



NATIONAL PROGRAM FOR ENVIRONMENTALLY SOUND MANAGEMENT AND LIFE-CYCLE MANAGEMENT OF CHEMICALS - PROJECT

"Development of a financial product to be used in the Artisan and Small Scale Gold Mining sector - ASM."

PRODUCT 4. CASE REPORT FROM A GENDER PERSPECTIVE

Quito July 2019



Executive Summary

One of the biggest problems for miners concerning reconverting to cleaner technologies is their low-income levels; and, in many cases, their informality, which makes it difficult for them to access formal financing. The artisanal mining and small-scale mining (ASM) sector requires the establishment of financial products that encourage integrated environmental management in their production and promote clean production to increase production efficiency, prevent the generation of waste at the source and reduce the risk to the population and the environment. In this context, the objective of this assessment was to develop a financial product for the ASM sector that stimulates the formalization and association of miners; and that encourages them to adopt cleaner processes and reduce pollution. To this end, the assessment developed three products:

1. A diagnosis that identified the current status of the miners concerning the ease/barriers to access financial products. The main results of this diagnosis show that:
 - Mining associations, natural/legal persons engaged in activities of extraction of precious metals, production, and refining of precious metals would be the potential candidates for the financial product ASM. In the four prioritized territories (Camilo Ponce Enríquez, Paquisha, Portovelo, and Zaruma), there are 290 natural persons and 459 legal entities that have a single taxpayer registry (RUC) active in the Internal Revenue Service (SRI), and that could demand the financial product.
 - The potential suppliers of the financial product ASM would be financial entities that have an active RUC in these territories and that have offered credits to the mining sector and are mainly: Banco de Machala, Banco del Pichincha, BanEcuador and Cooperativa de Ahorro y Crédito de la Pequeña Empresa (CACPE).
 - The mining sector has a low level of financial inclusion according to the ENEMDU (2008): 32.4% of those surveyed in rural areas have not carried out any transactions in financial institutions; in the last quarter 21.9% stated that they have not applied for a credit and that they did not apply because they consider they do not need the loan (58.0%) or they do not have the means to pay (4%). Of the total number of interviewees who applied for a loan, 78.6% were approved, and 21.4% were not approved, mainly due to a lack of collateral.
 - In the survey of miners in Chinapintza, 48% of those surveyed believe that financial service points are far or very far away and that they mainly use bank agencies and savings and credit cooperatives. 52% stated that they had not applied for a loan, and of the last loan they applied for, 36% were approved, and those who were not accepted



were mainly because they had no guarantees (36%) and because they had no credit history (12%). Currently, 72% of respondents stated that they do require financing and that they would use it mainly for the acquisition of machinery and tools (32%) and working capital (12%). It should be noted that orally and in writing, the majority of respondents stated that the amount of financing they need is approximately USD 50,000 and that they could pay for it in up to 3 or 4 years.

2. The main results of the analysis of the current and potential supply for the placement of credits in the mining sector were:
 - On average for the period 2016-2018, the volume of credit for the mining and quarrying sector granted mainly by the entities of the national financial system and to a lesser extent by those of the popular and solidarity financial system reached an amount of USD 235.9 million, equivalent to 0.23% of the GDP and with a participation of 0.71% in relation to the total volume of credit. Concerning the total volume of the credit, 91.8% were commercial credits, 3.2% were microcredits, 3.0% were productive credits, among others. In the provinces of Azuay, El Oro and Zamora Chinchipe¹, where the Program plans to intervene, the average annual amount of credits placed in that period was USD 34.51 million; its participation was of 14.9% of the total volume of the mining and quarrying sector at the national level. 51.6% was placed in Azuay, 43.9% in El Oro, and 4.6% in Zamora Chinchipe.
 - At the national level within private banks, Produbanco participated with 32.5% concerning all the credits for the extraction of precious minerals, followed by Banco de Loja with 24.5%, Banco de Machala with 14.4% and Banco del Pichincha with 11.8%. Among public entities, CFN participated with 4.2% and BanEcuador with 1.0%.
 - At the national level within the entities of the popular and solidarity financial system, on average for the period 2016 - 2018 of the total volume of credits placed for the mining and quarrying sector, 62.2% was granted by segment 1 (assets greater than USD 80 million), 22.2% by the financial entities of segment 2 (assets between USD 20 million and 80 million) and 15.5% by those of segment 3 (assets between USD 5 million and USD 20 million). The primary Savings and Loan Cooperatives that have placed credits are CACPE Zamora, Santa Rosa, Juventud Ecuatoriana Progresista, Jardín Azuayo, and Once de Junio.
 - Currently, financial institutions are offering "Green" financial products aimed at energy efficiency, renewable energy, or the acquisition of more efficient vehicles. No credits could be found for cleaner production related to the mining sector.



- Of all financial entities that have branches or agencies in the Program's intervention territories, not all have granted loans to the mining sector. On the other hand, of the entities that have granted loans to this sector, they have concentrated in the province of El Oro and with less presence in the other provinces. The potential entities that could be interested in granting credits for the mining sector are Banco de Loja, Banco de Machala, Banco Pichincha, BanEcuador, CAC 29 de Octubre, CAC Jardín Azuayo, CAC de la Pequeña Empresa CACPE Yantzaza, CAC Juventud Ecuatoriana Progresista, and CAC MASCOOP.
 - The financial products currently offered by these financial institutions would be adapted to their financing needs and the term in which artisanal miners could repay the credits. However, the main barriers faced by artisanal miners in accessing financing from these financial institutions are: i) their activity is done informally (they do not have RUC or RISE); ii) they cannot prove their income as they do not issue receipts or invoices; iii) they are considered risky and are therefore asked to provide excessive guarantees, usually mortgages; and iv) they do not know how to prepare a feasibility project/investment plan/business plan. The only financial product that can be strengthened is the "Credits for Inclusive Citizen Businesses" offered by BanEcuador B. P.
3. Working together with BanEcuador, it was decided that the financial products that have the most significant viability to be used by the mining sector that wishes to become formal and/or carry out productive reconversion towards a mercury-free production is the Inclusive Business Credit; while for women miners (Jancheras) who want to change their productive activity, the one that would have the potential to support them is the Entrepreneurial Credit. The main characteristics of these financial products are:
- The purpose of the Credit for Inclusive Business in Mining would be to provide credit support to individuals who are formally organized and/or Associations of Miners ASM and who sell gold to the Central Bank of Ecuador (BCE). BanEcuador B.P. would grant credits to these miners, and the BCE would function as an anchor company by paying a part to the miner. Another part would be deposited in the client's account in BanEcuador B.P., according to the payment date established in the credit operation granted to the client. To ensure that mining activities are mercury-free, beneficiaries must sign a Mercury-Free Management Plan with the Ministry of the Environment, as well as an agreement for technical assistance and accompaniment by the "National Program for Environmentally Sound Management and Life Cycle Management of Chemicals (PNGQ)." Suppliers that have been informed by the BCE that they



are eligible to apply for credit may contact the BanEcuador B.P. agency closest to their investment location. The type of operation would be productive credit or priority trade credit with amounts ranging from USD 500 to USD 500,000 destined for activities related to production, trade, and services related to the extraction of mercury-free gold. The term would be up to 5 years with two years of grace for the purchase of machinery and equipment; and up to 10 years with two years of grace for infrastructure works.

- The Entrepreneurship Credit would support those women miners (Jancheras) who wish to start new individual or family production units outside the mines that would allow them to improve their economic autonomy with the support of reimbursable and non-reimbursable financing. The type of operation would be microcredits ranging from USD 500 to USD 59,100 with a term of 30 days to 60 months.

Abbreviations

| ACRONYM | DESCRIPTION |
|---------------|--|
| BCE | Central Bank of Ecuador |
| EPS | Popular and Solidarity Economy |
| SAICM | Strategic Approach to International Chemicals Management |
| GEF | Global Environment Facility |
| Hg | Mercury |
| ASM | Artisan mining and small-scale mining |
| MERNnR | Ministry of Energy and Non-Renewable Natural Resources |
| MAE | Ministry of the Environment of Ecuador |
| UNDP | United Nations Development Program |
| PNGQ | National Program for Environmentally Sound Management and Life Cycle Management of Chemicals |
| RISE | Simplified Tax Regime |
| RUC | Single Taxpayer Registration |
| SRI | Internal Revenue Service |
| SBS | Superintendence of Banks and Insurance |
| SEPS | Superintendence of Popular and Solidarity Economy |

1. Background

Population growth in recent decades, as well as technological and industrial development, has led to increased pressure on natural resources, primarily

through the use of substances and chemical compounds used in various industrial sectors such as agriculture, food, mining, health, among others. Mercury (Hg) is a chemical substance used in a variety of products such as thermometers, blood pressure meters, and energy-saving lamps, as well as in Artisan Mining. The peculiar physical-chemical properties of Hg (liquid at ambient temperature, high density, etc.) can easily cause its release into the air, soil, and water at the manufacturing stages or as a result of damage during use and final disposal, and impact human health and the environment.

Artisanal and Small-scale gold mining (ASGM) is the world's largest source of anthropogenic mercury emissions to the environment, with about 35% of total emissions within a set of more than 70 countries (UNEP Global Mercury Assessment, 2013), representing about 17-20% of the world's annual gold production (Estelle Levin Limited, 2014).

With the goal of establishing an appropriate environmental management of hazardous substances, the international community, and the different countries make significant efforts in the implementation of the Basel, Rotterdam, Stockholm, Minamata Conventions and other global initiatives, including the Strategic Approach to International Chemicals Management (SAICM), with the common objective of protecting human health and preserving the environment.

In 2008, Ecuador conducted a national inventory that identified the two main sources of mercury release: mercury-containing products and primary metal production (Artisanal and Small Scale Gold Mining - ASGM).

On October 10th, 2013, the Government of Ecuador signed the Minamata Convention to address mercury threats and ratified it on April 8th, 2016. In 2013, a Zero Mercury Plan was developed, which establishes its registration, allowing the control of its use through the establishment of import quotas. Similarly, in 2017, the document "Development of mercury inventory" was prepared, which established that the categories with the most significant releases in the maximum scenario are: primary production of metals, incineration, and burning of waste and consumer products with intentional use of mercury. [CITATION Law 094 \l 12298] established the prohibition of the use of mercury in the country in mining activities and that non-compliance with this provision will be penalized with the revocation of mining rights. Additionally, the Mining Law provides that for the eradication of the use of mercury in mining activities, natural or legal persons, national or foreign, and holders of mining rights must apply alternative methods that allow the progressive elimination of such substance in the mineral recovery processes.

The Ministry of the Environment of Ecuador (MAE) in its capacity as Implementing Partner and Program leader, the Ministry of Energy and Non-Renewable Resources (MERNR) in its position as Responsible Partner and with the support of the United Nations Development Program (UNDP) as the implementing agency of the Global Environment Facility (GEF) are implementing the "National Program for Environmentally Sound Management and Life Cycle Management of Chemicals", hereinafter referred to as the "National Chemicals Management Program" (PNGQ), which seeks to protect human health and the environment by adopting an environmentally sound management approach during the life cycle of chemicals in Ecuador.

Within the framework of the PNGQ, the present assessment aimed at "Developing the financial product for the ASM sector, which stimulates the formalization and association of miners, and encourages the adoption of cleaner processes and the reduction of pollution."

2. Methodology

Within the framework of the products established in this assessment, the starting point was to identify the demand for credits in the mining sector under the financial conditions currently demanded by public banks, as well as to identify the financial entities that have offered credits for the mining sector in the last five years. The main questions that were raised to identify potential demanders of the financial product ASM were:

| Question | Sources for the required information | Data collection technique(s) |
|--|--|--|
| Who would be the potential applicants? | <p><u>Secondary sources:</u> Unique taxpayer registry database.</p> <p>http://www.sri.gob.ec/web/guest/RUC</p> | Quantification of natural and legal persons with economic activity related to mines and quarries in the prioritized territories (Quantitative approach) |
| Who would be the potential credit providers for the mining sector? | <p><u>Secondary sources:</u> Unique taxpayer registry database.</p> <p>http://www.sri.gob.ec/web/guest/RUC</p> | Quantification of legal persons with economic activity related to financial intermediation and who granted credits to the mining and quarrying sector in the |



| Question | Sources for the required information | Data collection technique(s) |
|--|---|---|
| | <p>Superintendence of Banks of Ecuador</p> <p>http://estadisticas.supebancos.gob.ec/portalestadistico/portalestudios/?page_id=327</p> <p>Superintendence of Popular and Solidarity Economy</p> <p>http://www.seps.gob.ec/estadistica?volumen-de-credito</p> | <p>prioritized territories (Quantitative approach).</p> |
| <p>What has historically been the number of credits demanded by the mining sector?</p> | <p><u>Secondary sources:</u> Superintendence of Banks of Ecuador</p> <p>http://estadisticas.supebancos.gob.ec/portalestadistico/portalestudios/?page_id=327</p> <p>Superintendence of Popular and Solidarity Economy</p> <p>http://www.seps.gob.ec/estadistica?volumen-de-credito</p> | <p>Annual statistical analysis for the mining sector (Quantitative approach)</p> |
| <p>What is the characterization of historical credits' demand?</p> | <p><u>Secondary sources:</u> Superintendence of Banks of Ecuador</p> <p>http://estadisticas.supebancos.gob.ec/portalestadistico/portalestudios/?page_id=327</p> <p>Superintendence of Popular and Solidarity Economy</p> | <p>Statistical analysis of the sectors and activities prioritized by the type of credit, geographical location, and several operations (Quantitative approach).</p> |



| Question | Sources for the required information | Data collection technique(s) |
|----------|--|--|
| | <p>http://www.seps.gob.ec/estadistica?volumen-de-credito</p> <p><u>Primary source:</u></p> <p>Survey on financial inclusion and demand for credits to miners in Chinapintza.</p> <p>Semi-structured interviews with miners and financial institutions.</p> | <p>Statistical analysis of the surveys carried out (Quantitative approach).</p> <p>Qualitative analysis.</p> |

The estimate of the historical demand for credits related to the mining sector was based on an analysis of the volume of credits granted by the entire financial system for the period 2014 to 2018 by the financial system (public and private), including the popular and solidarity system under a "Top-down" methodology. An analysis of the demand of all the financial institutions in the prioritized economic sectors will be used as a starting point, to then proceed to disaggregate it at the level of public and private banks and finally by Financial Institution. Information on the volume of credits granted by the entities of the popular and solidarity financial sector (by segments and mutualists) is available from the Superintendence of Popular and Solidarity Economy as of 2016.

To identify the entities that could offer financial products, we started by identifying which financial entities have agencies, branches, or other types of offices in the cantons close to the intervention areas by June 2018. Later, we verified if any credit has been granted to the mining sector in the national financial system based on the analysis of the volume of credits awarded in the analysis period. Based on the analysis of the potential financial entities that could offer and/or strengthen their financial products to destine them to the mining sector, we proceeded to identify the characteristics of the current financial products they offer (amount, term and guarantee) and if the requirements they request may or may not be met by the miners of the ASM sector.

Finally, based on all the analysis carried out previously, it was identified that the financial entity with the most significant potential to work with miners is

BanEcuador B.P. and that the financial product that could be strengthened is the Inclusive Business Credit for miners and the Entrepreneurship Credit for Jancheras. To define the aspects to be strengthened in these financial products, we worked together with BanEcuador's technical team. We made approaches with the Central Bank of Ecuador to analyze the feasibility of being an "anchor entity" for credits.

3. Actors

In order to identify and gather information regarding the main actors, groups or associations likely to be the recipients of the product generated in selected territories, the starting point was the identification of the actors established in the different regulatory bodies, mainly the Monetary and Financial Organic Code (Book I), the Organic Law of Popular and Solidarity Economy, the Organic Code of the Environment and the Codification of the Resolutions of the Monetary and Financial Policy and Regulation Board (JPRMF); as well as, based on semi-structured interviews, actors related to the National Program for Environmentally Rational Management and Life Cycle Management of Chemical Substances. Additionally, a survey was conducted to potential recipients of credits as well as potential financial entities that could provide the financial product. The actors were classified according to the objectives they pursue (content or process), the roles they play (Promoter, director, opponent, ally, mediator, with veto capacity, filter), the logic of action (Political, bureaucratic, with general interest, experts) and the scale in which they operate (International, National, Regional, Local).¹

These actors have formal or informal institutional rules that determine the availability of resources (legal, economic, political support, cognitive, trust, etc.) and the viability of mobilizing them to influence the decision-making process. More powerful actors will have more significant amounts and types of resources to try to change the decision-making process. These institutional rules may create opportunities or limit the opportunities for actors to participate in or influence financing for the mining sector that stimulate formalization/association or encourage the adoption of cleaner processes and the reduction of pollution. Institutional rules can be general, i.e., for all public policy decisions (e.g., Constitution of the Republic, Legal Statute of the public administration, etc.); or specific, i.e., specific to each public policy (Organic Monetary and Financial Code, Organic Law of Popular and Solidarity Economy, Organic Environmental Code, etc.).

The actors can interact with modalities of confrontation, negotiation, or collaboration, and they can do so in technical (e.g., Monetary and Financial Policy Regulatory Board), political (e.g., National Assembly), social (e.g.,

¹ Based on Knoepfel (2007) and Dente and Subirats (2014)

Community Assembly) or institutional (e.g., Sectoral Councils) spaces. The spaces where interactions between actors take place are the decision-making arenas and can be classified into: technical, political, social, or institutional.

Table 1: Mapping of financial product creation actors

| Actors | Objective | Roles | Type of actor | Resources | Modality of interaction | Decision-making arenas |
|---|---|--|--|---|---|--|
| Central Bank of Ecuador | Increase the IMF's gold reserve. | To trade gold from artisanal and small-scale mining, directly or through public and private economic agents. Implement policies to reduce the cost of credits and financing through the investment of liquidity surpluses. | Ally: acts with objectives congruent with the Program | Legal: it has the power to buy gold from artisanal and small-scale mining. Economic: it has the financial resources to acquire the gold. | Collaboration: When resources are joined to achieve an objective shared by all stakeholders. | Institutional: Spaces where public bureaucracies are particularly active. |
| Ministry of the Environment | Eliminate the use of mercury in the mining sector. | Governance of environmental management. | Director: manages public policy development. | Legal: has the power to promote and protect the sustainable use of natural resources. | Collaboration: When resources are joined to achieve a goal shared by all actors. | Institutional: Spaces where public bureaucracies are especially active. |
| Ministry of Energy and Non-Renewable Natural Resources | Promote the development and sustainable use of energy and mining resources, with social and environmental responsibility. | Governance, regulation, and control in the field of energy and non-renewable natural resources. | Promoter: poses, raises the problem, or introduces it into the policy agenda. | Legal: has the power to promote the sustainable use of mining resources. | Collaboration: When resources are joined to achieve an objective shared by all actors. | Institutional: Spaces where public bureaucracies are especially active. |
| Small-scale miners and artisanal miners | Obtain income from mining activity | Mining exploitation | Ally: acts with objectives consistent with the Program. | Interactive: participate through associations | Collaboration: When resources are joined together to achieve a goal shared by all actors. | Social: Spaces where interaction involves miners. |
| Informal Lenders | To obtain profitability for the granting of loans in usury conditions. | Provide informal and usury loans. | Opponent: Acts and commits its resources to prevent access in soft | Economic: miners can be coerced. | Confrontation: uses force to prevent miners' access to formal financing... | Social: Spaces where interaction involves miners. |



| Actors | Objective | Roles | Type of actor | Resources | Modality of interaction | Decision-making arenas |
|---|--|---|---|---|--|---|
| | | | conditions for the mining sector. | | | |
| Miners' Associations | Encourage the development of small-scale and artisanal mining. | To receive and channel the concerns of its associates. | Filter: Bearer of the requirements or representative of interests and objectives of another actor. | Interactive: Mining associations can take advantage of their organization to achieve a common objective. | Negotiation: The Chamber would support the creation of financial products as long as they are allowed to develop their associates to continue with the mining activity. | Social: Spaces where interaction involves miners |
| Chamber of Miners | Promote the development of mining. | Receive and channel the concerns of its partners to the relevant authorities. | Filter: Bearer of the requirements or representative of interests and objectives of another actor. | Interactive: the chamber can take advantage of their organization to achieve common objectives | Negotiation: The Chamber would support the creation of financial products as long as they are allowed to develop their associates to continue with the mining activity. | Politics: Spaces where the mining leaders use as their resources the consensus that each one can mobilize. |
| Monetary and Financial Policy Regulation Board | Regulate the financial and monetary system. | They can regulate the orientation and direction of the credit operations of the financial system. It sets maximum interest rates, credit segmentation, and the type of guarantees. It establishes the BCE's preferential right to purchase gold from public and private | Promoter: poses, raises the problem, or puts it on the policy agenda. | Legal: has the power to regulate and guide credit operations. | Collaboration: When resources are joined to achieve an objective shared by all actors. | Institutional: Spaces where public bureaucracies are especially active. |



| Actors | Objective | Roles | Type of actor | Resources | Modality of interaction | Decision-making arenas |
|--|---|---|---|---|---|--|
| | | economic agents. | | | | |
| Superintendence of Banks | To supervise and control the activities carried out by financial institutions. | Authorize entities of the national financial system to exercise financial activities. | Trigger: It has the capacity to veto or block the decisional process. | Legal: It has the power to supervise and control financial entities. | Collaboration: When resources are joined together to achieve a goal shared by all actors. | Technical: Spaces where professionals act and focus on substantial and technical aspects of the solution. |
| Superintendence of Popular and Solidarity Economy | To supervise and control the organizations of the Popular and Solidarity Economy. | Authorize entities of the national financial system to carry out financial activities. | Trigger: It has the capacity to veto or block the decisional process. | Legal: It has the mandate to supervise and control EPS entities. | Collaboration: When resources are joined together to achieve a goal shared by all actors. | Technical: Spaces where professionals act and focus on substantial and technical aspects of the solution. |
| Public financial sector | Sustainable, efficient, accessible and equitable provision of financial services. Provide financing to natural or legal persons. | They function as first and second-floor banks. Seek to create financial products for the acquisition of modern and environmentally friendly technology. They may buy or sell precious minerals with the prior authorization of the Superintendence. | Director: Manages the development of the policy process, according to the initial proposal, until results are obtained. | Economic: they can deliver financial resources through credits. | Negotiation: Financial Entities give credit to miners whenever soft financing is obtained. | Technical: Spaces where professionals act and focus on the substantial and technical aspects of the solution. |
| Private financial sector | Provide financing to natural or legal persons. | They provide financial services. They may buy or sell precious minerals with the prior authorization of the Superintendence. | Director: Manages the development of the policy process, according to the initial proposal, until results are obtained.. | Economic: they can deliver financial resources through credits. | Negotiation: Financial Entities give credit to miners whenever soft financing is obtained. | Technical: Spaces where professionals act and focus on the substantial and technical aspects of the solution. |
| The popular and solidary | Provide financing to | They provide financial services. | Director: Manages the | Economic: they can deliver | Negotiation: The Financial | Technical: Spaces where |



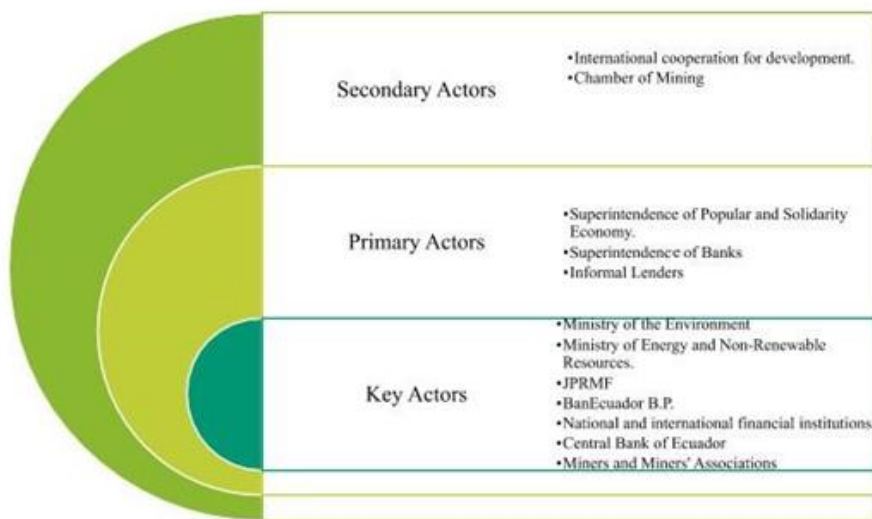
| Actors | Objective | Roles | Type of actor | Resources | Modality of interaction | Decision-making arenas |
|--|--|---|--|--|--|--|
| financial sector | natural or legal persons. | They may receive differentiated and present treatment from the State to encourage the development of the EPS. | development of the policy process, according to the initial proposal, until results are obtained. | financial resources through credits. | Entities give credit to the miners whenever soft financing is obtained. | professionals act and focus on substantial and technical aspects of the solution. |
| International financial institutions | Provide financing to natural or legal persons. | Provide financial services. Provide soft financing for new financial products to be funded. | Director: Manages the development of the policy process, according to the initial proposal, until results are obtained. | Economic: they can deliver financial resources through credits. | Allies: Act with objectives consistent with the promoter and/or director. | Technical: Spaces where professionals act and which focuses on substantial and technical aspects of the solution. |
| International development cooperation agencies. | Support sustainable development . | Provide technical and financial assistance. | Ally: acts with objectives consistent with the Program. | Economic and cognitive: can provide non-reimbursable resources and technical assistance for the development of mercury-free activities. | Allies: Act with objectives congruent with the promoter and/or director. | Technical: Spaces where professionals act and focus on substantial and technical aspects of the solution. |

Source: Own development based on the regulatory and institutional framework

Additionally, it was classified according to its degree of influence on changes in the institutional rules according to its objectives, roles, and resources:

- Key actors: are those whose support or participation is indispensable to reach the expected assessment objectives or those that can block (veto capacity).
- Primary actors: they are the ones who can significantly influence the project.
- Secondary actors: are those who only participate indirectly or temporarily.

Illustration 1: Mapping of actors by the degree of influence on the development of the financial product



Source: Own development based on the regulatory and institutional framework

4. Replicability and Scalability

At the national level, the methodology applied for gathering information to characterize the demand and supply of financial products for the mining sector can be replicated and scaled to other economic sectors. On the other hand, the characteristics of credits for inclusive businesses can be of interest for those projects that wish to foster the associativity and strengthening of producers who are committed to the sustainable management of natural resources and where an anchor company can reduce the level of credit risk, especially for producers of the popular and solidarity economy.

At the level of other projects with objectives similar to those of the National Program for Environmentally Sound Management and Life Cycle Management of Chemicals that are being implemented at an international level, the methodology for characterization can be replicated based on information available in each country. While the design and characteristics of the financial product proposed for the Ecuadorian case can be easily replicated in other countries that have public development banks and where the central bank has the power to acquire gold to strengthen its international reserves.

a. SWOT Analysis

Based on the information gathered during the development of this assessment, strengths, weaknesses, opportunities, and threats related to the creation of a financial product for the mining sector were identified and systematized in the following SWOT matrix:

Table 2: SWOT Matrix

| Strengths | Weaknesses |
|--|---|
| The formality of workers in the mining sector has increased. | The high degree of non-formal mining and informality in trading. |
| Several community mining associations are legally constituted and could support the creation/reception of the financial product. | The level of union organization or associativity of the ASGM is emerging since the miners prefer to sell quickly to have cash flow rather than seek better prices due to negotiations through the associations. |
| The profits from the mining activity provide them with enough cash flow to be able to repay a loan or their working capital. | In many cases, the small miners are the owners of the concession, but not of the land on which they carry out their work, so they cannot constitute real or collateral guarantees so that they can access credits. |
| The miners own homes that could serve as collateral for a loan. | Absence of mining titles or non-acceptance by banks of the pledge on mining titles due to the lack of certifications on the existing mineral resources and reserves in a deposit and their corresponding valuation. |
| | The sale of gold is made informally, without supporting documents (invoice or receipt), so the miners cannot prove their income to give them credit. |
| | They have no credit history. |
| | Limited access to financial products by women miners. |

| Opportunities | Threats |
|---|---|
| International treaties and commitments to eliminate the use of mercury to which countries have subscribed. | Perception of the high risk of mining activity in terms of uncertainty in the behavior of prices and, therefore, to determine the ability to pay. |
| Environmental financing on soft terms/donations can help create a financial product on favorable conditions for miners. | Funding problem to allow institutions to provide soft financial conditions to miners. |
| Private financial institutions have signed Ecuador's Sustainable Finance Protocol. Within this Protocol, it is established that the financial entities will promote the creation of green or environmentally friendly financial products. | Reputation risk for banks due to the potential environmental impacts of mining activity. |
| Gold prices have increased | In the vast majority of cases, in places where ASM activities are carried out, access to financial entities' points of attention is limited or non-existent. |
| The Central Bank of Ecuador has the power to acquire gold from the ASM sector to strengthen monetary reserves. | The cost of machinery and vehicles needed for mining is high. |
| Mandate that the State should establish financing mechanisms for sustainable development for artisan and small-scale mining. | The amounts that the financial institutions want to finance (microcredit) are not following the needs of the miners. On the other hand, for more significant numbers, they require mortgages as collateral. |



Through public banking, the State will seek to create financial products for the acquisition of modern and environmentally friendly technology for the mining sector.

Mining Regulation and Control Agency (ARCOM) limits the amount of gold that the BCE can buy from artisan miners and small-scale miners.

Source: Own development

b. Good Practices

There are three key aspects or good practices that allowed the objectives of this assessment to be achieved:

- The importance of having strong legal and quantitative evidence to characterize both the demand and supply of financial products for the mining sector. This information will support and justify the importance of strengthening the Inclusive Credit for the mining sector both within BanEcuador and externally to communicate to the miners themselves and the general public.
- Joint work with the entities involved in the development of the financial product, as they are: BanEcuador, Central Bank of Ecuador and the National Program of Chemical Management, has made it possible to establish with greater precision the characteristics and the management model that could be applied for the implementation of the financial product.
- Exchange of experiences and information with other related assessments allowed to strengthen the work of the present assessment, such as the formalization of mining and the mechanisms of competitive funds.

c. Lessons learned

The main lesson learned is that it is necessary to carry out field visits and get to know the reality first hand through interviews with the main actors involved in the process. Although the analysis of secondary sources such as the legal basis and the available documentation allow us to know the sector, this information is not complete. It is necessary to complement this information with primary sources through interviews and surveys of the target population. Having carried out the field visit made it possible to know the real needs and barriers to access to financing and to fine-tune the financial product so that it adapts to the ASGM sector.

d. Sustainability

The fact that the financial product already exists in BanEcuador B.P. and that it has its own financing from this entity guarantees the sustainability of the product to be implemented. The implementation of this financial product for the ASM sector will be done gradually, starting with those groups of miners that the Program is supporting for its formalization and then expand it

nationwide. With the gradual implementation, it will be possible to evaluate the results and take the necessary corrective measures to improve the financial product.

Another key element to guarantee the sustainability of the financial product is that it must be complemented with technical assistance activities for miners to reconvert to mercury-free processes and accompaniment for the development of business plans so that they can submit their credit applications for better management of their economic activity.

Finally, it is necessary for the public entities related to the Program, such as the Ministry of the Environment and the Vice-Ministry of Mines, to take ownership. These institutions are called upon to formalize the request to BanEcuador B.P. to continue with this process.

e. Results

| PGNQ Component | Indicators | Achieved results | Good practices | Lessons learned | Sustainability |
|-------------------------------------|---|--|--|---|--|
| 3 | Access to improved finance for the ASGM sector through the development /improvement of 2 financial products | Two improved BanEcuador B.P. financial products (credit for inclusive mining businesses and credit for undertakings of women miners "jancheras") will increase access to financing for the ASM sector. | Joint work with the entities involved in the development of the financial product. | Knowing the reality of the mining sector through interviews and the field visit survey allowed us to understand what the real needs are and what the barriers to accessing financing are. | Existing financial products in BanEcuador. |
| The objective of the project | Two new financing partnership mechanisms for sustainable natural resource management solutions, ecosystem services, chemicals and waste at the national level | The credit for inclusive businesses and the credit for undertakings of women miners "jancheras" is intended for associations that will have access to financing for mercury-free activities in the territories prioritized by the Program. | Exchange of experiences with related assessments such as: the formalization of mining and the mechanisms of competitive funds. | | |



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| | | Additionally, this financial product is related to the process of formalization of miners and the creation of mechanisms of competitive funds. | | | |
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5. Gender mainstreaming

The mainstreaming of the gender approach during the execution of this assessment was carried out through:

- Analysis of the gender strategy of the program that was mainly focused on the mining sector. It systematized the regulatory framework on gender and mining, the characterization of the population by gender in the prioritized territories, as well as gender issues in the Ecuadorian mining sector.
- In the survey conducted in Chinapintza, questions were structured to characterize gender issues and financing needs by gender.
- When potential financial products were identified, those that could be used by women miners (Jancheras) were also identified. Thus, it was determined that the BanEcuador B.P. Entrepreneurial Credit could be used for those Jancheras who wanted to start economic activities outside the mine to improve their financial autonomy.

6. Conclusions and recommendations

The main conclusions and recommendations for the implementation of the financial product for the ASM sector are:

- Inter-institutional work is required to reduce the barriers of access of miners to this commercial product as much as possible. These barriers are related to restricting the amount of gold that the BCE can buy from miners, further reducing the times in which the BCE pays the miners who sell the gold, finding instruments that allow the miners to operate while environmental licenses are being approved, among others.
- It is suggested to initiate the placement of credits with the miners that the program is supporting to become formal. Therefore, in addition to the formalization process, it is required to verify whether



these miners are on the list of miners authorized to sell gold to the BCE and to support them so that they can comply with these requirements.

- The financial product must be accompanied by technical assistance for miners on issues of mercury-free mining and sustainable management of natural resources. Still, they also need to strengthen their capacities with a financial education that will allow them to have business plans that can be presented when they apply for a credit from BanEcuador.
- Training in financial education is of vital importance for the "jancheras" women miners so that they can conceive and generate a business plan for entrepreneurship outside the mines and strengthen their economic autonomy.