Solidaridad

REALITIES AND EXPECTATIONS OF ASM IN PERU

A qualitative analysis of the Artisanal and Small-scale Mining sector in Peru centered on the voices and perspectives of miners and stakeholders

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Solidaridad is an international civil society organization with over 50 years of global experience that cooperates with value chain actors to make them more resilient, sustainable and inclusive.

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LIST OF ABBREVIATIONS

DGFM	Dirección General de Formalización Minera, within Ministry of Energy and Mining (MINEM) (General Directorate of Mining Formalization)
DREM	Dirección Regional de Energía y Minas (Regional Directorate of Energy and Mines)
REINFO	Registro Integral de Formalización Minera (Comprehensive Registry of Mining Formalization)
IGAFOM	Instrumento de Gestión Ambiental y Fiscalización para la Formalización de Actividades de Pequeña Minería y Minería Artesanal (Instrument for Environmental Management and Inspection for the Formalization of Artisanal and Small-Scale Mining Activities)
ASM	Artisanal and small-scale mining
MSM	Medium-scale mining
LSM	Large-scale mining

LIST OF DEFINITIONS

ASM (Artisanal and small-scale mining) – Mining activity characterized by relatively small scale and labor-intensive, low-capital forms of production and processing. This report uses "ASM" in a general, conceptual manner; official definitions from the Government of Peru are provided below:

Small-scale mining Officially defined in Peru with concession size up to 2,000 hecatres and production capacity up to 350 metric tons per day, or up to 3,000 cubic meters per day in the case of gold placer mining.

Artisanal mining Officially defined in Peru with concession size up to 1,000 hectares and productive capacity up to 25 metric tons per day, or up to 200 cubic meters per day in the case of gold placer mining.

Informal mining ASM that is carried out without formal approvals and permits, but that has the theoretical potential to become formalized – i.e. is not conducted in protected areas, is not linked to criminal enterprises, etc.

Informal mining Officially defined in Peru as mining activity in areas where mining is not prohibited, carried out by a person or entity registered in the REINFO and complying with the administrative norms, and meeting the conditions of article 91 of the Texto Único Ordenado de la Ley General de Minería, aprobado por el Decreto Supremo No 014-92-EM.
Decreto Legislativo 1336, Artículo 2.2

Illegal mining ASM that is conducted in prohibited or protected areas, has links to criminal enterprises, has rejected and avoided pathways to formalization, etc.

Illegal mining Officially defined in Peru as mining activity carried out by a person or entity without authorization by the competent agency or not registered in the formalization process created by the State. Notwithstanding the prior, all mining activity carried out in prohibited zones is considered illegal.
Decreto Legislativo 1451, Artículo 34

TABLE OF CONTENTS

1. INTRODUCTION

Mining is a key sector in Peru's economy, and Peru is a key producer for the global mineral and metal supply. Peru ranks in the top ten globally for both production and reserves of gold, copper, silver, zinc, lead, tin, and molybdenum. Mining contributes approximately 10% of Peru's GDP, 60% of export earnings, and 23% of foreign direct investment (FDI).[1]

While most attention focuses on the large-scale mining (LSM) and medium-scale mining (MSM) sectors, mining activity in Peru is diverse and includes large amounts of artisanal and small-scale mining (ASM). Most ASM activity focuses on gold, producing an estimated 20% of Peru's total gold output. The number of people working in Peru's ASM sector is difficult to determine. Published estimates vary widely, with calculations as low as 52,258[2] and 70,000[3], or ranging from 95,000 to 150,000[4], while many guess there could be up to 500,000 artisanal miners.[5]

The macroeconomic importance of LSM and MSM are undoubtedly higher, though ASM employs similar or perhaps higher numbers of Peruvians (employment in LSM and MSM is around 180,000[6]). ASM stands out as an important engine for employment, especially given its rural locations, low barriers to entry, and low educational requirements. In other words, ASM holds promise for places and people in Peru who are shut out from many other economic opportunities. It also has positive spillover effects in the local, regional, and national economies.

To achieve ASM's potential as a driver of rural development it is necessary to confront problems associated with the sector. ASM is widely demonized in the media, highlighting examples of environmental, labor, and human rights abuses. These issues have been the main focus of interventions around ASM, including substantial emphasis on mercury pollution and deforestation. However, there are also important questions about how to guarantee decent working and living conditions for artisanal miners themselves. Many miners and mining communities remain impoverished and underdeveloped. These issues need more attention in order to achieve ASM's development potential, rather than ignoring the sector or assuming that it will disappear. This report thus brings a needed shift by centering how to improve conditions for artisanal miners themselves. The guiding question of the report is: What are the principal limitations and

[1] *MINEM (2020).*

[2] *Hopkins et. al. (2020).*

[3] *Seccatore et al. (2014)*

[4] *ASM Database 2019. http://artisanalmining.org/InventoryData/doku.php/country:peru.*

[5] *Por ejemplo, De Echave 2016. https://nuso.org/articulo/la-mineria-ilegal-en-peru-entre-la-informalidad-y-el-delito/.*

[6] *MINEM (2020).*

opportunities for ASM producers and workers in Peru to achieve better working conditions and higher incomes?

The report was commissioned by Solidaridad Peru as a baseline study responding to the guiding question above. It provides a snapshot in time as Solidaridad Peru kicks off its REVALORO project, funded under the global Solidaridad fund Reclaim Sustainability! The REVALORO project in Peru aims to promote an increasingly formal and responsible ASM sector, providing access to decent livelihoods for mine workers and women miners. At the moment, there are no other political and social advocacy projects in the ASM sector in Peru fully dedicated to these topics. The REVALORO project also has a key focus on gender, which is woven as a recurring theme throughout the report.

The report structure is organized thematically. The introduction and methodology lead into the four main sections of the report: Formalization; Labor Conditions; Economic Facets; and Dynamics, Dialogues and Organizing, followed by a brief conclusion and appendix. Each of the main sections is sub-divided around differ-

1.1. Methodology

This baseline study of ASM in Peru was commissioned by Solidaridad Peru and conducted by Aaron Malone and Gerardo Martinez of Colorado School of Mines (USA). Solidaridad staff members Mauricio Winkelried, Alejandra Carvajal, and Luis Landa defined the scope of the research, posed the guiding question, and developed a list of sub-questions focusing on different facets of ASM and oriented toward three key groups of actors: public sector, private sector, and civil society organizations (see Appendix). Solidaridad also provided primary and secondary sources for the research, including internal working documents and summaries or transcripts of 26 interviews, focus groups, and events they conducted in 2021 as part of the activities of the REVALORO project. The interviews, focus groups, and events included participation by 25 ASM leaders, 36 women miners and 67 central and regional government officials. Solidaridad staff helped identify and recruit interview participants for this project as well.

For the baseline study we employed a qualitative approach focusing on the guiding questions. We conducted 19 interviews via Zoom, averaging 1 to 1.5 hours, with representatives of government, civil society, private sector, and ASM leaders (see Appendix). We also incorporated additional sources from the academic literature and white papers. Official statistics and data are incorporated to the extent possible, though the lack of solid information is a persistent problem around ASM. Analysis consisted of focused coding of all primary and secondary sources using the computer program NVivo.[7] The authors collaborated with Solidaridad staff throughout the process, including receiving feedback and suggestions about preliminary findings, outlines, and draft versions of the report. The study was conducted between September and December of 2021.

[7] *Cope (2005).*

2. FORMALIZATION

2.1. Introduction

Formalization has been a central focus of ASM policy and interventions globally for the past two decades. In the context of ASM, formalization refers to a series of steps and processes to register artisanal miners, document their operations, provide approvals or identify changes needed to obtain approvals, establish monitoring, and generally bring them into compliance with business requirements and mining-specific regulations. Formalization is seen as a central avenue through which to achieve multiple goals and satisfy diverse interests. States often value formalization as a means to better understand, monitor, and regulate ASM, and to improve tax collection. NGOs and development organizations often embrace formalization as a way to enhance the positive aspects of ASM, most notably as a rural livelihood activity, while tackling problems associated with the sector, such as environmental or safety issues. Some of the interest in formalization ties back to Peruvian economist Hernando de Soto's theories about the transformative power of recognizing and legalizing the resources of micro-entrepreneurs and informal business or property owners.[8] Formalization gained currency as a solution for the ASM sector following trend-setting interventions by the World Bank and other international actors.[9]

Despite sustained interest from a broad range of actors on a global scale, most formalization programs have met substantial obstacles and delays. This broad critique aligns with the realities in Peru, where about 90,000 have registered to formalize but a mere 10,050 had completed formalization as of December 2021, according to DGFM. A recent update to the formalization database reveals 88,094 registrations, of which 23,752 are classified as active and 64,342 suspended.[10] There has also been confusion among miners about who should register, making it difficult to estimate what percent of MAPE is on the formalization pathway and what percent remains fully informal or illegal. It seems clear there are major problems both getting miners to register and successfully completing the process. Officials acknowledge that there has not been sufficient analysis and planning to design the formalization program, nor a clear vision for ASM policy.

The first law which introduced a legal framework for the formalization of ASM activities in Peru was passed in 2002, titled Law of Formalization and Promotion of Small-Scale Mining and Artisanal Mining (Law 27651). This law is referred to as the "ordinary" process of formalization, and under it artisanal and small-scale miners are required to complete the same requirements as any medium or large-scale mining company (e.g., environmental impact assessments, archaeological studies, environmental permits, mineral titles, mining rights, etc.),

[8] *De Soto (2000).*

[9] *Hilson & Maconachie (2017).*

[10] http://pad.minem.gob.pe/REINFO_WEB/Index.aspx.

all prior to conducting any mining activity. Thus, artisanal miners must stop any mining activities, complete the formalization process, and only then can resume mining activities. The failure in Peru of ASM formalization modeled on LSM/MSM requirements mirrors the experiences of other countries that have tried to apply LSM standards for ASM formalization.[11] The ordinary process remains on the books but so few ASM miners use it that it has become nearly irrelevant.

Ten years later, the government approved Legislative Decree 1105 which created the "extraordinary" formalization pathway and established provisions for the formalization process of ASM activities. From 2002 to 2016, the focus of the state was focused on combating illegal mining (Legislative Decrees 1100-1107) which resulted in just 112 miners being formalized nationally. Given the low success rate of miners that had been formalized in 14 years, the government approved Legislative Decree 1293 in 2016 which declared that it was in the national interest to formalize artisanal and small-scale mining and created the integral process for mining formalization. Under this decree, artisanal miners should enroll in the Integral Registry of Formalization (REINFO) to declare their commitment to the formalization process. However, there has been a lack of clarity on who is able to join the formalization process, which led concessionaires, laborers, mechanics, restaurant owners, investors, and many others to sign up in the REINFO. The lack of clarity about who should register and how also makes the REINFO database difficult to interpret; some entries represent one person, while others represent ASM operations with hundreds of laborers, but these important differences are obscured.

In contrast to the ordinary process, the extraordinary simplifies many of the requirements and allows some steps to be fulfilled by a simple sworn declaration from artisanal miners. For example, artisanal miners can sign a declaration that they are not operating in sensitive archeological zones, rather than needing to pay for a professional archeological remains study. One of the most notable changes was to allow a simplified environmental impact declaration (IGAFOM) instead of requiring an environmental impact assessment conducted by engineers. The simplified process allows miners to fill out their own form in the field declaring how they will correct their current practices, without needing to contract with a professional engineer. This is known as a "corrective IGAFOM." On the other hand, a "preventative IGAFOM" lays out the preventative measures to be implemented in the future to protect the environment, and this form must be created and signed by an engineer. The simplified requirements are intended to create review and control mechanisms appropriate to artisanal and small-scale operations, though some critics fear the simplified process is too permissive.

The extraordinary process was intended to be temporary and is in a wind-down phase, with the REINFO officially closed, meaning that new miners are no longer allowed to register. The timeline for enrolled miners to complete all the formalization requirements, to avoid being officially re-classified as illegal miners, was set to expire at the end of 2021 but has been extended for an additional three years. This marks the fourth extension of the extraordinary process timelines, driven by miners' complaints about the difficulty of completing all the requirements. Not everyone has agreed with the repeated extensions, with some officials noting that repeated extensions set a bad precedent and create the perception that beginning formalization is sufficient, while deemphasizing progress toward completion. Representatives of the corporate mining sector also highlighted repeated extensions of the extraordinary process as a source of problems around ASM.

The future of the formalization process remains a topic of debate, though nearly all parties agree that the status quo is not working and that changes are needed. The DGFM has initiated a comprehensive process to establish a national, multi-sectoral policy for ASM, within which formalization is a key topic. Early outputs from that process have been consulted as secondary sources in this report. As we explore in the following sections, Peru's formalization model creates an unclear and complex legal framework, provides few tangible benefits to miners, and does not bring new safeguards to guarantee responsible environmental practices or working conditions. As in many other examples, this regulatory framework does not address the real needs of small producers nor support holistic, sustainable rural development.

[11] *Hilson and McQuilken 2014.*

2.2. Challenges for Formalization

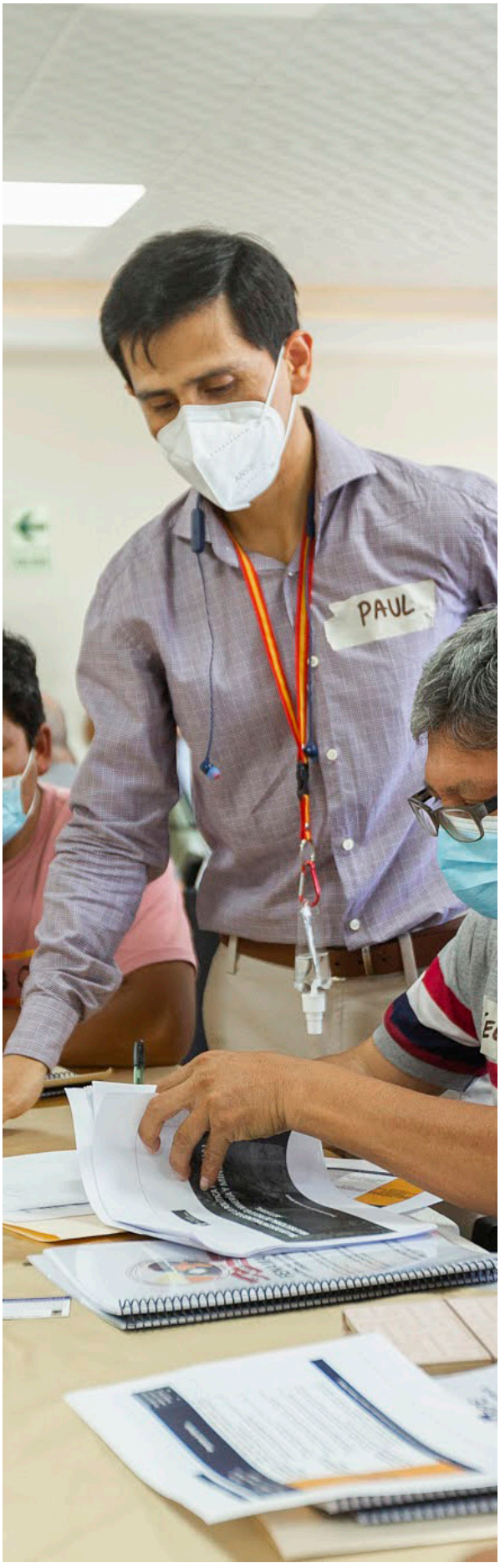
The challenges and problems with formalization are broadly recognized by officials, artisanal miners, and other stakeholders. There is consensus about many key issues, though there are also important areas of divergence, as noted below. There is general agreement that the first problem limiting successful formalization of ASM is the complexity of the process. The original (ordinary) formalization pathway set out requirements identical to the general regimen for mining, treating ASM operators the same as medium and large-scale mining companies. This ignored the huge differences in technical and managerial capabilities and access to capital between LSM and ASM, setting up ASM formalization to fail. The simplified (extraordinary) formalization pathway is meant to address this problem, but artisanal miners feel that even the simplified requirements are extremely burdensome. It is important to bear in mind that many miners have limited formal education or knowledge of business and legal norms, and limited prior experience tracking and reporting on their operations. All of this impedes artisanal miners' ability to meet bureaucratic requirements. The few artisanal miners who decided to start the process must hire specialists to complete many required forms and processes, often at high prices, but even then the quality of services is often lacking. One reason is that few of these professionals specialize in the ASM sector. As one miner noted, contracting a mining engineer or accountant whose experience is in the LSM sector will only bring frustrations and unrealistic expectations. Regional officials in charge of evaluating miners' paperwork report similar observations, that even when ASM operators hire consultants to complete environmental and other documents, there are frequent errors and generally low quality of work. Miners face a double bind, as the paperwork is too complicated to complete themselves, but they are also unable to hire competent consultants at reasonable prices to accomplish the tasks. Miners also complained of changes in requirements and timelines, making the formalization process feel unpredictable and unstable.

In addition to the complexity of the process itself, logistics also impede the completion of required forms and permissions. Most ASM activity occurs in rural areas with difficult transportation access and limited internet connectivity. The Peruvian government's increasing shift toward online forms and processing does not help when miners lack regular internet access, not to mention the digital divide among miners with limited computer literacy. These limitations mean that ASM operators continue to travel to regional capitals and even to Lima to complete paperwork. Miners underscore the time lost and expenses incurred for these trips, which are then multiplied because miners must deal with numerous different agencies and departments spread across the city, each with their own requirements, timelines, and delays. For example, the formalization process can involve paperwork or permits filed with agencies for mining (MINEM / DREM), environment (MINAM), water (ANA), culture (MINCUL), taxes (SUNAT), and public registry (SUNARP). Most of these agencies are focused on other issues or sectors and might give low priority to completing the paperwork needed for ASM formalization. Government officials acknowledged the lack of communication and coordination between agencies as a major factor in the slow progress of formalization. There is support among miners and officials for a "one-stop-shop" (*ventanilla unica*) approach to streamline logistics, allowing completion of all necessary permits and paperwork at a single, specialized service center, though the model has not been implemented at scale. MINEM touts a *ventanilla unica* on their formalization website, but this refers

only to a one-stop website within MINEM, it does not incorporate all of the agencies and requirements from across government, which is what the miners request.

The logistical hurdles for formalization are compounded by the fundamental weakness of the government agencies responsible for processing documents and granting permissions. A key actor on the ground are the Regional Directorates for Energy and Mining (DREMs), tasked with leading the formalization process in each region. DREM officials across regions complain that their budgets are insufficient to the task. They lack staff to process the volume of paperwork, and their efficiency is further undermined by frequent turnover and inadequate training. One regional official was so frustrated with turnover and staffing issues that they felt employee training was futile and a waste of money. Most regional officials did not share this view, calling for better training and human capital as a fundamental need, but the example underscores how personnel challenges and limited budgets create a vicious cycle. Miners and officials pointed out that turnover

In addition, most DREMs are unable to maintain branch offices in mining zones, severely limiting their presence on the ground. As noted above, this puts the burden on miners to travel to regional capitals to advance in the formalization process. The little on-site work DREMs do perform absorbs inordinate time and resources, as staff travel to remote areas for short field campaigns. The lack of experience in the field exacerbates the perception among miners that agency staff do not understand ASM. Officials further note that the n In Inaddition, most DREMs are unable to maintain branch offices in mining zones, severely limiting their presence on the ground. As noted above, this puts the burden on miners to travel to regional capitals to advance in the formalization process. The little on-site work DREMs do perform absorbs inordinate time and resources, as staff travel to remote areas
for short field campaigns. The lack of experience in the field exacerbates the perception among miners that agency staff do not understand ASM. Officials further note that the lack of telecommunications connectivity in mining zones prevents them from following-up with miners to advance formalization or monitoring once back in the office.



In addition to the general barriers to formalization, one specific element merits special attention: titling and surface / subsurface rights. Under Peru's current formalization model, both ordinary and extraordinary paths, registration and approval must be tied to a specific geographic location where the mining activity takes place. Miners are required to either be the title holders or have a formal agreement with the title holder (contract of exploitation) as a mandatory condition for formalization. This means that formalization is literally impossible for artisanal miners who do not hold the mining title and cannot reach an agreement with the title holder. Many artisanal miners find themselves in this situation and have limited possibilities to remedy the situation, as discussed in more detail in the following paragraphs. Because of this, some analysts identify titling as the key bottleneck for ASM formalization.[12]

Data from DGFM show that only 7.7% of artisanal mining operations registered in REINFO hold the title of the mining concession where they work. Of the 92% working on mining concessions held by someone else, 27% work on concessions titled to LSM or MSM and 73% on titles held by others classified as small-scale or artisanal miners, some of whom are likely to be investors or speculators rather than active miners. Information about titles and access contracts is not always certain; for example, a study based on official data in Puno reported that only 9% of ASM had title or contract,[13] while a survey of ASM in Puno reported 47% title holders and another 45% with contracts for access.[14] These glaring differences could owe to methodological differences or internal variation within the region, but in either case, the example underscores the uncertainty that surrounds most "hard" data on ASM. Ownership or permission for surface access presents similar problems, though seemingly on a more limited scale. Surface land ownership is separate from subsurface rights, meaning that miners should have ownership or permission for both. In many contexts, surface rights are controlled by local communities or property owners.

On one hand, strong property rights for mining concession titles are seen as a necessary condition for

[12] *Cano & Quiñon 2020.*

development of the MSM and LSM sectors, which are the foundation of Peru's formal economy. On the other hand, critics note that titling requirements are lax and penalties for inactivity are low, resulting in widespread speculation on mining concessions and a problem with idle claims (concesiones ociosas). In Madre de Dios and other regions, the situation is further complicated by large areas covered in extinct claims (concesiones extinguidas), which blocks miners from registering new claims. There are also problems of overlapping mining concessions. Officials and artisanal miners we interviewed underscored these problems, which leave most artisanal miners with no pathway to obtain clear mining title. It also puts them at a disadvantage when negotiating with title holders to grant access agreements and leaves them no recourse when title holders are unwilling to negotiate, even if the title holders have no intention of working or developing the claims themselves. Interview participants also noted that in many cases, title holders charge artisanal miners informal fees (regalias) for access, but are unwilling to grant formal contracts.

Obstacles to formalization also have important gendered components, most notably regarding pallaqueras. Pallaqueras, who are almost exclusively women, sort through waste rock from mining operations to glean any residual valuable material. Their work is not recognized in the current ASM formalization framework in Peru, leaving no pathway for them to formalize. The official standards do not consider pallaqueo to be a form of mining. This exclusion reinforces women's position on the bottom of the ASM hierarchy and forecloses opportunities for advancement. The Ministry of Energy and Mines has moved to recognize officially the commercialization of gold produced by pallaqueras in Puno[15], but deeper, systemic changes are needed to ensure the government is helping empower and support rather than re-marginalizing pallaquera women in ASM. However, it is important to recognize that not all women in ASM are pallaqueras, women also engage as ASM owners, investors, managers, workers, and in other roles. Reflecting this reality, 22% of REINFO registrations by individual persons are from women, more than 15,000.[16] This total does not include unregistered women miners nor pallaqueras.

The previous paragraphs note logistical, bureaucratic, and technical problems that undermine the formalization process. An additional set of challenges center on the perceptions and motivations of ASM actors. One of the leading complaints from government officials, also frequently mentioned by MSM and LSM representatives, is that too many ASM miners are content either to remain informal or to complete only the first step toward formalization (registering in the REINFO) and then remain perpetually "on the path to formalization" without progressing. In addition to understanding the hurdles that motivated ASM actors face on the path to formalization, it is also important to understand some of the reasons others decide not to embark on or complete the process.

The first point is to realize that nearly all artisanal miners have operated informally in the past or at present – they know from experience that informality is a viable option, despite its drawbacks. With this background understanding about formality versus informality as a choice, artisanal miners make calculations about the tradeoffs of formalization, weighing costs and benefits, comparing norms on paper to realities on the ground, and bearing in mind their own and other ASM actors' experiences with informality, formalization, and post-formalization.

In this regard, many artisanal miners have strong views about the cost, bureaucracy, and headaches of formalization, while they perceive the benefits as nebulous or limited. One element of ASM actors' frustration ties to what they see as unmet promises around formalization. They expected formalization to be accompanied by technical assistance and other supports from the state, but very few support services or programs have been offered. Officials blame budgetary constraints for limiting technical support offerings. Here Peru's approach fits the global norm, focusing on the first step of legalizing ASM operations, but ignoring the holistic version of formalization as promoting positive development of the sector. Miners point not only to unfulfilled promises of technical support from the state, but also to limited

[13] *Salas-Urviola, et. al. (2021)*

[14] *planetGOLD Perú (2021 c)*

[15] *Decreto Supremo 018-2018-EM.*

benefits from the private sector. Formalization is supposed to bring access to loans and capital, but many financial institutions decline to engage even with formal ASM operators. Easier and more profitable commercialization of production via formal channels is likewise stated as a key benefit of formalization, but artisanal miners noted that even formalized operations sometimes struggle to find buyers and resort back to black market channels. Connecting artisanal miners to fair and profitable outlets to sell their production is a key challenge, explored in detail in Section 4.2.

Examples like these are widely discussed among artisanal miners and contribute to the perception that formalization brings costs and hassles without many concrete benefits. A common anecdote from ASM actors is that when someone formalizes, the tax and environmental authorities immediately arrive to scrutinize and fine them, while the promised technical support and business advantages never materialize. Regardless of whether these perceptions are reasonable or exaggerated, analyzing them is of paramount importance for understanding the decisions and actions miners take regarding formalization.

Finally, formalization challenges should be viewed relative to the broader context of the Peruvian economy. Comparing ASM to LSM creates a shocking contrast of informality versus formality, but comparing ASM to other economic sectors, particularly in rural areas, reveals that the informality of ASM is in line with its surroundings. Artisanal miners noted that in the communities where they live and work everyone from farmers to restaurant and shop owners to taxi drivers also operate informally. In this regard, Peru's larger struggle for economic formality forms a more appropriate baseline from which to consider ASM.

[16] *DGFM 2021.*

2.3.
Effects of Formalization Failures

The lack of progress toward formalization has many ramifications for artisanal miners. To begin, it is likely that most artisanal miners continue to labor informally (or under the liminal status of being "on the path" to formalization), though the full reality is not known due to uncertainty about how many miners the REINFO registrations represent and how many total MAPE workers exist in Peru. Although artisanal miners might doubt or downplay some of the purported benefits of formalization, as noted above, one of the key benefits they do value and seek from formalization is the ability to work in peace.[17] As long as most ASM activity remains informal, miners continue to work under the looming threat that the state could fine or close their operations at any time. The state's interdiction efforts against illegal miners, including destruction of equipment and mining camps, deepen informal miners' sense of uncertainty. Slow progress toward formalization also leaves the door open for unscrupulous actors to thrive around the margins of ASM. In turn, this reinforces negative public perceptions of ASM and reinforces the narrative of a sector tied to crime and vice. Many other negative impacts of the faltering formalization process are noted throughout this report, affecting ASM profitability, sustainability, working conditions, etc.

The failures of the formalization process also have important ramifications for the state. For starters, formalization is put forward as a key step toward combating the high-profile problems of mercury pollution and deforestation linked to ASM, but this progress remains stalled along with formalization.[18] In addition, the state interest in formalization as a pathway to regulate and tax ASM activity also remains unachieved. On one hand, lack of information limits the state's ability to understand and manage the ASM sector. For example, miners complained

[17] *Martinez et al 2021.*

[18] *Progress toward these goals is also hampered by many other factors, as summarized by Veiga and Fadina 2020, DOI: 10.1016/j.exis.2020.06.023*

of raids by military and police that erroneously targeted miners in the process of formalization, due to gaps in knowledge and communication. Limited understanding of the sector also precludes its incorporation in development planning. The state can only estimate even the most basic facts about ASM, like employment and production. On the other hand, uncollected taxes starve the state of resources that could be used for monitoring and enforcement, among other activities. The latter issue affects all levels of government, including regional DREMs that lack the staff and resources to carry out their missions and local governments in mining zones, which receive mining canon funds only in proportion to the declared/formal production in their districts and provinces, and thus often do not receive funds from ASM activity. The slow progress of formalization also perversely keeps DGFM and DREM resources tied up in the formalization process itself, preventing a shift in focus to technical assistance or development centered activities.

Slow progress on formalization also has negative impacts for the formal mining sector. LSM leaders note that there is a need to support motivated artisanal miners to improve and develop, and a corresponding need to identify and either correct or remove the worst actors. With formalization floundering, the worst actors in ASM continue to cause environmental and social problems, which LSM leaders see as a reputational risk for mining as a whole.

2.4. Pathways to Formalization

The reality in Peru echoes challenges around the world – failure has been the norm for ASM formalization efforts. As an expert on ASM emphasized in our interview, the challenge is multiplied because it is not just miners learning to become formal, it is also necessary for officials to learn how to formalize. Academics and NGOs are also analyzing and adapting on the fly. Given this reality, it is well beyond the scope of this report to provide solutions for the formalization program, though we provide some reflections in the following paragraphs.

Fundamental changes need to be approached from a holistic perspective. In Peru as elsewhere, formalization is undermined by an overly legalistic approach and neglect of supportive or capacity building elements. For formalization to succeed, it needs to be holistic, focusing on legalization *and* positive development of the ASM sector.[19] This is only likely if the state will embrace a fundamental view of ASM as a potential driver of rural development, moving away from the traditional perspective that tied all of ASM to the worst elements of illegal mining. The shift in approach to treat ASM as a development sector would open the door for a reconceptualized formalization model with the potential to support the good and confront the bad in ASM. This type of shift could also build artisanal miners' trust in formalization, particularly as concrete support and benefits become apparent, motivating more to initiate and complete the process. One potential opportunity to catalyze this change has already been initiated under the DGFM's effort to develop a multi-sectoral national policy for ASM. Engaging artisanal miners in this effort and opening spaces for dialogue are keys to success, to ensure new policies reflect and respond to ASM realities.

Taking a holistic approach to ASM formalization and development is not only about changing mindsets, it also requires concrete changes in policy and practices. First, ASM formalization needs to meet miners where they are, both in the sense of increasing state support and presence in mining zones and in the sense of keeping requirements and paperwork approachable for artisanal miners who often lack formal business

[19] *Veiga and Fadina 2020.*

training and have low educational levels. Second, Peru needs to find a middle path between the ordinary process that is so cumbersome that it is effectively ignored, and the extraordinary process that is vague and shifting, under which many artisanal miners seem content to remain perpetually "on the path" to formalization but never arriving. The most obvious solution to this impasse is to create a new ordinary process that balances ASM realities and the state's interests in oversight, taxation, and development. An ordinary process that works would do away with the need for an extraordinary process, providing a much-needed opportunity to re-set expectations on all sides. Furthermore, the REINFO is closed to new registrations, meaning that new ASM operations beginning in the future would be required to use the old process that mimics the general regimen, with no access to complete the simplified ASM steps allowed under the extraordinary process. A new ordinary process could institutionalize some of these ASM-specific standards. Third, there is a paramount need to clarify who should be registering as an artisanal miner and how. This will require refinements of a tiered approach to flexibly engage the smallest, simplest individual operations while also clarifying consolidated registration and formalization of larger ASM operations. Limited resources for formalization can be utilized more efficiently if extraneous and erroneous entries to the process can be avoided.

Other specific areas for change have also emerged over the course of this research. For example, finding solutions to the mining title puzzle is of paramount importance for ASM formalization. The most fundamental path would be to reform the mining concession system to make speculation more difficult and allow more artisanal miners to obtain their own titles, though changes of that nature would require complex political navigation and negotiations between competing interests. A related effort could focus on the state acquiring extinguished concessions and facilitating formal access for ASM in those areas. These approaches would need to include mechanisms to resolve conflicts between artisanal miners with overlapping registrations or claims. A second model, explored in more detail later in this report, is to encourage and facilitate access agreements between LSM / MSM title holders and artisanal miners operating on their concessions. These agreements have the potential to be a win-win, though more work is needed to refine the model and bring it to scale. A third possibility emerges from the complaint of an ASM leader that the current formalization model is inherently temporary for the vast majority of artisanal miners who work on third party concessions. Their formalization depends on the permission of the title holder, and can be lost if their agreement is rescinded. One potential response to this critique could be to develop a model that divorces the formalization of the miner / mining operation from the registration of a geographic location of work. Miners could obtain a generic formalization as an ASM operator, then pursue agreements or obtain titles as a separate step. Both steps would still be necessary to bring ASM operations into full compliance, but separating them could make both processes smoother, and shield artisanal miners from some of the abuses of title speculators who know their formalization depends on obtaining a written agreement. This model could also work well for alluvial miners who tend to move their operations more frequently.

Formalization stands out as the cornerstone for interventions around the ASM sector. Its failure reverberates in many other areas, notably influencing the issues to be addressed in subsequent sections of this report. Solving the formalization puzzle would represent a major step toward a sustainable ASM sector that provides better working conditions and incomes for artisanal miners, though it is also important to recognize that fixing formalization would likely reveal and underscore other problems that are currently secondary. Formalization is necessary but not sufficient for sustainability and development of ASM.

3. LABOR CONDITIONS

3.1. Contracts and Benefits

The current reality is that few artisanal miners have work contracts or receive benefits. For example, a recent survey of 502 artisanal miners in Arequipa, Piura, and Puno found that 47% had no health insurance and 92% had no pension plan. A linked survey of 73 pallaqueras found that 99% had no health insurance.[20] The precarity of employment in ASM in turn creates insecurity for miners' families and dependents, who often have no other substantial sources of income in case of an accident or loss of work. Artisanal mining often provides higher incomes than other available livelihoods, particularly agriculture, but instability remains an important constraint.

There are numerous barriers that prevent access to

[20] [20] *planetGOLD (2012c).*

formal contracts and benefits. First is the continued informality of most ASM operations, which makes it difficult to provide formal work status and benefits. Advancing ASM formalization could help bring workers into regular contracts with benefits, both by easing bureaucratic hurdles and by exerting pressure on ASM operators to comply. It is likely that fixing formalization – bringing most ASM operations into the formal sector – would be the single most impactful step toward bringing ASM workers into formal contracts and benefits.

The characteristics of ASM work are another important factor in the low levels of formal employment. In contrast to LSM operations, which are relatively steady in their labor demands during exploitation stage, ASM activity is highly variable. Artisanal miners working in hard-rock, tunnel operations describe a need for flexibility to bring on more laborers or cut back quickly, due to the inconsistent geology and narrow, discontinuous veins, and fluctuations in gold prices. Alluvial ASM features more frequent movement by operators, which can also lead to fluctuations in labor demand and short-term employment cycles. These demand-side factors are exacerbated by supply-side factors as well, as laborers at the lowest tiers of ASM exhibit high turnover and mobility, including some seasonal cycling between agriculture and mining. Furthermore, many ASM laborers' income is tied to the amount of gold produced, leading workers to abandon operations that have fallen into low grade deposits or low ebbs in production to seek out better opportunities in other ASM mines. All of these factors combine to make ASM employment volatile and poorly suited to traditional contracts and benefits models. In some respects, the volatility and informality of ASM work arrangements mirror the conditions of gig work and day labor, such that research and advocacy in those fields could present lessons relevant to ASM.[21]

The diversity of ASM activity also makes it difficult to fit into standard contract and benefit models. Traditional work arrangements like cachorreo and pallaqueo are deeply rooted in ASM in Peru, but do not align with standard employment models. Cachorreros, most prevalent in the Puno region, work a fixed number of days for the benefit of the mine owners, followed by one or two days during which they keep their own production as their income for the whole period. Cachorreros have been described as "lottery" miners because their luck on a few key days can result in feast or famine.[22] Even where cachorreo is not common, ASM laborers are frequently paid in a share of ore, rather than cash payment, which can complicate contracts and documentation. Pallaqueras, almost exclusively women, work on their own behalf gleaning any valuable ore mistakenly discarded with mines' waste rock, typically with explicit or implicit permission from the mine owners. The indirect relationship between pallaqueras and mine owners precludes typical work contracts.

The baseline assumption of this report is that work contracts and benefits are fundamental goods that should be accessible to all. Still, it is important to contextualize the ASM sector's shortcomings against the broader reality of informal employment in Peru. According to official statistics, 75% of workers in Peru are employed informally, with average salaries less than half of that enjoyed by the formally employed. Relatedly, 57% of all Peruvian workers are considered underemployed, due to insufficient wages or involuntarily working part-time.[23] In this light, the challenge of making formal employment with contracts and benefits available to ASM workers is part and parcel of the larger challenge of bringing the Peruvian workforce into the formal sector.

A final point also centers on the perceptions and mindsets of artisanal miners. Studies have shown that formal employment benefits are valued and desired by many artisanal miners,[24] though others document a get-rich-quick mentality among miners who prefer the chance at riches over the stability of wage labor.[25] Our interviews similarly found that a subset of artisanal miners prefer informal employment, viewing withholdings for benefits as a poor tradeoff against more cash in hand immediately. Seasonal or temporary ASM workers fear that entering the formal payroll will jeopardize their access to means-tested government benefits, such as an-

[21] *Regarding gig work: Woodcock and Graham 2020,*

[22] *Wieland 2020.*

[23] *MTPE: Informe Anual del Empleo en el Peru 2020.*

[24] *Smits et al 2020. DOI: 10.1016/j.exis.2019.12.003*

[25] *Wieland 2020. ISBN 978-612-48087-5-3*

ti-poverty programs, public health plans, and pensions. These realities tie back to the broader context and social norms of labor informality, and the challenge of creating a culture of formality in Peru, within ASM and beyond.

Alternative approaches will be necessary to solve contracting and benefits access for artisanal miners, given the mismatches between ASM realities and traditional contracting and benefits models. One possibility could be to establish access to benefits that miners can opt into on a stable basis, despite potentially shifting between ASM operations, between ASM and other activities, or engaging in non-standard labor practices like cachorreo or pallaqueo. A benefits model divorced from traditional employer links could be established via cooperatives, guilds, and associations, or under a state-managed system. New models will need to be developed creatively to bring the benefits of formal employment into alignment with ASM realities.

3.2.
Workplace Safety and Health

Working conditions and safety in the ASM sector are generally thought to be sub-standard, though hard figures on accident and fatality rates do not exist.[26] Accident data published by MINEM are self-reported by mining operations, with few artisanal and small-scale miners submitting regular reports.[27] One of the fundamental drivers of health and safety problems is the tradition-bound and self-taught nature of many ASM operations. Miners and officials noted that ASM operators and workers become accustomed to unhealthy and unsafe conditions and accept them as normal. Changing practices requires a shift in mindset and culture, which can only be achieved over time and with multi-faceted interventions.

Internal dynamics of ASM operations can be a driver of unsafe working conditions. As one ASM leader explained, most laborers will not stand up to ASM owners around safety concerns. New ASM workers in Peru are typically young men from rural areas with limited education. Many bottom-rung laborers are unwilling to speak out about unsafe conditions, particularly when their employment is informal and precarious and they fear being dismissed. Many also do not have the training and knowledge to recognize risky practices. Macho workplace culture can also exacerbate this issue and perpetuate unsafe working conditions.

[26] *Note that problems of child and forced labor are not considered here, as they are human rights abuses that are clearly illegal and can only be addressed through elimination.*

[27] *https://www.minem.gob.pe/_estadistica.php?idSector=1&idEstadistica=12486. It is beyond the scope of this study to analyze the available accident data for ASM and MSM/LSM to draw conclusions about relative accident frequency or severity; the incomplete and self-reported nature of the data would make it impossible to draw firm conclusions in any case.*

One concrete indicator of workplace safety practices, use of personal protective equipment (PPE), has been analyzed in recent studies. A survey of pallaqueras found that PPE use has increased, but progress has been uneven. While 90% of surveyed pallaqueras reported wearing helmets, only 30% wore gloves, 25% respirator masks, and 10% safety glasses. The women surveyed reported mixed motivations for safety equipment decisions: some could not afford PPE while others felt that gloves and glasses impeded their work.[28] Other research has demonstrated that education campaigns can drive culture change to make PPE use standard in specific ASM operations or locations.[29]

Use of PPE is an important starting point for workplace safety improvements and the above studies provide an encouraging outlook, but it is also important to recognize that the challenges facing ASM go much further. Mercury exposure has been a focus of intense scrutiny in academic work and interventions by NGOs and governments, particularly because this high-profile problem affects miners and community members. Process improvements like use of retorts or concentrating ore before amalgamation are seen as stop-gap measures in lieu of the ultimate goal of eradicating mercury amalgamation in ASM. While the mercury issue is undoubtedly important, the intense focus on mercury has potentially distracted attention away from other occupational hazards in ASM. However, miners themselves place higher emphasis on accidents linked to machinery use and tunnel or pit stability, and other immediate safety concerns.[30] Other problems are less visible but still important; for example, a recent study found that the ventilation system installed in a relatively large and sophisticated ASM operation in Arequipa provided less than one-third of the fresh air required under Peruvian mine safety standards, creating both immediate safety and long-term health risks for workers.[31] Many underground ASM operations lack mechanical ventilation altogether.

Efforts to improve workplace safety and health for artisanal miners must confront various challenges. For training and capacity building for workplace safety to be effective, it needs to work on multiple levels. ASM owners and managers need to understand and implement top-down safety improvements, while laborers also need training and education to be empowered to monitor and speak up around their own safety. Safety programs must be continual, given the high turnover in ASM and a steady influx of new workers entering the sector. Trainings must also be tailored by context, such that a single educational program or set of workplace standards will not be applicable across all ASM contexts. At minimum, safety interventions must be differentiated for hard-rock versus alluvial mining, and ideally should be further customized to fit each context. Pallaqueras and other groups with unique working conditions and hazards need tailored training. A particular concern is the reality that many pallaqueras and other women artisanal miners bring their children with them to work, because childcare is not available or affordable. This creates unique risks and demands tailored solutions, including recognition of childcare as a health and safety issue. Special concern for pregnant or breastfeeding women miners should also be addressed.

Unfortunately, the need for safety and health training in ASM has not been met by Peru's central or regional governments. Artisanal miners complain of insufficient training and support offerings from the state, and officials concede that is the case. ASM leaders also noted that trainings are often low quality, particularly when they draw from LSM models. Attempting to follow standards and trainings designed for MSM or LSM contexts can be counter-productive and make compliance impossible for ASM operations. Trainings and safety materials need to be ASM-specific and tailored to match reality in different contexts. Given limited state capacity and competing demands on resources, one approach could be for the state to encourage development of private sector consultants, academic institutions, or NGOs to provide safety training and resources. A key to success for this approach would be fostering ASM specialists, rather than relying on technicians trained for LSM. The state (or NGOs) could play a key role in vetting service providers for quality control. Subsidies could also be provided to encourage uptake of professional

[29] *Orozco et al (2017).*

[30] *Martinez et al (2021).*

[31] *Hinton et al (2003).*

[32] *Brune et al (2021)*

services by ASM operations, either by the state directly subsidizing ASM-specialist consultants or by making expenditures on these services tax deductible. Finally, better organization among ASM operators at local and regional levels could also facilitate collective investments in capacity building around health and safety, such as association-contracted engineers who provide services to various ASM operations. These same models could also be applied to productivity, business management, and other challenges.

3.3. Spotlight on Pallaqueras

This report notes in various places how trends and impacts in ASM are gendered. One particular group stands out in this respect – women miners known as pallaqueras. Pallaqueras glean any valuable material left behind in the waste rock from mines, working on the margins of ASM, MSM, and LSM operations. Much of our knowledge of pallaqueras comes from a hallmark study published by Solidaridad and Red Social in 2017.[32] The report estimated that there are more than 16,000 pallaqueras in Peru, almost exclusively women, mostly with low educational levels (60% did not complete secondary education) and as many as 80% native speakers of indigenous languages (primarily Quechua). Most engage in pallaqueo (gleaning / salvaging) as a way to support their families and children.

Given the character of pallaqueo and its treatment in the current formalization framework, it generates very low incomes and is relegated to the lowest rung of the value chain of ASM. The 2017 study found that 75% of pallaqueras did not earn a living wage (*menores al sueldo minimo vital*) and most lived in substandard housing, epitomized by the finding that 97% did not have full indoor plumbing.[33] A more recent survey found pallaqueras made just 60% as much as other ASM workers. They were also much more likely to report having no personal assets (23%) compared to the main strata of artisanal miners, of whom just 6% reported no assets.[34] In this study, our interviews revealed that only recently have these women begun to be recognized and included in meetings regarding ASM issues. Given these realities, many pallaqueras aspire to use the work as a stepping stone to other types of employment or entrepreneurship outside of pallaqueo, as discussed in more detail in Section 4.1.1.

An expert in gender and ASM who we interviewed noted that men and women miners often start from similar socioeconomic positions, but structural forces within ASM open doors for men to advance economically, while many women are stuck in marginalized and informal activities like pallaqueo, which offers fewer possibilities for advancement. In other interviews, miners and officials repeated traditional views about gender roles and norms that limit women's roles and view underground work as men's work. Surveys of artisanal miners document the prevalence of these views,[35] which explains why women are often relegated to the most marginal ASM work – pallaqueo.

Most pallaqueras also face a "double shift" of mining and household labor. In the 2017 study, 60% reported

[33] *Orozco et al (2017).*

working at the mines 6 or 7 days per week, while more than 80% also bore primary responsibility for cooking and laundry, among other unevenly distributed household tasks. Many women also reported increasing their work as pallaqueras in response to household financial needs, redoubling their burdens in times of difficulty.[36]

While many of these key trends are common across contexts, it is also important to recognize differences among pallaqueras. Regional variations are apparent in surveys. For example, pallaqueras in Arequipa tend to be younger, report higher incomes, and live permanently in the mining zones, while in Puno pallaqueras are on average older, report lower incomes, and split their time between the mining zones and other areas.[37,38] It also bears repeating that not all women in ASM are pallaqueras, there are women owners, managers, partners, laborers, engineers, etc. This reality is perhaps most pronounced in Madre de Dios, where one-third of ASM title holders are women.[39]

Although the reality for pallaqueras is challenging, they are not passive victims in the story of ASM. Pallaqueras are increasingly organizing and speaking up to demand greater support and recognition.[40] They have pushed to be included in ASM organizations and to have a seat at the table when decisions are made and policies debated. At the local level, 48% of pallaqueras are organized in working groups or associations. This high level of localized organization suggests the strong potential for scaling up and increasing the visibility and voice of pallaqueras, and the value of programs seeking to empower and support this vulnerable demographic.

[33] *Orozco et al 2017. Pallaqueras: Entre piedras y oro*

[34] *planetGOLD 2021. Hacia la inclusión financiera de la MAPE. However, it is worth noting that the survey was conducted during the COVID-19 pandemic in 2020, which based on initial reports seems to have affected pallaqueras more severely than other ASM workers.*

[35] *planetGOLD 2021. Diagnóstico y desarrollo de un Plan de Acción con enfoque de género dirigido al sector de minería artesanal y de pequeña escala*

[36] *Orozco et al 2017. Pallaqueras: Entre piedras y oro*

[37] *planetGOLD 2021. Hacia la inclusión financiera de la MAPE*

[38] *Orozco et al 2017. Pallaqueras: Entre piedras y oro*

[39] *USAID 2021 Prevenir 360*

[40] *Smits et al 2020. DOI: 10.1016/j.exis.2019.12.003*

4. ECONOMIC FACETS

4.1. Productive and Profitable Operations

4.1.1. Financial services and access to capital

Global research has increasingly underscored the potential of ASM as a driver of rural development. To catalyze and support this potential, the ASM sector must overcome several hurdles to productive and profitable operations in order to offer decent working conditions and incomes. As with other topics, formalization is the logical starting point for discussion of profitability and productivity. Informality impedes ASM development across numerous facets, and many of the themes we explore in this section connect back to formalization.

One of the key challenges for ASM productivity and profitability is lack of access to capital and financial exclusion. The historic reality for ASM in Peru has been complete exclusion from the formal financial sector. A recent survey found 87% of ASM operations have no interactions with financial institutions.[42] Many ASM operations are funded entirely out of owners or investors' own assets, including putting at risk homes, vehicles, and personal savings. This reality, coupled with rudimentary exploration methods, mean that a failed ASM investment can devastate miners' household finances and living conditions. On the other hand, exclusion from formal financing has opened the door for ties between ASM and black-market financers, sometimes tied to organized crime. Although these links are often exaggerated in sensationalized press reporting, they are undeniably part of the reality surrounding ASM at present. Reliance on black-market financing brings legal risks for ASM operations as well as subjecting them to exaggerated borrowing costs and arbitrary terms.

Banks and financial institutions have generally refused to do business with ASM operators because they are informal. Even as ASM operations formalize or begin on the path to formalization, most report that they remain shut out from financial services. Lenders remain wary of involvement with ASM and treat it as a high-risk sector. Representatives of the financial industry suggest that their wariness is motivated in part by the state's shifting and unclear stance toward ASM. We conclude that as long as state entities and officials continue to

[43] *planetGOLD (2021c).*

treat ASM with suspicion and lump together illegal with informal and formalizing operations, financial institutions are likely to keep the sector at arm's length. Banks also worry that engaging with ASM could be interpreted as money laundering under current statutes, creating legal risk.

The reputation of risk surrounding ASM is a major limitation for access to financial services, but emerging data suggest the reputation is unwarranted. An analysis of credit reports for a sample of artisanal miners found more than 80% were current on debt payments and fell within the "normal" credit risk category.[43] If these results hold for the sector more broadly, financial instructions should be encouraged to set aside biases and institutional inertia, which are major obstacles for ASM financial inclusion. One strategy to address this problem has been put forward by financial industry representatives: an ASM loan guarantee fund. A loan guarantee fund would help assuage banks' wariness around ASM, and if preliminary data on repayment and default rates hold true, the fund should be sustainable over time without incurring losses. Bankers suggested this model after seeing its success in Peru's small business sector, providing a clear template to adapt for ASM. There is also an issue of knowledge, as banks' unfamiliarity with ASM leaves them unable to evaluate and differentiate the creditworthiness of artisanal miners and operations. The dispersed nature of ASM also makes monitoring difficult.

PlanetGold's recent survey of miners also documented the demand for financing. 78% of surveyed miners stated they would be interested in loans, for an average request of S/50,000 for investments in machinery and equipment, as well as working capital, to improve their operations.[44] However, it is also important to remain realistic about the role of financing in ASM, bearing in mind that labor intensiveness is one of the defining characteristics of ASM, in contrast to the capital intensive LSM sector. Loans and investment are needed, but the amounts are relatively modest and many other factors also influence ASM productivity and profitability. This perspective emerged in another recent survey, which found that government officials placed more emphasis on financial access for ASM, while miners themselves rated it far down their list of priorities.[45] These contrasting results suggest caution, to appreciate the importance of financial access but not exaggerate the point or treat it as a silver bullet.

Interest in capital and investment opportunities also varies across gender and status. PlanetGold's survey found that interest in loans for investment in their operations was consistent among male miners and female miners of the operator / owner tier. However, for pallaqueras, women occupying the lowest rung of the ASM hierarchy, the results were starkly different. Pallaqueras indicated interest in business loans, but unlike the other groups, reported that they would use the funds to invest in other areas, such as starting a restaurant, shop, or micro-enterprise to service the ASM sector. In other words, whereas most ASM respondents saw loans as a pathway to double-down on the sector, pallaqueras dreamed of leveraging financial access to leave behind their current activities. This result starkly underscores the inequalities within ASM and the diverse realities that often break across lines of gender and status. Interventions aimed at increasing financial inclusion for ASM must be flexible to encompass this diversity.

[44] *planetGOLD (2021 c)*

[45] *planetGOLD (2021 c).*

[46] *Martinez et al (2021).*

4.1.2. Business ecosystems

The business ecosystems in which ASM operates create challenges that reduce their potential profitability and the sustainability of their operations. For many artisanal miners, whether informal or formal, buying equipment and supplies from formal vendors is difficult or impossible. Like banks, mining industry suppliers are often wary of association with ASM, or have limited understanding of the sector and are ill equipped to meet its unique supply chain needs. For example, the smaller scale and distinct practices of ASM compared to LSM necessitate specialized suppliers, but few exist at present. Addressing this issue, PlanetGold Peru recently released a first edition catalogue of providers for the ASM sector, which aims to fill the information void and help artisanal miners connect with specialized vendors.[46] The catalogue is a valuable step toward cultivating a market for responsible, specialized ASM suppliers.

Many ASM operations turn to the black market to procure essential supplies, especially highly regulated items like fuel and explosives. Black market prices for dynamite can be as much as four-times higher than formal retail, but hard-rock miners see no alternative to paying these inflated prices. Similarly, Peru's entry into the Minamata Convention has not appreciably decreased mercury use in ASM, but has driven up prices as the mercury trade recedes deeper into black market spaces linked to cross-border smuggling. While the ultimate goal is to eradicate mercury use, inputs like explosives will always remain central to ASM. Securing reliable supply chains and formal mechanisms for ASM operations to obtain these goods legally could be a double win, improving ASM profitability while also weakening links to the black market. At the same time, cultivating an ecosystem of suppliers and service companies focused on ASM could generate positive spillover effects across the economy, with particular benefits in rural areas.

Current problems in ASM business ecosystems also hurt artisanal miners in other ways. An ASM leader gave the example that LSM companies document and deduct their operating expenses, offsetting profits to reduce their tax bills. In contrast, he said most artisanal miners buy provisions, supplies, and equipment locally in remote, rural mining zones where receipts and documentation are rare – it is not just the ASM operators who are informal, much of the economies of their rural communities likewise operate informally. The leader argued that this amounts to "double taxation" of miners who try to follow the rules, because they declare their production but are unable to document and claim operating expenses. As a result, their tax bill effectively treats the gross income as though it were all net profits, so the artisanal miners end up paying higher effective tax rates than LSM. Problems like this can also skew ideas about taxation among artisanal miners. Some officials felt that artisanal miners prefer informal production and black-market sales because they vastly overestimate how much they would be taxed if they became formal. In reality, paying their full share of taxes would almost certainly cost ASM operations less than what they currently lose to black-market markups, predatory loan rates, and inefficient practices.

Examples like this underscore the interconnected nature of ASM problems, that seemingly distinct problems like supply chains and tax compliance are actually inseparable, demanding holistic solutions.

[47] *planetGOLD (2021 b).*

4.1.3. Business management capacity

One of the leading themes in interviews with ASM leaders was the need to build the business acumen of artisanal miners. Many prioritized capacity building for business management and accounting equally or more than technical or engineering support. They underscored that most ASM operators, owners, and investors rose within the sector and have little or no formal business training. This reality complicates formalization and compliance, as noted above, but it also can undermine the profitability and sustainability of the operations directly.

An artisanal mining leader argued that one of the underlying drivers of poor business practices in ASM is a short-term orientation that is tied to informality and uncertainty. They noted that many miners have the perspective that at any moment they could be evicted or closed down, or the vein they are working could disappear, or other unforeseen problems could strike. From this mindset, miners focus on extracting as much gold as possible in the moment, while neglecting investments in capacity, strengthening their businesses, and building toward a long-term vision. The necessary shift to see capacity building as an investment in profitability can be encouraged by miners' organizations and culture change from within, as well as through support and assistance from state, NGO, and private sector actors.

Similar to the situation discussed around labor conditions, artisanal miners look to the state and NGO sectors to provide training and support around business management, or to help identify quality providers from the private sector. As in other facets, it is important for business services, advice, and capacity building to be tailored and relevant to ASM realities. Larger and more advanced ASM operations might be able to invest independently in business capacity – indeed, some already have accountants or trained managers on staff – but most smaller operations would need to pursue collective or subsidized models for training and capacity building. As elsewhere, improvements in business practices will have positive spillovers into other facets, such as dovetailing with better handling of contracts and benefits, or easier compliance with formalization and post-formalization requirements.

4.2. Commercialization

Commercialization is one of the most important problems identified by artisanal miners. Whether miners sell ore, concentrates, or processed gold, access to fair and reliable markets is a basic requirement for profitable and sustainable ASM operation. It is also one of the areas where miners complain of the greatest obstacles, including unfair treatment and exploitation at the hands of predatory buyers. For example, a study of pallaqueras found that they had to sell their production at discounted rates, losing from 15 to 30% of the fair value.[47]

Many commercialization problems are the direct result of the incomplete and flawed formalization process. Formalization is intended to open access for ASM to sell directly on the legal market, severing ties with black-market channels and escaping the abuses that are associated with it. Indeed, this is one of the benefits of formalization that is most valued by artisanal miners. Progress on that front has been limited, though, leaving most ASM operations still selling through informal channels and suffering economically for it. Informal buyers generally offer prices well below market value. Some artisanal miners report selling to formal buyers, especially in the case of selling ore or concentrates to processing plants, but being paid a "discounted" price if they are informal, lack proper documentation, or are treated as informal despite being formal or on the path to formalization. There is ample evidence of buyers across the spectrum taking advantage of artisanal miners' informality and marginal status to pay unfair prices. This inflates the profitability of buyers at the direct expense of ASM sellers. Even formalized artisanal miners sometimes must resort to informal commercialization channels because a critical mass has not been reached to establish reliable markets and only informal buyers are available in certain areas or in particular moments.

An additional problem emerges from an information differential between ASM producers and buyers. Artisanal miners do not always have access to current information on gold prices, particularly when they operate in remote areas with limited internet access. Buyers' secrecy and opaque market dynamics also limit miners' knowledge about which channels provide fair or unfair treatment. These issues have been identified as a particular problem for pallaqueras, who have lower literacy levels than average male miners and whose marginalized status limits their ability to push back against unfair treatment. Their exclusion from the REINFO precludes pallaqueras from selling gold via formal channels, locking them into informal markets where they are often targeted for the worst abuses from predatory actors.

Some progress has been made against predatory behaviors, notably with the introduction of a mobile app from Solidaridad that allows artisanal miners to spot check the gold price and calculate fair payment for their products. There are also examples, though limited thus far, of ASM organizations playing an oversight role to identify and exclude abusive buyers in their local areas. Tighter state regulation of gold and ore buyers could also help diffuse the predatory dynamic that exists in many ASM settings. However, it is also important to acknowledge that buyers who benefit from the status quo might resist changes that reduce their profits by leveling the playing field. In this regard, ASM advocates have called on the state to demonstrate political will to monitor buyers and processers and crack down on abuses, rather than focusing only on the artisanal producers.

Finally, as an ASM leader noted, liquidity challenges further complicate ASM commercialization. As a rule, ASM operations are under-capitalized, with very slim margins to balance income and expenditures on a rolling basis. Some formal commercialization channels process payments slowly and these delays can threaten the short-term solvency of ASM operations.[48] An ASM owner with immediate cash-flow needs might

[48] *planetGOLD (2021b).*

see no choice but to sell informally, sacrificing better prices and conditions in the formal market for the benefit of rapid payment. The value artisanal miners place on immediate payment has also been identified elsewhere as a factor in the persistence of mercury processing techniques.[49] Liquidity problems and rapid payment needs should not be underestimated when crafting commercialization policies or interventions.

One model suggested by miners is for the state to intervene directly as a buyer of ore and/or gold. The success of Chile's state agency ENAMI, which buys ASM ore and handles processing and commercialization, provides a point of reference and potential model. There is precedent for this model in Peru, with the Banco Minero and Activos Mineros SAC buying ore and/or gold at different periods of time, though these experiences were not always successful. Reviving a state buyer model has potential, but could also be risky given Peru's underlying challenges with state capacity and widespread public perceptions of corruption. An alternative approach could be for the state to expand its role fostering the development of a robust private market with more buyers and channels, coupled with identifying and sanctioning predatory actors. In the specific context of selling whole ore, artisanal miners often suspect they are cheated in the sampling and analysis to grade the gold content, which determines their payment. State or third-party involvement to monitor fairness and enhance confidence could have substantial positive effects. The state could even establish an intermediary entity to handle ore sampling and analysis, leaving extraction to artisanal miners and processing to private sector plants while generating confidence and trust in both directions.[50]

[48] *This problem of slow payment was noted under the old state-buyer model with Activos Mineros SAC.*

[50] *Veiga et al (2014).*

[51] *Veiga & Fadina (2020).*

4.2.1. Certification and premium markets

In the last decade, certification and premium market models have emerged as a potential solution to commercialization problems in ASM, while at the same time incentivizing improvements in environmental and social sustainability. Globally, there are two certification models that specifically target the ASM sector, Fairtrade Gold managed by Fairtrade International and Fairmined Gold managed by the Alliance for Responsible Mining. Both certification models were created to provide artisanal miners with support so they could implement more responsible practices while incentivizing their efforts with a fair, guaranteed price for their gold, greater than or equal to 95% of the London Bullion Market Association (LBMA) fixing for gold, as well as an additional premium. Miners who obtain the Fairtrade Gold certification receive a premium of $2000 USD per kg of gold, while miners who obtain the Fairmined Gold certification receive a premium of $4000 USD per kg of gold. Both certification models have an additional ecological gold premium for miners who produce gold without the use of mercury or cyanide. Fairtrade Eco-gold producers receive a premium of 15% above the applicable LBMA gold price, and Fairmined Eco-gold producers receive a fixed premium of $6000 USD per kg of gold. A third player, the Swiss Better Gold Initiative (SBG), does not run a certification system, but pursues similar goals in cultivating and supporting responsible ASM producers and connecting them with premium markets in Switzerland.

While these models have transformative potential, their reach thus far has been very limited. Currently in Peru, there are only eleven certified artisanal mining organizations, three Fairmined and eight Fairtrade, and SBG has not reached exportation stage. These miniscule numbers demonstrate that scaling up is a major challenge if the potential of certification models is to be realized. One of the largest barriers to entry for miners is that they must be fully formalized before even being considered for certification. Given the low rates of formalization in Peru, most artisanal miners are ineligible for certification. Another barrier is that certification requirements are different from formalization requirements. This creates a double burden to obtain and maintain both formalization and certification. Miners are well aware of these barriers and expressed doubts about the relevance of certification for most ASM actors. Furthermore, there is evidence that smaller-scale ASM producers struggle more to achieve certification and special export standards, which can reinforce and deepen inequalities within the sector.

Another key concern for certification models is the challenge of increasing the traceability of ASM gold. The basic assumption of certification and premium markets is that buyers can be assured that ethical, environmental, and labor standards are met all along the production and supply chain. Premium buyers and international actors value these models as a way to avoid reputational risk and/or burnish their credentials as responsible actors. Gaps in traceability threaten to undermine this assumption, and even a few examples of illegal or otherwise problematically produced gold entering these markets could erode confidence.

Leaders in this space acknowledge that a key challenge is finding ways to speed and ease due diligence without compromising rigor. One set of approaches focus on technological interventions, such as the Peruvian government's development of a mobile app to register and track gold production, or efforts to merge and cross-check data from different sources to identify potential anomalies and thus target monitoring and enforcement resources. The Swiss Better Gold Initiative has advanced another approach focusing on education. They recently released infographics to educate artisanal miners about what traceability is, why it is important, and how to achieve it in ASM contexts. This approach acknowledges the reality that many ASM actors are not initially interested and must be convinced of the value of implementing changes.

Another response to the challenges around ASM certification is ARM's recent creation of a less stringent

model called the CRAFT Code (Code of Risk-mitigation for ASM engaging in Formal Trade). CRAFT attempts to overcome a key barrier by allowing participation from miners who have not yet completed formalization. The program is aligned with the OECD Due Diligence guide but does not have any environmental requirements. The premise of this new code is to serve as a steppingstone for miners, moving them closer to attaining full Fairmined Gold certification at a later stage. This program is still in its infancy, with no CRAFT certified ASM in Peru, so its effectiveness is unclear.

Finally, it is important to note that certification and premium market models depend on involvement from NGOs (certifying organizations) and are vulnerable to market volatility. Regarding the first point, to date NGOs have shown willingness to develop and subsidize certification programs, but this role is not guaranteed in perpetuity. Second, certification models rely on the market, which means that shifts in supply and demand strongly impact the success of the certification and premium. For example, if demand for Fairmined and Fairtrade gold by jewelers decreases, as was seen during the COVID-19 pandemic, then certified artisanal miners might not be able to sell all of their production via the premium channels. Erosion of faith in the certification standard could also upend the market, as noted above in relation to traceability challenges.

4.3.
ASM coexistence models

Coexistence models between ASM and mining companies are attracting increasing interest as a pathway with advantages for issues from commercialization, formalization, profitability, to environmental concerns. The basic idea is for artisanal miners operating within the concessions of mining companies to reach mutually beneficial agreements. Most examples to date have occurred between MSM and ASM, though under some circumstances LSM operations might also employ the model. Recall that according to data from DGFM, 27% of ASM operations working on mining concessions held by someone else, some 13,605 registrations in the REINFO, overlap with concessions owned by large- or medium-scale mining. Some varieties of coexistence also occur between companies and artisanal miners who operate nearby but outside of company concessions.

Two key studies of ASM coexistence models in Peru and Latin America have been commissioned by Solidaridad. These studies document that different variations of coexistence have emerged in the field, from hands-off, "live and let live" models, to informal agreements, to formal contracts with technical support and direct production and processing links.[51] They also identified two necessary conditions for success: artisanal miners' commitment to formalization, and the company's commitment to make the agreement work.[52] A second tier of factors were identified as relevant though not indispensable: corporate culture and organizational resources, and engagement by a third party to mediate and facilitate, generally a government actor or NGO. Other factors vary with each case, such as the role of geology and whether the company and artisanal miners are interested in the same deposits.[53]

The most comprehensive varieties of ASM-company coexistence can bring significant benefits for both parties. For artisanal miners, coexistence models can include formal access agreements (assuming the company is the title holder), which are a necessary condition to complete formalization. In many cases, the companies encourage or require the artisanal miners to sell their ore directly to the company, which shifts miners away from inefficient and polluting mercury amalgamation methods. Gold recovery in professional plants is typically 90% or greater, compared to 30 to 40% using mercury amalgamation. Even paying for processing costs, the net profits for artisanal miners should be substantially higher than using mercury. This division of labor also lets artisanal miners focus where they have a comparative advantage – extracting high grade but small or discontinuous deposits – and stop engaging in processes that they do poorly – processing ore to extract gold. The increased specialization could further boost ASM profitability.

For MSM companies, coexistence models can bring in a valuable new source of material that they can process at a profit. Their technological advantages over ASM processing make this a win-win, in which both parties' profits can increase in tandem. The processing shift also has significant environmental advantages as extraction is performed using modern, cleaner techniques. In addition, companies can often benefit by suggesting deposits or areas for artisanal miners to work, which had been identified during exploration and geology analysis but are not economically exploitable for the company.[54] Some MSM have also experimented with contracting models for coexistence, incorporating artisanal miners within their operations directly. An

[52] *Quiñon (2021)*

[53] *Cano y Quiñon (2020).*

[53] *Discussion of ASM coexistence models here refers exclusively to hard-rock mining, as at present no examples exist in Peru of coexistence in alluvial settings.*

[54] *Some company officials noted that "economical" depends on many factors, including gold price, which might make companies reluctant to cede a spot that is not of interest at present, to protect future flexibility.*

added benefit of this model is to bring artisanal miners under the umbrella of the company's environmental and labor standards and permits.

The calculations for LSM companies are somewhat different, though in certain contexts can still be beneficial. The economic case is often weaker in LSM, and even some MSM, because the quantities of ore produced by ASM are insignificant compared to the company's scale of operation, such that the win-win assumptions around profitability would not be compelling. However, even in these instances, companies might choose to engage in coexistence models to strengthen their community relations, or as part of their local development initiatives. This is particularly relevant when artisanal miners are local community members whose goodwill and support can help secure social license to operate, which is a compelling business interest for even the largest operations.

Another key point will require research as ASM coexistence models develop and expand. Some company officials worry that a tolerant or cooperative approach with ASM will set a bad precedent and lead to more invasions and problems. In other cases, companies and artisanal miners suggest coexistence agreements will lead to fewer problems with new ASM proliferation or invasions, as the established artisanal miners limit or prevent new arrivals. This debate can only be advanced through empirical analysis of diverse ASM coexistence

cases and trends.

Although ASM coexistence models can be beneficial for companies, wariness is the default perspective across much of the sector. Especially in LSM, a closed, legalistic approach dominates, with no interest to engage with artisanal miners and a focus on protecting legal concession rights. A mining company official also highlighted that the state's unclear and shifting stance toward ASM reinforces companies' reluctance to engage. Others noted it is difficult to distinguish between responsible and irresponsible ASM actors, especially until formalization can be fixed. They also feel that associating with ASM creates both liability and reputational risk for companies. For all these reasons, many companies see dealing with ASM as an unnecessary risk, especially when they can call on the state or private security to prevent or remove claim invaders. Industry representatives noted that they must comply with international standards, especially companies that are listed on international stock exchanges. At present, these leaders see association with ASM as a risk, though we see potential if companies and industry organizations can incorporate collaboration with ASM and support for formalization within their social responsibility indicators, or otherwise shift the incentive structure.

Additionally, some within the LSM sector increasingly see an anti-ASM hard line as unsustainable, particularly as ASM-company overlaps become more common and enforcement-focused approaches exacerbate conflict. In general, more clarity on the legal frameworks and stronger evidence around proven models for coexistence could make companies more open to the idea of coexistence.

Even when companies are willing to engage with ASM and explore coexistence models, though, there are important hurdles to overcome. Trust is a key issue for coexistence. Often, mining companies and artisanal miners both harbor existing biases and mistrust toward the other. For example, many artisanal miners have past experiences with unscrupulous processing plants and buyers, which make them reluctant to sell whole ore rather than extracting the gold themselves. Transparency throughout the gold recovery process, demonstrations of efficiency, and gold-content analysis by independent labs can help assuage miners' fears, but this requires time and consistency. Another frustration among artisanal miners is the frequent turnover in ownership and management of corporate mining operations, particularly during pre-production stages. One ASM leader recounted negotiating toward a coexistence agreement with five different companies over the course of 14 years, with each new company bringing new people and perspectives, dragging out a process that still has not been resolved. On the other side, many companies have direct or indirect experiences of informal or illegal miners invading claims or leaving behind unmanaged tailings and waste. Artisanal miners also must work to earn the trust of the company by living up to their agreements and committing to continual improvements in areas like sustainability and working conditions.

As noted elsewhere, during the negotiation and trust-building stages, the state and NGOs can play an important intermediary role, though this depends on their own ability to gain trust on all sides. Artisanal miners and company representatives alike praised the role of NGOs as intermediaries in negotiations and relationship building, assuming the NGOs have sufficient knowledge of the sector and ability to serve as a trusted broker. The state also has the potential to incentiv-

ize coexistence agreements, though thus far it has not taken major steps in that direction. Positive incentives suggested by company leaders include tax breaks for those who formally work with ASM, while negative incentives suggested by artisanal miners include mandates for title holders to negotiate around exploitation contracts. Another pathway could involve development of market incentives, similar to certification for ASM, to encourage and reward mining companies who engage responsibly and sustainably with ASM.

Traceability is another potential sticking point for ASM coexistence models, closely linked to issues of trust. MSM and LSM companies, especially publicly traded ones, worry that buying mineral from artisanal miners creates reputational and legal risks. Given the obscure production and custody chains in ASM, companies worry that mineral they buy might be linked back to child labor, mercury pollution, illegal mining, or other social and environmental problems. The context of widespread informality in ASM complicates traceability. For example, "*facturadores*" are individuals with ASM registration who act as middlemen to pass off the production of informal or illegal miners as their own, thus "washing" it into formal status. Tricks of this sort perpetuate the mistrust of many companies to interact with ASM, unless traceability can be improved. This is a challenge also for well-intentioned artisanal miners, because it is difficult to bring their production, management, and record keeping practices up to follow traceability standards.

Finally, it is important to recognize that power dynamics are inherently unequal between companies and artisanal miners, particularly when miners' pathway to formalization depends on the company granting an access agreement. Coexistence models assume good-faith efforts to identify and pursue mutual benefit. If companies leverage power differentials to exploit artisanal miners and shift more benefits to themselves, the models no longer work and instead replicate the predatory behavior that has long plagued informal ASM commercialization chains. State and NGO actors with an interest in coexistence models should focus analysis and resources on identifying safeguards against such abuses. Social responsibility standards can be an effective check, but depend on corporate culture and self-policing. Value chain incentives and standards, such as certification and premium markets, offer another approach to encourage responsible behavior. Many of the challenges and opportunities around coexistence models are also applicable to ASM relations with processing plants, which have historically been plagued by abuses enabled by the large power imbalance between artisanal miners and plant owners / gold buyers.[55] Bringing together research on these two important topics is a ripe area for synergy and cross-case learning. In both cases, a fundamental challenge is to foster the emergence of private sector actors who will engage with ASM in responsible, mutually beneficial ways and to identify and remove predatory actors.

In summary, models for coexistence between ASM and MSM / LSM have shown the potential to be win-win arrangements across economic, environmental, and social fronts. However, coexistence agreements remain the exception rather than the norm in MSM and are even more rare in LSM. There is a clear need for more research to document case studies of successes and failures, identify best practices and pitfalls, and continue development toward scalable yet flexible models.

A final caveat connects ASM coexistence models to the earlier discussion of mining title problems. It is our perspective that coexistence models are viable and valuable when companies are active within their claims, especially when they have processing capacity to absorb ASM production, provide technical support, or otherwise collaborate. In contrast, it is important to underscore that this model does not solve the problems of speculation and idle claims. In those cases, the title holder can only negotiate for an access agreement (and payment), but cannot offer true coexistence because they engage in no activity with which to coexist. Suggesting "coexistence" between ASM and title speculators would only further entrench and embolden this problematic practice.

[55] *Veiga et al (2014.).*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5. DYNAMICS, DIALOGUES, AND ORGANIZING

The ASM sector is shaped by interactions with state, private sector, and civil society actors. The characteristics and perspectives of these actors and their relationships with ASM are key to understanding the sector. In the following paragraphs we analyze the state and civil society as they relate to ASM. The most important facets of ASM–private sector dynamics are highlighted elsewhere in the report, mostly within Section 4: Economic Facets. Interviewees from across sectors agreed that there is very little high-level dialogue between ASM and MSM / LSM, apart from localized negotiations in sites of overlap. Where these relations do exist, both ASM and MSM/LSM interviewees stressed the importance of sustained, good-faith dialogues with the participation of high-level actors who have decision making authority.

A few key characteristics of the Peruvian state shape its dealings with ASM across all levels of government. The first is that weakness of the state as a whole and of specific entities within the state, including at regional and local levels of government, undermine effective action. The general weakness of the state is compounded in the case of ASM by very little state presence in artisanal mining zones and high turnover of officials and staff from top to bottom. Considering its weakness and absence in ASM contexts, it is little surprise that the state has struggled to influence positive directions for the sector, solve persistent problems, or stamp out bad actors. In addition, artisanal miners note their persistent perception that some agencies and officials within the state persecute ASM and create an adversarial, punitive dynamic. The sense of persecution goes hand in hand with artisanal miners' perceptions of a double standard, that the state gives LSM special treatment and forgives mistakes or problems, while ASM is held to unattainable standards and given no leeway.

The tense atmosphere between ASM and the state makes it unfeasible to develop constructive dialogues for the exchange of ideas and establishment of compromises. Both sides agree that dialogues are limited and often frustrating. ASM leaders feel that state representatives are often untrustworthy. They note they have been willing to participate in dialogues, events, and studies when invited, but are frustrated by a sense that nothing results. They resent being called into dialogues when they perceive that the state does not act on what they learn; as a result, officials risk losing the goodwill of miners if dialogue does not translate into clear action and benefits. Furthermore, high turnover

in staff and even ministers and leadership leaves ASM leaders feeling that dialogue with the state is redundant – one leader described it as continually being asked to teach new officials about ASM and re-explain the same positions and complaints. In contrast, ASM leaders complain that if they call the Ministry of Energy and Mines or other officials to ask for an audience with high level officials, they are ignored or delayed for months. Their perceptions of relations and dialogues with the state are overwhelmingly negative. Taken together, these reflections from ASM leaders suggest that the state's focus in the short run should be on linking dialogue to action (and setting realistic expectations), rather than focusing immediately on opening more spaces for dialogue. Some interviewees claimed that relations have been better at certain points in the past, suggesting that relationship and trust building efforts can bear fruit and set the stage for broader advances.

Government officials, for their part, attempt to maintain dialogue with the ASM sector, but expressed frustration that organization is limited and fragmented, making it difficult to advance in negotiations and dialogues with artisanal miners. ASM organizations are often unstable, with alliances or groups forming around specific issues then dissolving, or disagreements within miner organizations leading to splits. Officials note particular challenges around representativeness – how to know who alleged ASM leaders truly represent and whether they are valid voices for ASM. Officials also complained about what they saw as old-fashioned leaders in many ASM organizations, who drum up anti-state sentiment and rely on oppositional tactics like strikes and road blockades rather than engaging in productive dialogue. In this regard, both government and ASM leaders claim that the other side perpetuates a counterproductive, adversarial dynamic.

When asked about dynamics and dialogues around ASM, many interviewees spoke of their dream to see a single organization representing the whole sector. The diversity of artisanal mining makes this scale of

organizing difficult, as a pan-ASM group must identify common interests that intersect across the sector's diversity. The interests of ASM are fractured by regional differences, hard-rock versus alluvial, owners or laborers, gender and socioeconomic status, etc. For example, women ASM leaders report being excluded from many high-level spaces, with male ASM leaders acting as gatekeepers and reproducing traditional gender norms. This exclusion stands in sharp contrast to the widespread formation of ASM women's organizations at the local level. Domestic realities of women also limit their participation, as many cannot find time to participate or travel for events and meetings. Many of the women who do emerge as leaders beyond the local level are single or do not have children to take care of. These issues of exclusion and representation limit ASM women from exercising their voice and shaping the debates and decisions that affect them. There is strong potential for empowerment of ASM women through scaling up their strong local organizing traditions and securing recognition and inclusion.

The sometimes-hazy distinctions between formal, informal, and illegal ASM also complicate organization, with the interests of illicit actors threatened by advances in formalization and transparency. It is necessary to confront the reality that not all ASM actors are interested in making changes to operate more responsibly and sustainably. Interviewees from all groups noted that there is a sub-population of ASM that prefers informality and their traditional practices. Efforts to organize ASM at a national scale will need to balance the goals of supporting motivated artisanal miners, convincing and educating skeptical artisanal miners, while also admitting that some actors will not be convinced or changed. This is a key area for additional research, to understand how prevalent resistant attitudes are in ASM and which segments of the sector are willing to assume the obligations of responsible mining. Understanding current perspectives and potential for education and change could pave the way for better organizing campaigns. Progress in organizing artisanal miners and improving sustainability can create a virtuous cycle, as successes increase interest among previously wary peers and catalyze further improvements.

Across the board, there is a need for support of ASM organizing and capacity building. A first step highlighted in the interviews is the need for a comprehensive analysis to map existing ASM organizations at all scales. This point dovetails with government officials' complaints about being uncertain who ASM leaders truly represent. Second, ASM leaders called for comprehensive technical and capacity building, ranging from organizational strengthening to entrepreneurship and business workshops to technical and process improvements. There are strong potential synergies, as the types of trainings and support needed to strengthen ASM organizations could also improve give artisanal miners the tools and knowledge they need to improve their profitability and sustainability. For example, financial management and operational organization trainings would serve both ends. These needs could be met by increased government programming or by private sector or civil society actors.

Government officials recognize that their complicated dynamics with ASM preclude them from catalyzing and nurturing development of artisanal miner organizations. This limitation creates an opening for intervention by respected, independent civil society actors and NGOs, and for bottom-up organizing by artisanal miners themselves. Organizations intervening in this area need to maintain clarity about the central goal to open space for and empower artisanal miners to advocate for their own interests. Some analysts have criticized NGOs for being too worried about reputational risks, only wanting to work with formal ASM. Overly cautious approaches run the risk of re-marginalizing and excluding most of ASM and ignore the complex realities and shared blame for the disastrously slow formalization process. To maximize their impact in fostering ASM organization and dialogues, NGOs must be willing to engage with responsible and improvement-oriented ASM actors regardless of formalization status.

6. CONCLUSIONS

This study took a qualitative approach to analyzing the realities in Peruvian ASM to establish a baseline for the REVALORO project, drawing from our own interviews, as well as interviews, focus groups, and meetings conducted by Solidaridad, and other secondary and academic sources. The guiding question behind the report was: What are the principal limitations and opportunities for ASM producers and workers in Peru to achieve better working conditions and higher incomes? The analysis focused on roles for the public sector, private sector, and civil society organizations. We included analysis of gender, though this topic merits much deeper consideration than was achieved here. There is a particular unmet need to disentangle the different roles and positionalities of women in ASM, recognizing that pallaqueras are the most visible, thanks to recent efforts by NGOs, but are far from the only women in ASM.

The report details numerous challenges and opportunities around ASM in Peru, of which a few key takeaways are noted here. First, the report underscores the importance of formalization. Formalization is the fundamental lynchpin that drives success or failure on many other issues in ASM. Challenges with formalization are not unique to Peru, but it is likely that solutions will need to be tailored to the national reality and flexible to work across the diversity of contexts. If formalization could be "fixed" and the majority of ASM formalized within the coming years, there would be numerous positive spillover effects that would facilitate addressing other problems that currently seem intractable.

Second, and related to the first, improvements for the ASM sector would be greatly facilitated if the state could shift to a holistic, supportive stance toward ASM. To begin, this would mean moving from a legalistic focus on formalization of ASM operations and individual miners to a view encompassing the whole ecosystem, including inputs, production, titles, commercialization, etc. This means working not only to formalize ASM miners, but also to monitor suppliers, buyers, title holders, middlemen, etc. and helping build the bench of responsible actors around ASM. This approach will require up-front investments, which is a question primarily of political will. It is likely that if the state begins treating ASM as a sector that contributes to development and mer-

its support, that in the medium-term they will also be more successful in sanctioning and eradicating truly illegal/bad actors in the sector, who would begin to stand out more from the formalized, positive mass. The current mix of demonization (especially in the press, but also by some elements of the state) and broad informality makes it impossible for the state to differentiate between good and bad actors. This is linked to the issue that the state's adversarial and inconsistent stances toward ASM set the tone for private sector actors. Banks and mining companies do not want to work with ASM because of their perceived illegality, uncertainty, and risk. If the state sets the tone from the top that ASM can be a development plank, other actors will follow suit. This ultimately comes down to a mindset shift and political will – can the state accept ASM as a development driver and act accordingly?

An important step has been initiated through DGFM's national multi-sectoral policy process for ASM. This initiative has followed a rigorous evaluation and planning model to identify current realities and future directions for public policy around ASM. DGFM has made significant efforts to engage artisanal miners in the process thus far and have expressed a commitment to continue engagement during the implementation stage. The ongoing dialogue between policy makers and those affected (artisanal miners) offers favorable conditions for the creation of more appropriate regulatory frameworks, conducive to the development and sustainability of the sector. Successful implementation of the plans and ideas discussed within the policy would represent a huge step toward addressing many of the issues identified in this report.

Third, while the state's approach to ASM is the central focus for much of the report, there are clear roles to be played by other actors. Civil society has the potential to act as a mutually trusted intermediary between ASM and state and private actors. This trusted role also opens possibilities for NGOs to support and nurture organization within ASM and catalyze other improvements. Elements of the private sector, for their part, are increasingly willing to engage with ASM, recognizing potential for mutually beneficial engagements. Moving this perspective from the margins to the mainstream within MSM and LSM, and cultivating more ASM-focused support services, financing, suppliers, buyers, etc. would open powerful new opportunities to develop a sustainable, responsible ASM.

Organizations representing artisanal miners also have important roles to play in improving working conditions, incomes, and the sustainability of ASM. Numerous ASM organizations exist in Peru, but their participation in dialogues and ability to influence public and private decision making have been limited. Their relationships with the state are often tense and dynamics within ASM organizations are frequently fragmented. These realities create challenges for ASM organizations to be recognized and empowered. This is particularly the case for women in ASM, both pallaqueras and others, who are often excluded and marginalized. Finding ways to scale up and unify ASM organizing, address and confront exclusions within the sector, and identify shared interests across diversity could set the stage for artisanal miners to play a much larger role in influencing policies and decisions that affect them. This can be achieved through bottom-up initiatives of the miners themselves, and with support from the public, private, and civil society sectors.

Finally, over the course of the baseline study we have identified important areas for research. The following topics could be fruitful for future investigation:

- *How can ASM organizing be strengthened and made more representative and complete? How can ASM participation be optimized in dialogues with policy makers?*

- *What conditions are necessary to improve women's participation in ASM decision-making processes? What are the convergences and divergences of interests and perspectives between different groups of women in ASM?*

- *What potentials and pitfalls exist in ASM-company coexistence models, and how can best practices be exported and scaled up?*

- *How does the mining title and concession system in Peru compare to other countries and what changes could be made to facilitate titling for ASM without harming the legitimate interests of LSM and other actors?*

- *How can negative public perception, media narratives, and official attitudes toward ASM be shifted? What critiques of the sector are merited and how can they be addressed? How can the potential contributions of ASM to sustainable development become more recognized and accepted?*

APPENDICES

List of interviews:

Alberto Rojas	Director General de Formalización Minera
Álvaro Cano	Investigador y consultor internacional en minería
Cecilia Julcarima	Red Nacional de Mujeres Mineras del Perú
Franco Arista	Coordinador Nacional Proyecto planetGOLD
Hernán de la Cruz Enciso	Coordinador del Consejo Nacional de la Minería Peruana a Pequeña Escala (CNMPPE)
Javier Camargo	Coordinador Nacional de la Iniciativa Oro Responsable
José Carneiro	CEO de SMRL Acumulación Los Rosales
Lenin Valencia	Experto en gobernanza y políticas públicas
Manuel Reinoso	Sociedad Nacional de Minería en Pequeña Escala (SONAMIPE)
Máximo Gallo Quintana	Experto en gerencia de proyectos y gestión social
Nahúm Briceño Rodríguez	Asociación de Mineros Artesanales de San Blas (AMASBA)
Olinda Orozco	Presidenta de la ONG Red Social
Oscar Bravo	Especialista en Asuntos Sociales de la Dirección General de Formalización Minera
Pavell Galvez	Gerente de Desarrollo de Negocios de Cori Puno SAC
Raúl Jacob Ruisánchez	Presidente de la Sociedad Nacional de Minería, Petróleo y Energía (SNMPE)
Sandra Guzmán	Especialista de género del proyecto planetGOLD
Yakir Rozas	Director Regional de Energía, Minas e Hidrocarburos de Madre de Dios
--	Representante anónimo de una empresa de la gran minería
--	Representante del Grupo Yanaquihua

Guide Questions:

General objective

What are the main limitations and opportunities for producers and workers of Peruvian ASM to access better working conditions and higher incomes?

Public sector

1. *What are the main problems for artisanal miners to have safe working conditions? (i.e. zero accidents, personal protection, occupational health)*
2. *What are the main difficulties for artisanal miners to have an employment contract with social benefits? (i.e. vacation, perks, life insurance, etc.)*
3. *What are the main difficulties for artisanal miners to make their operations more productive and profitable?*
4. *What limitations or opportunities does the current regulatory framework create for achieving more inclusive artisanal mining for women?*
5. *What are the main difficulties of the formalization process for artisanal miners?*
6. *What are the main difficulties in the commercialization of minerals from ASM?*
7. *What are the limitations and opportunities that the current regulatory framework creates for the recognition of ancestral forms of mining in ASM (i.e. Cachorreros, Pallaqueras, Challamperos, Llamperos, Chichiqueros, among others)?*

Private sector

1. *To what extent do internal policies of the formal private sector facilitate or limit the integration of ASM in the formal economy?*
2. *What associative or business models exist in the sector to promote the responsible and inclusive economic development of ASM? What factors facilitate or inhibit the implementation of the associated models for different actors?*
3. *What are the perceptions of the main actors regarding the conditions of women in artisanal mining?*

Civil society

Dialogues

1. *What are the spaces for dialogue between artisanal miners and the public sector?*
2. *What are the spaces for dialogue between artisanal miners and the private sector?*
3. *What actors represent artisanal miners in these instances? How are they chosen? (Disaggregate by women and formal / informal mining)*
4. *To what extent do these actors participate in the formulation of public and private policies*

Capabilities

5. *What do you consider to be the most important skills and knowledge that an organization must have to influence public and private decision-making? Do the organizations involved feel that they have these abilities?*
6. *What would be the best strategies to improve these abilities (e.g. participating in events, having mentoring sessions for some members, group workshops, etc.)?*

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