

Analysis and systematization of innovative cooperation programs between large-scale mining and artisanal and small-scale mining

Executive summary



EXECUTIVE SUMMARY

The research project, carried out between August 2020 and January 2021, identifies, and systematizes case studies where large-scale mining (LSM) projects have cooperated with artisanal and small-scale mining (ASM) in five Andean countries (Bolivia, Colombia, Chile, Ecuador, and Peru). The study addresses the simultaneous mining expansion of large-scale and artisanal and small-scale mining in the same territories. In the context of the health emergency and economic impacts resulting from the coronavirus pandemic, the trend of coexistence among these actors is more likely to occur as countries seek investment to develop LSM projects and the number of artisanal miners who resort to this subsistence activity increases.

The study carried out an analysis and systematization of nine collaboration practices between LSM and ASM in the Andean region. These includes the following mining companies:

- Gramalote Colombia Limited (Colombia)
- Gran Colombia Gold Corp. (Colombia)
- C.I. Anexpo S.A.S. (Colombia)
- Lundin Gold Inc. (Ecuador)
- Minera Yanaquihua S.A.C. (Perú)
- Compañía Minera Poderosa S.A. (Perú)
- Minera Los Rosales S.A. (Perú)
- Empresa Minera San Lucas S.A. (Bolivia)
- Empresa Nacional de Minería (Chile)

Analytical framework

This study proposes an analytical framework for future research on collaboration models between LSM and ASM. Four dimensions are proposed: geological competence, the value chain, the corporate dimension, and the relationship between the mining company and ASM.

The starting point for the analysis of the collaboration models refers to the geological competence and the location of artisanal and small-scale miners with whom the mining company establishes collaboration. This point is key given that the challenges and collaboration scenarios may differ depending on the location of the artisanal miners within or outside the mining company’s concession, the legal requirements, and the prospecting of mining activities by the company, among others.

Table 1. Analytical framework for the analysis of collaboration models

Analytical framework							
Location and Geological competence	A. ASM Value Chain				B. Corporate Dimension		C. LSM – ASM relation
	FORM	PROD	PROCE	COMMER	Social Management	Corporate Culture Structure	Trust/Distrust

Source: Own elaboration

Once defined, the ASM value chain is a good starting point to classify the different collaboration models. There are four areas in the ASM value chain where mining companies have collaborated: i) access to the formal sector and legalization (FORM); ii) mineral production and extraction (PROD); iii) mineral processing and beneficiation (PROCE); and iv) commercialization of the mineral (COMMER).

Table 2. Collaborative actions in the ASM value chain

Access to the formal sector and legalization	Mineral production and extraction	Mineral processing and benefit	Commercialization of the mineral
<ul style="list-style-type: none"> • Signing of operating agreements and contracts • Establishment of areas designated or assigned to artisanal miners • Technical assistance for access to environmental permits • Promotion of local companies for mining extraction • Leasing contracts of mining operations • Formal business relationships 	<ul style="list-style-type: none"> • Technical assistance in extraction practices (geology, environmental, and safety) • Transfer and loan of equipment and small machinery • Access to credit and financing for ASM activities • Development of state promotion program 	<ul style="list-style-type: none"> • Technical assistance and training for processing • Monitoring of activities • Collection and purchase of minerals • Mineral processing plant for artisanal miners 	<ul style="list-style-type: none"> • Technical assistance and training for marketing processes • Premiums for the sale of certified artisanal mineral • International certifications and good practice stamps
FORM	PROD	PROCE	COMMER

Source: Own elaboration

Analysis of the corporate dimension of mining companies

As a second variable, the corporate dimension of the mining company has been deemed to be a key distinguishment of collaborative approaches. In some case studies, mining companies include ASM as part of their Corporate Social Responsibility programs. In others, the internal systems are adapted to address ASM. Therefore, some companies integrate ASM activities into their operations, while others recognize the importance of ASM for the community but run the mining business separately.

Analysis of the relationship between the mining company and ASM

The third variable chosen to distinguish approaches refers to the relationship between the mining company and ASM. In particular, the coexistence and the bond of trust between the mining company and the artisanal miners that are part of the collaboration activities are analysed. The process of negotiation and interaction between actors is essential for the sustainability of agreements. Despite all case studies having collaborative approaches, it has not been possible to establish a bond of trust and good relations in all cases. This can be traced back to several factors such as demands for greater transparency from the company, greater involvement of the company in local problems, or invasions by artisanal miners in areas that were not agreed upon.

Collaboration models in the Andean region

The study has identified five models of collaboration between mining companies and ASM, organized into two scenarios according to the location of artisanal miners. These are not ideal models or study proposals for collaboration, but rather an analysis framework to situate best practices of mining company collaboration in different scenarios.

Table 3. Collaboration models between LSM and ASM

Overlapping licenses scenario		Non-overlapping licenses scenario		Public policy model for state promotion and collection
Collaborative coexistence model	Productive coexistence model	Collection and processing model from external business partners:	ASM commercialization model	
<ul style="list-style-type: none"> • Lundin Gold • Gramalote 	<ul style="list-style-type: none"> • MYSAC • Minera Los Rosales • Gran Colombia • Poderosa 	<ul style="list-style-type: none"> • Minera San Lucas 	<ul style="list-style-type: none"> • Anexpo 	<ul style="list-style-type: none"> • ENAMI

Source: Own elaboration



Collaboration scenarios of mining companies with artisanal miners within the concession

▪ Collaborative coexistence model:

In this model, the mining company recognizes the importance of ASM within its concessions for local development. However, no business model or commercial links between the mining company and ASM is established. This collaboration focuses on social coexistence between the actors. The support provided is focused on promoting the formalization of ASM and improving its processing practices, safety aspects and reducing negative environmental externalities.

▪ Productive coexistence model:

In this model, the mining company that owns the concessions implements a business model or commercial ties with ASM within its concession. Formal productive and commercial links are established by signing contracts that authorize exploitation under certain environmental, safety and human rights standards. The mining company purchases the ASM minerals.

Collaboration scenarios of mining companies with artisanal miners outside the concession

▪ Collection and processing model from external business partners:

In this model, the mining company recognizes the artisanal miners outside the concession. A formal commercial link is established, but without allowing ASM activities within the concession. The main collaboration mechanism is the collection and purchase of ASM production for its processing facilities.

▪ Commercialization model for artisanal miners and access to markets:

While commercialization is not related to the mining concession or extraction point, it plays an important role in bringing ASM production to market. By recognizing ASM as a key actor for the community, in this model, commercialization companies act as formal intermediaries between the ASM's domestic market and foreign refineries. This model allows access to international markets through pre-established price mechanisms. In addition, minerals' traceability, due diligence and good practices in the extraction and processing process are implemented.

▪ Public Policy for the Promotion and Collection of ASM: State-owned company:

This model involves the State as a central actor. It includes the registration and regularization of small-scale miners' concessions, supporting the start-up of new projects, and providing a series of programs for small-scale miners to enter the refined metals market competitively. This model aims to support ASM along the whole value chain, including leasing of mine sites, access to credit, training and technical assistance, ore collection, and mineral.



Lessons learned:

- There is no single collaboration model between LSM and ASM. The deciding features include the geographical location of LSM and ASM activities (inside or outside the concession) and where support is provided along the ASM value chain.
- The main contributions in the case studies include formalization efforts (both for ASM activities within or outside the concession) and reducing mercury in ASM production (activities outside the concession). Formal business relationships have led to higher incomes and social benefits for stakeholders.
- The main challenge in the collaboration is linked to the fulfilment of agreements. The proposed analytical framework allows for the systematization of the complex relationship beyond the value chain.
- The role of the State as a manager of coherent public policies is fundamental for the formalization and promotion of responsible ASM activities. ENAMI in Chile is an example of how the State can support ASM activities while generating public income from the sector.
- A tripartite collaboration between the LSM company, the State and ASM actors is key. The LSM company needs to recognize artisanal and small-scale miners as key social actors. The State should enable trust between private entities such as the financial sector and other actors along the value chain.
- The State plays a key role in the formalization, assurance of good environmental practices and the protection of human rights in ASM activities.
- The sustainability of the collaboration agreements and mechanisms should be reviewed on a continued basis. A stronger participatory role of the State as a strategic actor to guarantee its sustainability and a comprehensive vision of the mining sector is key. External factors, such as changes in commodity prices or ownership of the LSM company need to be considered when reviews are made.

General recommendations:

- The first step for a successful coexistence is to adequately map and characterize artisanal miners inside and outside the concession in question. This information along with agreements reached with the artisanal and small-scale miners should be made transparent and be included in sustainability reports. With this information, governments will have a basis to better understand and distinguish formal and illegal mining activities; investors will have a better understanding of the relationship between the mining operator and local stakeholders; and international organizations working in the space can better channel resources to areas where development outcomes are more likely to materialize.
- Governments should consider collaboration models as being an important part of ASM and formalization policies. In this context, regulations could be developed that promote collaborative mechanisms and articulate the responsibilities of each stakeholder.
- Recognition of artisanal and small-scale miners and the desire to formalize them through commercial links is of essence for LSM companies to coexist peacefully. This requires an adapted corporate culture and structure with community relations staff knowledgeable about ASM. For example, some of the companies that were analysed as part of this study have formed internal working groups to address ASM problems and identify opportunities for collaboration along the supply chain.
- Collaboration efforts are based on the trust between LSM and ASM stakeholders, and the transparency of processes. During collaboration negotiations in our case studies significant efforts have been made to manage relationships with artisanal miners inside and outside their concessions over extended periods of time. There must be a willingness to collaborate from both sides through the right mix of economic incentives (better income and the possibility to operate without interruptions) and social incentives (social peace and coexistence).
- Good practices by LSM companies include: i) sustainability reports incorporate an assessment and collaboration efforts with the ASM sector, ii) technical assistance is provided to improve environmental, safety, and health impacts through better extraction and processing practices, iii) purchasing programs and processes are made transparent, iv) working groups are created to attend ASM issues, v) institutional and multi-stakeholder alliances are built; and, vi) processes are developed to learn from existing programs and their effectiveness to formalize artisanal and small scale miners. These can be adapted accordingly.
- External actors such as NGOs, universities and international donors can provide important technical support, accompany negotiations, and disseminate the lessons learned. Their participation can also promote sustainability challenges that may not be considered without their participation, such as gender and human rights issues.

Table 4. Summary table of case studies

Company	Collaboration model between LSM company and ASM							
	Geological competence	ASM Value Chain				Corporate Dimension		ASM-company relation
		FORM	PROD	PROCE	COMMER	Social Management	Corporate and culture structure	Trust
Lundin Gold	<ul style="list-style-type: none"> • Artisanal miners are within the company's concession. 	<ul style="list-style-type: none"> • Signing of operating contracts with ASM. • Technical and geological assistance to comply with the regulatory requirements of ASM. 	<ul style="list-style-type: none"> • Technical assistance in production, safety, labour, and human rights issues. • Monitoring of ASM operations. 	<ul style="list-style-type: none"> • The company does not collect and process ASM minerals. However, it keeps track of the extracted minerals that are sent for processing at state-authorized plants. 	<ul style="list-style-type: none"> • No commercialization for the ASM sector. 	<ul style="list-style-type: none"> • The company's involvement with the ASM sector is part of its social management and relationship with the community. • Lundin Gold expresses its commitment to the SDGs as part of its core business. 	<ul style="list-style-type: none"> • The company recognizes the artisanal miner as an important actor in the community. • Unit within the company in charge of supervising artisanal miners and their activities. Includes third parties such as universities. 	<ul style="list-style-type: none"> • The company has less conflict with artisanal miners and has an adequate mapping of the ASM activity present in the concession.
Gramalote	<ul style="list-style-type: none"> • Artisanal miners within the company's concession. 	<ul style="list-style-type: none"> • Signing of mining formalization subcontracts. • Assistance in meeting regulatory and environmental requirements. 	<ul style="list-style-type: none"> • Technical assistance in improving extraction and environmental practices, as well as safety. • ASM operations monitoring. 	<ul style="list-style-type: none"> • The company does not collect minerals from ASM. • Proposed processing plant in coordination with local authorities. 	<ul style="list-style-type: none"> • No commercialization for the ASM sector. 	<ul style="list-style-type: none"> • ASM is part of the community's social management and relationship. • Alliance with Somos Tesoro (multi-stakeholder project to reduce child labour) to promote good ASM practices. 	<ul style="list-style-type: none"> • Shareholders have experiences in coexistence models between LSM and ASM activities within concessions. • Mining Formalization unit. It intervenes in social and environmental unit. 	<ul style="list-style-type: none"> • It is only possible to mine in this location through a coexistence model.
Gran Colombia	<ul style="list-style-type: none"> • Artisanal miners mine within the company's concession. 	<ul style="list-style-type: none"> • Signing of the formalization subcontract. Provides geological and technical assistance. 	<ul style="list-style-type: none"> • Training and assistance in production, safety, and labour issues. Monitoring of ASM operations. 	<ul style="list-style-type: none"> • Purchase of minerals within the concessions. Sale of all mined mineral is a requirement. 	<ul style="list-style-type: none"> • No commercialization for the ASM sector. 	<ul style="list-style-type: none"> • <i>Insufficient information.</i> 	<ul style="list-style-type: none"> • <i>Insufficient information.</i> 	<ul style="list-style-type: none"> • Coexistence with tensions around the purchase of minerals and ASM invasions.

Poderosa	<ul style="list-style-type: none"> • Artisanal miners mine within the company's concession. 	<ul style="list-style-type: none"> • The company signs operating contracts. • Carries out technical assistance and trainings. 	<ul style="list-style-type: none"> • Training in the improvement of extraction practices. 	<ul style="list-style-type: none"> • Purchase and processing of minerals. Mineral delivery is mandatory for the signing of operating contracts. 	<ul style="list-style-type: none"> • No commercialization for the ASM sector. 	<ul style="list-style-type: none"> • Social responsibility based on community work and execution of inter-institutional cooperation agreements. 	<ul style="list-style-type: none"> • Vision on artisanal miners as an interest group for community relations. • Mineral Collection unit. 	<ul style="list-style-type: none"> • Coexistence with tensions around the purchase of minerals and invasions of ASM.
MYSAC	<ul style="list-style-type: none"> • Artisanal miners mine within the company's concession. 	<ul style="list-style-type: none"> • Signs operating contracts, assignment of agreed areas, and provides technical assistance to artisanal miners. 	<ul style="list-style-type: none"> • Training and technical assistance in improving extraction practices, safety, and the environment. 	<ul style="list-style-type: none"> • Purchase of minerals for processing. Bought from inside and outside the company's concession. 	<ul style="list-style-type: none"> • The company commercializes the ore as part of the company's production. • Benefits are provided through traceability. 	<ul style="list-style-type: none"> • Social responsibility is based on the generation of shared value. 	<ul style="list-style-type: none"> • Corporate vision to promote formalization of artisanal miners who work within its concession. 	<ul style="list-style-type: none"> • The company has a coexistence approach with ASM present in the concession.
	<ul style="list-style-type: none"> • Collaboration with ASM who mine outside of the concession. 	<ul style="list-style-type: none"> • Training of contractors. 	<ul style="list-style-type: none"> • Monitoring the ASM production. 				<ul style="list-style-type: none"> • Has an office for the formalization of ASM miners and collaborating with other actors such as NGOs. 	<ul style="list-style-type: none"> • Framework Agreement.
San Lucas	<ul style="list-style-type: none"> • Cooperative miners are not within the company's concession. 	<ul style="list-style-type: none"> • Training to formalize and compliance with good practices. 	<ul style="list-style-type: none"> • Training and technical assistance in improving extraction practices, safety, and the environment. 	<ul style="list-style-type: none"> • The company collects and buys the minerals for processing purposes through contracts. 	<ul style="list-style-type: none"> • The company commercializes artisanal ore as part of the company's production. 	<ul style="list-style-type: none"> • The company involves ASM as part of its social strategy and relationship with the community. 	<ul style="list-style-type: none"> • The corporate vision is to work closely with its suppliers, including cooperatives. 	<ul style="list-style-type: none"> • Prior relationship with mining cooperatives. This has allowed the agreements to be maintained and the relationship of trust to be strengthened.
			<ul style="list-style-type: none"> • Machinery and personal protection equipment for cooperative miners. 				<ul style="list-style-type: none"> • Commercial Department is involved in the collection. 	

Los Rosales	<ul style="list-style-type: none"> •Artisanal miners mine within the company's concession. 	<ul style="list-style-type: none"> •Signing of exploitation contracts. 	<ul style="list-style-type: none"> •Training and technical assistance in improving extraction practices. 	<ul style="list-style-type: none"> •Project for the collection and purchase of minerals within the concession (to be implemented). 	<ul style="list-style-type: none"> •The company does not carry out direct commercialization of minerals from the ASM sector. 	<ul style="list-style-type: none"> •The company has involved artisanal miners given that they are a part of the community. 	<ul style="list-style-type: none"> •Corporate vision of coexistence with the ASM sector as part of the supply chain. 	<ul style="list-style-type: none"> •The relationship between the parties is recent; however, it has been possible to establish bonds of trust due to the commitment assumed by the company.
		<ul style="list-style-type: none"> •Technical assistance and training to formalize. 	<ul style="list-style-type: none"> •Monitoring ASM production. 	<ul style="list-style-type: none"> •Allows for the sale of minerals to other formal processing plants. 			<ul style="list-style-type: none"> •Coordination of Permits and Community Relations unit. •Alliances with NGOs. 	
Anexpo	<ul style="list-style-type: none"> •Artisanal miners operate in their own authorized work areas. •Anexpo has no mining concessions as a gold trading company. 	<ul style="list-style-type: none"> •The company encourages formalization through strategic alliances. 	<ul style="list-style-type: none"> •No direct assistance is provided to ASM production. 	<ul style="list-style-type: none"> •The company buys processed material. 	<ul style="list-style-type: none"> •The company implements a commercialization model for the processed mineral. 	<ul style="list-style-type: none"> •The company provides better business opportunities for ASM. 	<ul style="list-style-type: none"> •Corporate vision of fair trade with ASM. 	<ul style="list-style-type: none"> •The relationship is based on the commercial aspect and social support for ASM.
			<ul style="list-style-type: none"> •Monitoring of production practices. 			<ul style="list-style-type: none"> •Strategic alliances with NGOs and donors (Better Gold Initiative). 	<ul style="list-style-type: none"> •Creation of a Commercialization Model with ASM. 	
ENAMI	<ul style="list-style-type: none"> •Small mining producers work in their own mining concession or in a third party's concession. 	<ul style="list-style-type: none"> •The company encourages the training and registration of small mineral producers nationwide. 	<ul style="list-style-type: none"> •Public policy programs for training and technical assistance in the improvement of extraction practices. 	<ul style="list-style-type: none"> •The company collects and processes mining material. 	<ul style="list-style-type: none"> •The company commercializes the mineral. 	<ul style="list-style-type: none"> •Direct impact on the communities where the small miners are located. 	<ul style="list-style-type: none"> •The vision of a public policy to promote and develop small-scale mining. 	<ul style="list-style-type: none"> •The company has a long-term relationship with small mining producers.
		<ul style="list-style-type: none"> •Leasing of mining operations. 	<ul style="list-style-type: none"> •Access to credits. 			<ul style="list-style-type: none"> •The business strategy rests on trade and traceability of operations. 	<ul style="list-style-type: none"> •The government's departments of Promotion and Mining, Plants, Projects, Safety and Sustainability, and Mining Development intervene. 	<ul style="list-style-type: none"> •The relationship of trust is supported by high participation of the State.

Source: Own elaboration

