, 20–27 (2009); IGF *supra* note 6, at 49; Siegel & Veiga, *supra* note 8, at 53.

⁴⁹⁸ See RPP, *supra* note 430.

⁴⁹⁹ See generally Rose, *supra* note 419; King, *supra* note 454, at 440–441.

⁵⁰⁰ SPIEGEL, *supra* note 182, at 13.

⁵⁰¹ See Hilson et al., *supra* note 191, at 260 (citing the United Nations Environmental Program); Siwale & Siwale, *supra* note 466, at 123-131.

⁵⁰² Woodruff, *supra* note 447, at 1223.

⁵⁰³ Bromley, *supra* note 497, at 22.

of people in otherwise economically depressed areas, through poor and informal labor agreements. A formalization wave could result in fewer entrants to ASM, which in turn, could spark social turmoil and instability in light of massive layoffs. As La Rinconada case study shows, the mining rents that the mining settlement produces continues to attract new entrants (the population shifted from 10,000 in 2000 to 70,000 in 2018), but there are simply too many people exploiting a limited resource and no rules limiting new entrants.⁵⁰⁴ Unlike the CGR, in La Rinconada miners did not devise a ‘sufficiency’ principle that would limit access of new entrants when it becomes impractical to exploit the deposit.⁵⁰⁵

Another important policy concern is environmental protection. With regard to mercury exposure in particular, ASM miners do not have technical or financial assistance to access better technology and upgrade their operational standards. Ironically, simple and non-expensive technological adjustments, such as using a retort during the burning of a mercury-gold amalgam, can positively impact not only the environment, but also human health. Women and children in particular are the main victims of the lack of information concerning mercury use,⁵⁰⁶ which further reflects the asymmetries of power in the sector.⁵⁰⁷ Yet, when interviewers confront de Soto with the environmental impacts of informal mining, he responds ambiguously that “formalization is a political act, not a technical one.”⁵⁰⁸

7. ASM is not LSM

Perhaps one of the Commission’s most striking proposals is its call for the expansion of ASM activities from local to global markets.⁵⁰⁹ Since only 1.2% of Peru’s territory is currently used for mining activities, the Commission argues that informal miners should be entitled to compete with LSM companies in the remaining 98.8%.⁵¹⁰ Even if we wrongly assume that 98.8% of Peruvian territory is available for mining prospecting (mining is not allowed in national parks, archaeological sites, primary forests, and urban peripheries, or in areas with pre-existing mining concessions), to consider that the ASM sector can compete with LSM companies is irresponsible.

⁵⁰⁴ Cf. H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 53 *BLTN MATHCAL BIO.* 132 (1991) (“This is why fishermen are not wealthy, despite the fact that the fishery resources of the sea are the richest and most indestructible available to man. By and large, the only fisherman who becomes rich is one who makes a lucky catch or one who participates in a fishery that is put under a form of social control that turns the open resource into property rights”).

⁵⁰⁵ Cf. SCHORR, *supra* note 69, at 16-18.

⁵⁰⁶ See Veiga & Beinhoff, *supra* note 194, at 49.

⁵⁰⁷ See Yakovleva, *supra* note 175, at 30; Verburgge, *supra* note 189, at 1026.

⁵⁰⁸ RPP, *supra* note 430.

⁵⁰⁹ *Id.*; ILD & FENAMARPE, *supra* note 10 (“[For miners the] aim is to shorten the distance between Peru and North America, where they drill a thousand wells to Latin America’s one, and therefore their wealth is real and not a distant potential”).

⁵¹⁰ See *id.*; ILD, *supra* note 11.

On one hand, without technical support, environmental stewardship, and finance, the possibility of converting informal miners into LSM prospectors overnight is a populist move that could aggravate Peru's delicate environment. On the other hand, LSM companies comply with stringent licensing and environmental standards, taxes, royalties, and employment obligations that go far beyond the existing requirements for ASM. For example, LSM companies must file an exhaustive EIA, which includes public participation engagement, and a mining closure plan that must back up all remediation activities with finance throughout the lifetime of the mine. By contrast, the ASM sector is exempted from said obligations precisely in light of its alleged low impact and rudimentary processes.

To be clear, ASM is not barred from upgrading into LSM operations for cultural reasons, racial backlash, or discriminatory laws, as the Commission implies. What stops ASM from becoming LSM is the fulfilment of minimum legal requisites and standards, which require *inter alia*: filing a mining claim, obtaining surface rights, securing environmental permits, implementing EHS obligations, and respecting employment laws.⁵¹¹ Finally, it seems contradictory that while de Soto advocates for more economic opportunities for the ASM sector, at the same time he demands tax benefits for informal miners.

8. The ASM sector is unlike any other informal sector

Since the 1980s, de Soto's ideas on land titling have been implemented by both developing countries and multilateral banks to foster the formalization of rural and urban lands.⁵¹² His titling recipe has also been considered in other sectors, such as public transportation, or street vending.⁵¹³ Nonetheless, the ASM sector is much less manageable than any other of those informal settings. What makes it so unique? Unlike other sectors, ASM: (a) is conducted in the margins of the state (that is, rural and remote areas with little or no state presence);⁵¹⁴ (b) is highly mobile and transient (miners tend to reject fee-simple rights and opt for more flexible arrangements according to mining's hit and run character); (c) involves highly risky and uncertain livelihoods (miners can make fortunes or go broke overnight); (d) encompasses the discovery of finite resources such as gold (wealth

⁵¹¹ See generally SOCIEDAD NACIONAL DE MINERIA, PETROLEO Y ENERGIA (SNMPE), *Peru Mining Investment Handbook* (2017), <http://www.snmpe.org.pe/informes-y-publicaciones/manuales-de-inversion/manuales-de-inversion-del-sector-minero/2935-manual-de-inversion-en-ingles.html>.

⁵¹² Eduardo M. Peñalver, *The Cost of Regulation or the Consequences of Poverty? Progressive lessons from de Soto*, D. Benjamin Barros (Ed) *Hernando de Soto and Property in the Market Economy*, Ashgate, 2010 at 7; On de Soto and multilateral organizations See, e.g. Edesio Fernandes, *Una lectura critica a Hernando de Soto*, in IRREGULAR 216 (Clara Eugenia Salazar ed., 2012).

⁵¹³ See Dyal-Chand, *supra* note 451.

⁵¹⁴ See, e.g., Damonte, *supra* note 236.

is not produced but extracted); and (e) poses serious environmental and public health externalities.

As the World Bank puts it, “Few other sectors have so many diverse points of entry—income generation, health, governance, corruption and transparency, institution building, natural resources management, displacement and migration, and conflict mitigation—into the policy spectrum.”⁵¹⁵ This is why the ASM sector entails an “exceptionally unique and arguably more complex ‘brand’ of informality.”⁵¹⁶

Though important, conventional property rights are not enough to tackle persistent informality in the ASM sector. Scholars must look elsewhere for solutions to this ever-growing sector.

VI. CONCLUSION

Classic property rights scholarship resorts to storytelling to explain the origins of property.⁵¹⁷ Professor Carol Rose has long pointed out that these stories are, in fact, “modern fables” or “noble lies” rather than exhaustive historical accounts.⁵¹⁸ Hernando de Soto’s account on the California Gold Rush and his depiction of the “little man in the shafts” in the ASM sector can be framed as another “smooth tale.” Widely acknowledged as a brilliant storyteller⁵¹⁹—according to Nobel laureate Mario Vargas Llosa, de Soto is a better storyteller than many novelists⁵²⁰—he has cherry-picked the passing of the U.S. federal mining laws that followed the CGR to advocate for a bottom-up formal property reform in Peru. Nonetheless, the legalization of California’s mining codes responded to a specific time and space and does not provide a template for the expanding ASM sector.

Formal property rights are key for economic development, but are not enough to bring informal miners from the extralegal to the legal sector.⁵²¹ Formalization strategies that use property rights to tackle ASM represent a false panacea because they will not automatically alleviate the perils associated with this sector nor

⁵¹⁵ WORLD BANK, *The Millennium Development Goals and Small-Scale Mining: A Conference for Forging Partnerships for Action. Workshop Report 10* (2015).

⁵¹⁶ Hilson et al., *supra* note 7 at 82.

⁵¹⁷ See Carol M. Rose, *Property as Storytelling: Perspectives from Game Theory, Narrative Theory, Feminist Theory*, 2 YALE J.L. & HUMAN. 37-39, 37-58 (1990).

⁵¹⁸ See *id.* at 52-53.

⁵¹⁹ See Otto, *supra* note 29, at 180.

⁵²⁰ HERNANDO DE SOTO, *supra* note 466. Forward by Mario Vargas Llosa.

⁵²¹ See, e.g., Hendrix, *supra* note 426, at 185 (“[T]itling may have positive economic benefits contingent upon other conditions also being met”); Woodruff, *supra* note 448, at 1222-23 (“[L]and titling by itself is not likely to have much effect. Titling must be followed by a series of politically challenging steps”); Manders, *supra* note 459, at 180; The Economist, *Of Property and Poverty. Land Titling is a Good Thing, but it Does Not in Itself Create Capitalism* (2006), <https://www.economist.com/leaders/2006/08/24/of-property-and-poverty>; Hendrix, *supra* note 426, at 223 (“Land titling is not a panacea. It is likely to impact each country differently, depending upon custom, geography, resources, law, and history”); Dyal-Chand, *supra* note 452, at 99.

provide miners with capital, technology and environmental stewardship to upgrade their operations and internalize externalities. By overlooking the existing socio-economic divergences and power asymmetries in ASM, as well as indispensable ancillary reforms, titling programs risk becoming cynical government gifts or end up legalizing an informal right to pollute. Worse still, the application of blanket, all-encompassing solutions can aggravate existing inequalities or create additional entry barriers.⁵²² In a context in which miners benefit from their own informal arrangements, which are considered fair, legitimate, and secure, operating outside legal frameworks is the natural way of conducting their businesses. Governments need to reconsider the incentives their formalization programs offer, in light of miner's demand for mobility and flexibility. In this article, I have used an example drawn from contemporary ASM in Peru to reveal the difficulties in discovering and codifying the "people's law," and thus bringing thousands of miners into legality.⁵²³ La Rinconada gold rush village is a peculiar but graphic example of how contemporary forms of ASM hide vicious cycles of poverty, exclusion, and disinformation. While the massive working force withstands the harshness of a mining livelihood in the hope, real or imaginary, to strike it rich, the emerging opportunistic entrepreneur uses his power and agency to bypass his environmental and labor obligations, capturing most of the mining rents. Unlike the normative image of a frontier democracy, hard work and good luck play little role for the massive working force. In the margins of the state, either by incompetence or unwillingness, the Peruvian State is the silent accomplice of exploitative employment arrangements and human abuse.⁵²⁴ As a *cachorro* miner frankly puts it, "my job has no dignity."⁵²⁵

⁵²² See, e.g., Putzel et al., *supra* note 186, at 464; Clausen, et al. *supra* note 198, at 21; Natalia Ryzhova & Elena Lee, *Gold, the State and Market Actors: Legal vs. Illegal Practices of Interaction*, 15 INNER ASIA 15, 5–32 (2013).

⁵²³ See Valdes *supra* note 221, at 104 (arguing that mining informality has no short term solution).

⁵²⁴ See *id.*, at 7.

⁵²⁵ Interview with anonymous *cachorro* worker #3, *supra* note 289.