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Understanding the Persistence of Informality in Bolivia's Gold Value Chain: Analysis of Incentives and Constraints

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Abbreviations

AFCOOP	Autoridad de Fiscalización y Control de Cooperativas
AFP	Administradora de Fondos de Pensiones
AJAM	Autoridad Jurisdiccional Administrativa Minera
AML	Anti Money-Laundering
ASGM	Artisanal and Small-scale Gold Mining
ASM	Artisanal and Small-scale Mining
ATE	Autorizaciones Transitorias Especiales
BGI	Better Gold Initiative
CAM	Contrato Administrativo Minero
CH	Switzerland
CNS	Caja Nacional de Salud
COMIBOL	Corporación Minera de Bolivia
DAPRO	Dirección de Análisis Productivo
FACTA	(United States) Foreign Account Tax Compliance Act
FATF	Financial Action Task Force
FOFIM	Fondo de Financiamiento para la Minería
FUNDEMPRESA	Registro Comercial de Bolivia
GAFILAT	Grupo de Acción Financiera de Latinoamérica
ID	Identity Card
IT	Impuesto a las Transacciones
IUE	Impuesto a las Utilidades de las Empresas
IVA	Impuesto al Valor Agregado
LBMA	London Bullion Market Association
MMAYA	Ministerio de Medio Ambiente y Agua
MMM	Ministerio de Minería y Metalurgia
NIT	Número de Identificación Tributaria
NSMG	Non-State Market-based Governance
OECD	Organization for Economic Development
RUEX	Registro Único de Exportadores
SBGI	Swiss Better Gold Initiative
SENARECOM	Servicio Nacional de Registro y Control de la Comercialización de Minerales y Metales
SENVAVEX	Servicio Nacional de Verificación de Exportaciones
SIIP	Sistema Integrado de Información Productiva
SIN	Sistema de Impuestos Nacionales
SINACOM	Sistema Nacional de Información Sobre Comercialización y Exportaciones Mineras
SNIA	Sistema Nacional de Información Ambiental
UAE	United Arab Emirates
UIF	Unidad de Investigaciones Financieras
USD	United States Dollar

Executive summary

In many resource-rich low- and middle-income countries, artisanal and small-scale gold mining (ASGM) constitutes an important source of livelihood and contributes to economic development. However, the sector generally operates informally and without oversight. Informal ASGM is often associated with land conflicts, occupational health and safety issues, human rights violations and environmental degradation. Despite the promotion of formalization, certification and responsible sourcing programs, ASGM remains an activity that takes place largely outside the regulatory control of governments. This poses significant challenges for the internal and external trade in ASM gold due to the lack of traceability, the loss of significant tax revenues for host states, high risks of money laundering and the funding of criminal groups.

To analyze and explain the persistence of informality in ASGM settings we develop a conceptual framework to capture the incentive structures of domestic value chain actors' preferences with regard to formal or informal business operations. The framework provides a generic 'formalization matrix' that can be applied across different countries and ASGM contexts (and possibly to other informal value chains). This analytical model allows us to, firstly, situate the different domestic ASGM value chain actors at the upstream, midstream and downstream level (producers, intermediaries, exporters) along a 'formality continuum' for each formalization requirement as stipulated by the applicable legal framework and the competent state authorities; and, secondly, to systematically capture the (perceived) costs, benefits and risks that inform actors' choices to operate under different formalization modes, that is, fully or partially formalized, informal, or even illegal. In this way, advantages and disadvantages of informality and the respective incentive structures of domestic value chain actors can be discerned to inform future policy design in the context of formalization efforts.

We apply our conceptual framework to the Bolivian gold sector, analyzing the domestic ASGM value chain. The analysis is structured into three parts, corresponding to the three key actor groups along the domestic gold value chain in Bolivia (cooperative producers, intermediaries and private exporters). The findings indicate that incentive structures of value chain actors in Bolivia's ASGM sector are not in favor of gradual formalization but are often distorted, entrenching informality and non-compliance.

The following analysis results in a set of recommendations on how the Swiss Better Gold

Initiative (SBGI) can contribute to advancing formalization and supply chain due diligence efforts in the country. The main idea is to shift the focus away from promoting direct export of responsibly produced gold towards prioritizing policy dialogue and reform. We recommend three main areas for policy reform: first, legal recognition of artisanal producers and midstream actors; second, setting targeted incentives to alter value chain actors' preferences in favor of formalization; third, strengthening state-delivery of technical and educational support to mining cooperatives and communities.

The analysis rests on a qualitative case study of the Bolivian gold trading sector. It draws on academic literature on ASGM and the cooperative gold mining sector in Bolivia, documents and data provided by the Bolivian regulatory and other relevant institutions, and data that was collected through a series of semi-structured interviews with cooperative gold miners, Bolivian gold export traders, independent private sector consultants, and regulatory authorities, conducted during in-depth field research carried out in June 2021.

Analysis of informality in the Bolivian gold value chain

1. Upstream: gold producers (gold mining cooperatives)

The analysis of the costs and benefits of different modes of formalization in Bolivia's cooperative gold mining sector indicates that the majority of cooperatives generally lacks incentives to become gradually more formalized. Overall, operating formally does not hold any tangible benefits for most cooperatives but involves both one-time and recurring costs as well as an increased administrative burden. Hence, most cooperatives embrace informality to avoid costs. At the same time, for most cooperatives, operating informally does not have any notable disadvantages. In general, the capacity to sustain current levels of production and to market gold remains relatively unaffected by the degree of a cooperative's formalization.

The situation is reinforced by a lack of administrative and organizational capacity, poor access to finance, and a culture of informality in business relations among the majority of gold mining cooperatives. Lack of education and absence of specific training for (new generations of) cooperative miners further contributes to the situation that technologically advanced, cleaner and more efficient production methods as well as new marketing opportunities for gold (such as direct exports) are either perceived as unattainable or not considered altogether by most cooperatives. Since there is no viable perspective for changing production arrangements and improved marketing opportunities, the potential benefits associated with becoming more formalized are limited and often outweighed by additional costs. In some areas formalization is further hampered by bureaucratic sclerosis and distrust towards state authorities. Thus, for many cooperatives reducing interactions with state authorities to a minimum becomes the preferred *modus operandi*.

At the same time, state authorities generally refrain from directly interfering with the work of gold mining cooperatives as illustrated by an almost complete lack of compliance enforcement across nearly all categories of formalization. Regular inspections, environmental controls or tax audits as well as an effective sanctions framework generally do not exist while in many areas a tacit toleration of legal norm violations has become the norm. This reinforces the perception among cooperatives (and other market actors) that legal regulations and respective formalization requirements can be flouted without consequence.

It is these two general components, the lack of tangible benefits of becoming formalized due to an almost complete absence of support services paired with a weak and in some areas non-existing enforcement and sanctions framework that cement the status quo of informality in the Bolivian cooperative gold mining sector. Complemented by a dysfunctional taxation system and an ill-designed regulatory framework for the internal commercialization of gold, the current political and regulatory situation creates a distorted incentive structure for gold mining cooperatives that abets informality instead of facilitating a gradual process of formalization.

2. Midstream: gold collectors and intermediary traders

Under the current legal framework basically all midstream-level gold traders operate in violation of the existing legal framework since gold sales are prohibited for anyone not directly connected to a mining contract. Thus, intermediaries are organized informally. However, despite their informal status, gold collectors and intermediary traders assume a crucial function in Bolivia's gold sector. They organize a significant part of the gold supplies for downstream export traders and thus serve as important logistics providers and retail agents. For the upstream gold producers, they constitute a crucial source of liquidity that allows them to cover regular expenses and to sustain production in remote areas. In fact, without the informal services provided by midstream-level gold traders, a large part of Bolivia's gold sector would not be functional.

Currently, there is no possibility for gold collectors and intermediary traders to leave irregularity behind and to become formalized. At the same time, these actors do not face a high risk of criminal prosecution and are (at least tacitly) tolerated by the state. Thus, despite their nominally illegal activities, gold collectors and intermediary traders generally operate openly and unimpeded.

The pervasive informality at the midstream level of Bolivia's gold sector makes traceability and supply chain due diligence largely impossible. Moreover, it prevents formalized export traders at downstream level from complying with the existing legal and regulatory framework. In fact, it frequently incentivizes exporters to misrepresent the origin of gold shipments.

Against this backdrop, it is strongly recommended that any attempt to formalize Bolivia's cooperative gold mining sector and to improve supply chain due diligence should include a legal recognition and formalization of midstream-level actors. Given the right set of incentives, particularly with regard to taxation and access to finance, midstream-level actors could benefit from formalization while contributing to enhanced traceability.

Ultimately, legal recognition and functional integration of gold collectors and intermediary traders into the formal economy will put an end to a situation where an entire economic subsector openly operates in violation of the law, undermining the credibility of legal and regulatory institutions.

3. Downstream: Bolivian private gold exporters

Being the formalized link at the end of a mostly informal value chain, Bolivia's gold export traders also contribute to informality when they buy gold from any origin which could be illegal but becomes formalized at the moment of exporting. They are situated at the bottleneck where all regulation takes effect, all documentation is supposed to be controlled, and where royalties and other official levies are collected.

Given the widespread informality at up- and mid-stream level, export traders face serious challenges in complying with the formal requirements for gold purchases, particularly when it comes to documenting the origin of gold shipments. This is because many cooperatives remain steeped in informality and fail to provide the necessary paper work while preferring to market their gold through individual sellers to avoid taxation. At the same time, many cooperatives are unable to regularly travel to La Paz to sell their gold directly to the export traders and, thus, must rely on illegal intermediaries. Consequently, there are many incentives built into the system of the Bolivian gold market that favor missing or false documentation of the origin of gold.

As a result, export traders must accept that a significant share of their direct suppliers remain undocumented and the origin of gold unknown. To operate profitably, exporters have to guarantee a continuous inflow of gold to keep up a certain frequency of export consignments (*rotación*). The same dynamic is at play for their choice of international customers and export markets. While the prices that exporters receive are certainly a key factor, the conditions of payment, especially the speed of the payment, are often equally important. Since most exporters depend on timely payments from their international clients to finance new gold purchases, ensuring fast and regular turnovers is crucial.

Quick payments combined with low due diligence requirements have made Dubai and India preferred export destinations for Bolivian exporters. Moreover, in the past, controls by commercial banks on the gold-trade related financial flows emitted and received by exporters have been lax. Due to the weak enforcement of anti-money laundering and terrorist financing provisions, gold exporters have faced almost no risk in commercializing gold of unknown and potentially illegal provenance.

It follows that the current regulatory framework does not correspond well with the reality of the Bolivian gold market. In practice, several regulatory exemptions, procedural 'workarounds', enforcement gaps and legal 'grey zones' have been established to allow for the smooth commercialization of gold despite widespread informality and illegality at upstream and midstream level. This lenient regulatory practice rife with legal contradictions does not incentivize export traders to comply with legal requirements for gold purchases. Currently, there are no incentives, positive or negative, for commercial gold exporters to comply with due diligence provisions and responsible sourcing standards.

Formalization matrices for Bolivian gold value chain actors

1. Upstream cooperative gold producers

Formalization requeriments	Formality continuum and formalization modes				
	Formal		Informal		Illegal
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited
1.1 Registered legal entity					?
1.2 Mining title (CAM)					?
1.3 Operating license					
1.4 Environmental license					
1.5 Access to finance					?
1.6 Taxes and duties					
1.7 Gold sales					

2. Midstream gold collectors and intermediary traders

Formalization requeriments	Formality continuum and formalization modes				
	Formal		Informal		Ilegal
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited
2.1 Registered legal entity					
2.2 Operating permission					
2.3 Gold purchase					?
2.4 Access to finance					?
2.5 Taxes and duties					
2.6 Gold sales					

3. Downstream private gold exporters

Formalization requeriments	Formality continuum and formalization modes				
	Formal		Informal		Ilegal
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited
3.1 Registered legal entity					
3.2 Gold purchases					
3.3 Access to finance					
3.4 Taxes and duties					
3.5 Gold sales/exports					?

Source: authors.

Recommendations

For years, the political situation in Bolivia's gold mining sector has been characterized by a political reform gridlock and a lack of progress in the areas of value chain formalization and enforcing existing regulations. As a consequence, Bolivia's cooperative gold mining sector has remained steeped in informality, with low-levels of administrative and managerial capacity, and continues to employ outdated, inefficient and harmful production methods.

Based on the analysis of the cost and benefits of formalization at the upstream, midstream, and downstream level of the Bolivian domestic gold market, three main areas of recommendations emerge:

1. Formalization of artisanal producers and midstream actors:

- Legally define and recognize artisanal miners, small-scale gold collectors and intermediaries and grant all three actor groups a legal right to formally sell gold on the domestic market.
- Adapt formalization requirements to the administrative and compliance capacity of each actor type.
- Compensate lack of enforcement capacity by the state by a strong incentive framework that rewards formality and penalizes informality and non-compliance.

2. Altering actors' incentive structures in favor of formalization:

- Reduce costs for formalization-related administrative requests.
- Harmonize royalty rates and contributions to mining federations and simplify the tax framework by applying taxes at the end of the value chain.
- Proactively create incentive structures for cooperatives and export traders to formalize trade operations and comply with due diligence standards through the introduction of targeted economic benefits and other advantages.

3. Strengthen state-delivery of technical support to mining cooperatives:

- Establish regional educational centers in mining areas, specifically for younger generations of miners to train and educate them about modern production methods, environmental and health hazards, business administration and marketing strategies.
- Improve miners' formal access to financial resources by setting up a (state-backed) special-purpose fund, possibly in cooperation with the private banking sector, to provide low-interest or interest-free loans for mining cooperatives that want to invest in more efficient and cleaner production methods.
- Provide technical support for cooperatives that seek to adopt cleaner and more efficient production methods as well as to obtain environmental licenses.

Contents

1. Background and mandate

Artisanal and small-scale mining (ASM) is defined as "formal or informal mining operations with predominantly simplified forms of exploration, extraction, processing, and transportation" (OECD, 2016). An estimated 80% of ASM takes place outside the regulatory control of governments (IGF, 2017; Verbrugge and Besmanos, 2016) but is often tolerated by authorities (OECD, 2016, p. 6). Among ASM activities artisanal and small-scale gold mining (ASGM) is among the most prevalent. Governments forfeit significant amounts of tax revenues in the form of royalties when gold is extracted outside the legal framework. Informal ASGM is often a source of land tenure conflict with both large industrial miners and local landholders (Hilson, 2002; Persaud et al., 2017). In addition, informal production systems are typically associated with negative externalities such as occupational health and safety issues, human rights violations, and environmental degradation (Fritz et al., 2016; Hilson et al., 2018).

After production, the gold enters the marketing chain which can be informal at the beginning but is usually integrated into the formal system at some later stage downstream the trading chain. At some point, the gold is either sold to a formal buyer who exports it through official channels, or it is brought to a third country by smuggling across borders; this can again lead to tax losses (Hunter, 2018; Hunter et al., 2017).

In recent years, efforts were undertaken to formalize the ASGM sector to improve working conditions, environmental performance, and miner's access to markets. Examples include the Global Environment Facility-funded and United-Nations-led PlanetGold program, the Swiss Development Cooperation-financed projects *Gestión Ambiental en la Minería Artesanal* (GAMA, Peru) and Sustainable Artisanal Mining (SAM, Mongolia), and the United States' Agency for International Development-funded *Oro Legal* (Colombia), among others. Non-state market-based governance (NSMG) initiatives have developed certification schemes for mining operations (e.g., Fairtrade, Fairmined) or sourcing strategies involving verification mechanisms for responsible production such as the Swiss Better Gold Initiative (SBGI, formerly Better Gold Initiative (BGI)). These initiatives are all building on the development potential of ASGM, as it is an important driver for local economies and a vital source of income for socio-economically disadvantaged people who lack access to formal markets (Collins and Lawson, 2014; Hilson and McQuilken, 2014).

Despite the introduction of NSMG initiatives, the supply of responsible gold continues to be very limited. In 2019, less than 1% of global ASGM production came from certified sources (Krauer, 2018; Sippl, 2020). There is also an increasing number of certified producers that decided not to renew certification and/or have been decertified.

To answer the question of why informality continues to prevail in ASGM settings - despite the promotion of formalization, certification, and responsible sourcing programs - we focus on the respective incentive structures that actors face along the domestic value chain. We develop a generic conceptual framework and analytical model to systematically capture the (perceived) costs, benefits and risks that inform actors' choices to operate under different formalization modes. In this way, advantages and disadvantages of informality and the respective incentive structures of domestic value actors can be analysed to inform future policy design in the context of formalization efforts.

This report was commissioned by SBGI to better understand the persistence of informality in the domestic ASGM value chain in Bolivia and to provide recommendations on how SBGI can contribute to advancing formalization and supply chain due diligence. However, since the conceptual framework is generic, it can be applied to ASGM contexts across different countries.

2. Conceptual framework

To answer the key question at hand – what explains the persistence of informality? – we develop a conceptual framework as illustrated in Table 1. The framework makes the question accessible for analysis by deconstructing it into three components: (1) the ASGM formality-informality continuum, (2) the formalization requirements that accrue along the domestic gold value chain, and (3) the cost-benefit calculations and risk perceptions that inform actors' business decisions regarding formalization.

	1 ← Formality-informality continuum →
2 ↑ Formalization requirements along the value chain ↓	**3** Cost-benefit calculations and risks perceptions informing business decisions on formalization

Table 1: Structure of the conceptual framework (source: authors).

2.1 The ASGM formality-informality continuum

The first component aims at understanding formality conceptually and how it plays out in reality by considering the different modes and forms of formality and informality that artisanal and small-scale gold mining and trading operations can take. We approach formality as a continuum ranging from formality to informality and even illegality as illustrated in Table 2 whereby, in reality, the boundary between illegal and informal is often blurred. Within this continuum we define five categories of operations representing different 'formalization modes': (1) activities within a formal setting that are governed by formal NSMG schemes; (2) activities within a formal setting that are legally compliant (but do not necessarily live up to the standards of NSMG schemes); (3) activities in an informal setting where formalization is in process; (4) activities in an informal setting that from a legal or normative point of view could be formalized; and (5) activities in an illegal setting that are outright prohibited and which from a legal and normative point of view cannot possibly be formalized (e.g. operations linked to or involving criminal activities).

Formality continuum	Formal		Informal		Illegal
Formalization modes	NSMG compliant	Legally compliant	Formalization in process	Could be formalized	Prohibited

Table 2: The ASGM formality-informality continuum (source: authors).

In addition to the three basic settings along the formality continuum, there is a plethora of hybrid configurations, for example, producers owning a formal mining title but not fulfilling the requirement of having an environmental license (see Table 3 below). Assuming that value chain actors are primarily profit-oriented, they opt for a *modus operandi* along this spectrum by considering different formalization requirements and respective costs, benefits, and perceived risks as outlined below.

2.2 Formalization requirements along the value chain

The second component relates to the domestic ASGM value chain and concerns the steps along the gold value chain at which operations can either be formal, informal, or illegal. Domestic ASGM value chains typically involve at least three steps:

1. the upstream part of extraction/production.
2. the midstream part of marketing/trading.
3. the downstream part of processing/export.

At each of these steps, actors are required to operate under a certain legal status and often need one or several licenses as well as access to finance and markets. With regard to all of these requirements actors can operate within different modes along the formality continuum.

(1) At the upstream level, gold miners must satisfy several requirements to produce gold: they need to form any kind of legal entity (which may be liable for taxation) as well as access to deposits in the form of a mining title or contract. In addition, miners often require operational approvals such as environmental licenses or health and safety permits as well as access to finance for investment in equipment or mining operations. Finally, they need access to formal or informal sales channels to market their gold.

(2) At the midstream level, the operations of gold collectors and intermediary traders require some form of legal recognition (which makes them liable to taxation) and, in many countries, they also need a license or special operational approval. Further, they need access to finance, which is critical given that gold is a high-value commodity. Finally, they need access to gold suppliers as well as to buyers which can be formal, informal, or illegal. Gold buyers may also stipulate certain due diligence requirements related to the provenance of the gold or to the handling of financial transactions. In some cases, when intermediary traders perform refining activities, they may also need environmental permits.

(3) At the downstream level, private gold exporters typically need to fulfil the same requirements that apply to intermediary traders. A key difference, however, is that gold exporters typically require an export license and must conform to the respective procedural guidelines for gold exports as well as to (due diligence) requirements requested by international buyers. The most applied standards are the London Bullion Market Association (LBMA) Good Delivery

Standard and the Organization for Economic Cooperation and Development (OECD) Supply Chain Due Diligence guidelines. Further requirements may relate to financial transactions and compliance with anti-money laundering (AML) provisions.

While the conceptual breakdown of the value chain is made along functional criteria, it is important to note that in practice some actors may assume several functions simultaneously. For example, gold producers can also be exporters or even traders when they purchase gold from other producers. Likewise, exporters can be involved in upstream activities, for example as financiers or investors.

2.3 Cost-benefit calculations and risk perceptions

The third component of the analytical framework links the first two together and considers the factors that influence value chain actors' decisions regarding formal or informal operations. We posit that different formalization modes entail differential costs, benefits and (perceived) risks that present different sets of incentives to value chain actors. We assume that actors base their profit-seeking strategies on cost-benefit-risk calculations that weigh the relative merits of different modes of operation.

To discern underlying incentive structures, we identify three key dimensions that are presumed to condition the cost-benefit-risk calculations of local value chain actors involved in the production and/or commercialization of gold:

1. Formal regulations (and their enforcement)
2. Market-related factors
3. Subjective factors

(1) In many regards, the applicable regulatory framework defines the costs and benefits for value chain actors. Thus, it is presumed that in all relevant areas of regulation the costs of being fully formalized are weighed against the (perceived) benefits and risks associated with different modes of formalization. National tax laws, royalty rates as well as other duties and costs arising from compliance with legal and administrative requirements co-determine actors' preferences and business decisions about formalization. Incentive structures and cost-benefit-risk calculations for operating under different formalization modes are further shaped by the effectiveness of monitoring and enforcement as well as the expected likelihood and the severity of sanctions in case of non-compliance. Ultimately, (international) banking and AML regulations that constrain actors' access to finance and their ability to process financial transactions can also have an impact on formalization choices. This applies particularly for private export traders that rely on the (international) banking system to conduct gold sales.

(2) Market-related factors and dynamics can influence value chain actors' business choices regarding different modes of formalization. International gold prices, supply- and demand-side elasticity as well as other factors directly influence the costs of doing business. For example, costs for transportation, security, and insurance as well as currency exchange rates and loan conditions can all have an influence on value chain actor's preferred modes of formalization as these may affect profit margins and thus co-shape underlying incentive structures.

(3) A range of conditions and factors may influence how different incentives are ultimately perceived, weighed, and prioritized by different actors. Incomplete information, risk perceptions and other subjective factors are thus likely to further co-determine how value chain actors translate (competing) incentives into a set of preferences for operating under a certain formalization mode. For example, the need to generate income in the short-term may lead gold exporters to discount prospective benefits they could derive from becoming formalized or supplying stricter regulated markets. Path-dependencies arising from established practices, business relationships, and vested interests may also play a role in shaping actors' incentive structures regarding their choice of different formalization modes in the production and/or commercialization of gold.

Together, the three components of our conceptual framework form the theoretical background and build the structure of the generic cost-benefit-matrix that can be applied to any ASGM setting.

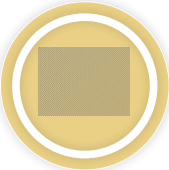
2.4 Analytical model: a generic formalization cost-benefit matrix

The analytic model provides a generic matrix (Table 3) through which the relative costs and benefits of formalization can be systematically identified for the three main value chain actors involved in the commercialization of gold: 1) gold miners or mining entities; 2) gold collectors and intermediary traders; and 3) private gold exporters. For each actor type, a tailored matrix breaks down key formalization decisions along the value chain and allows for a comprehensive assessment of actors' respective cost-benefit-risk calculations regarding different formalization requirements.

Formalization requirements	Formality continuum and formalization modes					Influence factors	
	Formal		Informal		Illegal		
	NSMG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited		
1. Legal status: operating entity		1	2	3		Regulatory	X
						Market-related	
						Subjective	X
2. Mining title, concession contract						Regulatory	
						Market-related	
						Subjective	
3. Operational permits						Regulatory	
						Market-related	
						Subjective	
4. Access to finance						Regulatory	
						Market-related	
						Subjective	
5. Taxes and duties						Regulatory	
						Market-related	
						Subjective	
6. Gold purchases						Regulatory	
						Market-related	
						Subjective	
7. Gold sales/exports						Regulatory	
						Market-related	
						Subjective	

Table 3: Generic formalization matrix; note: formalization requirements in left-hand column are adapted in accordance with the actor type and the applicable regulatory framework; entries in row 1 only serve illustrative purposes (source: authors).

Legend



Crosshatched cells indicate that the given NSMG scheme does not demand any further requirements beyond being fully formalized as set out by the applicable legal framework.

Value chain actors (miners, intermediaries, traders); size indicates a rough estimate of the prevalence of actors operating under the given formalization mode.

X

Indicates which type of influence factors could be observed.

❶,❷,…,❺

Explanatory notes that summarize influence factors that incentivize actors to operate under the given formalization mode along the formality continuum.

The cost-benefit matrix thus helps to navigate the complexity of formalization along the domestic gold value chain and to highlight key factors and respective incentive structures in a summary fashion. Hence, the matrix lends itself to systematically identify target areas for policy reform, political dialogue, or (technical) support with regard to facilitating formalization and enhancing due diligence along the value chain.

Our formalization cost-benefit matrix provides a generic heuristic tool that can be applied across different contexts to analyze the persistence of informality in gold (and potentially other) value chains. The matrix can be adapted to different country-specific and legal contexts as well as different actor types and categories of formalization can be added or removed from the matrix, depending on the context and setting at hand.

3. Analysis: ASGM value chain in Bolivia

The following sections offer an analysis of Bolivia's domestic ASGM value chain as illustrated in Figure 1. In line with the conceptual framework introduced above, the analysis is structured into three parts, corresponding to the three main steps and key actor types along the value chain: upstream gold producers, midstream intermediaries, and downstream private gold exporters.

For each actor type we provide an overview of the relevant formalization requirements as well as an account of the actual operating arrangements in terms of business formality and compliance. Table 4 indicates the position that the main value chain actors currently occupy on the formalization continuum.

We offer summary evidence on the key factors (regulatory, market-based, subjective) that can account for value chain actors' preferred formalization modes regarding different formalization requirements.

The analysis rests on a qualitative case study of the Bolivian gold trading sector and draws on a variety of different data sources. It is grounded on the academic literature on ASGM in general and on the cooperative gold mining sector in Bolivia in particular. Additionally, available documents and data provided by the Bolivian regulatory and other relevant institutions find entrance into the analysis. The bulk of the data has been collected through a series of semi-structured interviews with cooperative gold miners, Bolivian gold export traders, independent private sector consultants, and regulatory authorities which have been conducted during in-depth field research carried out in June 2021.

3.1 Upstream: gold producers

In 2019, gold production in Bolivia reached an unprecedented level with an estimated total production of 42 tons. In 2020, production volumes decreased sharply to an estimated 23,2 tons, mostly because of the Covid-19 pandemic (MMM 2021a).

The lion's share of Bolivian gold, an estimated percentage ranging from 93.9% (MMM 2021a) to 97.4% (BGI Bolivia 2020), is produced by gold mining cooperatives *(cooperativas auríferas*).

Within this share, an unknown amount of gold is produced by informal artisanal miners (generally called *barranquilleros*, or *barranquilleras*/*palliris* for females). In addition, there are informal occasional miners from local communities (*comunarios*) and others that work part-time in agriculture and part-time in ASGM (*agromineros*). In general, these actors are subsistence miners and do not produce significant volumes.

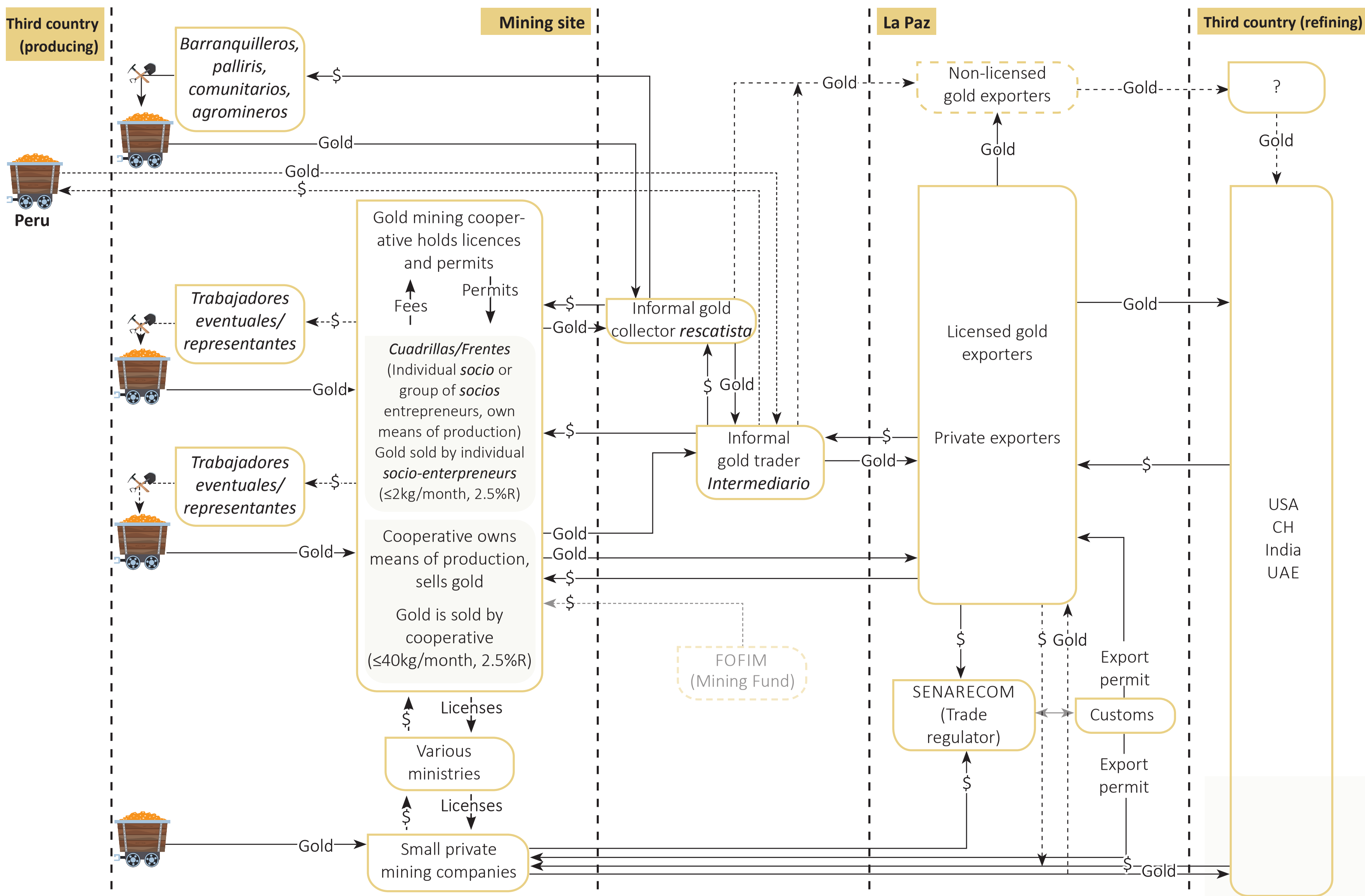


Figure 1: Overview over the gold value chain in Bolivia (source: authors).

Actors	Formality continuum and formalization modes					Influence factors	
	Formal		Informal		Illegal		
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited		
1. Individual artisanal producers*						Regulatory	
						Market-related	
						Subjective	
2. Mining cooperatives						Regulatory	X
						Market-related	X
						Subjective	X
3. Private mining companies*						Regulatory	
						Market-related	
						Subjective	
4. Gold collectors and intermediary trades						Regulatory	X
						Market-related	X
						Subjective	X
5. Private gold export trades						Regulatory	X
						Market-related	X
						Subjective	X

Table 4: Formalization overview of gold value actors in Bolivia (source: authors). *Given the dominance of mining cooperatives in the producer landscape in Bolivia, the analysis focuses on cooperatives and leaves out individual artisanal producers and private mining companies.

The remaining gold production is assumed by private mining companies and, to a lesser extent, by state-owned mines (MMM 2021a).

Since more than 90% of the gold production in Bolivia is assumed by mining cooperatives, our analysis focuses on this set of actors, whereby we also consider the role of informal individual artisanal miners (i.e., *barranquilleros*).

There are various ways in which gold cooperatives organize their production. In general, all gold mining cooperatives are composed of registered members (*socios*). The General Law of Mining Cooperatives stipulates that cooperatives own their means of production and that the *socios* work jointly in production. However, organizational production arrangements, particularly in lager gold mining cooperatives, frequently deviate from the legal norm as mapped in Table 5.

Mining cooperatives: production arrangements				
		Small cooperatives	**Large cooperatives**	**Sub-contracting**
Means of production	Machinery and capital	● Belong to cooperative	● Belong partly to cooperatives, and partly to individual *socios*	● Belong to private individuals, non-*socios*, who pay 20-30% commission to cooperatives
	Labor	● *Socios* work, percentage paid to cooperatives for admin. work ● Cooperatives hire *trabajadores eventuales* (paid cash or gold, based on extraction or fixed hours for cooperatives additional hours for themselves)	● Some *socios* act as owners /financiers, sometimes hire *representantes* ● *Socios* organise in *cuadrillas* (production units), produce independetly and pay cooperatives ● *Cuadrillas* or *socios* hire *trabajadores eventuales*	● Either: *socios* act as owners, work done by non-*socios* as part of some "joint-venture" ● Or: *socios* work but do not own the machinery
	Artisanal production	● Artisanal producers *(barraquilleros or comunarios)* tolerated by cooperatives for agreed time (often end of the day/week), no payment from cooperatives or *socios*	● Artisanal producers (*barraquilleros* or *comunarios*) tolerated by cooperatives for agreed time (often end of the day/week), no payment from cooperatives or *socios*	● Arrangements with artisanal producers might be tolerated

Table 5: Operational arrangements in Bolivia's ASM gold production (source: authors).

3.1.1 Legal requirements and operational permits

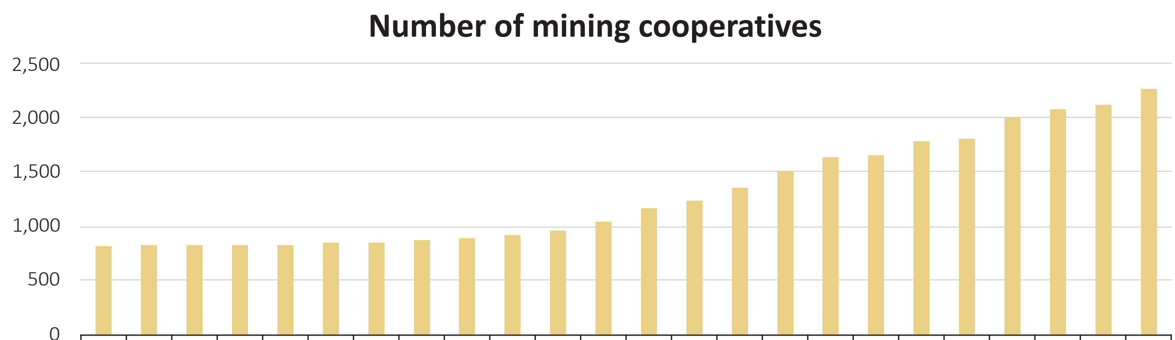
Registration of the operating entity (gold mining cooperatives)

Mining cooperatives are legally recognized entities in accordance with the General Law of the Cooperatives (*Ley General de Cooperativas* N 356).

In contrast, most artisanal and subsistence miners, such as the *barranquilleros* as well as occasional miners from local communities (*comunarios*) and those alternately working in agriculture and mining (*agromineros*), are not recognized by the legal framework and are thus considered illegal. Consequently, under the current regulatory framework, these actors have no opportunity to operate as legal entities.

As of 2020, a total of 2,274 registered mining cooperatives exist in Bolivia, based on previous estimations that gold mining cooperatives make up some 70% of all mining cooperatives (BGI Bolivia 2020), one can estimate the number of gold mining cooperatives at some 1,600.

Under the Bolivian framework, a gold mining cooperative operates legally when it possesses a valid mining title as outlined below. In addition, to operate as formalized entity, a mining cooperative must register with the following state entities:



816	823	828	831	840	849	862	880	893	911	959	1,048	1,170	1,240	1,369	1,507	1,631	1,663	1,790	1,806	1,999	2,077	2,122	2,274
816	7	5	3	9	9	13	18	13	18	48	89	122	70	129	138	124	32	127	16	193	78	45	197
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020

Figure 2: Number of mining cooperatives registered with AFCOOP 1997-2020; first row: total of cooperatives; second row: new registrations; third row: year (source: authors, data provided by AFCOOP).

a) Mining Administration (*Autoridad Jurisdiccional Administrativa Minera*, AJAM);

In order to operate legally, gold mining cooperatives need to obtain a mining title from AJAM. A mining title is granted in the form of an administrative mining contract (*Contrato Administrativo Minero,* CAM) or through a transitory authorization as outlined below. Operation without a valid mining title is considered illegal.

b) Cooperative Supervisory Authority (*Autoridad de Fiscalización y Control de las Cooperativas,* AFCOOP);

Registration with AFCOOP allows cooperatives to operate as a legally constituted entity by obtaining the status of a legal person (*personería jurídica*). However, this process is relatively complex, requiring the service of a public notary and ample documentation on the part of the cooperative. Registration with AFCOOP is required to apply for a mining title (CAM).

c) National Tax Authority (*Sistema de Impuestos Nacionales*, SIN);

Only a minority of gold mining cooperatives are registered with the national tax authorities and possess a tax identification number (*Número de Identificación Tributaria*, NIT).

The majority of gold mining cooperatives can operate outside the national taxation system without being subjected to any form of legal reprisals or sanctions. Consequently, most gold mining cooperatives bear no costs for non-compliance. The potential benefits of obtaining a NIT are relevant only for a few, as outlined below. Most gold mining cooperatives have no incentives to register with the national tax authorities.

Since the passing of the new mining legislation in 2014 (*Ley de Minería y Metalurgia* N 535), it is required to register with the national tax system (SIN) to obtain a CAM. However, cooperatives that have obtained their mining title before 2014 often fail to register with the SIN and thus do not possess a NIT. Operating as a not fully formalized cooperative may be perceived as preferable and as a way to 'stay below the radar' to evade potential controls, audits or (future) attempts at taxation.

d) Minerals and Metals Marketing Authority (*Servicio Nacional de Registro y Control de la Comercialización de Minerales y Metales,* SENARECOM);

Only a minor share of gold mining cooperatives is registered with SENARECOM and has a corresponding mining identification number (*Número de Identificación Minera*, NIM). Although the legal framework stipulates that a NIM is required for the internal commercialization and export of minerals, this requirement is frequently disregarded by both sellers and traders.[1] Registration with SENARECOM and the holding of a NIM offers no tangible benefits to cooperatives as SENARECOM does not provide any relevant services for them. A registration with SENARECOM is thus generally only beneficial for gold mining cooperatives that seek to export directly – a business strategy that is currently not embraced by cooperatives (BGI Bolivia 2020).

e) National Health Insurance Fund (*Caja Nacional de Salud*, CNS)

Since no transparent membership registries exist, it is generally unclear to what extent members of cooperatives (*socios*) are duly insured. Although some cooperatives insure their *socios,* as insurance contributions are generally low and members receive a direct benefit, the degree to which cooperatives duly insure their members varies across cooperatives.

Many cooperatives (illegally) employ informal laborer which do not benefit from any formal social security or health insurance and thus may not receive adequate support in case of injury or illness. Hence, informal laborers are highly vulnerable as they do not enjoy basic social and labor rights.

f) Pension Fund (*Administradoras de Fondos de Pensiones*, AFP)

Registration with the AFP allows to insure *socios* with the integral pensions system (*Sistema Integral de Pensiones*) which provides workers with retirement benefits, disability insurance, and offers benefits to workers' families in case of death or injury against regular premium payments. However, reportedly cooperatives consider contributing to the pension fund as a voluntary option rather than a compulsory requirement.[2] This view is reaffirmed by the fact that there is no formal sanctions framework that applies in case of non-compliance as well as a complete absence of enforcement mechanisms.

In addition to registering with the institutions listed above, gold mining cooperatives need to hold a valid mining title as well as an operating license (*Licencia de Funcionamiento*) and an environmental license (*Licencia Ambiental*) to be fully formalized.

Mining title

Exact figures on how many gold mining cooperatives possess a valid mining title in the form of an administrative mining contract (CAM) are not publicly accessible.

Extraction without a CAM is illegal except for those gold mining cooperatives that have been established (or claim to have been established) before the current mining legislation (*Ley de Minería y Metalurgia* N 535) was enacted, claiming pre-constituted rights (*derechos preconstituidos*). These cooperatives hold special transitory authorizations (*Autorizaciones Transitorias Especiales*, ATE) or transitory contracts which were granted under regulations prior to Law 535. Recognizing these rights, the legal norm permits gold mining cooperatives that hold pre-constituted rights granted before May 2014 to continue operations but stipulates that they have to change these rights into a

1 Decreto Supremo No. 29165, 13th of June.

2 Authors' interview with MEDMIN representative, La Paz, June 2021.

CAM through a "process of adaptation" (*adecuación*). Since the norm prescribes that cooperatives which do not initiate their process of adaptation (*adecuación*) within the prescribed time line forfeit their mining rights, most cooperatives have started the process - a prolonged effort which often takes more than one or even several years.

As of 2022, many gold mining cooperatives are still in the process of obtaining a CAM from AJAM. While it is commonly assumed that several hundred cooperatives operate based on pre-constituted rights, AJAM does not communicate how many cooperatives are still in *adecuación* nor how many cooperatives possess a CAM, nor how many possess neither and are thus operating illegally according to the legal framework.

Moreover, once cooperatives have initiated the process of changing their pre-constituted rights into a CAM, there are no (immediate) negative or positive incentives for them to conclude the process in a timely manner, especially since no authoritative timelines exist. Operating based on (claiming) pre-constituted rights does not affect a cooperative's ability to sustain and commercialize production. Hence, many cooperatives simply remain in the state of *adecuación* without actively working towards finalizing the process of obtaining a CAM, sparing associated costs and efforts.

Others argue the main reason that so many gold mining cooperatives are still in the process of *adecuación* was due to AJAM'S inability and lack of capacity to process applications in a timely fashion. As a result, many gold mining cooperatives became frustrated with the bureaucratic and time-consuming process of soliciting a CAM from AJAM.[3] The large distance to La Paz that many gold mining cooperatives have to overcome further impedes a timely administrative process.

In general, operating based on a CAM as opposed to an ATE does not provide any particular benefit to gold mining cooperatives other than obtaining a certain legal security. Yet, the specific situation of a cooperative and its exposure to external pressures by the state or other actors may have an influence on how highly a cooperative evaluates this benefit. For example, a stronger incentive may be present when the claim to a certain mining area is contested by competitors or when escalating conflicts with surrounding communities lead to fears of eviction. Hence, certain outward circumstances may further incentivize a cooperative to actively solicit a CAM.

3 Authors' interview with a former intermediary trader, La Paz, June 2021.

Operating license (Licencia de Funcionamiento)

To operate formally, gold mining cooperatives require an operating license from the local municipal government (*Gobierno Autónomo Municipal*) where the cooperative is located. The administrative process of obtaining an operating license is free of charge, however, an annual fee has to be paid to the respective municipal government (BGI Bolivia 2021). Nevertheless, many gold mining cooperatives do not possess a valid operating license or fail to pay the annual fees. The degree of compliance also depends on the administrative capacity of the respective municipal government and is generally lower in remote areas where local governance is weaker.

Environmental license (Licencia Ambiental)

All mining operations in Bolivia require an environmental license. Environmental licenses are generally awarded by the Ministry of the Environment and Water (*Ministerio de Medio Ambiente y Agua*, MMAYA), following a review and a technical report by the Ministry of Mines and Metallurgy (*Ministerio de Minería y Metalurgia*, MMM). For smaller mining operations, which do not exceed a production or extraction volume of 300 tons of ore per month or do not have a significant environmental impact, an environmental license can also be granted by the autonomous departmental governments (*Gobiernos Autónomos Departamentales*) (BGI Bolivia 2021).

According to data provided in the national environmental information system (*Sistema Nacional de Información Ambiental*, SNIA) only some 15% of the total number of mining cooperatives in Bolivia possess an environmental license (BGI Bolivia 2020).

Obtaining an environmental license is a formalization requirement that, for most gold mining cooperatives, is relatively complex and costly while providing no tangible benefits. Moreover, operating without an environmental license is a widely tolerated practice that does not carry a penalty, thus incentives are generally absent. This is clearly documented by the fact that some 85% of gold mining cooperatives do not hold environmental licenses despite being legally obliged.

Nearly all gold mining cooperatives that hold or actively seek an environmental license have reached a relatively high degree of formalization. For some mining cooperatives obtaining an environmental license is perceived to avoid costs and mitigate certain risks that result from external pressures. For example, interviews with the members of two mining cooperatives revealed that in both cases an environmental license was sought as a measure to protect the cooperative from external pressures.[4]

In one case, the cooperative was involved in a long-standing conflict with the surrounding communities, facing allegations of water contamination due to its usage of mercury. Members of the cooperative who also had a desire to further expand their production area were concerned that the conflict with local communities about environmental and public health impacts which might force local authorities to stop or restrict their production. Obtaining an environmental license was thus perceived as a way to further shield the cooperative from unwanted interference.

In the second case, the cooperative was operating in a natural park within a protected area.[5] To obtain an environmental license, the cooperative had hired an environmental engineer that was tasked with making the necessary technical preparations – a protracted and costly undertaking. As the cooperative was operating on the basis of (claiming) pre-constituted rights for the area and did not possess a valid CAM, it feared that at some point the authorities might expel them from the area due to pollution concerns. Hence, while members of the cooperative generally expressed a desire to adopt cleaner production methods, it became evident that the cooperative was also seeking to obtain an environmental license to avoid or mitigate the risk of being decommissioned.

These two examples illustrate that under specific circumstances outward pressures may incentivize cooperatives to obtain an environmental license. However, in general, weak governance structures and controls incentivize gold mining cooperatives to operate without an environmental license for as long as this remains a viable option.

To conclude, since only a fraction of gold mining cooperatives are duly registered with all of the above institutions and possess the required licenses, most gold mining cooperatives operate under varying degrees of informality, despite being legally constituted entities. For a large share of gold mining cooperatives, operating as a fully formalized entity does not hold significant benefits while involving various costs in terms of time and money. Moreover, there is generally no effective sanctions framework in place to penalize non-compliance. It follows that in the current administrative and regulatory environment, many gold mining cooperatives neither face positive nor negative incentives to become gradually more formal as operating entities.

An exception may provide those gold mining cooperatives that wish to attain a certain degree of legal certainty, for example, by actively seeking to obtain a mining title in a relatively short time, which requires registration with AJAM and AFCOOP.

Moreover, larger and more advanced cooperatives with higher production volumes and administrative capacity may actively seek to attain a certain level of formalization and compliance to mitigate the risk of being vulnerable to state reprisals. It has been consistently observed that cooperatives may comply with regulations to be able to operate 'unmolested' by state authorities and/or other stakeholders that may disturb production (Salman, et al. 2015, Salman 2016). Correspondingly, as outlined above, in interviews

4 Authors' interviews with miners of two gold mining cooperatives, Department of La Paz, June 2021.

5 In Bolivia, the mining law (*Ley de Minería y Metalurgia* N 535) permits mining operations in protected areas if compliant with environmental norms and satisfying additional, context-specific requirements.

with members of two (relatively advanced) co-operatives it became apparent that the cooperatives sought to obtain an environmental license mainly to mitigate risks of being exposed to outward interference. Hence, the degree of formalization is, at least to some extent, also a function of the presence of the state and the cooperative's relative 'visibility' and exposure to external pressures as an economic entity. While concrete figures are lacking, circumstantial evidence suggests that more advanced cooperatives as well as those that lie closer to centres of state authority, such as La Paz, generally display a higher degree of formalization than those located in regions where the presence of the state is comparatively thin (e.g., Beni, Pando).

3.1.2 Finances and marketing

Access to finance

Mining cooperatives have only limited access to finance. Moreover, it is unclear to what extent gold mining cooperatives require and take out loans to sustain production and to what extent individuals take out loans to finance operations (e.g., individuals leading a *cuadrilla*).

In principle, mining cooperatives may gain access to formal loans from a) the state-owned mining fund FOFIM (*Fondo de Financiamiento para la Minería*) or b) from private banks. Indirectly and informally, cooperatives may also get access to finance through c) private persons who hand out loans or provide advances and d) from private companies:

a) The FOFIM is a special-purpose fund established in 2009 to provide loans to mining cooperatives. However, only very few gold mining cooperatives have actually received loans from FOFIM.[6] This is because FOFIM has only limited financial capacities while the bureaucratic requirements and administrative procedures to obtain loans are too complex for most cooperatives. Therefore, the FOFIM does not constitute a significant and relevant source of finance for the cooperative gold mining sector.

b) Mining cooperatives and individual miners may take out loans from private banks. However, the organizational structure of co-operatives with often diffuse and changing leadership and unclear legal responsibilities generally prevents banks from lending to co-operatives.[7] Several private banks have been approached with the idea to create a special fund to provide finance for gold mining co-operatives but showed no interest.[8] Private banks only lend to individual miners able to present collateral (e.g., real estate) or some other source of regular income. Most individual miners lack the necessary credentials and the collateral.[9]

c) Private individuals, including well-capitalized *socios* as well as intermediary gold traders (*intermediarios*) may privately grant loans or advances to individual members of mining cooperatives. Such financing arrangements are generally informal and usually take place based on long-term personal relations and mutual trust.

d) Finally, individual miners may obtain low- or even interest-free loans from private individuals or companies, typically from private gold exporting companies (*comercializadoras*). Such 'loans' are essentially pre-financing arrangements (*préstamos*). This type of financing is generally informal, based on long-lasting relationships of trust as well as on future cooperation. Traders grant such advances to ensure client loyalty and to guarantee a constant stream of gold shipments (BGI Bolivia 2020).

It follows that for gold mining cooperatives attaining a higher degree of formalization does not generally translate into a better access to formal sources of finance. Access to formal sources of finance is not a potential benefit that would incentivize cooperatives to formalize.

Cooperative members financing their own production seems to be the most common

6 Authors' interview with a former intermediary trader, La Paz, June 2021.

7 Authors' interview with MEDMIN representative, La Paz, June 2021.

8 Authors' interview with private gold exporter, La Paz, June 2021.

9 Authors' interview with former intermediary trader, La Paz, June 2021.

finance model. Yet, since access to formal loans is severely restricted, informal sources of capital become more important. Private individuals, including members of the cooperative, may provide private capital to sustain operations or expand production. It is unclear how common this type of financing is, however. While for some exporting companies it is a form of ensuring client loyalty, others refrain from lending to cooperatives or individual *socios* due to a lack of trust in their ability and willingness to repay debts.[10]

In some cases, private individuals not only provide loans or advances but act on the part of external investors - a practice illegal under the mining law. Nevertheless, cooperatives have been found to enter into various financing agreements with private individuals or (foreign) companies providing capital, equipment, or machinery. Reportedly, this illegal practice has been particularly prevalent in the alluvial gold production in the Bolivian lowlands.[11] For many cooperatives, such informal financing arrangements - although not always favorable - are thus the only option to access finance other than mobilizing private capital of its members.

Taxes and duties

Mining cooperatives operate under a preferential tax regime. They operate under a zero-tax regime for the value-added tax (*Impuesto al Valor Agregado,* IVA) and are exempted from the general transactional tax (*Impuesto a las Transacciones,* IT) for gold sales in the internal market destined for export as well as from the payment of additional quota for corporate income tax (*Alícuota Adicional al IUE*, AAIUE). Mining cooperatives are in principle required to pay the corporate income tax *(Impuesto a las Utilidades de las Empresas,* IUE*)* of 25% from which relevant expenses can be deduced (BGI Bolivia 2020). However, since most gold mining cooperatives are not registered with the national tax system (SIN) and do not possess a tax identification number (NIT), they do not pay any form of taxes. Cooperatives that are registered with the SIN can minimize or bypass IUE by channeling gold sales through individual members of the cooperative.

In addition to taxes, mining cooperatives are obliged to pay an annual fee for the mining patent (*patente minera*) to AJAM. The amount to be paid is based on the size of the mining area and the respective number of units (*cuadriculas*) for which the cooperative has a mining title. However, a large number of mining cooperative fails to pay its annual fees for the mining patent, leading AJAM to publish a list of debtors, threatening non-complying cooperatives with the loss of their mining title (AJAM 2019).

Further 'duties' accrue when the gold is sold on the domestic market. Such payments materialize indirectly as gold traders along the value chain discount the price of gold to cover the costs for the mining royalty and other obligatory fees which have to be paid to SENARECOM and the respective mining federation[12], among other expenses incurred by traders. The fixed costs discounted by traders typically include:

- 2.5% mining royalty (1.5% for internal sales and 1% for export)
- 1.8% *seguro delegado* - health insurance fund managed by mining federations
- 0.05% administrative fee for services by SENARECOM
- 0.3% - 0.4% contribution to the corresponding regional mining federation

In total, a fixed sum amounting to 4.7% is discounted by intermediary traders and export companies to cover the mining royalties, fees, and insurance costs. Generally, these fixed discounts are non-negotiable and are applied by all types of traders along the value chain. However, a private gold exporter claimed that individual vendors frequently refuse to accept the 1.8% deduction for the health insurance premium (*seguro delegado*), thus paying lower discounts.[13]

10 Authors' interviews with private gold exporters, La Paz, June 2021.

11 Authors' interviews with representatives from MEDMIN and regional mining federation, La Paz, June 2021.

12 In Bolivia, mining cooperatives are organized into mining federations (*federaciones mineras*) to which cooperatives have to pay solidarity contributions in the form of a percentage of the gross sales value (between 0,3 and 0,4% depending on the respective mining federation).

13 Authors' interview with private gold exporter, La Paz, June 2021.

As indicated above, the fixed discounts applied by traders also include the contributions that cooperatives as well as individual sellers have to make to regional mining federations of between 0.3 and 0.4% of the sales value (depending on the federation). Due to this variance, gold sellers are incentivized to misrepresent the origin of gold as coming from areas where regional mining federations charge the lowest percentage. It has been reported that during the time when there was no regional mining federation in the department of Beni and no corresponding fee was levied, significant quantities of gold mined in other departments such as La Paz or Pando where falsely indicated as originating from Beni.[14]

As a consequence, such misrepresentation of the origin of gold shipments also distorts the redistribution of mining royalties which ought to benefit producing municipalities.

In general, the willingness to pay taxes is reported to be low which is often explained by the absence of any notable state services for gold mining companies other than issuing mining contracts and demarcating production areas. Gold mining cooperatives generally receive no state support in the field of miners' professional training, access to finance, capacity-building, or marketing. The system for short-term social security (*Sistema de Seguro Social de Corto Plazo*) which provides miners with personal accident insurance and access to public health services is one of the few state institutions to which at least some cooperatives make regular payments. A small share of cooperatives also contributes to the system of national pension funds (*Administradoras de Fondos Pensiones*, AFP) to gain access to retirement benefits or insurance services.

State authorities tend not to investigate and prosecute mining cooperatives for tax and other fiscal offenses. Explanations include a lack of enforcement capacity but also the political weight of the mining sector (cf. Baraybar Hidalgo and Dargent, 2020; Salman et al., 2015). However, as with other categories of formalization, larger, technically more advanced and well-capitalized gold mining cooperatives may be incentivized to make at least some form of tax payments to bolster their status as legal entities and to avoid potential state auditing measures and other controls.

Gold sales

There are three basic sales channels through which a cooperative can bring its gold production to market:

1) The cooperative sells its gold production on the domestic market

2) The cooperative directly exports its produce, selling on the international market

3) Members of the cooperative (i.e., the *socios*) sell their gold individually as 'natural persons' (*personas naturales*) on the domestic market

As internal statistics from SENARECOM show, gold mining cooperatives sell the largest share of their gold individually through their members while only a small part is sold as cooperative. In 2019, some 89.3% of all internal gold sales have been conducted by natural persons (on average 1.9 kg per seller) compared to only 8.7% by cooperatives (on average 9.5 kg per cooperative). Direct exports by cooperatives – as previously promoted by SBGI – are not practiced due to the high administrative workload and the attractiveness of selling to domestic (export) traders (BGI Bolivia 2020).

Selling the gold through individuals rather than on account of the cooperative significantly reduces the tax burden for cooperatives (*Impuesto a las Utilidades de las Empresas,* IUE) and enable larger cooperatives to stay below the sales limit of 40 kg per month.

This strategy for tax avoidance is enabled by the current regulatory framework which permits 'natural persons' that are holders of a mining title or that demonstrably act on behalf of a cooperative (e.g., *socios*) to sell up to 2 kg of fine gold per month.[15] Although, in theory, sales by cooperatives or individuals that sell "on behalf of a cooperative" are limited to an aggregated amount of 40 kg per month, this is not controlled rigorously and, in reality, any individual can sell up to 2 kg of

14 Authors' interview with former intermediary trader, La Paz, June 2021.

15 Ministerio Minería y Metalurgia. Resolución Ministerial No. 165/2017 y Resolución Ministerial No. 118/2018.

gold per month without providing documentation of a valid mining title or a confirmed affiliation or link to a cooperative. Furthermore, both at the mid- and downstream level, gold traders regularly accept gold without demanding the required documentation. Moreover, both sellers and traders may easily provide false documentation, attributing gold sales to a different or even non-existent title holder as has been reported in numerous instances (see section 3.3.2).

Independent of the sales channel, nearly all transactions are realized in cash. Mining cooperatives and their members may also sell their gold at different entry points along the value chain. At the midstream level, gold may either be sold to local-level gold collectors (*rescatistas*), to small-scale buyers, or to larger wholesale traders (*intermediarios*). At the upstream level, gold may be sold directly to private export companies located in La Paz (*comercializadoras*).

At which point or level along the value chain members of cooperatives choose to sell their gold depends on a range of factors and conditions that typically include:

a) sales quantities and discounts applied by intermediary and export traders

b) physical distance to La Paz or another larger trading hub

c) perceived security risks

d) the degree of miner's collective organization

e) the size and production output of a cooperative

f) miner's capitalization / need for liquidity

Smaller quantities of gold are sold at the lower end of the midstream value chain, either to local gold collectors or to small-scale intermediary traders. While volume traders may offer better prices, travelling is time consuming and includes additional expenses. Hence, sales quantities and the physical distance to volume traders are important factors that co-determine at which point along the value chain miners choose to sell.

Perceived security risks related to the transport of gold may further influence miners' decisions regarding the location and the modalities of their gold sales. Cooperatives operating in remote areas, where the presence of the state is thin, may choose to sell at midstream level to avoid risks associated with bulk transportation.

Another factor that may co-determine the sales point is the degree of collective organization among miners of a cooperative. Some miners sell their gold to the nearest convenient buyer while others pool their gold and sell it together to benefit from more generous volume prices.

Since larger cooperatives generally reach higher production volumes, their members may be particularly incentivized to sell jointly to volume traders. Thus, cooperative size and production volumes may further influence the preferred sales point.

Ultimately, the capitalization of cooperatives and the need for liquidity play an important role for the choice of sales point. Many cooperatives depend on regular revenue streams from gold sales to cover the fixed costs that have to be met to sustain production. Cooperatives with low degrees of capitalization only have a limited ability to accumulate gold to sell larger volumes as they lack the necessary capital to sustain production in the meantime. When regular gold sales of smaller quantities become necessary to meet fixed production costs, cooperatives prefer to sell at the lower end of the value chain.

Similarly, miners' individual needs for quick liquidity to cover living expenses can constitute an important determinant for the choice of sales point. The higher the demand for quick liquidity, the higher the likelihood that miners will sell their personal share of the gold production individually to local-level buyers on a short-term basis rather than accumulating their produce to sell it collectively to a volume trader at the higher end of the value chain.

3.1.3 Upstream formalization matrix

The 'formalization matrix' indicates the position of upstream producers along a 'formality continuum' for each formalization requirement and consolidates the evidence provided above (Table 6). It provides a comprehensive overview of the regulatory, market-related, and subjective factors that influence the actors' cost, benefit and risk calculations and that incentivize them to operate under a certain formalization mode.

Formalization requirements	Formality continuum and formalization modes					Influence factors	
	Formal		Informal		Illegal		
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited		
1. Registered legal entity		1	2	3	? 4	Regulatory	X
						Market-related	X
						Subjective	X
2. Mining title (CAM)		1	2		? 3	Regulatory	X
						Market-related	X
						Subjective	X
3. Operating license		1		2		Regulatory	X
						Market-related	X
						Subjective	X
4. Environmental license		1	2	3		Regulatory	X
						Market-related	X
						Subjective	X
5. Access to finance				1	? 2	Regulatory	X
						Market-related	X
						Subjective	X
6. Taxes and duties			1	2		Regulatory	X
						Market-related	X
						Subjective	X
7. Gold sales			1	2		Regulatory	X
						Market-related	X
						Subjective	X

Table 6: Formalization matrix for upstream cooperative gold producers (source: authors).

1. Registered legal entity

❶ Only a small number of gold mining cooperatives is duly registered with all relevant entities. Typically, these are cooperatives that operate in vicinity to state authorities (e.g., La Paz) or have received external technical and formalization assistance.

❷ The majority of gold mining cooperatives is only partially registered, mostly with AFCOOP and AJAM. Registration with SENARECOM and SIN occurs to a much lesser extent.

❸ Some cooperatives have not yet registered with state authorities; these are typically smaller cooperatives that operate in remote regions.

❹ A limited but unknown number of cooperatives operates only for the sake of appearances while other (foreign) informal miners work on the cooperative's title in exchange for a share of the profits – a practice that is illegal.

Regulatory factors: registration with AFCOOP and AJAM is a precondition for obtaining a mining title. However, registration with SIN and SENARECOM is not enforced, especially in remote regions.

Market-related factors: registration with regulatory institutions does not affect a cooperative's ability to produce and sell gold on the domestic market.

Subjective factors: perceived state tolerance for partial compliance; lack of administrative and managerial capacity among smaller cooperatives; registering with SIN and SENARECOM provides no tangible benefits but involves additional costs.

2. Mining title

❶ Only a smaller share of cooperatives holds a CAM, especially those that have been established after 2014.

❷ A large number of cooperatives is still in the process of obtaining a CAM and operates on the basis of transitory authorizations (ATES), claiming 'pre-constituted rights'.

❸ An unknown, smaller number of mining cooperatives operates illegally without a valid mining title (CAM or ATE), sometimes in protected areas.

Regulatory factors: lack of enforcement in remote areas and limited administrative capacity to process pending applications; it is sufficient for cooperatives to merely have started the process of adapting their 'pre-constituted rights' into a CAM to operate while there is no time-limit to being "*in the process*"; obtaining a CAM is a prolonged administrative process and involves costs and bureaucratic efforts for cooperatives.

Market-related factors: operating on the basis of 'pre-constituted rights' (ATE) or even without a valid mining title does not negatively affect a cooperative's ability to produce and market gold as traders and exporters accept gold without documentation of a mining title.

Subjective factors: for most cooperatives, obtaining a CAM offers no tangible benefits except for providing a higher degree of legal certainty (evaluation of this benefit may differ across cooperatives); small and remote cooperatives face administrative challenges obtaining at CAM from AJAM; the perceived risk of not being granted a CAM at all may incentivize some cooperatives to remain in an administrative limbo.

3. Operating license (Licencia de Funcionamiento)

❶ Only a smaller share of gold mining cooperatives holds a valid operating license (i.e. pays annual fees to the respective municipal government).

❷ A larger share of cooperatives holds no valid operating license (i.e. is not registered with respective municipal government.

Regulatory factors: lack administrative capacity and enforcement, particularly in remote areas.

Market-related factors: operating without a valid operating license does not negatively affect a cooperative's ability to produce and market gold as traders and exporters accept gold without documentation of a license.

Subjective factors: perceived tolerance for non-compliance; obtaining an operating license provides no tangible benefits but involves additional costs.

4. Environmental license (Licencia Ambiental)

❶ Only an estimated 15% of gold mining cooperatives hold an environmental license; these are often more advanced cooperatives with higher production volumes and administrative capacity operating in the vicinity to centers of state authority (e.g., La Paz) or in protected areas.

❷ Only a few gold mining cooperatives are in the process of obtaining an environmental license.

❸ The vast majority of gold mining cooperatives holds no environmental license but could obtain one if the necessary requirements and measures were satisfied.

Regulatory factors: lack of enforcement; obtaining an environmental licence involves costs and bureaucratic efforts for cooperatives; in protected areas control is often higher than in other areas.

Market-related factors: operating without an environmental license does not affect a cooperative's ability to produce and market gold on the domestic market.

Subjective factors: perceived state tolerance for non-compliance; prolonged process of obtaining an environmental license; small and remote cooperatives face logistic and administrative challenges; for most cooperatives, obtaining an environmental license offers no tangible benefits; some cooperatives seek to obtain an environmental license to better insulate themselves from external (community) pressures related to pollution concerns.

5. Access to finance

❶ Gold mining cooperatives generally lack access to formal sources of finance; finance is provided by individual members or private (often foreign) investors (which is illegal under the Bolivian mining law) or they receive informal advances from private gold traders.

❷ Some cooperatives may receive finance from illegal actors (e.g., criminal networks).

Regulatory factors: The Bolivian law prohibits cooperatives to receive private investment and access to finance through FOFIM is restricted by administrative hurdles.

Market-related factors: banks refrain from handing out loans to cooperatives due to insufficient legal guarantees; for individual miners obtaining formal loans requires significant collateral.

Subjective factors: formalization of cooperatives does not improve access to formal finance as cooperative management structure deters banks from granting loans.

6. Taxes and duties

❶ A minor share of cooperatives pays some taxes (IUE) but evades paying the full tax rate by marketing gold through individual sellers.

❷ Many cooperatives established before 2014 evade paying taxes altogether and possess no tax identification number (NIT).

Regulatory factors: tax provisions are not strictly enforced; taxation can be minimized by selling gold through individuals and by misrepresenting production volumes; since 2014, a NIT is required to obtain a mining title.

Market-related factors: tax evasion does not affect cooperative's ability to produce and market gold.

Subjective factors: risk of prosecution for tax offenses is perceived as low; tax evasion is perceived as 'normal' among gold mining cooperatives, many cooperatives do not have a NIT; paying some taxes bolsters legal status of a cooperative.

7. Gold sales

❶ A share of cooperatives sell their gold directly to private export traders; transactions are realized in cash, however, and the required documentation is often lacking as gold is sold through individuals.

❷ In most cases, members of the cooperatives sell their gold individually to informal intermediary traders with no documentation.

Regulatory factors: internal gold sales are prohibited for individuals that are not linked to a mining contract; regulations on internal gold sales are ambiguous and not strictly enforced; tax and royalty provisions incentivize informal gold sales through individuals.

Market-related factors: private exports traders accept gold without proper documentation; there are no formal traders at midstream level; intermediary traders are a crucial source of liquidity; for smaller and remotely located cooperatives selling gold directly private export traders is not a viable option due to cost of logistics.

Subjective factors: low levels of collective organization among many cooperatives abets individual sales.

3.2 Midstream: gold collectors and intermediary traders

Gold collectors *(rescatistas*) and, more generally, intermediary traders *(intermediarios)* constitute a key actor type in the commercialization of gold along the value chain.

Gold collectors frequent mining camps or nearby towns and villages to buy gold directly from individual miners or other mining-site level sellers such as informal artisanal miners (*barranquilleros*). Villages within mining regions typically have a few local gold collectors while a bigger number of gold collectors operate in the larger mining towns and cities. In many places, these low-level gold buyers set up small buying outlets that are easily identified through their unmistakable "*compro oro*" signs.

In some gold producing areas miners reportedly also use gold as a currency to buy food and drinks, among other basic goods and services. There are also suppliers of mining equipment who accept gold in exchange for supplies.[16] Thus, in some regions a localized gold-based barter economy has developed where local merchants effectively assume the role of (part-time) gold collectors as they accept gold as a currency.

So far, no estimation or approximation on the number of gold collectors has been put forward. Moreover, the number of gold collectors and other intermediaries is likely to be fluctuating,

16 Authors' interviews with former intermediary trader; MEDMIN representative, La Paz, June 2021.

influenced by market related factors such as gold price developments as well as by seasonal cycles in gold mining. Some gold collectors and intermediary traders may only act as part-time or occasional traders while others operate as professional agents. Thus, gold collectors and intermediaries may vary significantly regarding capitalization, professionalism, degree of organization, and socio-economic status.

The gold collectors either travel with the purchased gold to a larger gold trading hub or directly to La Paz and sell it at a profit either to a larger intermediary or to a private export company (*comercializadora*). While some gold collectors operate on their own account, relying on their own capital, others act as buying agents for large-scale traders and exporters.

Ultimately, also private export traders may assume the role of intermediary traders when they trade gold with each other on the domestic market. Hence, some private gold traders assume both roles, acting as exporting companies that supply international markets and as intermediary traders on the domestic market.[17]

By linking artisanal and small-scale gold producers with private export companies, gold collectors and other midlevel traders fulfil a crucial role in Bolivia's gold sector. Many cooperatives lack the necessary capital to accumulate gold while covering fixed expenses. At the same time, large distances to La Paz or other trading hubs make regular trips to sell small amounts of gold unprofitable. For many small-scale mining cooperatives informal gold collectors play a key role as providers of liquidity. For downstream export traders, gold collectors and larger intermediary traders provide an important function as local retail agents that transport, organize and bundle gold flows along the supply chain.

3.2.1 Legal requirements and operational permits

Despite their key role in the commercialization of gold, nearly all gold collectors and other (non-exporting) intermediary traders are informal, self-employed tradesmen and operate illegally. Although the terms and functional roles of *rescatistas* and, more generally, *intermediarios* are well established in Bolivia's gold trading sector, they are not recognized by the regulatory framework. This means that, the entire midstream landscape of Bolivia's gold sector is organized informally.

Despite their illegality, gold collectors and midstream intermediary traders do not face a high risk of being subject to law enforcement or controls. This is evinced not least by the numerous gold buying shops which operate openly in La Paz and in other commercial towns as well as in mining areas and nearby villages.

3.2.2 Finances and marketing

Just as at the upstream level, nearly all financial flows received and emitted by gold collectors and intermediary traders are handled in cash. It follows that nearly the entire midstream commercialization of gold in Bolivia is conducted in violation of the national tax service resolution 10-0017-15 of June 26th, 2015, which prohibits cash transactions that exceed the sum of 50,000 Bs.[18]

There are no statistics or estimations that indicate which share of the gold production received by private export traders is directly purchased from gold mining cooperatives and intermediary traders respectively. Hence, the exact scale of the annual financial and value flows handled by gold collectors and intermediary traders cannot be established. However, it is evident that midstream actors handle a substantial if not the largest part of domestic value flows in Bolivia's gold trading sector.

Gold purchases

Small-scale, local-level gold collectors (*rescatistas*) typically do not possess the capital to purchase large quantities of gold. They usually buy small amounts from informal artisanal and subsistence miners (*barranquilleros, comunarios,*

17 Authors' interview with former intermediary trader, La Paz, June 2021.

18 Resolución Normativa de Directorio N 10-0017-15. Respaldo de Transacciones con Documentos de Pago, La Paz, 26 junio de 2015.

agromineros) or from individual *socios* and small cooperatives, especially those operating in remote areas.

Since both artisanal miners and small-scale cooperatives often produce only small amounts of gold per day and lack access to finance, they depend on the regular purchases by gold collectors to cover their daily living expenses and to sustain production. In general, the smaller and poorer the gold producers, the more frequently they sell their gold in small amounts to nearby collectors.

How much gold the local collectors can purchase before travelling to the next town or city to resell, depends primarily on their liquidity. While the capitalization of gold collectors may vary, low-level gold collectors generally do not realize profits by trading larger volumes but buying gold at comparatively low prices.

Intermediary traders higher up the value chain either buy gold from low-level gold collectors or directly from cooperatives or individual miners. Typically, these intermediary traders operate in a certain region where they have cultivated a number of clients and formed stable business relationships with mining cooperatives.[19]

Access to finance

Gold collectors and intermediary traders differ in terms of capitalization and sources of finance. While some gold collectors and intermediaries solely rely on their own capital, others receive advances from export traders. Whether and to what extent export traders pre-finance intermediary traders varies across traders. Some export traders reportedly maintain stable business relations with intermediary traders that assume the role of buying agents. In any case, pre-financing arrangements between export traders and intermediary traders are informal and based on mutual trust and long-term business relationships.[20]

To what extent gold collectors and intermediary traders make use of loans provided by private banks, micro-finance institutions or (informally) by private individuals including family members and associates remains unclear and may differ across traders. In any case, given the informality of mid-stream gold trade, access to formal loans is likely to be limited.

Taxes and duties

Since intermediary traders operate outside the existing legal framework and thus work informally, this actor type is not subjected to any form of tax payments.

Intermediary traders along the value chain retain a fixed percentage of around 5% which includes 2.5% for the mining royalty among other discounts (see section 4.2.3). These discounts are also applied by export traders at the end of the domestic value chain.

Gold sales

The Bolivian legal framework, in particular ministerial resolution 165/2017 and directive resolution 07/2017 of the 4th of December 2017, prohibits the internal sale of gold by persons that do not possess a valid administrative mining contract (i.e., CAM) or do not have a formal and demonstrable relationship with a duly registered mining cooperative. It is these legal provisions that render nearly the entire mid-stream landscape of Bolivia's gold sector informal as its constituent actors are not legally entitled to sell gold on the domestic market.

However, given the widespread informality among mining cooperatives compliance with the legal provisions governing the internal commercialization of gold is often impossible while the lack of effective enforcement and control mechanisms precludes a successful repression of informal gold traders at midstream level.

Against this background, the competent authorities at SENARECOM acknowledge that individual gold sales by persons without a mining contract or a formal relation to a registered mining cooperative are a reality (see section 3.3.2).

The resulting legal grey zone provides a space for intermediary traders to operate freely and reinforces the prevalence of informality at midstream level.

Just as at the upstream level, nearly all purchases and sales of gold are realized through cash payments.

19 Authors' interviews with former intermediary trader and private export traders, La Paz, June 2021.

20 *Ibid*.

The amount and frequency of gold sales by intermediaries depends on their liquidity as well as on their position along the value chain. Typically, low-level gold collectors make frequent sales to other intermediary traders as their level of capitalization is generally low. Mid-level traders higher up the value chain accumulate larger amounts of gold before they travel to La Paz or another trading hub selling directly to private export traders or to another larger intermediary.

Many intermediary traders operate based on established business relationships and regularly sell their gold to a limited number of established clients, for example, one or two private export companies, often fixing an agreed sales price in advance of their visit. However, the *modus operandi* of different intermediaries may vary as some sellers reportedly look for quick transactions rather than the best price.[21]

Profit margins in the internal gold trade are generally reported to be low as it is a volume business where profits are realized by trading large quantities. This particularly applies to well-capitalized intermediary traders placed at the higher end of the value chain. However, low- and mid-level gold collectors and small-scale intermediary traders may realize higher profits, often by exploiting miners' need for quick liquidity. [22]

3.2.3 Traceability and due diligence at midstream level

Traceability of gold along the midstream level is generally difficult and, in many cases, impossible to guarantee as many gold collectors and intermediary traders smelt their gold before selling it on to the next buyer. Generally, the further down the value chain the more difficult it becomes to verify the origin of gold.

Although often the origin of gold produced by artisanal miners and cooperatives is not entirely obscure to value chain actors, there is no formal system in place to ensure traceability or a chain of custody along the midstream level of the gold value chain.[23] It follows that, in principle, illegally mined or smuggled gold can easily enter the value chain at the up- and midstream level and, due to lax controls and insufficient due diligence exerted by export traders, also at the downstream level.

The lack of a fully functional and accurate centralized register of mining cooperatives and their members and formal associates paired with the prevalence of informality at midstream level currently prevents the establishment of a functioning due diligence system that would guarantee the traceability of gold along the midstream value chain. Traceability is further impeded by the fact that nearly the entire domestic gold trade is cash-based.

3.2.4 Midstream formalization matrix

To consolidate the evidence from the above chapters, the midstream 'formalization matrix' indicates the position of midstream intermediaries along a 'formality continuum' for each formalization requirement (Table 7). It provides a comprehensive overview of the regulatory, market-related, and subjective factors that influence the actors' cost, benefit and risk calculations and that incentivize them to operate under a certain formalization mode.

21 Authors' interviews with former intermediary trader and private export traders, La Paz, June 2021.

22 *Ibid*.

23 *Ibid*.

Formalization requirements	Formality continuum and formalization modes					Influence factors	
	Formal		Informal		Illegal		
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited		
1. Registered legal entity				1		Regulatory	X
						Market-related	
						Subjective	X
2. Operating permission				1		Regulatory	X
						Market-related	
						Subjective	
3. Gold purchase				1	? 2	Regulatory	X
						Market-related	
						Subjective	
4. Access to finance				1	? 2	Regulatory	X
						Market-related	X
						Subjective	
5. Taxes and duties				1		Regulatory	X
						Market-related	
						Subjective	
6. Gold sales				1		Regulatory	X
						Market-related	
						Subjective	X

Table 7: Formalization matrix for midstream intermediary gold traders (source: authors).

1. Registered legal entity

❶ Midstream gold collectors and intermediary traders are informal self-employed tradesmen and operate illegally. Although they are well established and perform a crucial function in the Bolivian gold value chain, their role is not recognized as formal occupation.

Regulatory factors: internal gold sales are prohibited for persons that do not have a demonstrable relation to a cooperative holding a mining title. From a normative perspective a formalization of this set of actors would be possible but would require a reform of the existing legal framework.

Subjective factors: the risk of operating in violation of existing legal provision is considered to be low.

2. Operating permission

❶ No operating permissions for midstream traders exist as they operate outside the legal framework.

Regulatory factors: business activity of intermediary traders is not recognized as a formal occupation.

3. Gold purchase

❶ Gold purchases are made informally and paid in cash without (sufficient) documentation to ensure supply chain due diligence.

❷ Some gold collectors may purchase gold that has been illegally mined or smuggled from neighboring countries. It is unclear how many intermediaries are involved in this practice.

Regulatory factors: the applicable legal framework proscribes cash payments that exceed the sum of 50,000 Bs.; regulations on internal gold sales are ambiguous and not strictly enforced.

4. Access to finance

❶ Access to finance is mostly informal through pre-financing arrangements with export traders; access to formal loans is limited as traders have no opportunity to obtain business loans.

❷ Some traders may have access to illegal sources of finance (e.g. drug money).

Regulatory factors: business activity of intermediary traders is not recognized as a formal occupation.

Market-related factors: the process of obtaining formal loans as individuals from private banks is cumbersome and would require traders to present sufficient collateral.

5. Taxes and duties

❶ Intermediary traders operate illegally and thus do not pay any taxes or have other duties.

Regulatory factors: business activity of intermediary traders is not recognized as a formal occupation.

6. Gold sales

❶ Gold sales by intermediary traders are conducted in violation of existing legal provisions.

Regulatory factors: internal gold sales are prohibited for individuals that are not linked to a mining contract; regulations on internal gold sales are ambiguous and not strictly enforced.

Subjective factors: risk of state reprisals is considered to be low; practice is generally tolerated regulations on internal gold sales are ambiguous and not strictly enforced.

3.3. Downstream: private gold exporters

The downstream landscape of the gold value chain in Bolivia is characterized by formally registered private gold exporting companies (*comercializadoras*) which account for all official gold exports from Bolivia. As of 2019, Bolivia had a total of 30 gold exporting companies.[24] Yet, the ten biggest exporting companies assumed 91.59% of all gold exports in ingots and concentrate.[25] Moreover, according to a local gold sector expert, the ten largest exporting companies belong to only a much smaller number of owners.[26]

Gold is Bolivia's first export product, even exceeding natural gas in 2021 (export value of 2,554 millions USD for gold and 2,249 millions USD for gas in 2021) (SIIP 2021). Jewelry made of precious metal (gold, silver and others) is the eighth biggest export product (export value of 131 millions USD in 2020) with gold jewelry dominating (export value of 136 millions USD for gold jewelry of 137 millions USD for total jewelry in 2019) (DAPRO 2020, 2019). There are two industrial jewelry producers that export gold jewelry, one of which, ORBOL S.A., is a significant player having bought 3.39% of Bolivia's gold on the internal market in 2019.[27]

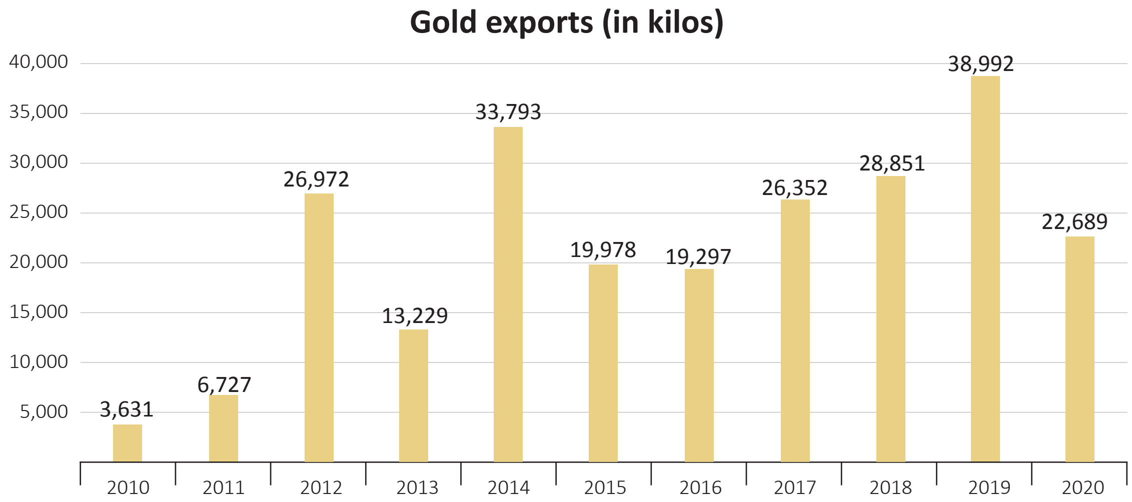


Figure 3: Gold exports between 2010 and 2020 (source: Ministerio de Minería y Metalurgia).

24 Data by SENARECOM, 2019.

25 In the following, "gold exports" refer to exports in gold ingots and concentrate.

26 Data by SENARECOM, 2019; authors' interview with Bolivian gold sector expert, La Paz, June 2021.

27 Data by SENARECOM, 2019.

Over the past five years, Bolivia has witnessed a significant increase in its gold export volumes, from 3.6 tons in 2010 to a peak of 38.9 tons in 2019 (MMM 2019, 2021b) (Figure 3). This increase has been quite unsteady with significant jumps in some years that cannot be explained by production increases alone, but rather by regulatory changes in the neighboring countries (especially Peru) and subsequent gold smuggling through Bolivia's porous borders. The prevalence of gold smuggled both into and out of Bolivia, particularly across its remote green borders but also via the country's airports, is preoccupying, as a capture of over 300 kg gold due to falsified documentation at La Paz airport makes apparent.[28]

Although only a few gold exporters dominate the Bolivian gold export market, these exporters act as strong competitors and do not have an overarching political organization to represent joint interests.[29]

3.3.1 Legal requirements and operational permits

Registration as operating entity and operating permits.

Along with registering with the national registry of commerce FUNDEMPRESA to obtain a general business license (*Licencia de Funcionamiento*), gold export traders are required to be registered with SENARECOM to get a mining identification number (NIM), with the national tax authorities (SIN) for a special tax identification number (NIT) for exporters, with the national service for export verifications (*Servicio Nacional de Verificación de Exportaciones*, SENAVEX) with a unique exporter declaration (*Registro Único de Exportadores,* RUEX), and with the national customs service. As fully formalized companies, export traders also need to comply with the regular social and occupational health and safety standards in Bolivia.

28 Authors' interviews with a financial sector expert, two customs officials, several private gold exporters and gold cooperatives, La Paz, June 2021.

29 Authors' interviews with private gold exporters, La Paz, June 2021.

3.3.2 Finances and marketing

Gold purchases

Bolivia's gold export traders, for being the formalized link in a mostly informal upstream value chain, face serious challenges in complying with the necessary documentation of their gold purchases. For one, they are reliant on illegally operating gold collectors and intermediary traders. They are used to buying gold from the same trusted intermediaries and place a high value on good business relationships with them. However, given the illegality of those operations, the latter never appear in internal sales documentation and traders are bound to process their purchases clandestinely. Furthermore, the widespread informality of the gold producers and their challenges to provide adequate documentation makes it even more difficult for gold traders to comply fully with traceability standards.[30]

Figure 4 displays a simplified trade and export structure of the gold value chain in Bolivia, with the exporters at a "bottleneck" position for financial and gold flows between the internal market and foreign buyers as well as for legal and due diligence requirements.

All documentation of internal gold sales is controlled at the moment of export. Exporters must provide to SENARECOM the form M02 (for internal gold sales), a juridical declaration containing simple copies of the following supporting documentations:

- Mining patent (*patente minera*) of the mining cooperative or company
- Chemical analysis of the export product
- Documentation of the form for the mining royalty, liquidation form as well as bank statement of mining royalty payment
- Documentation of the payment to the national health insurance (where applicable)
- Documentation of the rental of land belonging to COMIBOL (*Corporación Minera de Bolivia*) (where applicable)

30 Authors' interviews with private gold exporters, La Paz, June 2021.

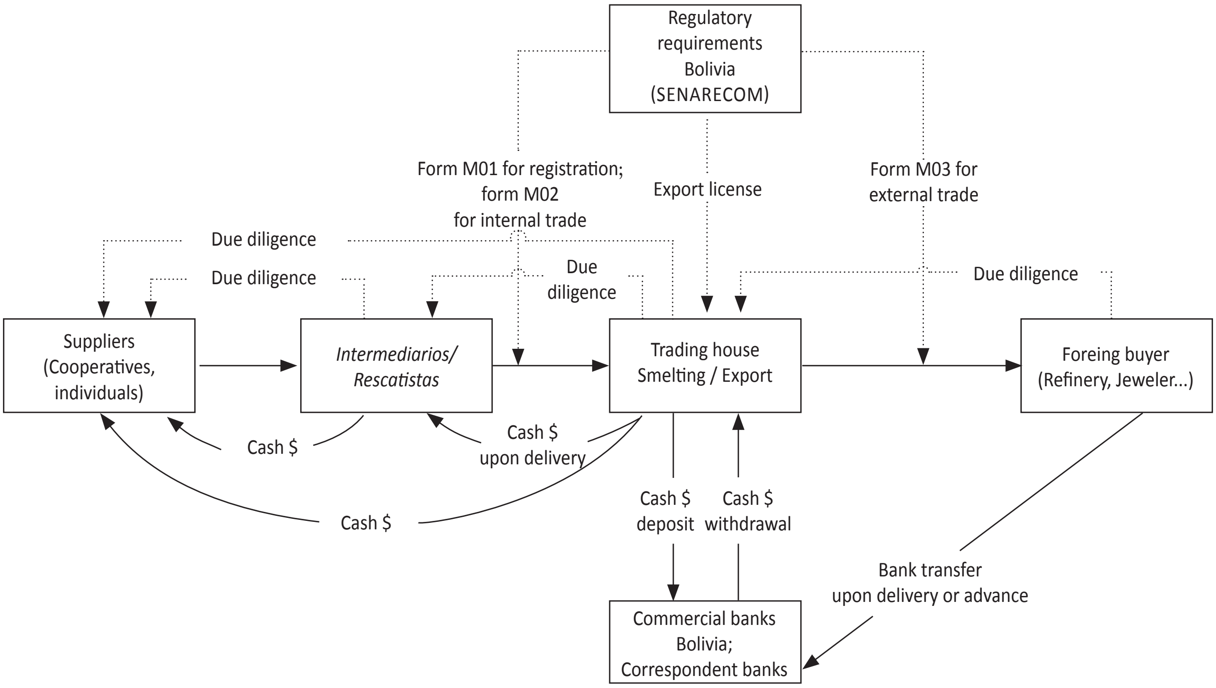


Figure 4: Simplified trade and export structure of the gold value chain in Bolivia. Dashed arrows refer to regulatory processes (legal and due diligence requirements), bold arrows to gold and money flows (source: authors).

After declaring the M02 form through the online portal SINACOM (*Sistema Nacional de Información Sobre Comercialización y Exportaciones Mineras*), exporting companies have 15 days to physically deposit the form and all required photocopies with SENARECOM. In 2019, there were close to 31,000 transactions registered via SINACOM. However, SENARECOM only controls documents and has no authority to physically inspect if an internal gold sale actually occurred in the reported way.[31]

Verification of the documentation regarding the origin of the gold through a mining title is challenging and further complicated by unclear legal provisions. Individual gold sales (up to 2 kg monthly) are allowed for private individuals, as long as they hold a mining title (CAM) or if they sell gold "on behalf of a mining cooperative". In the latter case, it must be within the 40 kg monthly limit of gold sales by cooperatives.[32] Both requirements should in theory allow SENARECOM to verify the origin of the sold gold. However, nowhere does the Bolivian law specify exactly what documentation is needed so that individuals can sell gold "on behalf of a cooperative".

This lack of legal clarity leads to various workarounds in practice. SENARECOM reportedly requires a special identity card for miners certifying that an individual person is a member of a certain mining cooperative or a "certificate" issued by the mining cooperative for non-members, certifying that the gold was mined on their concession and with their permission. In reality, however, such certificates or special miner IDs are almost never presented by individual sellers. Typically, the only document individual sellers provide is a personal ID.[33] As most sellers fail to offer any other documentation for their gold sales, export traders face difficulties in complying with the due diligence requirements and are incentivized to provide false documentation of mining patents by submitting random copies.[34]

31 Authors' interview with SENARECOM representative, La Paz, June 2021.
32 Ministerio Minería y Metalurgia. Resolución Ministerial No. 165/2017 y Resolución Ministerial No. 118/2018.
33 Authors' interviews with private gold traders, La Paz, June 2021
34 Authors' interviews with SENARECOM representatives, La Paz, June 2021.

As result of this practice, several mining cooperatives have opened court cases, claiming that unrelated individuals used copies of the cooperative's mining patents to justify individual gold sales.[35] As SENARECOM is aware of these challenges, gold shipments are usually accepted based on the information traders provide in form of the M02, which has the legal status of affidavit (*declaración jurada*). In any case, SENARECOM does not have the capacity to verify the authenticity of provided copies of mining patents or trader's declarations on the origin of the gold purchased.[36]

The abovementioned workarounds in the control of export documentation and the inherent obstacles for authorities to effectively verify forgery of documents have opened up a space for personal negotiations at the moment of the export control providing a risk for corrupt practice.

Bolivia's gold export traders' business decisions regarding gold purchases are first and foremost shaped by market-related factors. Where, from which seller, through which intermediary trader, how frequently, under what conditions and with which due diligence standards exporters purchase gold are all determined to a great extent by transaction costs and profit opportunities. These generally follow the precept 'the more gold that can be bought, the better' so that they can keep up with a certain speed and frequency (*rotación*) of export consignments. While formal regulations and their lax enforcement do not provide much incentive to comply with traceability requirements, let alone enforce voluntary due diligence measures like verifying compliance with environmental or social standards of producers, neither do these market related factors. Bureaucratic procedures for gold exports and the connected back-and-forth for corrections to the M02 requirements already take long and further due diligence standards would add to the process even more paperwork and time, which for exporters is money.[37]

Access to finance

How exporting companies finance their operations varies first and foremost with the size of the company. While the bigger companies have equity capital, the smaller ones additionally have to take on loans. The biggest share, however, in some cases up to 80-90% of exporters' working capital, is made up from payments of their international buyers. [38]

Given this dependency, timely payments by their buyers are crucial for even the biggest exporting companies providing them with the necessary liquidity to purchase gold. Receiving timely payments from their international customers gives exporters significant competitive advantages on the internal gold market, since gold sellers also require immediate payment, e.g., they prefer to travel to La Paz for only one day to sell their gold, saving payment for accommodation.[39]

Payments to Bolivian gold exporters by their international customers are always transferred in USD, which is why they are to a large extent processed by US correspondent banks (or in the case of *Banco Unión* by a French correspondent bank).[40] Thus, banking due diligence regulations, imposed by international correspondent banks on their Bolivian counterparts, could in theory have the potential to bring Bolivian banks to demand documentations from gold exporters and, where not available, stop their transactions.

In practice, this potential pressure from correspondent banks does not seem to materialize significantly and control by Bolivian banks over gold exporters is still meagre. However, private export traders and financial sector experts report that in the course of the last ten years, two occasions triggered some progress. First, the entry into force of the us Foreign Account Tax Compliance Act (FACTA) in 2010 led to some control by correspondent banks over their Bolivian partners. This particularly impacted the big private Bolivian banks, like *Banco Bisa*, *Banco de Crédito del Perú* and *Banco Mercantil Santa Cruz.* Smaller

35 Authors' interview with SENARECOM official, La Paz, June 2021.

36 Authors' interviews with private gold exporters, La Paz, June 2021.

37 Authors' interviews with private gold exporters, La Paz, June 2021.

38 Authors' interviews with private gold exporters; financial sector expert, La Paz, June 2021.

39 Authors' interviews with private gold exporters, La Paz, June 2021.

40 Authors' interviews with financial sector expert, La Paz, June 2021.

banks worked with the Argentinian National Bank as correspondent bank which is known for imposing less requirements on their partners in Bolivia and thus were less impacted. Generally, the larger banks demand and control more frequently documentations from their customers and on some occasions even stopped transactions. Furthermore, as a consequence of a media-effective case of gold capture at La Paz airport in December 2020 Bolivian banks started to more rigorously compare the amount gold traders declare at the bank with SENARECOM export receipts. In general, however, banks do not require more documentation from gold traders than SENARECOM through the M02 form, which makes the degree of control exerted by banks on gold exporters still generally very low. [41]

The bigger gold traders still prefer to channel their transactions through the larger Bolivian banks (*Banco Unión, Banco Bisa, Banco de Crédito del Perú and Banco Mercantil Santa Cruz*), since they possess higher equity capital than the small banks and are thus able to process larger transactions.[42] Bolivia's banks limited the maximum of payments gold traders may receive to 1 million Bolivianos (about 140,000 USD a day) and 5 million Bolivianos a week. [43]

To mitigate the remaining risk of bank controls, exporters usually operate many different bank accounts, so that they are able to realize payments through one account in case they face problems with another. Smaller and younger gold exporters face more difficulties when opening bank accounts.

In theory all transfers in cash equal to or above 50,000 Bolivianos (about 7,000 USD) are prohibited by national tax service resolution 10-0017-15 of June 26th, 2015, on the documentation of transactions. Thus, all transactions above this amount need to be transferred through the official banking system. However, this law is not strictly enforced, making it possible for gold exporters to buy larger quantities of gold and pay in cash. Given that all upstream payments are done in cash, an enforcement of this law would put a relatively high constraint on export companies' executions of financial upstream payment transactions.[44]

Bolivia is a member of the *Grupo de Acción Financiera de Latinoamerica* (GAFILAT), the Latin American associate member of the international Financial Action Task Force (FATF), which reviews money laundering and terrorist financing techniques and aims to strengthen standards and regulation in their member countries. Bolivian anti-money laundering and terrorist financing laws are based on the 40 FATF recommendations, however they remain toothless in practice and lag significantly behind Bolivia's neighboring countries' regulations. The Bolivian Financial Intelligence Unit (Unidad de Investigaciones Financieras, UIF), the body responsible for implementing anti-money laundering and terrorist financing regulations, deals with significantly (800 times) less anti-money laundering alerts from banks as its counterparts in its neighboring countries. Of these alerts, an average of only 5% reportedly leads to actual investigations.[45] There is no reporting regarding suspicious gold-related transactions from banks to the UIF unless an investigation into a certain customer has already been initiated by law enforcement authorities.[46]

Against this background, it is evident that the Bolivian gold market has a heightened risk for money laundering related to e.g. drug trafficking and other illicit trade activities. While the Bolivian legal framework declares the gold sector as a high-risk sector, it has no laws regulating the sector specifically, leaving law enforcement toothless. It remains to be seen whether the GAFILAT peer review between December 2021 and March 2022 will trigger stricter banking regulations in Bolivia.[47]

41 Authors' interviews with financial sector expert; private gold exporters, La Paz, June 2021.

42 Authors' interviews with high-ranking former central bank official; financial sector expert, La Paz, June 2021.

43 Authors' interview with former private gold trader, La Paz, June 2021.

44 Authors' interview with financial sector expert, La Paz, June 2021.

45 Authors' interview with UIF representative, online, July 2021.

46 Authors' interview with financial sector expert, La Paz, June 2021.

47 Authors' interview with financial sector expert, La Paz, June 2021.

Taxes and duties

Royalties for the gold trade (1.5% on the value sold internally and 1% on the value sold externally) are paid by the exporting firm at the moment of export. Of these royalties 85% are paid to the region (*departamento*) and 15% to the municipality *(municipio*) where the gold was produced.

As fully formalized and registered firms, export companies pay value added tax (13%), transaction tax (3%) (minerals that are destined to be exported are excluded from transaction tax) and corporate income tax (25%). Additionally, exporting firms retain all the discounts that apply for internal gold sales and that are mentioned in section 4.2.3, that is national health insurance (1.8%) and contribution to the federation to which the cooperative where the gold comes from is affiliated (0.3-0.4%) (BGI Bolivia 2020). Given the discounts for royalties and federations have a regional character (the latter are also organized by regions), exporters find themselves involved in fraudulent deals regarding their regional distribution. Since regional administrations as well as federations directly profit if higher quantities of gold are traded as being sourced in their region, there are incentives to falsify declaration of origin in their favor.

In this race to attract declarations of origin, the bigger and longer established federations have significant advantages, since they maintain better contacts to SENARECOM and possess a larger financial capacity. Three out of the 14 federations of gold cooperatives have signed agreements with SENARECOM, fixing the discount they receive for gold sales to 0.35% of the gross value of the gold for Ferreco and Fecoman, and 0.30% for Fedecomin La Paz.[48]

As explained above, while cooperatives generally try to avoid declaring a large amount of gold sales on their account, given the higher tax payments implicated, federations, on the contrary, profit from gold being declared within their member cooperatives, due to the contributions they receive. This explains why the federations politically support the status quo and the abovementioned workarounds allowing the unclear documentations for sales “on behalf of a cooperative” and thus generally oppose regulatory changes.

Compliance with the payment of royalties, taxes, and other fees, is difficult to measure. While royalty payments are controlled for all exports that pass through the export and customs authorities there is an unknown figure of illegal gold exports that bypass tributes to the state treasury completely. A recent case in December 2020 of a capture of more than 300 kg of gold at La Paz Airport for which false documentation had been provided demonstrates the existence of such fraudulent practices and might only be the tip of an iceberg of a much wider prevalence of illegal exports (see MMM 2020). It is unclear how widespread these practices are and among which companies they prevail.

It is difficult for authorities to hold wrongdoers accountable. Firstly, the offense of fraudulent export is not listed among the 34 predicate offences for money laundering enshrined in Bolivian law, which is based on the international Financial Action Task Force (FATF) AML recommendations. Accordingly, a fraudulent gold export case cannot be directly classified as a predicate offense for money laundering. It can, however, be classified as financial fraud and/or as smuggling, which both are predicate offences under Bolivian law. Here a second difficulty arises, namely that cases are sometimes handled with less rigor than they could. The charge for the above-mentioned case of gold capture was not linked to any predicate offence, neither to smuggling nor to financial fraud, raising questions of vested interests of the authorities involved, as emerged from expert interviews.[49]

Tax avoidance of exporting companies is also an observed issue. Many exporting companies, particularly the smaller ones, only operate for a few years because their owners encounter problems with tax authorities. Thus they close a problematic company and open a new one under a new name.[50]

48 Authors’ interview with Bolivian gold sector expert, La Paz, 2021.

49 Authors’ interviews with a financial sector expert, La Paz, June 2021 and a UIF representative, online, July 2021.

50 Authors’ interview with a private gold exporter, a Bolivian gold sector expert and a MEDMIN representative, La Paz, June 2021.

Gold sales

In the gold trade, profit margins are generally small, leading to the fact that money is made through volumes. Most of the exporting companies export in weekly consignments. Sizes of the consignments vary significantly from company to company, however, given the costs for a single export of around 4,000 USD, the minimum economically feasible amount for one consignment is about 18 kg. While the smaller trading companies export about 40-50 kg a month, in weekly consignments, the bigger ones export up to 600 kg a month, in consignments of 50 kg.[51]

Gold exporting companies have to fill out the form M03 (external gold sales) for every gold export consignment. This form includes all physical characteristics of the gold that is to be exported including a chemical analysis, a bank statement, a copy of the receipt of the royalty payment, and a copy of the invoice for the export. The cost of the export is 0.05% of the value of the export consignment, to be paid to SENARECOM. A copy of the certificate of origin of the gold shipped only has to be joined if the buyer requires it.

After filling out the form M03 online in the SINACOM system of SENARECOM, exporting companies have five days to personally pass by a SENARECOM office to get it validated. After that SENARECOM has 48 hours to carry out a physical inspection. National customs officials then again control all gold export consignments, given that gold is classified as a high-risk export good. However, customs only rarely demand additional documentation and hardly stop a consignment. Exchange and comparison between the databases of customs and SENARECOM is possible but not routinely done in practice.[52]

Many traders own multiple export companies. This can be for strategic considerations regarding the gold exports, mainly with respect to the speed and frequency (*rotación*) of their exports and payments they receive for the latter, or for tax avoidance reasons. Owning more than one export company gives traders several advantages. It enables them to export more consignments simultaneously, speeding up the whole exportation process. One company is in theory allowed to send more than one consignment at a time to SENARECOM, however responding times by SENARECOM (two days for each consignment) would be accumulated and in case of a rejection this would significantly delay the exports. With a second (or third) company exporters can keep up their exports even if one consignment is delayed thus guaranteeing a steady flow of payments from their clients abroad. Some exporters also own several companies to split fully documented and unproblematic exports from such with insecure, missing, or falsified documentation, minimizing the risk of being blocked or slowed down by law enforcement.[53]

Exporting companies sell or lend gold on the internal market either to other exporters or to jewelry manufacturers to “help each other out”, e.g., to make a consignment large enough to be shipped profitably.[54]

From 2015 onwards, Bolivia’s gold export destinations shifted away from the US to the United Arab Emirates (UAE) and India. While the value of gold exports to the US shrank from 512,6 millions USD (2015) to 26,9 millions USD (2018) and 50,1 millions USD (2019), the value of exports to the UAE increased from 186,2 millions USD (2015) to 735,3 millions USD (2019) and to India from 10,5 millions USD (2015) to 848,9 millions USD (2019) (Figure 5).

Mapping the exporters with the buying companies in the destination countries (see Figure 6) can help focusing the analysis on the behavior of particular buying firms rather than on importing countries.

To explain this shift in export destinations, the factors making up the incentive structure of export traders guiding their business decisions are revealing.

51 Authors’ interviews with private gold exporters, La Paz, June 2021.

52 Authors’ interview with private export trader, La Paz, June 2021.

53 Authors’ interview with Bolivian gold sector expert, La Paz, June 2021.

54 Authors’ interview with private export trader, La Paz, June 2021.

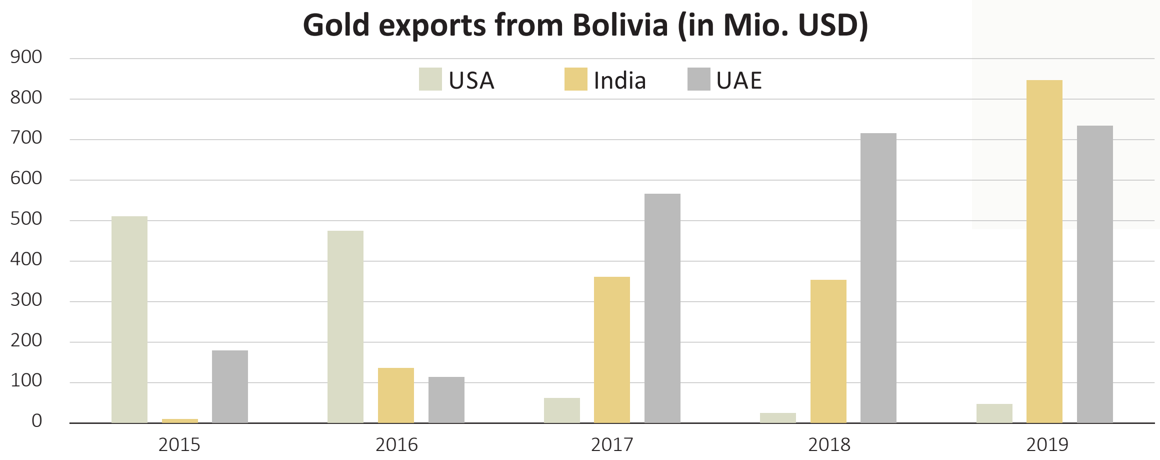


Figure 5: Shifting export patterns away from the US towards India and the Emirates (source: Senarecom).

The single most important aspect for exporting companies is the speed of the payment by their international customers. Other market-related factors like the price paid for the gold, as well as the acceptance of the purity declaration of the shipped gold were also mentioned to shape their decisions.

While European buyers usually pay a good price (and shipment to the US is cheaper), buyers from India and Dubai are preferred by many traders since they pay faster, allowing export traders to buy more gold on the internal market.[55] According to a private export trader, buyers from India and Dubai sometimes pay the same day the gold is bought but before it is shipped. This is possible because they have set up affiliate offices of their refineries in La Paz and are even sometimes involved in Bolivian gold export companies which allows them to form stable and trusted business relations with local exporting companies and develop preferential trade agreements and payment modalities. Buyers in the United States, however, only pay once the shipment has arrived in the US (often in Miami) and is controlled there. This might take up to a week from the moment the gold is bought. This results in the fact that only exporters with sufficient liquidity are able to wait for their payments. The same mechanism applies for shipments to European customers.[56] The purchase of Bolivian gold by Indian buyers is further incentivized by the Indian government through a visit of Indian Prime Minister Narendra Modi to Bolivia in 2016 and subsidies of transport costs for gold shipments to India larger than 40% and with a purity of maximum 95%.[57]

To a lesser extent, interviewed exporters mentioned due diligence requirements of their international customers as factors influencing their decisions on where to export to. While it happens that European buyers decline deals because environmental licenses of producers were missing, such additional requests by buyers are the exception and function more as a potential threat.[58] Thus, exporting to India or Dubai gives exporters an additional security, however, it is not the main reason why they chose those destinations.

While banks' due diligence regulations do not influence exporters' business decisions greatly, US and European law enforcement and LBMA standards seem to have at least an indirect effect on traders' decisions to which market they export, given that due diligence standards imposed by banks of LBMA listed refineries

55 Authors' interview with private gold exporter, La Paz, June 2021.

56 Authors' interview with private export trader and with Bolivian gold sector expert, La Paz, June 2021.

57 Authors' interview with private gold exporter, La Paz, June 2021.

58 Authors' interview with private gold exporter, La Paz, June 2021.

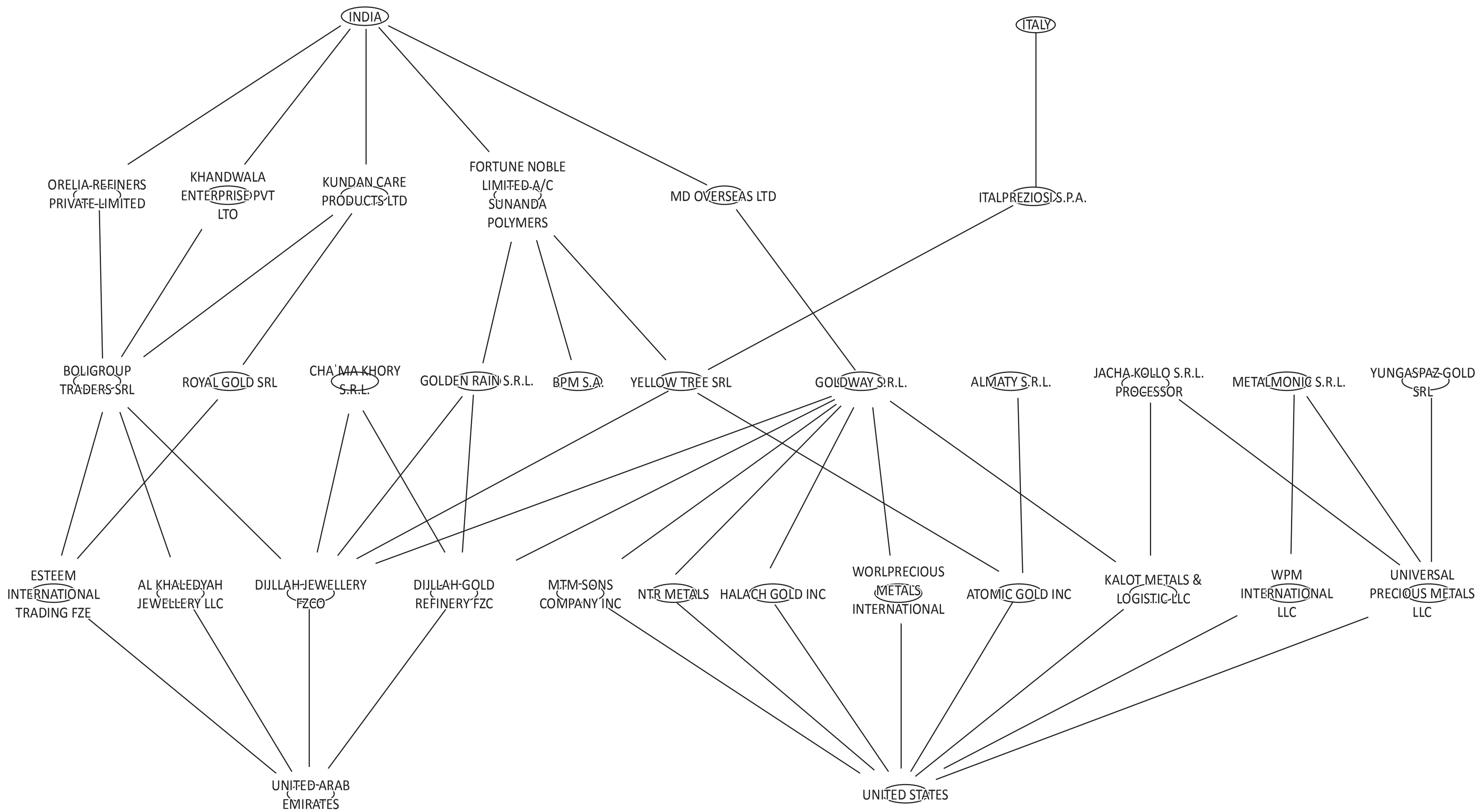


Figure 6: Mapping of Bolivian gold exporters (third row) and foreign buyers (second and fourth row) for 2017-2019 (source: authors based on data from INE).[59]

might be the reason why payment modalities are slower and more cumbersome for those customers, and therefore less attractive to Bolivian gold exporters.[60]

Also, law enforcement efforts in the US and Europe can have a certain signaling effect on gold traders worldwide, including in Bolivia. The fact that the abrupt shift of Bolivian gold exports away from the US towards the UAE and India coincides with a major US law enforcement effort called *Operation Arch Stanton* against US refineries which imported gold from Latin America, particularly Peru, without the (by US law) required due diligence and which increased compliance risks for precious metal traders in the US, might be partially explained by such a signaling effect.

3.3.3 Downstream formalization matrix

The 'formalization matrix' indicates the position the downstream export traders along a 'formality continuum' for each formalization requirement and thus synthesizes the evidence from the above chapter (Table 8). It provides a comprehensive overview of the regulatory, market-related, and subjective factors that influence the actors' cost, benefit and risk calculations and that incentivize them to operate under a certain formalization mode.

Formalization requirements	Formality continuum and formalization modes					Influence factors	
	Formal		Informal		Illegal		
	SBG compliant	Fully formalized	Formalization in progress	Could be formalized	Prohibited		
1. Registered legal entity		1				Regulatory	X
						Market-related	
						Subjective	
2. Gold purchases			1	2		Regulatory	X
						Market-related	X
						Subjective	X
3. Access to finance		1				Regulatory	
						Market-related	X
						Subjective	X
4. Taxes and duties		1				Regulatory	X
						Market-related	
						Subjective	
5. Gold sales/ exports		1			? 2	Regulatory	X
						Market-related	X
						Subjective	

Table 8: Formalization matrix for downstream gold exporters (source: authors).

59 Some of the foreign buyers (e.g. Kaloti Metals and NTR Metals LLC) are no longer in business today.

60 Authors' interview with financial sector expert, La Paz, June 2021.

1. Registered legal entity

❶ Private gold exporting companies are fully formalized legal entities.

Regulatory factors: gold exporters need to be legally registered with SENARECOM (with a valid NIT and NIM), at SENAVEX with a unique exporter declaration (RUEX) and at the national customs service control of these requirements is high.

2. Gold purchases

❶ In some cases, gold purchases made directly from cooperatives (partially) comply with existing documentation requirements, but are realized through cash payments.

❷ Most gold purchases by exporters do not comply with existing documentation requirements and are realized through informal cash transactions.

Regulatory factors: regulations on internal gold sales are ambiguous and not strictly enforced; the applicable legal framework proscribes cash payments that exceed the sum of 50,000 Bs.

Market-related factors: widespread informality among up- and midstream suppliers makes compliance with documentation requirements cumbersome and often impossible; availability of international destination markets with attractive payment modalities (India, Dubai) without traceability or due diligence standards.

3. Access to finance

❶ Gold exporters access finance through formal channels.

Market-related factors: international customers provide the largest share of the exporters' operative capital through formal banking system.

Subjective factors: trusted business relations with international clients improves access to finance.

4. Taxes and duties

❶ Gold exporters are subjected to tax payments and pay mining royalties and other gold-trade related duties

Regulatory factors: payment of mining royalties and other duties is controlled at the point of export; gold traders may be subjected to tax audits.

5. Gold sales / exports

❶ Gold shipments are exported through formal channels, passing SENARECOM and customs; however, gold exports do not comply with due diligence standards as required by NSMG schemes.

❷ Cases of gold smuggling and fraudulent export practices have been reported.

Regulatory factors: SENARECOM controls compliance of gold exports with national export requirements; lax enforcement of internal sales regulations and diligent sourcing requirements; incomplete databases, scarce resources and limited cooperation between institutions make strict controls difficult and increase risk of fraudulent exports practices; due diligence exerted by national banks does not exceed requirements set by SENARECOM; domestic AML framework is weak and international provisions are not strictly enforced; green borders are porous

Market-related factors: gold exporters depend on using formal channels for payments and gold shipments; choice of export market is largely influenced by the payment modalities (speed of payment, price) and, in some cases, due diligence requirements; in remote border regions nearest trading hubs are sometimes located abroad.

4. Recommendations

From the analysis of the costs and benefits of different formalization modes at the upstream, midstream, and downstream level, a number of recommendations emerge how SBGI can contribute to advancing formalization and supply chain due diligence. The main idea is to shift priority away from promoting the direct export of responsibly produced gold towards policy reform.

1. Prioritize policy dialogue in the following reform areas:
- **1.1.** Promote the formalization of artisanal producers and midstream actors
- **1.2.** Altering actors' incentive structures in favor of formalization
- **1.3.** Strengthen state-delivery of technical support to mining cooperatives

2. Considerations for supporting direct export of responsible gold in the future

1. Prioritize policy dialogue

For years the political situation in Bolivia's gold mining sector has been characterized by a political reform gridlock and a lack of progress in the areas of value chain formalization and enforcing existing regulations. This gridlock can mainly be attributed to the historically strong political position of mining cooperatives and the mining federations. Fearing the political backlash from the federations and their large constituencies, successive governments from different political orientations have effectively cultivated a policy of non-interference towards the gold mining sector resulting in an entrenched status quo with complex vested interests (cf. Baraybar Hidalgo and Dargent, 2020; Salman et al., 2015). The situation is compounded by vested interests. As a consequence, Bolivia's cooperative gold mining sector has remained steeped in informality, with low-levels of administrative and managerial capacity, and continues to employ outdated, inefficient and harmful production methods.

As we discuss in the following sections, there are a few elements that would significantly improve the regulatory framework for gold mining without unduly antagonizing cooperatives.

1.1 Formalization of artisanal producers and midstream actors

Under the current legal framework, a significant number of upstream gold producers operate illegally. It is important to note that under these conditions artisanal gold miners (e.g. *barranquilleros, agromineros, comunarios,* etc.) as well as gold collectors (*rescatistas*) and intermediary traders *(intermediarios*) have no opportunity to leave behind irregularity and to operate formally.

Artisanal mining is a livelihood strategy and among the least harmful in terms of environmental destruction. The wholesale exclusion of artisanal miners from formalized gold markets seems ill-advised as it serves no apparent purpose.

Similarly, midstream-level gold collectors perform a crucial function in Bolivia's domestic gold market and their legal repression is de facto unfeasible, runs contrary to formalization efforts, and makes traceability and supply chain due diligence impossible.

We recommend adapting the applicable legal and regulatory framework, taking into account the reality of Bolivia's gold value chain, and to consider the following revisions:

A. Legal definition and recognition of (various forms) artisanal mining and granting of the legal right for artisanal miners to sell (small amounts of) gold formally on the domestic market.

B. Legal definition and recognition of small-scale gold collectors that purchase gold from artisanal miners and individual cooperative miners and granting of the legal right to sell gold formally on the domestic market.

C. Legal definition and recognition of intermediary traders that purchase gold from gold collectors and cooperatives and granting of the legal right to sell gold formally on the domestic market.

D. Formalization requirements should be adapted to the administrative and compliance capacity of each actor type (e.g., flexible requirements for artisanal miners that are easy to comply with that are adapted to the necessities of the sector; minimal requirements for gold collectors; moderate requirements for intermediary traders).

E. Lack of enforcement capacity by the state must be compensated by a strong incentive framework that rewards formality and penalizes informality and non-compliance.

1.2 Altering actors' incentive structures in favor of formalization

The cost-benefit analysis of different formalization modes indicates that most gold mining cooperatives lack incentives to become more formalized. This results in substantial loss to the tax authorities and social security systems, a lack of traceability.

The following reform steps could alter actors' incentive structures in favor of formalization and enhanced supply chain due diligence:

A. Reduce the costs of formalization-related administrative requests and official applications to a viable minimum. Ideally, obtaining a CAM and other bureaucratic errands would be free of charge.

B. Harmonize royalty rates and contributions to mining federations to take away current incentives to veil production volumes and to misrepresent the regional origin of gold shipments.

C. Simplify the tax framework and adapt it the to reality of cooperative gold mining sector by applying taxes at the end of the value chain similar to the mining royalty. This would make current tax evasion strategies at the source impossible while eliminating a major incentive to remain informal.

D. Incentivize cooperatives by rewarding formality and due diligence compliance. This could be done by applying tiered tax rates at the end of the supply chain. For example: gold shipments lacking proper documentation would be taxed higher than shipments with sufficient documentation. Certified clean gold could be taxed even less.

E. Incentivize export traders by rewarding traders that source gold from duly formalized cooperatives/vendors. This could be done by establishing a 'fast track' export channel at SENARECOM for gold shipments that comply with all required formalization and due diligence requirements; gold shipments that lack proper documentation would go through a 'basic', slower export channel. Export traders that source from formalized vendors would thus be permitted a faster turnover (*rotación*).

It is important to note that these recommendations shall serve to illustrate the idea of introducing a system of punishment and reward. It is sensible to install such an incentive system at the end of the domestic value chain where the state has the capacity to exert control, i.e. at the downstream level where the formalized export traders operate.

1.3 Strengthen state-delivery of technical support to mining cooperatives

The near absence of state support and service provision for the cooperative gold mining sector is part of the general condition under which gold mining cooperatives lack any incentives to become formalized. Offering concrete support could form a starting point to alter the relation between gold mining cooperatives and the state and its regulatory institutions from one characterized by distrust and non-support to one of cooperation.

Drawing on interviews with the cooperative mining sector and based on our analysis, we recommend the following key areas for delivering support:

A. Establish regional educational centers in mining areas specifically for younger generations of miners to train and educate them about modern production methods, environmental and health hazards, business administration and marketing strategies.
B. Improve miners' access to formal finance by setting up a (state-backed) special purpose fund possibly in cooperation with the private banking sector to provide low-interest or interest-free loans for mining cooperatives that want to invest in more efficient and cleaner production methods (e.g., gravitation tables).
C. Provide technical support for cooperatives that seek to adopt cleaner and more efficient production methods as well as for obtaining environmental licenses.

2. Considerations for supporting direct export of responsible gold in the future

In the case that structural framework conditions for promoting direct gold export among cooperatives become more favorable in the future and technical support for direct export of sustainably produced gold is taken up again, a number of challenges need to be addressed. These concern primarily the payment modalities for cooperatives and production finance gaps.

Encouraging (sufficiently formalized) gold mining cooperatives to export directly has proven difficult despite offering the payment of a premium. As it is, the direct-export model would only be viable for a smaller number of cooperatives with relatively high production volumes and a relatively high degree of formalization and organizational capacity. Yet, even for relatively advanced cooperatives the payment modalities offered by importers in high-standard markets are not-competitive as payments are made too slowly compared with local buyers. Moreover, the need for cooperatives to accumulate production to make direct exports economically viable often led to a liquidity crunch during which production couldn't be sustained. Further, the administrative costs and bureaucratic efforts associated with reaching a formalization level that is sufficient for exporting directly are perceived as exceedingly high by most cooperatives. At the same time, for most cooperatives, operating informally has few if any tangible disadvantages with regard to sustaining production and the marketing of gold.

Given the ease with which export traders can market their gold internationally, there are currently no incentives for them to conduct enhanced supply chain due diligence and to participate in responsible sourcing schemes.

Against this background, the following recommendations emerge:

A. If the export promotion is to be pursued further, addressing payment modalities to ensure more rapid payment will be paramount.

B. To make the direct export model economically viable for a larger number of cooperatives, create a finance mechanism that would provide cooperatives with unbureaucratic access to bridging loans to enable them to accumulate production while sustaining operations.

C. Establishing a responsible export trading company (*comercializadora*) resembling the *C.I. Anexpo S.A.S.* model in Colombia with its in-house network of trained buying agents and sufficient financial capacity to accumulate economically viable amounts of responsibly produced gold for export could fill a niche in Bolivia's gold market and serve as a role model.

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