

# Green Mining in Latin America and the Caribbean

Comparative analysis of public policies  
and industry standards to promote  
sustainability in mining

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Infrastructure and Energy  
Department  
Energy Division

TECHNICAL NOTE N°  
IDB-TN-2697

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Cataloging-in-Publication data provided by the  
Inter-American Development Bank  
Felipe Herrera Library

Rojas-Hayes, Carolina.

Green mining in Latin America and the Caribbean: comparative analysis of public policies and industry standards to promote sustainability in mining / Carolina Rojas-Hayes, Elkin Javier Casas, Carlos G. Sucre.

p. cm. — (IDB Technical Note ; 2697)

Includes bibliographical references.

1. Mineral industries-Environmental aspects-Latin America. 2. Mineral industries-Environmental aspects-Caribbean Area. 3. Mining-Law and legislation-Latin America. 4. Mining-Law and legislation-Caribbean Area. I. Casas, Elkin. II. Sucre, Carlos. III. Inter-American Development Bank. Energy Division. IV. Title. V. Series.

IDB-TN-2697

Keywords: Energy and mining; decarbonization; public policy; industry standard; energy transition; extractive industry; extractive industry; mining industry; mining

JEL Codes: Q30; Q32; Q38; Q40

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# Acronyms

<b>ACM</b>	Colombian Mining Association
<b>ANA</b>	National Water Agency - Brazil
<b>ANA</b>	National Water Authority - Peru
<b>ANP</b>	Natural Protected Areas - Peru
<b>Bettercoal</b>	Bettercoal initiative
<b>CAMMA</b>	Annual Mining Ministries of the Americas Conference
<b>CAR</b>	Regional Autonomous Corporations - Colombia
<b>CESCO</b>	Center for Copper and Mining Studies
<b>CFEM</b>	Financial Compensation for Mineral Resources Exploration
<b>CLA</b>	Collective Labor Agreement
<b>CLL</b>	Consolidation of Labor Laws
<b>CM</b>	Copper Mark
<b>CNRH</b>	National Council on Water Resources - Brazil
<b>COCHILCO</b>	Chilean Copper Commission
<b>COI</b>	Communities of Interest
<b>CONAMA</b>	National Council for the Environment - Brazil
<b>CONPES</b>	National Council for Economic and Social Policy - Colombia
<b>EAS</b>	Environmental Assessment Service
<b>ECLP</b>	Long Term Climate Strategy 2050 -Chile
<b>EIA</b>	Environmental Impact Studies - Colombia
<b>EIAS</b>	Environmental Impact Assessment Systems
<b>EITI</b>	Extractive Industry Transparency Initiative
<b>ELAMI</b>	Latin American Mining Meeting
<b>ESG</b>	Environmental, Social and Governance issues
<b>EY</b>	Ernst & Young
<b>FAIRMINED</b>	Fairmined Standard for Gold from Artisanal and Small-Scale Mining
<b>FAIRTRADE</b>	Fairtrade Standard for Gold for Artisanal and Small-Scale Mining
<b>FPIC</b>	Free, Prior and Informed Consent
<b>GHG</b>	Greenhouse Gases
<b>IBRAM</b>	Instituto Brasileiro de Mineração
<b>ICA</b>	International Copper Alliance
<b>ICMM</b>	International Council on Mining and Metals

<b>IDB</b>	Inter-American Development Bank
<b>IFC</b>	International Finance Corporation
<b>IGF</b>	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
<b>IISD</b>	International Institute for Sustainable Development
<b>ILO</b>	International Labor Organization
<b>IRMA</b>	Standard for Responsible Mining
<b>LAC</b>	Latin America and the Caribbean
<b>LSO</b>	Social Operating License
<b>MAC</b>	Mining Association of Canada
<b>MAPE</b>	Artisanal and Small-scale Mining
<b>MPF</b>	Mining Policy Framework
<b>NAP</b>	National Action Plan - Peru
<b>NRGI</b>	Natural Resources Governance Institute
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>PCRM</b>	Mine Closure and Rehabilitation Plan - IFC
<b>PNGIBSE</b>	National Policy for the Integral Management of Biodiversity and its Ecosystem Services - Colombia
<b>PNM2050</b>	National Mining Policy at 200 - Chile
<b>PNMA</b>	National Environmental Policy - Brazil
<b>PNSB</b>	National Dam Safety Policy - Brazil
<b>PPI</b>	Fraser Institute's Mining Policy Perceptions Index
<b>PW</b>	Program of Works
<b>RGI</b>	NRGI's Natural Resource Governance Index
<b>RGI</b>	Resource Governance Index of the NRGI
<b>RGMPs</b>	WGC Responsible Gold Mining Principles
<b>RIMAY</b>	Mining and Energy Convergence and Best Practices Center - Peru
<b>RJC</b>	Responsible Jewelry Council
<b>RMI</b>	Responsible Mining Index
<b>SBAP</b>	Biodiversity and Protected Areas Service - Chile
<b>SDGs</b>	Sustainable Development Goals
<b>SENACE</b>	National Environmental Certification Service for Sustainable Investments - Peru
<b>SERNA- GEOMIN</b>	National Geology and Mines Service - Chile
<b>SINA</b>	National Environmental System - Colombia
<b>SINANPE</b>	National System of Natural Areas Protected by the State
<b>SINGREH</b>	National Water Resources Management System - Brazil
<b>SMA</b>	Superintendency of the Environment - Chile



<b>SNUC</b>	National System of Nature Conservation Units - Brazil
<b>SONAMI</b>	National Mining Society
<b>TFT</b>	The Forest Trust Responsible Stone Programme
<b>TSM</b>	Towards Sustainable Mining
<b>VSI</b>	Voluntary Sustainability International
<b>WDR</b>	Water Development Rights
<b>WGC</b>	World Gold Council
<b>WIM</b>	Women in Mining

# Acknowledgments

We are grateful for the valuable guidance and comments of Natascha Nunes da Cunha, Martin Walter, Mario Huapaya and Lenin Balza of the IDB, Adriana Unzueta of the World Bank, Carolina Gutiérrez of the Colombian Mining Association, Julio Nery and Claudia Salles of the Instituto Brasileiro de Mineração, and Jacqueline Villanueva of the National Society of Mining, Petroleum and Energy of Peru and others who participated in the interviews conducted for this study, whose fieldwork was carried out between July and November 2022.

# Summary

Mining is a vital sector in many Latin American and Caribbean (LAC) economies, as it is an important source of income and investment, a major generator of direct and indirect jobs, and a lever for innovation and linkages. At the same time, it is well known that mismanagement can result in negative impacts on the environment and local communities. Potentiating the positive impacts of mining in LAC thus implies addressing the challenges for public policy and industry development. The promotion of sustainable mining requires the collaboration of the public sector, the private sector and civil society. To analyze this interaction between public policy and industry practices, it is useful to apply the Environmental, Social and Governance (ESG) conceptual framework and to group the socio-environmental practices of the mining sector to perform an analysis of existing regulatory frameworks that promote sustainable mining versus industry standards.

The evaluation of the various good practices and international mining standards shows the factors that motivate mining companies to adopt them, mainly in order to resolve situations of environmental and/or social conflict. Therefore, the importance of common recognition of the standard or good practice is essential for business, government and communities and thus, there is variability in the attractiveness or usefulness of one international standard

versus another. After a review of the different mining industry standards, this document uses the standards of Towards Sustainable Mining (TSM), good practices of the International Finance Corporation (IFC), the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), the Fraser Institute and the Natural Resources Governance Institute (NGRI) as references to make a review of legislation and regulations in Brazil, Chile, Colombia and Peru and with regard to the best standards in practice by the industry.

As we will discuss in more detail throughout this report, the comparative analysis between the international standard and the national regulations in this work revealed areas where the regulations are less demanding or ambitious than the standards, and we consider these areas to be opportunities for improvement. For example, for the efficient use of water resources and biodiversity, there are opportunities to improve countries' governance schemes through greater community participation. On the other hand, for the principles of circular economy and waste management, there are opportunities for improvement to strengthen regulations so that requirements on issues such as tailings, mine closures or environmental liabilities are closer to international standards, which are generally more rigorous.

Under the topics of climate change and energy efficiency, we see that both the regulations and the authorities' skills can be strengthened to ensure compliance with global standards in this area. In all the countries studied there are adequate regulations for mining safety, but there are also opportunities to improve safety monitoring and inspection.

In terms of quality of life and inclusion, the general perception points to the need to incorporate specific policies to create spaces for social dialogue beyond those required in environmental processes, as well as to create policies that address gender equity in the sector. The study found that there is great expectation for new scenarios of timely access to environmental information and participation in decision making that affect the environment in the countries that have ratified the Escazú agreement. Finally, in terms of traceability, digitization and transparency, the research identified opportunities to improve the processes of digitization and real-time reporting of

information that can ensure sustainability standards, as well as the implementation of transparency initiatives such as the Extractive Industries Transparency Initiative (EITI).

Finally, based on the assessment, this paper presents a proposed regional roadmap that identifies twenty interventions or actions to be taken by the governments of the region in order to close gaps between local or national norms and global mining industry standards. These actions are divided between those that lay the foundations for a common understanding of the challenges and opportunities and the activities needed to address the weaknesses in the topics evaluated through the review of the regulatory frameworks of each of the countries.



# 1. Introduction

This document presents a diagnosis and makes recommendations to some mining countries in Latin America and the Caribbean (LAC) regarding some of the measures needed to ensure that the region can take advantage of its potential as a sustainable supplier of minerals. The analysis includes a review of existing legislation in Brazil, Chile, Colombia and Peru, a diagnosis of the available institutional conditions, as well as a regional roadmap to facilitate the sharing of experiences for the elevation of standards and public policies in green mining, which is defined as:

*"...an integral management concept of productive and sustainable indicators that promotes and commits to: efficiency in the use of resources, water and energy; safety, inclusion, empowerment and quality of life of people and communities; resilience in the face of climate change; the incorporation of circular principles, minimizing emissions and waste generated, increasingly adopting renewable energies and technologies in its processes, integrating digitalization, traceability and third-party verification as an integral part of its processes, in a manner committed to biodiversity and inclusion of its territories, and under a transparent, participatory and modern governance model."*<sup>1</sup>

In the face of climate change and the COVID-19 pandemic, mining and related industries face unprecedented challenges. The pressures on sustainable production and resilient supply chains have never been stronger. Minerals are key to driving the low-carbon technologies that will enable the world to limit global warming, such as the expansion of renewable energies and industry 4.0, which will significantly increase demand for minerals such as copper, lithium, niobium, graphite and others.

Mining is a vital sector in LAC economies, as it provides the revenues needed to finance their sustainable development from taxes, royalties and export revenues, generates important direct and indirect employment in the region, facilitates investment, and generates innovation and research, but the sector can also negatively affect the environment and local communities. In the midst of a global trend to promote efforts to advance responsible business conduct and corporate human rights due diligence, continuing to operate under the same practices and paradigms of past decades is not an option. The mining sector and related industries have the obligation and capacity to reduce their impact on ecosystems and communities and to adopt practices that provide greater well-being for the environment and local populations, while generating benefits for governments and companies.

<sup>1</sup> IDB (2022) *Leveraging demand growth in minerals and minerals for the transition to a low-carbon economy.* pp 76-77

Enhancing the positive impacts of mining for these countries also means addressing the challenges to the development of the industry. These include optimizing processes for efficient operations, improving relations with the environment both with communities and addressing environmental challenges, and properly managing the resources generated by the activity to generate progress in the producing countries and regions.

The Inter-American Development Bank (IDB) recognizes the strategic role of mining in the region's development as well as the challenges associated with becoming a sustainable supplier of these mineral inputs to the world and the global transition to a low-carbon economy. Through the Mining Group of the Energy Division, the IDB develops projects and initiatives to take advantage of the region's competitive advantages as a supplier of minerals, seeking to ensure that the sector contributes to development with criteria of sustainability, transparency and equitable distribution of benefits. The IDB's work agenda on these issues includes two studies that frame the IDB's vision of these opportunities and challenges: [Latin America and the Caribbean 2050: Becoming a low-carbon metals and solutions hub](#) of 2021, which presents the opportunity for LAC to emerge as a supplier of minerals and metals - specifically copper and iron - with associated low carbon emissions and [Leveraging the growth in demand for minerals and metals for the low-carbon economy transition](#) of 2022, which quantifies the economic opportunity for mining inputs generated by the demands of the energy transition, estimating it at USD 50 billion per year by 2050, and identifies the environmental and social challenges to be addressed to take advantage of that opportunity in a sustainable manner.

This work complements these studies by assessing the current state of the policies in place in the region and the regulatory framework driving green mining in LAC and suggesting a regional roadmap to promote it. Specifically, it analyzes how the regulatory framework can promote or affect investments in the mining sector in Brazil, Chile, Colombia and Peru, evaluates the institutional capacities in place for the implementation of such public policies and proposes roadmaps for joint work among the countries of the region.

The work is divided into four chapters including this introduction. The second chapter analyzes the regulatory frameworks of Brazil, Chile, Colombia and Peru with regard to international mining industry standards that were selected for this work under a methodology that we will describe herein. The first section of this chapter establishes the methodological framework of this work, which is based on a conceptual approach built on the environmental, social and governance (ESG) risk framework and its application in different standards used in the industry. It is based on the assumption of permanent interaction between standards and regulations to achieve high levels of sustainability and responsibility in mining processes. In section 2, a review of industry standards is conducted to arrive at definitions of good practice that will serve as input for the literature review. Once the conceptual framework has been defined, section 3 provides a review of the regulations in force in the four countries covered in this study: Brazil, Chile, Colombia and Peru. In the last and fourth section, conclusions are drawn

from the analysis, as well as recommendations for countries on how to revise and adapt their regulations to industry standards organized under the ESG scheme.

The third chapter addresses perceptions on the impact of existing regulations in terms of investment, institutional capacities and skills, and proposes a regional exchange of best practices in this area. The first section is a conceptual approach to the perception of investment and the capacity and ability of public institutions to achieve green mining in the different countries based on the perceptions of stakeholders identified in Brazil, Chile, Colombia and Peru. The second section will propose a roadmap and scenarios to address the identified policy and regulatory gaps on a regional basis. The third and final section offers conclusions regarding these issues.

Finally, the last chapter gives general conclusions and outlines some next steps.





2.

**Regulatory frameworks with regard to industry standards**

This chapter reviews the regulatory frameworks of Brazil, Chile, Colombia and Peru on issues related to green mining and contrasts them with some international mining industry standards. The chapter contains four sections: the conceptual and methodological framework of the review, the methodology for contrasting regulation and standard, the comparative analysis by country and some general conclusions.

## 2.1. Conceptual and methodological framework

This section describes the methodological and conceptual framework through which the status of policies and regulations in Brazil, Chile, Colombia and Peru will be analyzed in terms of their impact on the development of sustainable mining. The section will be divided into four parts. The first delves into the conceptual approach for the analysis, the second establishes some assumptions, the third explains the components and the fourth presents the methodology of the analysis.

### 2.1.1. Approach

In order to achieve the proposed objectives, the definition of green mining established in the introduction is reiterated. It also incorporates a conceptual framework to diagnose the state of public policies that regulate the different components of the definition and thus make comparisons between the countries analyzed.

The definition of green mining is connected to the role of responsibility and good practices associated with the mining sector. Today there are different lines of action to develop an environmentally and socially responsible mining sector. One of the current trends is so-called “green mining” which, as defined above, is the development of a mining activity that prioritizes the efficient use of water resources, minimization of environmental liabilities, management of emissions and protection of biodiversity, among others.<sup>2</sup> In particular, the concept highlights the importance of deepening the understanding of circular economy opportunities applicable to mining, with the aim of reducing the extraction of new or virgin minerals. This involves, among other things, using new types of metallurgical processing infrastructure to increase recycling rates and promoting the use of resource labeling from recycling processes to allow comparison between the attributes of different products.<sup>3</sup>

<sup>2</sup> Alta Ley, 2021. *Minería Verde: Oportunidades y Desafíos*. [https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021\\_Mineria-Verde\\_Oportunidades-y-Desafios\\_version-ligera.pdf](https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021_Mineria-Verde_Oportunidades-y-Desafios_version-ligera.pdf)

<sup>3</sup> IDB (2022) pp 76-77

Achieving sustainable mining based on this definition of green mining requires the collaboration of the public sector, private sector and civil society. Company practices should be guided by a regulatory floor overseen by the authorities and a ceiling of good social and environmental practices applied by companies beyond the regulatory framework.<sup>4</sup> This floor and ceiling of practices in the mining sector constantly feeds back, with good practices serving as a laboratory of experiences that can become part of the regulatory framework, and the regulation ensuring compliance with good practices. The ceiling of good practices can in turn be influenced both by upstream and downstream customers who demand compliance with such practices, as well as by investors who, through the application of environmental, social and governance - ESG - risk schemes, ensure compliance with high standards.

In the same vein, as the International Institute for Sustainable Development (IISD) points out, there is an interconnection between voluntary sustainability standards and mechanisms (VSI) and public policy.<sup>5</sup> In general, the standards adopted by industries (not only mining) are influenced by market and reputational issues. In turn, these standards can support the process of building public policy and regulation through three mechanisms: (i) the identification of priority issues for the industry for certain moments in time (e.g., increasing attention to mine closure and tailings management), (ii) serving as a reference for the incorporation of mandatory regulations or official reporting of information of interest to stakeholders (e.g., the contractual transparency requirements included in the Extractive Industries Transparency Initiative - EITI); and finally, (iii) through support for regulations that will benefit industry and society (e.g., supply chain controls to support due diligence processes). This relationship between the VSIs and public policy must be constant and not exclusive: the industry must move towards standards that improve the sustainability of the industry while public policy and regulation must ensure a minimum baseline for the industry.<sup>6</sup>

To analyze this interaction between public policy and industry practices, it is useful to apply the ESG conceptual framework and group practices into each of its vectors (environmental, social, and governance) to analyze the existing regulatory frameworks that promote green mining. It is a relatively new concept originally used by the financial industry and derived from the concepts of corporate social responsibility (CSR) and responsible sourcing.<sup>7</sup>

<sup>4</sup> IDB (2022), pg. 80

<sup>5</sup> IISD (2018)

<sup>6</sup> IISD (2018)

<sup>7</sup> Hutchins, M.J. and Sutherland, J.W. (2008) 'An exploration of measures of social sustainability and their application to supply chain decisions', *Journal of Cleaner Production*, 16(15), pp. 1688-1698

The ESG methodology, increasingly known and used in the private sector, aims to analyze and evaluate the complex interactions between society, the environment and economic development. When problems arise along the value chain of an economic activity and all relevant stakeholders feel affected or negatively impacted, there is a high probability that the economic activity will be affected and in some cases the very development of the activity is at risk. Therefore, prior identification of risks can alert to any negative impact and ensure the prosperity of operations. Environmental and social processes underpin most risks, but these can be managed by effective governance frameworks, so all three pillars are considered fundamental in applying this methodology.

ESG methodologies in turn reflect known standards in the mining industry that allow measuring its progress in terms of sustainability. The International Council on Mining and Metals (ICMM), for example, states that companies in the sector are taking it upon themselves to design schemes and best practices for the production of metals and minerals. Challenges to advancing responsible production include the development of performance criteria and initiatives for mining companies, whether small or large, to achieve market recognition and meet established standards. Gap analysis allows the mining industry to use risk indicators to identify and evaluate factors that could negatively affect the activity.

While many sustainability and ESG standards are implemented by the private sector, this methodology can be used to understand a country's public policy and regulatory framework. Risk analysis from environmental, social and governance perspectives can result in a mapping of existing gaps between communities, the private sector and government. This analysis includes the regulatory framework in processes identified in the production and processing of minerals. The issues analyzed include relevant topics such as climate change, circular economy, protection of human rights, social license to operate and transparent and efficient management of public institutions, among others.

This document, therefore, uses the conceptual framework of ESG risks as a methodology to make the regional diagnosis based on the investigation of the enabling factors of the mining sector and its regulatory framework in general. This diagnosis will then consist of identifying policy and/or regulatory gaps to facilitate the introduction or use of green mining solutions in Brazil, Chile, Colombia and Peru by comparing local regulations with best practice benchmarks in the private sector.

## 2.1.2. Analysis parameters and assumptions

As a basis for our analysis of the policies and regulations designed to promote sustainable mining in LAC, we conducted a study of Brazil, Chile, Colombia and Peru as a representative sample of the mining industry in the region, based on these parameters and assumptions:

- i. we can categorize the different green mining issues into one of the three ESG components: environmental, social and governance;
- ii. The application of mining regulations only addresses mineral production and processing issues and does not address policies and regulations applicable to the industry's supply chain or mineral utilization (downstream and upstream);
- iii. the study focuses on medium and large-scale industrialized mining, not on artisanal and/or small-scale mining;
- iv. the analysis takes into account policy and/or regulatory gaps around: measuring and monitoring socio-environmental impact; attracting investment; and developing skills for green mining solutions; and
- v. the analysis is general and no specific analysis is made per mineral.

## 2.1.3. Approach for ESG diagnosis and comparison in mining public policy

The analysis of sustainable mining policies and regulations requires comparing existing regulations against international best practices, guidelines and standards along with the main regulatory frameworks and governmental measures for social and environmental management of the mining sector.

To this end, for each country, the status of public policies and regulations is analyzed with respect to the criteria described above, which will in turn be evaluated against a standard.

The criteria are defined below:

- **Pillars:** Refers to ESG (Environmental, Social and Governance) aspects
- **Topics and subtopics:** Refers to the topics and subtopics within each ESG component as incorporated in tables 1, 2 and 3 of the previous section.
- **Reference of good practices:** This field contains international standards, best practices and guidelines for each subtopic to be evaluated in the private sector. For the purposes of this analysis, a maximum of three internationally recognized standards and/or best practices will be analyzed for each subtopic selected.
- **Regulations:** This field contains the most relevant regulations of each country for the topics defined in tables 1, 2 and 3 of the previous section.

As part of the risk assessment and identification methodology, good practice references will be used to set the identified standards, guidelines and/or directives that are under the mandates of the Mining Policy Framework (MPF) developed by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF)<sup>8</sup> - which resulted from the Intergovernmental Forum on Mining and Sustainable Development held in 2002 with the participation of 43 countries - as well as the practices, guidelines, guides and protocols that the private sector is applying on a voluntary basis and that are in line with the concept of green mining.

#### 2.1.4. Focus of analysis

##### Environmental aspects

Sustainable development is linked to environmental sustainability, as social and ecological pressures require mining to increase production efficiency while reducing pollution, greenhouse gas (GHG) emissions and overall environmental impacts. In mineral development, most environmental risks depend on the location of the mine and these can vary by geography, but typically include water management for the mine and local populations, biodiversity conservation, land use, impact on local livelihoods and GHG emissions.<sup>9</sup>

For this reason, and as a result of previous research carried out according to the available literature, the topics and subtopics to be analyzed under the environmental pillar were defined and are listed in Table 1.

**Table 1 Environmental aspects**

<i>Water</i>	<i>Environment</i>	<i>Tailings and mine closure</i>		<i>Climate change</i>	<i>Energy efficiency</i>
Water management	Biodiversity conservation management	Tailings management	Mine closure management	Actions on climate change	Energy use and GHG emissions management

Source: Author

<sup>8</sup> IGF (2003) Mining Policy Framework, <https://www.igfmining.org/wp-content/uploads/2018/08/MPF-EN.pdf>

<sup>9</sup> Nature Communications, Lèbre, É. et al. (2020). The social and environmental complexities of extracting energy transition metals, <https://www.nature.com/articles/s41467-020-18661-9>

## Social aspects

Recent advances in social standards and frameworks have developed different social perspectives on and from the extractive industry. Many studies in this field have reviewed existing frameworks and literature to adequately identify the necessary risks to be considered and from this analytical work the concept of Social Operating License (SOL) has been defined to refer to the idea that "companies also need to obtain the support of the community or society in which they operate."<sup>10</sup>

The concept of SOL is often used to refer to the current acceptance of the population surrounding a mining project. The 2021 survey by EY, a global consulting firm, on the top risks for mining companies for 2022 identified achieving and maintaining the SOL as one of the top risks for companies in the mining sector<sup>11</sup>.

The social pillar of the ESG scheme includes aspects such as human rights, labor rights and conditions, community and natural resources, which are all fundamental to obtaining a SOL. As a result of previous research conducted as indicated by the available literature, the topics and subtopics to be analyzed under the social pillar - listed in Table 2 - were defined, with a specialized focus on the most relevant issues that could affect the SOL.

**Table 2 Social aspects**

<i>Community and natural resources</i>	<i>Law and working conditions</i>	<i>Human rights</i>	
Indigenous and community relationships	Health and safety	Prevention of child and forced labor	Gender equity

Source: Author

## Governance aspects

Governance risks are palpable in weak schemes that do not meet or follow up on their national or international obligations. In the context of mining, governance risks arise when social and environmental issues caused by the mining project are impacted. Weak governance fuels bad industry practices and opens the door to violations of social and environmental rights, disruptions in production, and conflict among all stakeholders.<sup>12</sup> Based on previous research conducted as indicated in the available literature, the topics

<sup>10</sup> International Finance Corporation - IFC 2014, *A Strategic Approach to Early Stakeholder Engagement*, <https://commdev.org/publications/a-strategic-approach-to-early-stakeholder-engagement/>

<sup>11</sup> EY (2021) *Top 10 M&M business risks and opportunities - 14th edition*

<sup>12</sup> Lèbre, É. et al. (2020) 'The social and environmental complexities of extracting energy transition metals', *opt cit.*

and subtopics to be analyzed under the governance pillar were defined and are listed in Table 3.

**Table 3 Social aspects**

<i>Transparency</i>	<i>Sector governance</i>
Transparency guidelines and/or initiatives	Governance perspectives

*Source: Author*

## 2.2. Selection of voluntary standards

In the mining industry, there are numerous different voluntary standards that can serve as a reference to analyze the regulations, public policies and practices of all countries on the ESG issues described above. This section will first explain the context on industry standards and their importance for this analysis, state the different industry standards and the selection criteria we developed to choose the most relevant ones for this analytical work, and define and explain the chosen standards.

### 2.2.1. Context

The evaluation of the various existing good practices and international mining standards makes it clear that: (i) the factors that have motivated mining companies to adopt these standards are mainly related to resolving environmental and social conflict situations and (ii) the motivations for using sustainability standards are diverse and vary between organizations and over time.

As a result, both public and private organizations that promote responsible mining have developed standards, guidelines and best practices that seek to improve the participation of stakeholders in its development in order to reduce the impact of the risks identified in day-to-day operations. An important result of the development and adoption of any standard is to generate positive changes for all parties, both internally within the companies and with their external stakeholders (direct and indirect), thus helping to unify the interpretations of the objectives and actions of each of the mining projects in the regions in order to overcome possible conflicts.



For this reason, the importance of the recognition of the standard or good practice is essential for the company, the government and the communities. This is how a standard with international recognition and its compatibility with other initiatives can be more attractive than another. As an example, mining companies may be motivated by the needs of their customers or by reputation with communities and/or local governments, motivating them to adhere to different types of standards that are highly recognized by them.

However, the demand for adherence to these international standards may be driven by the market, relating the success of the project as a strategy for reputation, compliance and reduction of potential conflict.

## 2.2.2. Standards and inclusion criteria

There are a variety of standards and measurements by different organizations in the mining sector that seek to measure or compare, either objectively or through perceptions, the responsible practices of mining companies. Some of these are listed below (in alphabetical order):

- **Bettercoal** - Bettercoal initiative
- **CM** - Copper Mark
- **EITI** - Extractive Industries Transparency Initiative Standard
- **FAIRMINED**- Fairmined Standard for Gold from Artisanal and Small-Scale Mining
- **FAIRTRADE** - Fairtrade Standard for Gold for Artisanal and Small-Scale Mining
- **ICA** - International Copper Alliance
- **ICMM** - International Council on Mining and Metals Standards
- **IFC** - International Finance Corporation (IFC) Environmental, Health and Safety Guidelines for the Mining Sector
- **IGF** - Intergovernmental Forum on Mining, Minerals and Sustainable Development
- **RGI** - Natural Resource Governance Index of the Natural Governance Resource Institute (NGRI)
- **IRMA** - Standard for Responsible Mining
- **PPI** - Fraser Institute's Mining Policy Perceptions Index
- **RJC** - Responsible Jewellery Council Codes of Conduct
- **RGMPs** - Responsible Gold Mining Principles of the World Gold Council (WGC)
- **RMI** - Responsible Mining Index
- **TFT** - The Forest Trust Responsible Stone Program

- **TSM** - Towards Sustainable Mining of the Mining Association of Canada (MAC)
- With regard to inclusion criteria, there are different parameters, standards and evaluation guidelines for the mining sector. In this report, the following inclusion criteria that each of the standards or initiatives should meet were taken into account:
  - **International recognition:** The standard or initiative must be recognized and credible at a global level, both by the public and private sectors and civil society.
  - **Risk management:** The standard or initiative must address environmental, social and governance risk management issues, or any of their components.
  - **Transparency:** The standard or initiative must have clear communication processes that include all parties interested in mining projects.

### 2.2.3. Selected standards

After analyzing each of the above standards or initiatives and their specific content, and considering the parameters that each of these should have for the purposes of this document and in particular for ESG analysis with a public policy perspective, the standards and initiatives listed below were taken as a reference:

- **Towards Sustainable Mining (TSM):** This standard is a globally recognized performance management system that helps mining companies assess and manage their social and environmental responsibilities. It is a set of tools and indicators that serves to drive performance and ensure that key mining risks are managed responsibly at participating metallurgical and mining facilities. Participation in TSM is mandatory for MAC member companies and the primary objective of TSM is to enable mining companies to meet society's needs for minerals, metals and energy-related products in the most environmentally, economically and socially responsible manner.<sup>13</sup> It was selected because:
  - It is the only one that requires an external audit - conducted every 3 years - to check the status of implementation and the commitments made to all stakeholders.
  - Companies that comply with this standard and with some additional specific adaptations will be able to adhere in parallel and comply with the standards of other mining initiatives such as:
    - ICMM Mining Principles (MP)
    - WGC's Responsible Gold Mining Principles (RGMP)
    - RMI Risk Preparedness Assessment, including the Copper Mark initiative of the International Copper Association
  - In the region, the standard has been adopted by the mining associations of Colombia in 2022, Brazil in 2019 and Argentina in 2016.

<sup>13</sup> *Towards Sustainable Mining (TSM) (2022)*, <https://mining.ca/towards-sustainable-mining/>

- It is highly demanding and rigorous due to its different rating levels, ranging from level C to AAA (see Table 4).<sup>14</sup> TSM established a goal for all its members to achieve an A level or higher in all indicators. According to TSM's 2021 report, 29 member companies have complied with this requirement and the others are in the process of implementation and verification.<sup>15</sup>

**Table 4: TSM standard rating levels**

AAA	Excellence and leadership
AA	Systems and processes are integrated
A	Good practice. Systems and processes are developed and implemented
B	Procedures exist, but they are not yet completely uniform or fully documented. Systems and processes are being planned and developed
C	The facility does not meet all level B criteria

Source: Author

- **IFC Environmental, Health and Safety Guidelines for the Mining Sector:** These guides are technical reference documents containing general and specific examples of international practice. This standard was included because for the mine closure component it includes specific metrics, focused on closure and post-closure activities, that governments can require of their mine operators. Under these guidelines, it is recommended that mine financiers develop a draft mine closure and rehabilitation plan prior to commencing production, clearly identifying allocated and sustainable funding sources to carry it out.<sup>16</sup>
- **Gender perspective in IGF mining governance:** The IGF has developed a series of recommendations for governments to adopt mining frameworks that promote gender equity. The recommendations include legislative and institutional aspects, land purchase policies, incorporation in impact assessment processes, community development, security and crisis management.<sup>17</sup>
- **EITI Transparency Standard:** promotes transparency, good governance and accountability in the use of oil, gas and mining revenues. It was selected because the overall purpose and objective of the initiative is to strengthen transparency of natural resource revenues recognizing that this can reduce corruption, and that

<sup>14</sup> TSM (2021) *Towards Sustainable Mining 101: A Basic Handbook*, <https://mining.ca/towards-sustainable-mining/>

<sup>15</sup> TSM (2021) *TSM Company Implementation Schedule* <https://mining.ca/resources/guides-manuals/tsm-company-implementation-schedule/>

<sup>16</sup> IFC (2007), *Environmental, health and safety guidelines for the mining sector* taken from <https://www.ifc.org/wps/wcm/connect/e255ea3a-34be-4caf-886e-e8e2de66475f/0000199659ESes%2BMining-%2Brev%2Bcc.pdf?MOD=AJPERES&CVID=nPthg7V>

<sup>17</sup> IGF(2021) *La perspectiva de género en la gobernanza de la minería: oportunidades para responsables de política*. <https://www.iisd.org/system/files/2021-03/gender-mining-governance-es.pdf>

revenues from extractive companies can transform economies, reduce poverty and increase the quality of life of the entire population in resource-rich countries<sup>18</sup>. This initiative is being implemented in eight Latin American countries, including Colombia and Peru.

- **The Fraser Institute PPI survey** presents the results of an annual survey of more than 2,000 mining company professionals from around the world and assesses how mineral reserves and public policy factors, such as taxation or regulatory uncertainty, affect mining investment. It was selected because the survey's Mining Policy Perceptions Index (PPI) provides a comprehensive assessment of the attractiveness of mining policies in a jurisdiction and can serve as a small report to governments on how attractive their policies are from the private sector's point of view. The region includes Colombia, Peru, Chile and Brazil.<sup>19</sup>
- **The Natural Resource Governance Index (RGI) of the Natural Resource Governance Institute (NRGI)** - is primarily dedicated to improving the governance of countries over their natural resources to promote sustainable and inclusive development. It is a diagnostic tool to measure the governance of the mining, oil and gas sectors, as well as to highlight opportunities for policy and practice reform at the global, regional and national levels. The Index identifies emerging risks and opportunities for strong governance in the sector. Results are available for Peru and Colombia (2021) and Brazil (2017).<sup>20</sup>

For each of the standards, the parameters of topics and subtopics to be compared with existing regulations and practices in Brazil, Chile, Colombia and Peru were established, as will be discussed in the following section. Details of each standard can be found in Appendix 1.

<sup>18</sup> EITI (2019) EITI Standard 2019. <https://eiti.org/sites/default/files/2022-03/EITI%20Standard%202019%20EN.pdf>

<sup>19</sup> Fraser Institute (2021) Survey of Mining Companies 2021. <https://www.fraserinstitute.org/sites/default/files/annual-survey-of-mining-companies-2021.pdf>

<sup>20</sup> NGRI (2021) Resource Governance Index. <https://resourcegovernanceindex.org/>

**Table 5: Summary of best practice references**

<b>Environment</b>	<b>Water</b>	Water management	TSM Water Management Protocol	Evaluation of the water responsibility of mining companies through water-related management plans and systems. Confirmation of company interaction with water users and communities of interest, participation in planning and governance forums at the basin scale. Clear objectives or targets in relation to water, in order to measure performance and generate reports to aid decision making and for communication to the general public.
	<b>Environment</b>	Biodiversity conservation management	TSM Biodiversity Preservation Assessment Protocol	The main objective of this protocol is to measure biodiversity conservation management through management plans and systems implemented on important biodiversity issues. These must have clear corporate commitment and responsibilities and must be communicated to the relevant employees in order to support biodiversity conservation management issues. In addition, reporting on biodiversity conservation is mandatory in order to provide information related to decision making and to communicate performance publicly. Biodiversity conservation reporting should include elements such as policies, monitoring, initiatives and net biodiversity balance.
	<b>Mine and Tailings Closure</b>	Mine Closure Management	TSM Environmental, health and safety guidelines for the Mining Sector	<p>The Environmental, Health and Safety Guidelines for the Mining Sector establishes activities for closure, which should be taken into account during the initial planning and design phases. Mining companies should develop a draft Mine Closure and Rehabilitation Plan (MRRP) prior to commencing production, clearly identifying earmarked and sustainable funding sources to carry it out. The Closure and Rehabilitation Plan (with guaranteed funds) should take into account both physical rehabilitation and considerations of a socio-economic nature, should be an integral part of the project life cycle and should be designed so that:</p> <ul style="list-style-type: none"> <li>• Future public health and safety are not threatened;</li> <li>• The subsequent use of the site is beneficial and sustainable for the affected communities in the long term;</li> <li>• Socioeconomic impacts are minimized and benefits are maximized.</li> </ul>

Environment	Mine and Tailings Closure	Tailings Management	TSM Tailings Management Protocol	The protocol addresses tailings impoundment management and internal accountability and review mechanisms. It also includes the application of good tailings management practices and community involvement. This protocol addresses community engagement in relation to tailings as part of a broader issue of engagement with respect to tailings risks to communities. The Protocol requires companies to have processes in place to engage in discussions with communities of interest about potential risks to the public associated with the company's activities, including tailings management. As well as emergency response plans (ERP) and emergency preparedness plans (EPP), an operating, maintenance and monitoring manual specific to the tailings impoundment should be developed and implemented.
	Climate Change	Actions on climate change	TSM Climate Change Protocol	The protocol aims to facilitate the mining sector's continuous improvement in managing the risks and opportunities associated with climate change, including mitigation and adaptation strategies, target setting and reporting. The implementation of this protocol aims to provide support to mining companies in order to achieve the objectives of the Paris Agreement at the corporate level.
	Energy Efficiency	Energy use and GHG emissions management	TSM Protocol for the evaluation of energy use and GHG emissions management	The objective of the protocol is to provide guidance to facilities to measure the management of energy use and greenhouse gas (GHG) emissions. The assessment protocol establishes general expectations regarding the management of energy use and GHG emissions from the mining sector.
Social	Community and Natural Resources	Indigenous and community relationships	TSM Indigenous and Community Relationships Protocol	The protocol allows for the evaluation of relations with indigenous peoples and the community of interest. This will provide tools to confirm that processes have been implemented to identify Communities of Interest (COI), including indigenous organizations, affected or potentially affected by the company's operations and activities. Processes should ensure that IOCs are periodically reconsidered during the life cycle, as well as supporting the development and maintenance of meaningful relationships to achieve an understanding of mutual views, build effective relationships, and create mutual value and shared benefits. In addition, processes for the active development of meaningful relationships and implementation of participation and decision making with indigenous communities are evaluated. This includes the objective of achieving free, prior and informed consent (FPIC) of impacts on rights that directly affect indigenous peoples before proceeding with project development.

Social	Law and working conditions	Health and safety	TSM Health and safety protocol	The protocol assesses that mining companies have established clear accountability for safety and health management and performance, and that safety and health commitments have been established and communicated to employees, contractors and suppliers. In addition, it checks that processes are in place to effectively manage and plan safety and health controls so that incidents are prevented; that safety and health are recognized as a shared responsibility; and that hazard identification, risk assessment and the establishment of effective controls are integral to an effective management system.
	Human rights	Prevention of child and forced labor	TSM Preventing Child and Forced Labor Protocol	The objective of the protocol is the verification of mining companies regarding the prevention of child labor and forced labor. The verification protocol sets out the general approach adopted to verify that there are processes in place to ensure that there are no cases of child labor or forced labor as defined by the ILO Conventions in the companies participating in the TSM initiative.
		Gender Equity	IGF Gender	Recommendations include reviewing whether there are norms, policies, institutions that consider the impacts and benefits of mining on women.
Governance	Transparency	Transparency Guidelines and / or Initiatives	EITI	The Extractive Industries Transparency Initiative (EITI) promotes transparency, good governance and accountability in the use of oil, gas and mining revenues.
	Sector Governance	Governance Perspectives	Fraser Institute Mining Policy Perceptions Index	The Mining Policy Perception Index or PPI provides a comprehensive assessment of the attractiveness of mining policies in a jurisdiction and can serve as a small report to governments on how attractive their policies are from a private sector point of view.
			NRGI Natural Resource Governance Index	The Natural Resources Governance Index (NRGI) is a diagnostic tool to measure the governance of the mining, oil and gas sectors. It also highlights opportunities for policy and practice reform at global, regional and national levels.

Source: Author

## 2.3. Regulatory diagnosis based on international standards for the sector

This section describes the public policies and regulations in force in the four target countries - Brazil, Chile, Colombia and Peru - based on the best practice benchmarks identified in the previous section. The diagnostic reviews each of the ESG topics and subtopics identified and identifies gaps in regulations versus practice.

### 2.3.1. Environmental aspects



#### Water

##### Best practice reference

The **TSM Water Management Protocol** aims to assess the water responsibility of mining companies through water-related management plans and systems. It also verifies the companies' interaction with users and communities of interest, as well as their participation in planning and governance forums at the basin scale. This protocol requires that clear water objectives and targets be set, in order to measure performance and generate reports to aid decision making with constant communication to the general public.<sup>21</sup>

#### Brazil

##### *Legislation, policies, practices and recent developments*

Water resources management in Brazil is incorporated in the National Policy for Water Resources (Federal Law 9.433 / 1997) which defines the water resources management system. The law incorporates water governance for different levels of government, decision-making and coordination bodies, as well as the creation of diagnoses and action plans for watersheds at the local, state, and national levels.<sup>22</sup>

Brazil's National Water Agency (ANA) is the federal entity responsible for the administration of the National Water Resources Management System (SINGREH), including the granting of permits for the use of river basins (catchment and disposal of water resources), overseeing the use of water use licenses, as well as charging for water use.<sup>23</sup> ANA articulates its functions with the provincial water agencies in charge of water resources management at the territorial level and also promotes the creation of watershed committees where there is civil society participation at the local level.

<sup>21</sup> TSM, (2021) *Water Stewardship Protocol*, <https://mining.ca/towards-sustainable-mining/protocols-frame-works/water-stewardship/>

<sup>22</sup> OECD (2019) *Brazil Environmental Performance Review* pg. 32

<sup>23</sup> <https://www.gov.br/ana/es>



In addition, water management is regulated by bodies such as the National Council for the Environment (CONAMA), which is in charge of issuing environmental licenses that include the analysis and impact on water resources, and the National Water Resources Council (CNRH), which is the advisory body in charge of defining public policy in the water sector.

### *Diagnosis*

Brazil has established water resources governance that applies to productive sectors such as mining, where there are instances of stakeholder participation at different levels, including the subnational level. However, there are gaps compared to the TSM standard in terms of the depth of citizen participation in water resources planning and dialogue mechanisms. According to the OECD (2019), not all subnational watershed committees are in place (e.g. those in the Amazon and Midwest) which hinders the management of water resources in those areas. There are also opportunities for improvement in the monitoring of wastewater from various economic sectors including mining<sup>24</sup>, specifically through reliable information on the different uses of water resources and the strengthening of inspection plans and mechanisms.

## Chile

### *Legislation, policies, practices and recent developments*

Water use is one of the most important challenges facing Chile's mining sector. The mining sector's total water consumption represents 3.1% of the country's consumption and the presence of mining in the northern desert area of the country has generated the need for greater efficiency, reuse and desalination of water for mining projects.<sup>25</sup> The National Mining Policy 2050, published by the Ministry of Mining in 2022, sets the goal of reducing the percentage of inland water used in the mining industry, which should not exceed 10% of total water used by 2025 and 5% by 2040, promoting other sources that do not compete with human consumption. In addition, it determines active participation in the development of integrated watershed management (IWRM) by 2022 and begins implementation by 2025. This policy also promotes the publication of guides to understand the legal framework, regulations and permits required for the development of seawater desalination plants and provides and facilitates information regarding mining projects, determining their relationship with the glaciological environment in order to protect glaciers.<sup>26</sup>

<sup>24</sup> OECD (2019) *Ibidem* pg- 33

<sup>25</sup> SONAMI (2021) *Fundamentals and Challenges for Mining Development*. Pg. 43  
<https://www.sonami.cl/v2/wp-content/uploads/2021/11/fundamentos-2021-final.pdf>

<sup>26</sup> Ministry of Mining, 2050 National Mining Policy, [https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria\\_2050-Politica\\_Nacional\\_Minera.pdf](https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria_2050-Politica_Nacional_Minera.pdf)

Regarding the applicable regulations, Article 110 of the Mining Code defines the right to use the waters, known as the miner's waters. The use of water is regulated by the Water Code through Decree Law 1122/1981, Article 56 of which defines the right to use water through Water Development Rights (WDR) that can be traded in the market. This Code was reformed by Law 21.435/2022, establishing some modifications to give the state greater control over water use and its prioritization according to the needs of the environment.

Specifically, it established limits on water use rights at a maximum of 30 years, the power to remove such rights if they are not properly used, the obligation to register the rights with the general water directorate, the elevation of the right to water as a human right, and the granting of powers to the authorities to restrict rights in the event of scarcity. In the case of mining waters, the reform requires the registration of water encountered by mining operations and the need to ensure the sustainability of aquifers.<sup>27</sup>

### *Diagnosis*

The reform of the Water Code gave the state more tools to manage water resources, and in that sense is consistent with the TSM standard in terms of the evaluation of the goals and commitments acquired by the companies regarding water management.

The 2050 National Mining Policy sets specific goals for water resource management in Chile in order to minimize environmental effects by harmonizing the development of mining activities with the environment. However, progress in the regulation and implementation of this policy is still ongoing.

Going forward, there are some opportunities for improvement to bring water management closer to standards. In terms of watershed governance, water use planning could be expanded beyond water users to include communities surrounding mining projects<sup>28</sup> as recommended by the TSM standard. Likewise, to continue advancing in the use of technologies that allow an increasingly efficient use of water resources.

<sup>27</sup> Carey (2022) *Entra en vigor la reforma al Código de Aguas*, <https://www.carey.cl/entra-en-vigor-la-reforma-al-codigo-de-aguas/>

<sup>28</sup> González Hidalgo (2022). *La participación ciudadana en la gestión de las aguas*. Tesina Universidad de Valparaíso. <http://repositoriobibliotecas.uv.cl/bitstream/handle/uvsc/4110/TesinaGonzalez.pdf?sequence=1&isAllowed=y>

## Colombia

### *Legislation, policies, practices and recent developments*

Colombia has extensive legislation on water issues and the government has issued various regulations, most of which are the responsibility of the Ministry for the Environment and/or the Regional Autonomous Corporations (CARs). Decree 1076 of 2015 of the Ministry of Environment, compiles the regulatory standards governing the environmental sector. With respect to water, this decree establishes specific provisions for permits for the use, protection, discharge and exploitation of water in general. In addition, there are specific requirements for the mining sector in terms of environmental permits and guidelines that must be carried out for the management of the resource in the different stages of the mining cycle.

On the other hand, it dictates the terms of reference for Environmental Impact Assessments (EIA) for mining, which establish in detail the water resource requirements that the project will demand and that will be used, exploited or affected during the different phases of construction and operation of the project. Finally, this decree defines the spaces for socialization and information to the communities on the project's water management.

### *Diagnosis*

The broad regulatory framework for water resources in Colombia is in line with the global guiding principles of environmental management.<sup>29</sup> For mining, the regulations include, in general terms, the basic water management requirements that mining companies must apply, which include levels of contamination, use and exploitation for mining operations, among others. However, national regulations do not contemplate water resource governance models for mining. The requirements demanded of companies through environmental guidelines or EIAs are indicative in nature, which limits the scope to indicators by use and exploitation. There is a clear gap in water management between the practices of companies under the SST standard and Colombian regulations, since local regulations only open spaces for participation and dialogue on this issue in the socializations that companies have to carry out within the framework of the EIAs.

The TSM standard was adopted by the Colombian Mining Association (ACM) at the beginning of 2022, so it is expected that, in a couple of years, its member companies will implement the mandatory implementation of the specific actions required by the standard in terms of water management and include specific governance actions for this issue.

<sup>29</sup> Ministry of Environment and Sustainable Development, Decree 1076 of 2015, <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=78153>

## Peru

### *Legislation, policies, practices and recent developments*

The main provisions are found in the Regulation for Environmental Protection for Mining Exploration Activities (DS 042-2017) and the Regulation for Environmental Protection and Management for Mining Exploitation, Processing, General Labor, Transportation and Storage Activities (DS 040-2014-EM) which define all permits for water use, surface and groundwater, discharge permit, water quality, among others.

Regulation DS 040-2014-EM defines mining environmental management with competencies of institutions such as the Ministry of Energy and Mines, the National Environmental Certification Service for Sustainable Investments (SENACE) and others and also sets out the requirements to be met by the EIA. It should be noted that the DS 040-2014-EM contains a mandatory environmental management title during the execution of the mining project.

This title groups a series of environmental governance articles that are condensed into: commitment by senior management to environmental management, environmental policy of the mine owner and ongoing training for environmental management<sup>30</sup>.

On the other hand, there is the Mining and Energy Convergence and Best Practices Center (RIMAY) regulated under DS 020-2018-EM with the objective of achieving consensus on different issues - including water management - through multi-stakeholder and multilevel dialogue of stakeholders.

### *Diagnosis*

International best practices for water management throughout the mining value chain are reflected in Peruvian regulations. It has global guiding principles for water management as recommended by international organizations. In addition, there are clear regulations for the mining sector regarding the permits, uses and exploitation required by mining companies.

The DS 040-2014-EM contains an environmental governance title during project execution, which is in line with the TSM standard, although it is limited to internal company actions and does not involve communities.

Many social conflicts surrounding mining in Peru stem from water-related issues. As of June 2022, the Ombudsman's Office identified 207 cases of social conflict at the national level, of which 42% (88 cases) correspond to mining, mostly related to water conflicts and the impact on agriculture.<sup>31</sup>

<sup>30</sup> DS 040-2014-EM, Regulation for Environmental Protection and Management for Mining Exploitation, Processing, General Labor, Transportation and Storage Activities <https://www.senace.gob.pe/download/senacenormativa/NAS-4-6-01-DS-040-2014-EM.pdf>

<sup>31</sup> Defensoría del Pueblo (2022) Reporte de Conflictos sociales 2022, <https://www.defensoria.gob.pe/wp-content/uploads/2022/07/Reporte-Mensual-de-Conflictos-Sociales-Nº-220-Junio-2022.pdf>

There is a clear gap between national regulations and the water management practices applied by those companies that are under the TSM standard. The water management protocol involves a broader level of governance, where the scenarios for community participation are clearer and not limited to those existing in the EIAs.

Initiatives such as RIMAY are a step forward to have more robust governance actions and practices, following the guidelines of international mining standards. The inclusion and participation of communities is increasing, especially in water issues, and national regulations will have to be adjusted and aligned to this dynamic.



## Environment

### Best practice reference

The TSM Biodiversity Conservation Assessment Protocol aims to measure biodiversity conservation management through management plans and systems implemented on important biodiversity issues. Under the protocol, these plans must have clear corporate commitment and responsibilities and must be communicated to relevant employees and the general public in order to support biodiversity conservation management issues. The protocol requires the preparation of reports on biodiversity conservation, in order to provide clear and timely information for decision-making.<sup>32</sup>

### Brazil

#### *Legislation, policies, practices and recent developments*

Brazil's main environmental law is Law No. 6.938/1981, which was updated by Law No. 7.804/89, which approved the National Environmental Policy (PNMA) that includes the environmental licensing process. The environmental licensing process includes specific provisions for the mining sector contained in CONAMA Resolution 9/90, which includes the need to establish EIAs.<sup>33</sup>

The Brazilian mining sector requires environmental licensing processes at all stages: preliminary licensing, installation and operation. Such licenses have different stakeholders involved, including federal and state authorities. Impacts on fauna, flora, archeological resources and water, among others, must be identified in the different phases.

<sup>32</sup> TSM, (2020) Biodiversity Conservation Management, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/biodiversity-conservation-management/>

<sup>33</sup> IBRAM (2020) Políticas Públicas para a Indústria mineral. [https://ibram.org.br/wp-content/uploads/2022/08/Livro\\_Políticas\\_Publicas-Digital.pdf](https://ibram.org.br/wp-content/uploads/2022/08/Livro_Políticas_Publicas-Digital.pdf)

Biodiversity issues, on the other hand, are mainly incorporated in two laws. The National System of Nature Conservation Units (SNUC), created by Federal Law 9.985/2000, regulates the creation of conservation areas and establishes their governance. This law establishes the legal support for the protected areas, which represent 18.7% of the country's territory. This law also requires that projects with environmental impacts - which cannot be avoided or minimized through processes associated with the environmental license - must make environmental compensations. The value of the compensation corresponds to 0.5% of the value of the project in accordance with Decree 6848 of 2009.<sup>34</sup>

Additionally, the Forestry Code (Federal Law 12691/2012) which regulates the payments schedules for environmental services for the protection of protected areas, as well as the regulation of compensations. These compensations include the obligation of landowners to protect part of the native forests on their land or, otherwise, to compensate in other areas.<sup>35</sup> Such compensations apply to the mining sector.

### *Diagnosis*

With regard to biodiversity protection, the Brazilian regulation contemplates the general elements incorporated in the TSM. Specifically, the consideration of biodiversity impacts in environmental licensing processes, as well as the corresponding compensation schemes.

With regard to forestry issues as protection and compensation measures, there are some opportunities for improvement according to some studies<sup>36</sup>. Specifically, the strengthening of the rural land registry to adequately identify the areas to be protected and the incorporation of species inventories to improve biodiversity protection schemes. Also, a revision of the current compensation value of 0.5% of the value of the project, which is not necessarily consistent with the impacts on ecosystems, to the extent that there are small projects that may generate large impacts that are not covered by these amounts or vice versa.

In terms of the environmental licensing process, the private sector recommends making some adjustments to the environmental licensing system so that it can better contribute to the environmental protection process, including biodiversity protection.

These adjustments include: 1. Review of required information consistent with the stage of the project, 2. Strengthening the monitoring of environmental licenses, 3. Establishing historical compendiums of information that allow for the most effective evaluation of impacts, 4. Better connecting mitigating measures to the impacts of mining projects and 5. Simplifying the institutional structure, which is currently divided among different federal and local agencies. It is suggested that specific environmental

<sup>34</sup> OECD (2019) pg. 35-39

<sup>35</sup> OECD (2019) pg. 36

<sup>36</sup> OECD (2019) pg. 41

assessment systems be created at the federal level for mining, as is the case for other sectors such as petroleum.<sup>37</sup>

Finally, since in Brazil, the companies affiliated to the Instituto Brasileiro de Mineração (IBRAM) have adhered to the TSM standard, it is expected that in the near future they will comply with all the elements included in the TSM standard.

## Chile

### *Legislation, policies, practices and recent developments*

Environmental matters in Chile are defined in the General Environmental Law 19,300/1994, Article 41 of which establishes the Environmental Impact Assessment System (SEIA). The environmental impact assessment process is required for projects that generate impacts, which must submit environmental impact studies to the environmental authorities. Among the issues to be evaluated are risks to human health, natural resources (soil, water, and air), relocation of affected communities, including areas with tourist and scenic value, monuments and sites with archeological value, among others.

The 2050 National Mining Policy, published by the Ministry of Mining in 2022, sets the goal that all large and medium mining projects developed after 2021 should generate a net positive impact on biodiversity by 2050.<sup>38</sup>

Law 20.417/2010 established the legal basis for the creation of environmental institutions headed by the Ministry of the Environment, the Environmental Evaluation Service (SEA), the Superintendency of the Environment (SMA) and the Environmental Courts. This institutional reform made it possible to separate the roles of public policy from those of licensing and supervision. The creation of the Biodiversity and Protected Areas Service (SBAP) is still pending, for which there is a bill currently before Congress.<sup>39</sup>

Biodiversity issues are also subject to review during the environmental licensing process. Specifically, Articles 11 and 41 of Law 19,300 establish the mandatory classification of species in the SEIA. Supreme Decree 40 of 2012, which issued the SEIA Regulations, and the 2022 Guide for Biodiversity Offsets, establish methodologies for collecting, reporting and analyzing impacts on biodiversity.

<sup>37</sup> IBRAM (2020) pg. 82-84

<sup>38</sup> Ministry of Mining, 2050 National Mining Policy, [https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria\\_2050-Politica\\_Nacional\\_Minera.pdf](https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria_2050-Politica_Nacional_Minera.pdf)

<sup>39</sup> Consejo Minero (2021) Regulación Ambiental - Minería Chilena: Perspectivas actuales y análisis comparado. Pg. 4-5

## *Diagnosis*

The regulations in force in Chile regarding the measurement of biodiversity impacts and offsets are in line with the biodiversity conservation assessment scheme proposed in TSM in the management plans and systems component. The latter, taking into account that the aforementioned regulations establish the scope of the impacts to be measured (for example, use of resources that affect human groups (soil, flora, fauna and other living organisms), and those considered landscape and biotic attributes (flora and fauna)<sup>40</sup>. It also establishes the mechanisms to establish mitigation, reparation and compensation measures.

The guidelines also incorporate elements of corporate responsibility and communications in relation to biodiversity conservation management proposed by TSM. The Guidelines for Biodiversity Offsets establish the stages of the offset design process, including stage 3 where stakeholder participation is considered, and in its last phase the reporting of the measures to be implemented. These stages also include the participation of the communities in the monitoring of the compensation plans.

In addition to the above, and in order to improve environmental management. The 2050 National Mining Policy sets specific targets for biodiversity. However, these are not yet reflected in the current regulations.

## **Colombia**

### *Legislation, policies, practices and recent developments*

Colombia has a National Policy for the Integrated Management of Biodiversity and its Ecosystem Services (PNGIBSE) formulated by the Ministry of Environment in 2012. This national policy seeks biodiversity as the source, basis and guarantee of the supply of support services, regulation, provision and cultural values provided by continental and marine ecosystems to society, which are vital and strategic to guarantee the viability of the country's growth, development and welfare processes.

For its part, the Alexander Humboldt Institute, the biodiversity research arm of the National Environmental System (SINA), was delegated - within the framework of the United Nations Convention on Biological Diversity, which Colombia ratified in 1994 - to generate the knowledge necessary to evaluate the state of biodiversity in Colombia and to make sustainable decisions about it. The institute supports the mining sector in specific studies of relevance to the sector.

<sup>40</sup> SEIA - Servicio de Evaluación Ambiental Chile (2022) *Guía para la compensación de biodiversidad en el SEIA pp.15-16.*  
[https://sea.gob.cl/sites/default/files/imce/archivos/2022/05/23/guia\\_metodologica\\_ecosistemas\\_acuaticos.pdf](https://sea.gob.cl/sites/default/files/imce/archivos/2022/05/23/guia_metodologica_ecosistemas_acuaticos.pdf)



In addition, Decree 1076 of 2015 includes the legal provisions for the sustainable management of biodiversity in projects that require the use, exploitation and permits of fauna and flora, establishing the specific regulations applicable to the mining sector and which sets out the terms of reference for the preparation of EIAs in mining, as well as specifying information that the mining project must provide related to the qualitative and quantitative characteristics of the different ecosystems present in the area of influence, determining their functionality and structure. It should be noted that EIAs must include a compensation plan for biodiversity loss.

Colombian regulations regarding biodiversity are in line with the principles of the United Nations and other international organizations that seek to protect the world's fauna and flora.

By June 2022, the National System of Protected Areas reports a total of 1483 natural protected areas (31.5 million hectares), covering 15% of the national territory; 120 of these areas are national protected areas, 304 are regional protected areas and 1059 are local protected areas<sup>41</sup>. In Colombia, the environment is no longer a good that can be appropriated by humans and is no longer a subject of rights. Judges have given legal status to more than twenty ecosystems, including moorlands, valleys and rivers. In the case of the Atrato River, through Ruling T-622 of 2016, the Constitutional Court declared this tributary subject to rights and ordered an end to illegal mining, decontamination of water sources and the use of a food security plan. Subsequently, rivers such as Cauca, Cocora, Coello, Combeima, Otún, Pance, Quindío and Magdalena and ecosystems such as the Colombian Amazon, Salamanca island park, Los Nevados national natural park and the Cocora Valley came to be considered as entities with rights.<sup>42</sup>

### *Diagnosis*

The mining sector as a user of environmental services is governed by what is dictated mostly by Decree 1076 of 2015 and by the information and use requirements related to the preparation of EIAs and environmental guides. This is in line with the TSM Biodiversity Preservation Assessment protocol. However, the current national regulations do not involve levels of governance, where the scenarios for participation, control, monitoring and reporting are different from those opened by the socialization of environmental issues in the EIA frameworks, generating a gap between the practices of the companies that are under the application of the standard and the national regulations. It should be noted that the TSM standard was adopted by the MCL at the beginning of 2022, so it is expected that, in a couple of years, its member companies

<sup>41</sup> National Register of Protected Areas - RUNAP (2022), <https://www.parquesnacionales.gov.co/portal/es/sistema-nacional-de-areas-protegidas-sinap/registro-unico-nacional-de-areas-protegidas/>

<sup>42</sup> University of Antioquia, A Legislation for Biodiversity (2021), [https://www.udea.edu.co/wps/portal/udea/web/inicio/udea-noticias/udea-noticia!/ut/p/z0/fY8\\_D4lwFMS\\_igtj04IIOBIHE-PgYAx-0MU\\_a4MP-gVKIH9-ig3Fxyby7\\_O6SRzmtKDcwYwserQEVfM2za7HdJXGZsiPL0oyV2Snd5MI-fb4weqD-8PxAWsBsGXILeWOPI09Oqt86DmoSEiMH46-5Wv8-96MpYjw3CGLF326CwC\\_WNe-nQCmwsKA0avHSha-YAo2eKooAI\\_kB4ckNuCzdKNKECESJOcFaSbFEIYEtP-wesXtbmIIA!!/](https://www.udea.edu.co/wps/portal/udea/web/inicio/udea-noticias/udea-noticia!/ut/p/z0/fY8_D4lwFMS_igtj04IIOBIHE-PgYAx-0MU_a4MP-gVKIH9-ig3Fxyby7_O6SRzmtKDcwYwserQEVfM2za7HdJXGZsiPL0oyV2Snd5MI-fb4weqD-8PxAWsBsGXILeWOPI09Oqt86DmoSEiMH46-5Wv8-96MpYjw3CGLF326CwC_WNe-nQCmwsKA0avHSha-YAo2eKooAI_kB4ckNuCzdKNKECESJOcFaSbFEIYEtP-wesXtbmIIA!!/)

will implement the mandatory nature of the specific actions required by the standard in terms of management for the preservation of biodiversity and this will help to reduce conflicts with communities related to the use of fauna and flora.

## Peru

### *Legislation, policies, practices and recent developments*

The National Biodiversity Strategy is a management instrument that establishes policies, measures and priority actions of a political, legal, economic and technical nature for Peru.<sup>43</sup> Law 26839 on conservation and sustainable use of biological diversity establishes the principles and definitions in a general manner for its implementation in each of the productive sectors.

The National System of Natural Areas Protected by the State (SINANPE) aims to contribute to Peru's sustainable development through the conservation of representative samples of the country's biological diversity. Peru has 76 Natural Protected Areas (NPAs) under the care and protection of the Ministry for the Environment, representing approximately 22% of the national territory.<sup>44</sup>

The relevant regulations covering the legal provisions on biodiversity for mining are centered on the Regulations for Environmental Protection for Mining Exploration Activities (DS 042-2017) and the Regulations for Environmental Protection and Management for Mining Exploitation, Beneficiation, General Labor, Transport and Storage Activities (DS 040-2014-EM) which dictate the minimum requirements that mining projects must comply with to manage biodiversity. Specifically, DS 040-2014-EM in its provisions on the information requirements contained in the EIAs sets out the reports, sampling, monitoring and environmental management actions that the operating companies must carry out before and during the execution of the mining project.

It is worth noting that, in addition to the technical and monitoring articles, DS 040-2014-EM contains a mandatory title on environmental management during the execution of the project that includes a series of articles on environmental governance, which are condensed into the following: commitment of senior management to environmental management, environmental policy of the mining owner and ongoing training for environmental management.<sup>45</sup>

<sup>43</sup> Ministry of Development Peru National Biodiversity Strategy (2001).

<https://www.midagri.gob.pe/portal/47-sector-agrario/recurso-biodiversidad/349-estrategia-nacional-de-biodiversidad>

<sup>44</sup> Ministry for the Environment - Peru (2022) State Protected Areas System (SINANPE)

<https://www.gob.pe/institucion/sernanp/campañas/4340-sistema-nacional-de-areas-naturales-protegidas-por-el-estado>

<sup>45</sup> Ministry for the Environment - Peru (2014) DS 2014-EM, Regulation for Environmental Protection and Management for Mining Exploitation, Processing, General Labor, Transportation and Storage Activities <https://www.senace.gob.pe/download/senacenormativaNAS-4-6-01-DS-040-2014-EM.pdf>

## Diagnosis

The regulatory framework related to biodiversity is clear. Peru has specific policies and laws that look after the country's interests, and that are aimed at meeting the goals of the Sustainable Development Goals (SDGs), which include the environmental dimension of development.

For the mining sector there is a regulation focused on DS 040-2014-EM which specifies only actions of exploitation, monitoring, control and reporting through the mechanisms provided by the EIAs. Additionally, the DS 040-2014-EM contains an environmental governance title mentioned above which is in line with the TSM standard. However, this is only limited to internal company actions and does not involve the communities. This evidences a gap between national regulations and the biodiversity management practices applied by those mining company operations that are under the TSM standard (82 operations globally), 35% of which have satisfactorily complied with the protocol and the rest are in the process of implementation and verification.<sup>46</sup> It is important to clarify that the Biodiversity Preservation Assessment protocol involves a broader level of governance, where the participation, control, monitoring and reporting scenarios are broader than those existing in EIAs.



## Mine and tailings closure

### Best practice reference

The **TSM Tailings Management Protocol** addresses the proper management of tailings impoundments and the internal mechanisms for accountability and review of tailings impoundments. This protocol addresses community engagement in relation to tailings as part of a broader issue of engagement with respect to tailings risks to communities. The Protocol requires companies to have processes in place to engage in discussions with communities of interest about potential risks to the public associated with the company's activities, including tailings management<sup>47</sup>.

For its part, the IFC standard of environmental, health and safety guidelines for the mining sector establishes activities for closure, which should be taken into account during the initial planning and design phases. Mining companies should develop a draft Mine Closure and Rehabilitation Plan (MRRP) prior to commencing production, clearly identifying earmarked and sustainable funding sources to carry it out. The PCRM - which must have guaranteed funding - must take into account both physical

<sup>46</sup> TSM (2021), *TSM Company Implementation Schedule*, <https://mining.ca/resources/guides-manuals/tsm-company-implementation-schedule/>

<sup>47</sup> TSM (2019) *Tailings Management Protocol*, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/tailings-management-protocol/>

rehabilitation and socioeconomic considerations and must be an integral part of the project's life cycle.<sup>48</sup>

## Brazil

### *Legislation, policies, practices and recent developments*

The issues of mine closure, tailings and mining environmental liabilities in Brazil have been in the public discussions during the last few years, particularly as a consequence of tailings dam accidents in the province of Minas Gerais.<sup>49</sup> In particular, these accidents prompted a thorough review of the upstream tailings dams.

The disposal of tailings is contained in Law 12.334/2010, which defined the National Dam Safety Policy. This law regulated the safety conditions of tailings dams, as well as the National Dam Safety Information System, which refers to all tailings dams at the federal level. This law has been regulating specifically for the mining case as a consequence of the aforementioned accidents. The regulations include the National Department of Mineral Production Decree 70,389/2017 creating the National Registry of Mining Dams and the Integrated Management System for the Safety Management of Mining Dams, which was amended in 2002 by Resolution No 32, requiring additional risk classifications and periodic reviews. Additionally, National Mining Agency Resolution No. 13/2019 determines the safety of tailings dams and the dismantling and prohibition of these dams upstream.

Dam projects must follow the ABNT NBR 13029/2017 standard. In 2020, law 14.066/2020 was passed, which defines the Dam Safety Policy with increased requirements and safety for dams; finally, the National Mining Agency issued Resolution No. 51 of 2021, which regulates the use of tailings and tailings, allowing a circular vision of these deposits.

Mine closure regulations are contained in various instruments. Decree No 9,406/2018 which amended the 1967 Mining Code and established, among others, stricter environmental requirements both vis-à-vis tailings and mine closure. Resolution 68/2021 of the National Mining Agency regulated the inspection procedures for mine closure plans. This includes the permanent updating of mine closure plans certified by experts for the different stages of the mining project, special measures for the closure and dismantling of tailings dams, and/or monitoring of tailings dams, among others. The regulations include the need to provide resources for such mine closure plans.

<sup>48</sup> IFC, *Environmental, Health and Safety Guidelines - Mining Sector*, <https://www.ifc.org/wps/wcm/connect/e255ea3a-34be-4caf-886e-e8e2de66475f/0000199659ESes%2BMining-%2Brev%2Bcc.pdf?MOD=AJPERES&CVID=nPthg7V>

<sup>49</sup> These include the Mariana accident in 2015 and Feijão, in Brumadinho in 2019

## Diagnosis

Brazil has one of the most advanced tailings regulations in the region, which is consistent with the level of urgency and response to the recent accidents in the country. The regulation incorporates important elements of the standard including the obligation to establish tailings management policies, emergency protocols, identification of responsibilities, public records with risk classification, monitoring and control, among others. Likewise, the implementation of the TSM standard by IBRAM members will, in the medium term, boost the companies' internal tailings management mechanisms.

Regarding mine closure, the regulation has been advancing to incorporate different technical details and reporting requirements for mine closures that are consistent with the recommendations of the IFC guidance. However, there are still opportunities to align regulation with best practices. This includes increasing transparency regarding the use of trusts for mine closure plans, reviewing the capacity of the mining authority to inspect and audit such closures<sup>50</sup>, and finally integrating visions of long-term post-closure social and environmental reconversion.<sup>51</sup>

## Chile

### *Legislation, policies, practices and recent developments*

Mine closure processes are instrumented in Law 20,551/2011 on Closure of Mining Sites and Facilities, which is regulated by Decree 41/2021 of the Ministry of Mining. The law establishes the need to process a sectoral environmental liability, which is part of the environmental licensing procedure and is reviewed by the National Geology and Mines Service (SERNAGEOMIN).<sup>52</sup> This standard regulates the negative effect of post-closure mining activities, including the need to provide financial guarantees for their financing. The guarantees cover the present value of the costs of implementing the plan, the amount of which is reviewed periodically. Procedures and audits of the plan are also included. Finally, the law establishes the creation of the Fund for the Management of Closed Mine Sites, whose purpose is to maintain the physical stability of the closures, finance the closures and protect people and communities. The fund is funded by guarantees, private resources, fines and other resources.<sup>53</sup>

Tailings are also subject to review during the environmental licensing process and are reviewed by SERNAGEOMIN. They are reviewed in accordance with the regulations for the approval of projects for the design, construction, operation and closure of tailings

<sup>50</sup> OECD (2022), *Regulatory Governance in the Mining Sector in Brazil*, pg. 82 OECD Publishing, Paris, <https://doi.org/10.1787/63d60aa8-en>

<sup>51</sup> Ibram (2020) *Ibidem* pg. 65

<sup>52</sup> Mining Council (2021) *Ibidem* pg. 30-31

<sup>53</sup> A. L. Morales and M. Hantke Domas, "Guía metodológica de cierre de minas", *Documentos de Proyectos (LC/TS.2020/166)*, Santiago, Comisión Económica para América Latina y el Caribe (CEPAL), 2020 pg. 19

dams contained in Supreme Decree 248/2007 of the Ministry of Mines. The objective is to ensure the physical and chemical safety of the tailings.<sup>54</sup>

Likewise, in 2019 the Ministry of Mining issued the National Tailings Deposits Plan whose objective is to "...establish guidelines, programs and tools that, on the one hand, address the problems of the past, as is the case of abandoned sites and deposits, but also embrace the new challenges of mining, moving towards a safer and more environmentally sustainable industry."<sup>55</sup> The plan includes the creation of a tailings observatory, the review of emergency mechanisms and relocation of abandoned tailings, and introduces concepts of circular economy for the use of closed tailings as well as technology for the better use of existing materials.

In addition, the 2050 National Mining Policy includes specific goals for tailings, such as the elimination of tailings critical to the population by 2030.

In addition, the Policy stipulates that 100% of large and medium mining tailings operations have an Integral Monitoring Plan and report information to SERNAGEOMIN regarding physical and chemical stability, as well as reducing the generation of conventional tailings, encouraging other forms of deposits.<sup>56</sup>

### *Diagnosis*

Chile has clear regulations regarding mine and tailings closure. Regarding mine closure, the regulations include the IFC's recommendations in terms of incorporating processes and procedures, audits, recurring records, as well as the establishment of financing mechanisms through guarantees that are recurrently reviewed in relation to mine closure plans. The guidelines used by SEAGONOMIN for the technical description of mine closure are recommended by institutions such as ECLAC as a reference for other countries in the region.<sup>57</sup>

The tailings regulations also incorporate the recommendations of the TSM standard. Not only in terms of technical characteristics, but also in the obligation to register and audit active and abandoned tailings deposits, so that authorities and society can prevent damage to communities and ecosystems. The National Tailings Deposits Plan even goes a step further by putting on the table the role of tailings to enable new uses, thus introducing the perspective of circular economy, as well as the use of technologies to make their management more efficient. Some stakeholders, such as the National Mining Society (SONAMI), an association of small, large and medium-sized mining companies, suggest a more detailed policy on abandoned deposits or mining liabilities that could include the possibility of remediation of abandoned tailings deposits.<sup>58</sup>

<sup>54</sup> A. L. Morales and M. Hantke Domas, *Ibidem*. Pg. 19

<sup>55</sup> Ministry of Mining - Chile (2019) *National Tailings Deposits Plan* pg. 12

<sup>56</sup> Ministry of Mining, 2050 National Mining Policy, [https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria\\_2050-Politica\\_Nacional\\_Minera.pdf](https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria_2050-Politica_Nacional_Minera.pdf)

<sup>57</sup> A. L. Morales and M. Hantke Domas, *Ibidem*. Pg. 19

<sup>58</sup> SONAMI (2021) *Ibidem* pg.21

## Colombia

### *Legislation, policies, practices and recent developments*

There is no specific law for the construction and management of mine tailings in Colombia. However, through the EIA and the Program of Works<sup>59</sup> general indications are given for this type of infrastructure. The Colombian Ministry of Mines and Energy issued a proposal for technical guidelines for processes related to operations containing tailings dams<sup>60</sup>. Their application is not mandatory.

Regarding mine closure, there is no specific law or regulation for this stage and again the EIA and Program of Works give general indications. Among the most representative provisions, are that the mining owner must present a Mining Closure Plan that contemplates the entirety of the titled area and all the measures and activities necessary to achieve the closure, dismantling, recovery, restoration and adequate rehabilitation of its operation, whose execution must be carried out during the term of the contract and during the contractual stage of the exploitation. The environmental warranty is for three years from the termination of the contract.

Finally, with respect to environmental liabilities, the Ministry for the Environment and Sustainable Development has an environmental liabilities management strategy<sup>61</sup> that has identified areas affected by mining and other activities. However, there is no legal provision for dealing with this type of environmental damage. Colombia does not have any regulations to manage environmental liabilities from mining.

### *Diagnosis*

The TSM Tailings Management Protocol requires a series of specific actions that go beyond the technical level and include community participation, risk identification, adoption of internal policies and emergency plans, among others. Colombian regulations do not have a specific obligation in this area. Although the proposed technical guidelines for standardizing processes related to tailings dams is a good practice, it is not mandatory and is not as robust as the Protocol.

<sup>59</sup> "The Program of Works of exploitation is the result of the studies and exploration works, which is submitted by the concessionaire, before the final expiration of this period, for the approval of the granting authority which is annexed to the contract as part of the technical obligations." MME (2003) Mining Glossary. <https://www.anm.gov.co/sites/default/files/DocumentosAnm/glosariominero.pdf>

<sup>60</sup> Ministry of Mines and Energies (2020), Proposal of technical guidelines of good practices policy to standardize tailings dam processes in mining. <https://www.minenergia.gov.co/static/cursos-mineria/src/document/PROPUESTA%20LINEAMIENTOS%20TÉCNICOS%20DE%20POLÍTICA%20DE%20BUENAS%20PRÁCTICAS%20-%20PRESAS%20DE%20RELAVES.pdf>

<sup>61</sup> MADS, Environmental Liabilities, <https://www.minambiente.gov.co/asuntos-ambientales-sectorial-y-urbana/pasivos-ambientales/>

The same is the case for mine closure, given that Colombia, although it has mechanisms that regulate this issue, the regulations are not in line with standards such as the IFC. For example, there is no requirement for a minimum of five years of environmental warranty from the date of contract termination.

In terms of environmental liabilities, Colombia lags behind other Latin American countries from a regulatory standpoint because it does not have legislation or regulations governing this issue.

There is a great opportunity for Colombia to improve from a regulatory point of view in mine closure and tailings management. In addition to benchmarking practices being addressed by private companies in other jurisdictions, the TSM standard was adopted by the ACM in early 2022. With this, it is expected that, in a couple of years, the MCL member companies will comply with the specific actions required by the standards regarding tailings and mine closure. With regard to the topic of environmental liabilities, Colombia can learn from the experiences of other countries in the region, such as Peru and Brazil, to implement specific regulations on the topic.

## Peru

### *Legislation, policies, practices and recent developments*

In Peru there is no specific manual or guide for tailings dam construction and management. Although a Mining Tailings Management Guide was created in 1993, it is not valid, as it was created under DS 016-93-EM, which was repealed by the Regulation for Environmental Protection and Management for Mining Exploitation, Processing, General Labor, Transportation and Storage Activities DS 040-2014-EM. This Supreme Decree addresses the technical measures applicable to tailings management and construction.

Law 28090 regulates the closure of mines and establishes the regulations for the prevention, minimization and control of risks and effects on the health, safety of people, the environment, the surrounding ecosystem and property that could result from the cessation of operations of a mining unit.

Law 28271 regulates the environmental liabilities of mining activities and DS 059-2005-EM establishes the scope of the same Law, in order to establish mechanisms to ensure the identification, responsibility and financing for the environmental remediation of the areas affected by such liabilities, with the purpose of mitigating their negative impacts on the health of the population and the ecosystem.



## *Diagnosis*

According to the National Water Authority (ANA), there are 743 dams registered in the inventory of dams in Peru. Of these, the majority are irrigation dams (442), followed by tailings dams (113)<sup>62</sup>. While in the current legislation (DS 040- 2014-EM) Peruvian regulations make no mention of design criteria and only make general reference to the construction, management and control of tailings dams, mining associations recommend the direct use of international standards for the construction, control and management of tailings dams.

On the other hand, Peru is a standard-bearer in mine closure policy, dictated by Law 28090 and applied under its mine closure regulations, which apply international practices to set requirements at this stage. It highlights that the mine closure regulation uses the precepts of the IFC standard that establishes the closure activities to be taken into account during the initial planning and design phases. In addition, the IFC standard includes specific issues such as the duration of post-closing monitoring with a minimum period of five years and clear collateral structures for financing.

With regard to mining environmental liabilities, there are currently 7668 environmental liabilities registered in the national inventory, of which 1897 are assumed by the state, 1423 are assumed by the private sector and there are more than four thousand to be defined<sup>63</sup>. Peru is one of the few countries in LAC with specific legislation on this issue.

However, although Peru is a leader in mine closure and environmental liabilities, it does not have clear regulations on tailings management and there is a gap between local regulations and the TSM Tailings Management Protocol. This opportunity for regulatory improvement is relatively easy to remedy since most of the mining companies in Peru apply international standards for tailings construction, control and management.

<sup>62</sup> Auca Farfán Sebastián, 2021. *Revisión de la Normativa Nacional e Internacional para la evaluación de la seguridad en el diseño de presas de relave Perú*. <https://www.grupocivilizate.com/originals/revisin-de-la-normativa-nacional-e-internacional-para-la-evaluacin-de-la-seguridad-en-el-diseo-de-presas-de-relave>

<sup>63</sup> Ministry of Mines and Energy Peru (2021) *Mining Annual 2021*, <https://www.gob.pe/institucion/minem/informes-publicaciones/3145151-anuario-minero-2021>



## Climate change and energy efficiency

### Best practice reference

The **TSM Climate Change Protocol** aims to facilitate the mining sector's continuous improvement in managing the risks and opportunities associated with climate change, including mitigation and adaptation strategies, target setting and reporting. The implementation of this protocol aims to provide support to mining companies in order to achieve the objectives of the Paris Agreement at the corporate level.<sup>64</sup>

For its part, the TSM Energy Use Management and GHG Emissions Assessment Protocol provides guidance to facilities for measuring energy use management and GHG emissions. The assessment protocol establishes general expectations regarding the management of energy use and GHG emissions from the mining sector.<sup>65</sup>

### Brazil

#### *Legislation, policies, practices and recent developments*

Brazil ratified the Paris Agreement in 2016 and tracks its GHG emissions. Brazil's most recent GHG contribution report indicates that the largest contributing sector is agriculture (35%), followed by change of land use or deforestation (27%) and energy (28.9%), where within the latter more than half corresponds to transportation emissions. Industry and end uses accounted for 6.3%, of which 31% (or 2.0% of the total) corresponds to the mining sector.<sup>66</sup> Brazil's official commitments to climate change were defined in the 2009 National Climate Change Plan and detailed at the sectoral level in the Ministry for the Environment's National Climate Change Adaptation Plan (2016) and in the Sectoral Plans for Climate Change Mitigation and Adaptation. These were followed by statewide mitigation plans.<sup>67</sup>

<sup>64</sup> TSM, (2021) *Climate Change Protocol*, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/climate-change/>

<sup>65</sup> TSM, (2019) *Energy and GHG Emissions Management Protocol*, <https://mining.ca/resources/guides-manuals/tsm-energy-and-ghg-emissions-management-protocol/>

<sup>66</sup> Ministério da Ciência, Tecnologia e Inovações (MCTI) (2020) *E5\_Sumario 4a Comunicação Nacional do Brasil à Convenção-Quadro das Nações Unidas sobre Mudança do Clima (UNFCCC)*. [https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/comunicacoes-nacionais-do-brasil-a-unfccc/arquivos/4comunicacao/sumario\\_executivo\\_4cn\\_brasil\\_web.pdf](https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/comunicacoes-nacionais-do-brasil-a-unfccc/arquivos/4comunicacao/sumario_executivo_4cn_brasil_web.pdf)

<sup>67</sup> Instituto Brasileiro de Mineração IBRAM (2021) *Mineração Resiliente. Um guia para a Mineração se adaptar aos impactos da Mudança do Clima*. <https://ibram.org.br/wp-content/uploads/2021/12/Mineracao-Resiliente-1.pdf>

As for public mining institutions, the Mining and Development Program (2020-2030) proposed by the Ministry of Mines and Energy includes climate change as one of its strategic axes to increase the responsible contribution of mining to the country's development. Likewise, the National Mining Plan 2022-2050, currently under preparation, includes in one of its sections sustainable mining and the role of mining in meeting Brazil's emission reduction goals.<sup>68</sup> The private sector has adopted good practices and efforts of private emission calculations, such as those developed by IBRAM affiliates who have already made calculations of scope 2 emission processes and recommendations for adaptation to climate change.<sup>69</sup>

In terms of energy efficiency, Brazil has a National Electric Energy Conservation Plan that includes recommendations to promote energy efficiency in various sectors including buildings, use of household appliances, industry, public lighting, among others.<sup>70</sup> In the mining sector, energy efficiency is considered a strategic objective according to the 2023 Strategic Plan.<sup>71</sup>

### *Diagnosis*

Although there are general indications and commitments in Brazil to reduce greenhouse gas emissions, further development is still required to comply with the TSM recommendations. Specifically, there is a need to more clearly define monitoring competencies at the federal and state levels, make reporting and disclosure of emissions generated by the mining sector mandatory, provide financial resources to finance mitigation plans, improve infrastructure to mitigate the impacts of climate change, and promote research and development.<sup>72</sup>

With regard to energy efficiency, although there are plans at the regional level as well as mentions in the Strategic Plan for the mining sector, it is necessary to define concrete plans and strategies so that they are consistent with the desirable aspects of measurement, change in the use of energy sources, measurements, reports and other aspects included in the TSM standard.

<sup>68</sup> MME-BR (2022) Book 5. Sustainable Mining Performance. Pg 129-130 <https://www.gov.br/mme/pt-br/assuntos/secretarias/geologia-mineracao-e-transformacao-mineral/pnm-2050/estudos/cader-no-5-desenvolvimento-sustentavel-na-mineracao-brasileira/DesenvolvimentoSustentavelnaIndustriaMineral-Brasileira.pdf>

<sup>69</sup> IBRAM, for example, calculates emissions from the sector.

<sup>70</sup> OECD (2021) Evaluating Brazil's progress in implementing environmental performance review recommendations and its alignment with OECD core acquis on the environment. Accessed 22 Aug. 2022. pg. 43 <https://www.oecd.org/environment/country-reviews/Brazils-progress-in-implementing-Environmental-Performance-Review-recommendations-and-alignment-with-OECD-environment-acquis.pdf>

<sup>71</sup> MME-BR (2022) Programa Mineração e Desenvolvimento (English Version) -PMD 2020/2023 <https://www.gov.br/mme/pt-br/assuntos/secretarias/geologia-mineracao-e-transformacao-mineral/publicacoes-1/programa-mineracao-e-desenvolvimento/programa-mineracao-e-desenvolvimento-2020-2023-english-version.pdf/view>

<sup>72</sup> IBRAM(2020) *Ibidem* pg 46

## Chile

### *Legislation, policies, practices and recent developments*

Chile has ratified all international declarations to combat climate change, including the Paris Agreement. The Ministry for the Environment established the National Climate Change Action Plan 2017-2022 and the 2050 Long Term Climate Strategy (ECLP) in 2021. The latter defines national emission contributions and defines specific targets by sector. Recently, the Climate Change Law 21.455/2022 was approved, establishing sectorial plans, mitigation goals and the need to establish emission budgets by subsector. In terms of environmental licensing, climate change is not yet considered an explicit impact to be considered. However, there are some cases where it has been taken into account for impact analysis and mitigation.<sup>73</sup>

The mining industry has a fundamental role in GHG reduction. Large-scale copper mining consumes 33% of the country's total energy. This comes mainly from fossil fuels that drive vehicles in the mines. Likewise, mineral processing consumes high levels of energy, which are expected to increase as deposit grades decrease over time and represent the second largest operating cost for the sector.<sup>74</sup> Such challenges have been incorporated into diagnostics and action plans such as the 2019 update of the Copper Roadmap.<sup>75</sup>

In terms of energy efficiency, the Energy Efficiency Law (2021) and the Energy Efficiency Plan 2022-2050 indicate a need to reduce energy intensity for large-scale mining by 30% from 2022 to 2050. In addition to energy efficiency, the industry has been adopting a series of measures to reduce emissions, including the use of electricity from renewable sources, low-emission mining trucks, and support for initiatives to promote green hydrogen.<sup>76</sup> Additionally, the introduction of electromobility of workers and eventually trucks in order to reduce emissions in the sector.

### *Diagnosis*

The Chilean mining sector has a strong commitment to reducing the impact of greenhouse gases that meets the attributes of measurement, commitment and reporting recommended by standards such as the TSX. This commitment extends to the public sector, which has been advancing a robust regulatory framework to provide signals to the sector through laws and regulations to measure emissions, climate change adaptations and reduction targets. But it also translates to the private sector, which in recent years has been carrying out diagnostics, competitiveness reviews, and measurements, even up to scope 3 (with the support of the IDB). These efforts seek to

<sup>73</sup> Mining Council (2021) *Ibidem* pg. 32-25

<sup>74</sup> Alta Ley (2021) *Minería Verde, oportunidades y desafíos*. pgs. 27-30. [https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021\\_Mineria-Verde\\_Oportunidades-y-Desafios\\_version-ligera.pdf](https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021_Mineria-Verde_Oportunidades-y-Desafios_version-ligera.pdf)

<sup>75</sup> Alta Ley (2019) *Hoja de Ruta 2.0 de la Minería Chilena Actualización y consensos para una mirada renovada*. [https://corporacionaltaley.cl/wp-content/uploads/2020/01/ACTUALIZACION-HOJA-DE-RUTA-MI-NER-IA-DEL-COBRE\\_2019\\_21ene\\_aso\\_opt.pdf](https://corporacionaltaley.cl/wp-content/uploads/2020/01/ACTUALIZACION-HOJA-DE-RUTA-MI-NER-IA-DEL-COBRE_2019_21ene_aso_opt.pdf)

<sup>76</sup> Sonami (2021) . *Ibidem*. Pg. 41-42

position Chilean mining as a mining sector in compliance with standards and are an obligatory reference for other countries in the region.

In the future, progress will be made on the regulation of the Climate Change Law to understand the legal obligation and the mechanism for verifying the emission budgets assigned to the sector, as well as the permanent follow-up of the sustainability aspects of the sector, such as energy consumption and emissions included in different action plans.

## Colombia

### *Legislation, policies, practices and recent developments*

The country is a signatory to the Paris Agreement, a member of the OECD and has reaffirmed its commitment to the 2030 Agenda for Sustainable Development. The country has formulated an Energy Transition Policy through CONPES 4075 of 2022 materialized in Law 2099 of 2021 (Energy Transition Law), which aims to modernize current legislation and dictate provisions for the energy transition, boosting the energy market through the use, development and promotion of non-conventional energy sources.

In addition, it has issued Decree 172/2022, which created the Intersectoral Commission for Climate Action as an instance for the coordination, orientation and evaluation of the progress made by the entities of the national executive branch in relation to the country's international commitments on climate action. The mining sector through its governmental institutions has developed the Comprehensive Climate Change Management Plan for the Mining and Energy Sector 2050, the Standardization of Circular Economy Processes in the Mining Activity and the Rational and Efficient Energy Use Program as part of efforts to consolidate its transition to low carbon emissions as initiatives and best practice guidelines. In addition to the above, there are initiatives such as Colombia's Nationally Determined Contribution (NDC) Update and Colombia's Long Term Climate Strategy E2050 led by the Ministry of Environment that provide adaptation measures for the mining sector.

### *Diagnosis*

The country has a policy framework to address climate change but the regulations have not yet been defined. The mining sector has taken inter-institutional strengthening actions for climate change adaptation with a portfolio of adaptation measures and guidelines for the sector and society. The guidelines issued are in line with international best practices, but are voluntary. Therefore, there is an opportunity for regulatory improvement in this area. As with other issues discussed, in early 2022 the ACM adopted the TSM standard and its member companies are expected to comply with the specific actions required by the standards regarding climate change and energy efficiency.

## Peru

### *Legislation, policies, practices and recent developments*

Peru - which is a signatory to the Paris Agreement, has ratified the Minamata Convention on Mercury and has reaffirmed the commitment to the UN 2030 Agenda for Sustainable Development - has the Framework Law on Climate Change whose purpose is to establish the principles, approaches and general provisions to coordinate, articulate, design, implement, report, monitor, evaluate and disseminate public policies for the comprehensive, participatory and transparent management of climate change adaptation and mitigation measures, in order to reduce the country's vulnerability to climate change and comply with the international commitments assumed by the State before the United Nations Framework Convention on Climate Change.<sup>77</sup> Thus, the country has a National Plan for Adaptation to Climate Change, which seeks to contribute to reducing the risks and vulnerability of the Peruvian population and environmental ecosystems.

Regarding energy efficiency, Peru has Law 28832 to ensure the efficient development of electric energy and Law 27345 for the Promotion of Efficient Energy Use. Specifically for the mining sector, in 2020 the Ministry of Mines issued the update of the Energy Efficiency and Energy Diagnosis Guideline for Metal Mining<sup>78</sup>, which is not mandatory.

### *Diagnosis*

Peru is addressing climate change by formulating adaptation and mitigation goals expressed in its Nationally Determined Contributions. They involve all sectors and actors of society around common objectives for the country's sustainability.<sup>79</sup> From the private sector, mining companies are applying voluntary international practices that are in line with protocols such as those of TSM.

National regulations are being adapted to address energy efficiency and climate change. There is an opportunity for improvement from the regulatory point of view, since the commitments and actions being developed by mining companies are not mandatory and can serve as a basis for higher levels of requirements in the development of the activity.

<sup>77</sup> Ministry for the Environment Peru (2016) *Climate Change Framework*, taken from <https://www.minam.gob.pe/cambio-climatico-peru/proyecto-de-ley-1314-2016pe/>

<sup>78</sup> Ministry of Energy and Mines of Peru, (2020), *Energy Efficiency and Energy Diagnosis Guide*) [https://www.minem.gob.pe/minem/archivos/file/DGEE/eficiencia%20energetica/publicaciones/quias/1\\_%20guia%20mineria%20metalica%20DGEE-1.pdf](https://www.minem.gob.pe/minem/archivos/file/DGEE/eficiencia%20energetica/publicaciones/quias/1_%20guia%20mineria%20metalica%20DGEE-1.pdf)

<sup>79</sup> Ministry for the Environment. *Nationally Determined Contributions*. <https://www.minam.gob.pe/cambio-climatico/ndc/>

## 2.3.2. Social aspects



### Community and natural resources

#### Best practice reference

**TSM's Indigenous and Community Relationships Protocol** allows for the assessment of relations with indigenous peoples and communities of interest through tools that allow for the review of the application of appropriate processes to identify Communities of Interest (COI) - including indigenous organizations - affected or potentially affected by the company's operations and activities. Processes should ensure that COIs are periodically reconsidered during the life of the mining project and support the development and maintenance of meaningful relationships to achieve an understanding of mutual viewpoints to create effective relationships and shared benefits. Additionally, under the Protocol, processes for the active development of meaningful relationships and implementation of participation and decision-making with indigenous communities are evaluated<sup>80</sup>.

#### Brazil

##### *Legislation, policies, practices and recent developments*

Brazil is a signatory to ILO Convention 169 and adheres to free, prior and informed consent (FPIC) of ethnic communities. Article 176 of the Brazilian Constitution establishes that mining may be carried out on indigenous lands under specific conditions. However, these conditions and the FPIC procedure have not been regulated, which is why it is not possible to mine in these lands, which represent 13% of Brazil's territory and have great mineral potential.<sup>81</sup>

Citizen participation is part of the environmental licensing process. The procedure establishes hearings to evaluate environmental impacts with the communities.

Citizen participation will also be influenced in the countries by the adoption of the Escazú Agreement. The Escazú Agreement is an agreement that promotes timely access to environmental information, participation in decision-making that affects the environment, and access to justice to ensure compliance with environmental laws and rights Brazil signed the Escazú Agreement in 2018.

<sup>80</sup> TSM, (2020) *Indigenous and Community Relationships Protocol*, <https://mining.ca/resources/guides-manuals/tsm-indigenous-and-community-relationships-protocol/>

<sup>81</sup> IBRAM (2021) pg. 86

## *Diagnosis*

Citizen participation in Brazil, specifically with respect to indigenous peoples, is recognized by law. However, because mining has not been permitted within indigenous territories, its application has been limited. In this sense, there is still progress to be made in terms of the mandatory application of TSM recommendations in terms of maintaining a broad and informed dialogue with ethnic communities. A broad and participatory discussion with indigenous peoples is required to regulate mining in their territories, taking into account their high mineral potential, as well as the existence of illicit activities including illegal mining.

General citizen participation is incorporated into environmental licensing processes. As it is tied to the review of environmental impacts, it is circumscribed to this and not to social impact assessments in general. The industry follows good relationship practices, including TSM standards, but these are voluntary exercises and not legally mandated processes.

## Chile

### *Legislation, policies, practices and recent developments*

Chile is a signatory to ILO Convention 169 - which recognizes the collective property rights of these peoples over the lands they traditionally occupy and the right to be consulted before measures are taken that may affect them - and adheres to the free, prior and informed consent (FPIC) of ethnic communities, which is regulated by Supreme Decrees 66/2013 of the Ministry of Social Development and 40/2012 of the Ministry of Environment. Consultation processes are carried out as part of the environmental licensing process.

As for the communities, the environmental licensing process also provides for citizen participation. The process of citizen participation in environmental licensing processes is carried out for "projects or activities that generate environmental burdens for nearby communities, and this is requested by at least two citizen organizations with legal status or ten natural persons directly affected" (Consejo Minero (2021)

In addition, the 2050 National Mining Policy establishes actions that address social issues in order to develop a modern and sustainable mining industry that integrates territorial development. To this end, objectives were established to strengthen collaborative projects with neighboring communities and indigenous peoples, among others.<sup>82</sup>

<sup>82</sup> Ministry of Mining, 2050 National Mining Policy, [https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria\\_2050-Politica\\_Nacional\\_Minera.pdf](https://www.politicanacionalminera.cl/wp-content/uploads/2022/03/Mineria_2050-Politica_Nacional_Minera.pdf)



Chile also acceded to the Escazú Agreement - which promotes timely access to environmental information, participation in decision-making that affects the environment and access to justice to ensure compliance with environmental laws and rights - and ratified it in June 2022.

### *Diagnosis*

Chile has legislation in place to carry out consultation processes with indigenous peoples and citizen participation. However, such consultation processes are currently carried out concomitantly with environmental licensing processes and are therefore restricted to social impacts associated with environmental issues. There is no obligation to consult and inform communities on an ongoing basis as recommended by the TSM standard and therefore there are no formal spaces to resolve conflicts.

In this regard, private sector entities such as SONAMI have recommended strengthening the institutional framework for dialogue. Specifically, they recommend the creation of a Territorial Dialogue Agency. This agency would allow early dialogues prior to environmental licensing processes, in order to mitigate potential impacts of mining activities with communities in a preventive manner.<sup>83</sup> The need for this type of dialogue was recognized in the 2050 National Mining Policy (PNM2050), sponsored by the IDB. The Policy includes goals such as implementation of early participation as a tool to build the social license, seeking binding agreements with the community. It also proposes that 100% of medium and large mining companies develop shared value projects together with the surrounding communities. This will generate a greater alignment to the TSM standard and achieve joint benefits for the community, mining company and government. Finally, the regulation of the Escazú Agreement could establish information disclosure and dialogue mechanisms in addition to those established during the environmental assessment processes.

## Colombia

### *Legislation, policies, practices and recent developments*

Colombia has ratified ILO Convention 169 and the right to prior consultation extends to Afro-Colombian and other communities of African descent, in addition to the Roma people. Regarding access to information, public participation and access to justice in environmental matters, the law approving the Escazú Agreement was passed in November 2022.

<sup>83</sup> SONAMI (XXX) pg. 16

For the mining sector, the provisions of social participation framed in the requirements of the EIA, the ANM defined terms of reference applicable for the development of social management programs and projects in the implementation of mining projects.

However, the Constitutional Court has issued rulings that require the ANM to hold citizen participation hearings where all mining projects that were evaluated as viable are presented in order to guarantee effective participation of the communities in the territories where mining activity is being carried out.

### *Diagnosis*

Colombia has mechanisms for citizen participation in line with international agreements, such as the prior consultation process, which in Colombia is extended to other communities.

However, the unique models of citizen participation for mining projects are tied only to the spaces defined in the EIAs and public hearings of the ANM, and these address mining-environmental issues and not exclusively social issues. It should be noted that the social management plans are prepared once the mining title has been granted and are subject to oversight by the mining authority. Consultations and citizen participation models do not generate vetoes and the ANM is autonomous in its decisions, given that the State is the owner of the nation's soil and subsoil resources, transcending regional or municipal interests.

Although Colombian regulations on citizen participation are extensive, mining conflict is high. There is an opportunity for regulatory improvement to corporate practices, such as adopting those applied by TSM's indigenous and community relationships protocol, which offer extended participation mechanisms and thus create broad spaces for community participation and involvement in the mining project.

The Escazú Agreement Law could generate extended and informed participation dynamics and opens a door to new spaces for citizen participation in mining projects to allow better communication between communities and mining operators. However, there is the challenge of regulating the law and clarifying how the new participation models opened up by the Escazú agreement will affect current and future mining projects. It should be recalled that the TSM standard was adopted by the ACM at the beginning of 2022, and it is expected that in a couple of years its member companies will comply with the mandatory nature of the specific actions required by the standard in terms of community relations.

## Peru

### *Legislation, policies, practices and recent developments*

Peru is also a signatory to ILO Convention 169 on indigenous peoples and thus the State must consult with indigenous peoples and obtain their free, prior and informed consent for laws, plans and projects that may affect them. This commitment is embodied in the Prior Consultation Law (Law 29.785).

Peru has also created a multi-stakeholder dialogue space such as the Mining and Energy Convergence and Best Practices Center (RIMAY) through DS 020-2018-EM. RIMAY aims to promote the adoption of best practices in mining and energy operations, as well as to ensure long-term agreements that contribute to generating stability, sustainability and governance.

In addition, in the Regulation for Environmental Protection and Management for Mining, Processing, General Labor, Transportation and Storage Activities DS 040- 2014-EM. It frames the provisions for the elaboration of the EIA and within which the requirements for dialogue spaces in socialization of the environmental measures are established and dictates the elaboration of the Social Management Plans. Regarding the creation of additional opportunities for citizen participation and access to environmental information, the Peruvian Congressional Commission definitively shelved the ratification of the Escazú Agreement.<sup>84</sup>

### *Diagnosis*

The country has basic guidelines for the participation of communities in mining projects and is also a signatory to international agreements to ensure that indigenous peoples are consulted prior to the implementation of the project. However, the result of these consultations does not generate a veto in the institutions' decisions and development of the projects.

The initiative of the Mining and Energy Convergence and Best Practices Center (RIMAY) has created a space for coordination and articulation between the State, the private sector, civil society and academia, where best practices have been shared and promoted, and has also served as a platform for dialogue and high-level technical discussion to reach consensus in order to make better use of mining-energy resources for the country's development. However, although the country has spaces such as RIMAY, they are not sufficient to address the conflicts in the mining regions.

<sup>84</sup> *La República, Comisión del Congreso archiva definitivamente el Acuerdo de Escazú, (2022).*

As for the regulatory provisions contained within the legal framework of the EIA, they are not comparable to the actions contained in the TSM Indigenous and Community Relationships Protocol, since the latter seeks additional participation spaces to those required by the EIAs. The TSM protocol seeks to ensure that a system of processes is in place to ensure that COIs are periodically reviewed throughout the life of the project and to support the development and maintenance of meaningful relationships to achieve an understanding of each other's views and translate them into action planning activities of the mining company itself.

On the other hand, the non-ratification of the Escazú agreement could be understood by the community as limiting access to environmental information, which could generate conflicts in the territory and zones of influence of mining projects.

There is an opportunity for regulatory improvement since the scenarios for citizen participation between environmental and social issues are not differentiated and are being addressed in the same scenario, prior to environmental licensing, which is generating disagreements in communities. These differentiated spaces are in line with the best practices of standards such as TSM.



## Law and working conditions

### Best practice reference

The TSM safety and health protocol assesses that mining companies have established clear accountability for safety and health management and performance, and that those commitments have been established and communicated to employees, contractors and suppliers. In addition, it requires established processes to effectively manage and plan safety and health controls in a way that prevents incidents and recognizes that safety and health is a shared responsibility between the company and the workers.<sup>85</sup>

### Brazil

#### *Legislation, policies, practices and recent developments*

Labor relations in the Brazilian mining sector are governed by labor regulations including the Consolidation of Labor Laws (CLT), the Collective Labor Convention (CCT), the Collective Bargaining Agreements and the Regulatory Norms for Occupational Health and Safety. These standards include applications for underground and hazardous activities.

<sup>85</sup> TSM, (2020) Safety and Health Protocol, <https://mining.ca/resources/guides-manuals/tsm-safety-and-health-protocol-2020/>

Brazil is a signatory to ILO Convention 176 on health and safety in mines. This agreement is regulated through Regulatory Norm 22 of the Ministry of Labor and Employment, specific for health and safety conditions in mining. It regulates occupational health and safety issues in mining operations.<sup>86</sup> This standard applies to all types of mining - underground, open pit, small scale (known as garimpos in Brazil) - as well as mineral processing and mineral research and includes topics such as movement and transport of people, work organization, equipment, among others.<sup>87</sup>

Notwithstanding the above, the accident rate in mining is high. Mining has the second highest mortality rate in Brazilian industry, explained in particular by coal mining and informal gold mining. For this reason, efforts have been made by the private sector, such as IBRAM's Special Program for Safety and Occupational Health in Mining, which helps mining companies, regardless of their size, to comply with safety requirements.<sup>88</sup>

### *Diagnosis*

The occupational safety regulations for the mining sector in Brazil contain the main recommended components of the TSM standard. This includes establishing processes to ensure that employees, contractors and suppliers working at the facility are aware of the company's safety and health commitments, training, dissemination of plans and so on.

However, the sector has high accident rates, particularly in the more informal links of the activity, which indicates opportunities to continue working on these issues. The technification of mining is presented as an opportunity to reduce these accident levels.

Finally, some of the current regulations could be revised to better reflect the reality of mining activities. These include updating safety requirements for subway mining activities, revising working time definitions to include internal travel within subway mines, considering revising working hours to allow for the international practice of 12 hours of work and 36 hours of rest, eliminating the restriction on women working in underground mines, and working on Sundays and public holidays.<sup>89</sup>

<sup>86</sup> IBRAM (2021) pg. 92

<sup>87</sup> MDNP (2022) *Ficha de País Brasil* pg. 8

<sup>88</sup> MME-BR (2022) *Book 5. Sustainable Mining Performance*. Pg 73-74

<sup>89</sup> IBRAM (2021) pg. 93

## Chile

### *Legislation, policies, practices and recent developments*

Chile has acceded to ILO Convention 176 on safety and health in mines and has been regulated through Supreme Decree 132/2002, Mining Safety Regulations, which was amended by Supreme Decree 30/2022. This establishes that companies with more than 100 workers must have a Risk Prevention Department, headed by an expert qualified by the National Geology and Mining Service (SERNAGEOMIN). For this service, plans and programs for the prevention of accidents and occupational diseases must also be submitted. The recent modification modernized the provisions applicable to small mining companies to guarantee the lives of their workers, including training plans, disclosure, accident reporting to SERNAGEOMIN, among others.

PNM2050 addressed security as one of its strategic themes. Within its social axis, the strategic objective is to improve the quality of life of workers through quality, inclusive jobs with high safety standards. To this end, it establishes concrete goals including achieving zero fatalities, reduction in severity and frequency rates of mining accidents, and occupational health indicators.<sup>90</sup>

### *Diagnosis*

Chile has adequate safety regulations, in accordance with TSM standards. It includes the obligation to create specialized areas within the mines, concrete action plans disclosed with employees, as well as disclosure. In addition, the recent modification of the Mining Safety Regulations addressed the need to clarify the safety standards and responsibilities of small mining companies in this area.

The implementation of this regulation has been accompanied in the last decade by a change in the safety culture of the Chilean mining industry. This is a consequence of the 2010 mining accident at the San José mine in Atacama, where 33 miners were trapped underground. The emblematic accident strengthened the national culture of mining safety, which explains almost 80% of the reduction in fatalities during this period.<sup>91</sup>

<sup>90</sup> Ministry of Mining - Chile (XXX) Mining 2050: National Mining Policy. Pg. 47

[https://www.minmineria.cl/EAE/doctos/doctos\\_7/Mineria\\_2050-Politica\\_Nacional\\_Minera\\_Final.pdf](https://www.minmineria.cl/EAE/doctos/doctos_7/Mineria_2050-Politica_Nacional_Minera_Final.pdf)

<sup>91</sup> SONAMI (2020) "SERNAGEOMIN analiza avances y desafíos en seguridad minera al cumplirse 10 años del accidente de la mina San José" <https://www.sonami.cl/v2/noticias/sernageomin-analiza-avances-y-desafios-en-seguridad-minera-al-cumplirse-10-anos-del-accidente-de-la-mina-san-jose/>

## Colombia

### *Legislation, policies, practices and recent developments*

Colombia has ratified ILO Convention 161 on occupational health services. In addition, in June 2022, it issued the National Mining Safety Policy under Resolution 40209, whose objective is to reduce mining accidents and improve working conditions and aims to reduce accident rates in mining in Colombia by 40% by 2025 and 80% by 2030.<sup>92</sup>

Additionally, there are two specific regulations for health and safety in mining, Decree 2222/1993 which issues the regulations for hygiene and safety in open pit mining works, and Decree 1886/2015 Safety regulations for subway mining works. The purpose of these decrees is to establish the minimum standards for the prevention of risks in open pit and underground mining operations, and to adopt the procedures for inspection, surveillance and control, in order to preserve the safety and health conditions in workplaces where these operations are carried out.

### *Diagnosis*

Colombia has a clear health and safety policy and regulations that are in line with the health and safety precepts of the United Nations. The local regulations are in accordance with the precepts of the TSM Safety and Health Protocol, which distinguishes actions in the prevention of accidents and implementation of health and safety training programs, as well as a performance report.

## Peru

### *Legislation, policies, practices and recent developments*

Peru is a party to ILO Convention 176 on safety and health in mines and has Law 29783 on Occupational Safety and Health, which is materialized in the mining sector in the Regulation on Occupational Safety and Health in Mining (DS 024- 2016-EM amended by DS 23-2017-MS). This regulation applies to mining activities in surface or underground deposits of metallic or non-metallic minerals and to activities related to mining activities, from civil constructions and mechanical and electrical installations to the use of machinery, equipment and accessories, mechanical maintenance, etc.

<sup>92</sup> Ministry of Mines and Energy Colombia (2022) National Mining Safety Policy. <https://acmineria.com.co/acm/wp-content/uploads/2022/06/Resolución-40209-de-2022.pdf>

## Diagnosis

In terms of safety and health, the country has explicit regulations based on international practices and in line with the requirements of the TSM Safety and Health Protocol for its members.



## Human rights and gender equity

### Best practice reference

The **TSM Preventing Child and Forced Labor Protocol** establishes the general approach adopted to verify that there are processes in place to ensure that there are no cases of child and forced labor as defined by ILO Conventions in companies participating in the TSM initiative.<sup>94</sup>

For gender, the **IGF's Gender Perspective in Mining Governance** is used as a reference. Specifically, it will review whether the country includes some of the IGF recommendations in terms of including legislative aspects, institutional reforms, land purchase policies, incorporation in impact assessment processes, community development, security and crisis management.<sup>95</sup>

## Brazil

### *Legislation, policies, practices and recent developments*

The Brazilian legal framework prohibits both child and forced labor. Brazil is a signatory to various international agreements that regulate this matter. In addition, child labor is prohibited by Article 7 of the Constitution and is regulated by various labor laws. Forced labor, on the other hand, is prohibited by the penal code. These laws are complemented by different policies and strategies to reduce these phenomena. However, child labor is still existent in Brazil with approximately 1.8 million minors working especially in the agricultural sector, explained in part by pandemic issues.<sup>96</sup> Although official monitoring reports on the subject do not explicitly refer to mining, there have been reports of child and forced labor in illegal mining, especially in the Amazonian departments.<sup>97</sup>

<sup>94</sup> TSM, (2019) *Preventing Child and Forced Labour Protocol*, <https://mining.ca/resources/guides-manuals/tsm-preventing-child-and-forced-labour-protocol/>

<sup>94</sup> TSM, (2019) *Preventing Child and Forced Labour Protocol*, <https://mining.ca/resources/guides-manuals/tsm-preventing-child-and-forced-labour-protocol/>

<sup>95</sup> IFG (2021) *Ibidem*

<sup>96</sup> US Department of Labor (2021) *Brazil - International Child Labor and Forced Labor Reports*. [https://www.dol.gov/sites/dolgov/files/ILAB/child\\_labor\\_reports/tda2021/Brazil.pdf](https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2021/Brazil.pdf)

<sup>97</sup> Mongabay (2021) "333 people rescued from slavery in Brazil mines since 2008, exclusive report shows" (3 August 2021) <https://news.mongabay.com/2021/08/333-people-rescued-from-slavery-in-brazil-mines-since-2008-exclusive-report-shows/>



Another way to analyze the issue of human rights and the mining sector is through the companies' commitments to human rights issues. Brazil is a signatory to the main international human rights treaties and, according to the United Nations Human Rights Office, is in the process of elaborating the Business and Human Rights Action Plan, the main tool through which the private sector is committed to these issues.<sup>98</sup>

Another tool that shows the commitment of the private sector in this area is the implementation of the Guidelines for Multinational Enterprises of the Organization for Economic Cooperation and Development (OECD). Brazil not only adheres to these guidelines, but even has a contact point located in its Ministry of Trade, and an inter-institutional working group includes the Ministry of Mines and Energy.<sup>99</sup>

The importance of gender equity has taken prominence in mining discussions in Brazil. The participation of women in the mining sector is only 13%, which has generated discussions at both governmental and private levels on the importance of implementing specific strategies and policies to make progress on this issue. This is reflected in initiatives such as the creation of Women in Mining (WIM) Brazil, as well as the Action Plan for the Promotion of Women in the Mining Sector sponsored by IBRAM and WIM Brazil.<sup>100</sup>

The Brazilian regulatory framework does not yet have specific norms or policies for gender equity in the mining sector. The country has general adhesions and policies on gender equity issues in general. The 2020/2023 Strategic Plan does not explicitly mention the issue of gender equity, nor is it explicitly incorporated in the 2050 National Mining Plan currently under construction.

### *Diagnosis*

Brazil has regulations and policies to address the issue of child labor and forced labor in accordance with TSM recommendations. While these regulations are complied with in the formal mining sector, there appear to be challenges in the small-scale and illegal mining sectors.

The mining sector is also generally committed to human rights issues, as evidenced by its action plan included in the working group implementing the OECD human rights guidelines. However, the definition of the Human Rights and Business Action Plan and its application to the mining sector is still pending.

<sup>98</sup> United Nations, *National Action Plans on Business and Human Rights*.

<https://www.ohchr.org/es/business/state-national-action-plans-business-and-human-rights>

<sup>99</sup> National Action Plans - Brazil. [https://www.gov.br.translate.google.com/producao-e-comercio-exterior/pt-br/assuntos/camex/pcn?x\\_tr\\_sl=pt&x\\_tr\\_tl=es&x\\_tr\\_hl=pt-BR&x\\_tr\\_pto=nui,sc](https://www.gov.br.translate.google.com/producao-e-comercio-exterior/pt-br/assuntos/camex/pcn?x_tr_sl=pt&x_tr_tl=es&x_tr_hl=pt-BR&x_tr_pto=nui,sc)

<sup>100</sup> IBRAM (2021) *Ibidem* pg. 36

In terms of gender, there is a commitment from the industry and civil society to advance the participation of women in the mining sector. This is demonstrated by joint initiatives such as the Action Plan for the Advancement of Women. However, there is no public policy or specific actions from the state such as those recommended by the IGF guidelines, nor is it foreseeable whether they will be included in the 2050 National Mining Plan currently under construction.

## Chile

### *Legislation, policies, practices and recent developments*

The Chilean legal framework contains the elements for the prohibition and control of child labor and forced labor. This includes adherence to the main international agreements on the subject of the United Nations and the International Labor Organization, prohibitions in the constitution and labor and criminal law, institutional mechanisms for monitoring and control, institutional coordination mechanisms and policies.

According to the U.S. Department of Labor, in some cases there are enforcement restrictions on some of these policies due to staffing constraints and requires enhanced criminal enforcement in the case of child labor in illegal activities.<sup>101</sup> The existence of child labor is low and is not an issue in Chilean mining.

As in the Brazilian case, Chile has commitments from the private sector regarding human rights that contribute to the reinforcement of good practices in this area. Since 2017, Chile has had a Human Rights and Business Action Plan, which was updated in May 2022 and in the preparation of which the private mining sector participated through Sonami, a guild that groups the large Chilean mining companies.<sup>102</sup> There are no explicit regulations regarding complaints and claims mechanisms, beyond the guidelines established in the plan. However, most large and medium-sized companies have this type of mechanism within their operations. Even so, according to MinSus, "the implementation in Chile of the criteria for the effectiveness of grievance mechanisms is heterogeneous", because not all companies have the same levels of accessibility and follow-up.<sup>103</sup>

<sup>101</sup> US Department of Labor (2021) Chile - International Child Labor and Forced Labor Reports <https://www.dol.gov/agencies/ilab/resources/reports/child-labor/chile>

<sup>102</sup> Ministry of Justice Chile (2022) Second version of the Human Rights and Business Plan. <https://ddhh.minjusticia.gob.cl/segunda-version-del-plan-nacional-de-dd-hh-y-empresas-es-aprobada-por-el-comite-interministerial/>

<sup>103</sup> MinSus: "Cooperación Regional para la gestión sustentable de los recursos mineros en los países andinos, 2022. Prácticas líderes, avances y desafíos de los mecanismos de reclamo operacionales mineros en la región andina. <https://minsus.net/mineria-sustentable/wp-content/uploads/2022/04/resumen-ejecutivo-practicas-lideres-avances-y-desafios-pendientes-de-los-mecanismos-de-reclamo-operacionales-mineros-en-la-region-andina.pdf>

Gender equity is a challenge for Chile, but there are some public policy coordination mechanisms to make progress on the issue. As in most countries, the participation of women in the mining sector is low, reaching only 10%.<sup>104</sup> Recognizing this challenge, the National Roundtable on Women and Mining has been established since 2018, coordinated between the Ministry of Women and the Ministry of Mining with the participation of the private sector, supplier companies and civil society. Between 2018-2021 the main achievement of the National Roundtable was the signing of the Mining Industry Decalogue for the Incorporation of Women and the Reconciliation of Work, Family and Personal Life, in which commitments are established among the actors to promote greater female participation in the sector, the implementation of Chilean Standard 3262:

Gender Equality and Work-Life Balance Management System, a voluntary standard that provides recommendations for the incorporation of women in the workforce, advancing women's participation in industry unions, adjusting infrastructure to the needs of men and women, work-life balance, among others. Another achievement of the roundtable was the incorporation of three goals within PNM2050, specifically to increase women's participation to 35% by 2050, increase women's participation in management positions, and the adoption of inclusion and diversity plans by 100% of the industry.<sup>105</sup> In the civil society sector, Chile has a chapter of WIM Chile with broad leadership in the sector and among peer organizations in the region.

### *Diagnosis*

Regarding the issue of child labor and forced labor, the Chilean government's legislation, policies and plans follow TSM's recommendations to avoid this type of phenomena in Chilean mining. Likewise, the industry, in addition to implementing many good practices, actively participates in human rights and business review bodies that reinforce these public policies.

In the area of gender equity, Chile covers most of the IGF recommendations through the National Roundtable on Women and Mining. This includes inter-institutional coordination, action plans, commitment of women in leadership positions, establishment of plans and programs in the private sector that include security issues, prevention of gender violence, crisis management, among others. However, there is no legal regulation that covers these commitments beyond the objectives set out in the PNM2050.

<sup>104</sup> SONAMI (2021) *Ibidem*. Pg. 60

<sup>105</sup> Ministry of Women and Gender Equality (2021) *National Roundtable on Women and Mining 2018-2021*. <https://min-mujeryeg.gob.cl/wp-content/uploads/2020/07/MESA-NACIONAL-MUJER-Y-MINERIA-2018-2020.pdf>

## Colombia

### *Legislation, policies, practices and recent developments*

The main objective of the National Strategy for the Guarantee of Human Rights 2014 - 2034 is to establish the conditions and guarantees for the recognition, respect, guarantee and realization of human rights

The 2018 Human Rights Policy for the Mining and Energy sector aims to generate a framework for action that allows the mining and energy sector to strengthen its contribution to the prevention, promotion, protection and guarantee of Human Rights, with a differential approach.

Both the national strategy and the sector policy address actions for the prevention of child and forced labor.

On the gender issue, in 2019 the Ministry of Mines and Energy issued gender guidelines for the mining and energy sector, a work supported by the IDB, the general objective of which was to generate a framework for action that allows the mining and energy sector to promote, strengthen and articulate initiatives that target the gender approach from the labor and community dimensions, as well as to promote its integration into sectoral planning and project implementation. In 2020, the Colombian Mining Association and the Ministry will draw up its Comprehensive Gender Policy Plan for the Colombian mining industry, which contains the roadmap to promote, strengthen and articulate initiatives aimed at integrating the gender approach from the labor and community dimensions. Finally, Colombia has a chapter of WIM Colombia, a process that accompanies the activities of the public and private sectors.

### *Diagnosis*

Colombia, as a member of the UN, is bound by the UN Guiding Principles on Business and Human Rights and as a member of the OECD, the country applies the standards of business conduct that promote the prevention of child and forced labor. In addition, its Human Rights Policy for the Mining and Energy Sector has specific actions for the eradication of child and forced labor. Based on the above, Colombian regulations are in line with the actions of the TSM Preventing Child and Forced Labor Protocol, which seeks to prohibit this practice in all aspects.

In terms of gender, the Colombian mining and energy sector recognizes that gender equity is a public policy priority with implications both in terms of rights and productivity<sup>106</sup>. Colombia is the first country in Latin America with a roadmap to promote the inclusion of gender equity in the mining sector.

<sup>106</sup> IDB (2020) Oueda, S. *¿Por qué la diversidad y la inclusión son buenas para los negocios?* <https://www.idbinvest.org/es/blog/genero/por-que-la-diversidad-y-la-inclusion-son-buenas-para-los-negocios#:~:text=Esto%20es%20crucial%2C%20porque%20tener,empleador%20y%20generar%20ideas%20creativas>

Although progress has been made in the area of gender in recent years, there is still room for improvement in this area. From a regulatory standpoint, working conditions for women in mining companies in Colombia could be improved, such as wage parity.

## Peru

### *Legislation, policies, practices and recent developments*

Like Brazil and Chile, in terms of human rights, the Peruvian government has developed the National Action Plan on Business and Human Rights (PNA) 2021-2025 that addresses specific actions for the eradication of child and forced labor, with guidelines for the mining sector, which promote actions to monitor the progress of the business sector in the implementation of due diligence mechanisms, as well as transparency, training and multi-stakeholder dialogue.

Although Law 28983 establishes that it is the role of the State to promote and guarantee equal opportunities for women and men, there is no specific law or policy that promotes gender equity in mining. Peru has a chapter of WIM Peru with broad leadership in the sector and in relation to peer organizations in the region.

### *Diagnosis*

Peru is a signatory to the United Nations Human Rights conventions and under these guiding principles has developed its National Action Plan on Business and Human Rights (PNA) 2021-2025 which is organized into five strategic guidelines, i) Promotion and dissemination of a culture of respect for human rights in the business environment in accordance with the framework of international standards of the guiding principles and other international instruments, ii) Design of public policies of protection to prevent human rights violations in the business environment, iii) Design of public policies that promote respect for human rights by companies through accountability, investigation and punishment for the impacts of their activities, iv) Promotion and design of due diligence procedures to ensure respect for human rights by companies, v) Design and strengthening of mechanisms to guarantee those affected by human rights violations judicial, administrative, legislative or other means of redress. This plan has specific actions aimed at eradicating child and forced labor, which are extended to the mining sector. Therefore, Peruvian regulations are in line with the actions required by the TSM Preventing Child and Forced Labor Protocol.

On the other hand, in the area of gender, Peru shows regulatory lags, since there are no guidelines that promote gender equity in the mining sector. However, there are initiatives, such as Women in Mining Peru, which is working for the inclusion of women in the sector.

There is an opportunity for regulatory improvement to include or develop a roadmap for the inclusion of gender equity in mining company policies.

### 2.3.3. Governance aspects



## Transparency

### Best practice reference

For this area, different transparency guidelines and/or initiatives were analyzed, including the Extractive Sector Transparency Measures Act, Transparency International Mining Chapter. Because of its relevance in Latin America, the **Extractive Industries Transparency Initiative (EITI)** was selected as an approximate, although not necessarily conclusive, measure of transparency in the extractive industry. The overall purpose and objective of EITI is to make natural resource revenues and their management more transparent, with the understanding that greater transparency should reduce corruption, and that revenues generated from the extraction of mineral (and hydrocarbon) resources can transform economies, reduce poverty and increase the quality of life of the entire population in resource-rich countries.<sup>107</sup>

## Brazil

### *Legislation, policies, practices and recent developments*

Brazil is not a signatory to the Extractive Industries Transparency Initiative (EITI). There are transparency and reporting standards in Brazil, particularly for listed companies. In accordance with Decree 8777/2016 on open data, the ANM reports public information regarding topics such as the collection of Financial Compensation for the Exploration of Mineral Resources (CFEM), but does not report other tax contributions both federal and state made by mining companies. Other relevant information such as the distribution of royalties at the federal and municipal levels is also not reported.<sup>108</sup>

There are some civil society platforms such as [www.resourceprojects.org](http://www.resourceprojects.org) that report the main contributions of companies in the Brazilian extractive sector, which amount to USD 21 billion, in 60 projects.

<sup>107</sup> Extractive Industries Transparency Initiative (EITI), <https://eiti.org/es/documents/logros-y-opciones-estrategicas-evaluacion-de-la-iniciativa-para-la-transparencia-de-las>

<sup>108</sup> IBASE and Publish What You Pay (2021) In search of transparency: ending opacity in Brazil's Extractive Sector. [https://www.pwyp.org/wp-content/uploads/2021/10/IBASE%C2%AD\\_PWYP\\_Report\\_MinasRio\\_Brazil\\_EN.pdf](https://www.pwyp.org/wp-content/uploads/2021/10/IBASE%C2%AD_PWYP_Report_MinasRio_Brazil_EN.pdf)

## *Diagnosis*

Brazil does not have a unique and validated information platform for tax contributions in the mining sector as recommended by a standard such as the EITI. Although there is information on the CFEM, there is no information on other taxes, nor is there a single source for recording the destination of the resources paid by the mining sector. Nor of other environmental and social contributions by companies. Interested parties must therefore rely on mining company reports directly, without the possibility of validating such information against an official source.

## Chile

### *Legislation, policies, practices and recent developments*

Chile is not a member of the EITI, although in recent years the possibility of its membership has been discussed. However, Chile has transparency rules, especially for those companies listed on stock exchanges that have public reporting requirements that allow disclosure of relevant tax information.

There is also the **Mining Transparency Project**, led by Chile Transparente - the Chilean chapter of Transparency International - with the support of SONAMI, the Mining Council and COCHILCO, with the participation of research institutions such as the Center for Copper and Mining Studies (CESCO) and Alta Ley. It is a platform that contains information on the mining sector in several dimensions: production, fiscal and tax contribution, use of resources such as water and energy resources, employment, mining safety, tailings, and lobbying and management of private interests. Participation in this initiative is voluntary and the information is not corroborated or compared against public sources of information.

## *Diagnosis*

Although Chile is not part of the EITI, it has tools available that reflect the spirit of transparency contained in this standard. The transparency portal contains relevant information on the sector and includes the most important actors in Chile. However, this exercise could be strengthened through a more active participation of public entities and civil society to generate discussions of trust within different segments of society regarding the contributions of mining to the country.

## Colombia

### *Legislation, policies, practices and recent developments*

EITI member since 2014 with satisfactory progress status. Although it started out as an initiative focused on comparing the payments made by extractive companies and those received by national and local governments, it has made progress in including other elements of the industry's value chain, such as the amount of work produced by these projects or the benefits that have been implemented in the communities as a result of them. The last report published was in 2019 and the process for the second validation will begin in October 2022. In addition, the EITI initiative is carrying out processes at the sub-national level to bring information closer to the mining communities.

In 2019, the private sector - through the MCL - signed the Pact for Transparency with the Vice-Presidency of the Republic and the Transparency Secretariat, which establishes mechanisms to mitigate corruption risks through different regulatory tools and best practices.

### *Diagnosis*

The Ministry of Mines and Energy and the EITI International Secretariat in April 2022 signed a Memorandum of Understanding that establishes a framework to develop activities aimed at the exchange of good practices, lessons learned and tools that contribute to strengthen the implementation of the principles and the Standard. Among the topics identified are the exchange of experiences in data collection and collation, implementation of the gender policy, energy transition and implementation of EITI at the territorial level, and the participation of civil society, which strengthens and validates the discussions.<sup>109</sup> The standard is not yet applied by 100% of the sector, particularly by small-scale companies, their reports are still lagging behind in time, and the information has not yet been appropriated by the general public, although initiatives at the subnational level are noteworthy.

<sup>109</sup> Bnamericas, (2022), Colombia reafirma compromiso de buenas prácticas con EITI, iniciativa mundial para la transparencia en la industria extractiva, <https://www.bnamericas.com/es/noticias/colombia-reafirma-compromiso-de-buenas-practicas-con-eiti-iniciativa-mundial-para-la-transparencia-en-la-industria-extractiva>



## Peru

### *Legislation, policies, practices and recent developments*

Since 2005, Peru has been part of the EITI initiative after voluntarily implementing a series of measures related to guaranteeing the governance of the initiative and transparency mechanisms to ensure compliance with EITI standards for transparency and accountability of extractive activities. The initiative has been implemented at the sub-national level for the regions of Apurímac, Arequipa, Loreto, Moquegua and Piura.<sup>110</sup>

### *Diagnosis*

In May 2022, EITI announced that Peru has been temporarily suspended from this partnership for failing to report on the performance of extractive activities in the mining and hydrocarbons sector. The information to be submitted by the Peruvian government corresponded to the eighth report of the 2019-2021 period, according to the work plan initially approved; however, although the deadline was extended, this commitment was not met, which led to the suspension of the country.<sup>111</sup>

In addition to the EITI, Minsus in its 2022 report on the transparency of mining companies in Peru found that there are a number of weaknesses in the transparency of information for mining governance. Among these, the gap between regulatory progress and available environmental information stands out (the greatest deficit of information is concentrated in environmental variables). The available government and corporate sources are not designed for the application of citizen oversight. There is no denying that Peru has made progress in regulatory issues for the sector. However, in the applicability and materialization of the norms, the balance is negative, with a lot of administrative information, which is difficult to navigate in the available portals, and little quantitative information in the case of the state apparatus, in addition to little information at a very aggregated level in the case of mining companies. The problems can be categorized as: (i) Lack of open information for a set of variables and dimensions of mining governance, mainly concerning the environment and human health. (ii) Excess of administrative information that is not systematized in quantitative time series data. (iii) Little quantitative information available aggregated at a level that does not respond to the concerns and information demands of the local community.<sup>112</sup>

<sup>110</sup> EITIperu, Reportes, <https://eitiperu.minem.gob.pe>

<sup>111</sup> Actualidad Ambiental, Alerta para la transparencia ambiental: ¿qué le espera a Perú luego de ser suspendido de la EITI?, <https://www.actualidadambiental.pe/opinion-alerta-para-la-transparencia-ambiental-que-le-espera-a-peru-luego-de-ser-suspendido-de-la-eiti/>

<sup>112</sup> Minsus, (2022), La transparencia de las empresas mineras en Perú, [https://minsus.net/mineria-sustentable/wp-content/uploads/2022/05/Transparencia-en-empresas-mineras-RGB\\_mod.pdf](https://minsus.net/mineria-sustentable/wp-content/uploads/2022/05/Transparencia-en-empresas-mineras-RGB_mod.pdf)



## Sector governance

### Best practice reference

The Fraser Institute's **Mining Policy Perceptions** Index (PPI) provides a comprehensive assessment of the attractiveness of mining policies in a jurisdiction and serves as an industry perception of how attractive the policies of different jurisdictions are. Among the criteria included in the survey were: uncertainty about the administration, interpretation and application of existing regulations, environmental regulations, regulatory duplications and inconsistencies, taxation, uncertainty about land claims and protected areas, infrastructure, socioeconomic agreements, labor issues, geodatabase, and security.<sup>113</sup>

The Natural Resource Governance Institute's (NRGI) **Natural Resource Governance Index** (RGI) - a think tank dedicated primarily to improving the governance of countries over their natural resources to promote sustainable and inclusive development - is a diagnostic tool for measuring the governance of the mining, oil and gas sectors. It also highlights opportunities for policy and practice reform at global, regional and national levels.<sup>114</sup>

### Brazil

#### *Legislation, policies, practices and recent developments*

Brazil fell back in the PPI ranking between 2020 and 2021, from 56 out of 77 in 2020 to 68 out of 84 in 2021. Its rating was 44.7 in 2021 compared to 66.5 in 2021, a decline of 32.8%. The report, however, gives no indication of the reasons for the decline in the index. Brazil also does not have information available on the Natural Governance Resource Index specifically for the mining sector. Other sources of information were reviewed in order to assess the state of governance in the mining sector. The OECD's "Regulatory Governance in the Mining Sector in Brazil" report reviews the institutional strength of the mining sector through an analysis of the functioning of the ANM-BR, created as an independent entity in 2017, as well as the regulatory process. The report concludes that the creation of the ANM has been positive in terms of establishing an independent entity in charge of the administration of the mining resource and that the regulations have advanced in recent years, specifically in terms of dams and tailings. Some of the report's recommendations include strengthening the entity's budget so that it can fulfill its mandated functions, improving the use of information in regulatory construction, coordinating regulation with federal authorities, strengthening mining oversight and simplifying procedures.<sup>115</sup>

<sup>113</sup> Fraser Institute (2021), <https://www.fraserinstitute.org/categories/mining>

<sup>114</sup> NRGI, *Natural Resource Governance Index 2021*, <https://resourcegovernance.org/analysis-tools/publications/indice-de-gobernanza-de-los-recursos-naturales-2021>

<sup>115</sup> OECD (2022) *Ibidem*.

Finally, within the construction of the 2050 National Mining Plan, its thematic axes include the strengthening of sectorial institutions and the functioning of regulatory agendas.<sup>116</sup>

### *Diagnosis*

The latest Fraser Institute report indicates a significant drop in Brazil's PPI, but does not present detailed information to help explain this decline.

The OECD report mentioned above helps to identify some aspects included in the index. As indicated, in Brazil there are some opportunities for improvement in the coordination of regulatory enforcement between different levels of government, in the administrative efficiency of the ANM, and in the use of technology for regulation creation. Some of these recommendations are being taken into account in the new National Mining Plan.

## Chile

### *Legislation, policies, practices and recent developments*

According to the PPI, Chile ranked 38th out of 84 in 2021 compared to 23rd out of 77 in 2020. Although it is the best ranked jurisdiction in the region, the overall decline was explained by uncertainties perceived by investors regarding changes that would affect the sector, which were presented and discussed during the National Constituent Assembly.

As for the NRG natural resource governance index, in 2017 it obtained 81 out of a possible 100 points, placing it in second place in the ranking, reflecting an adequate overall rating against mining governance systems in the country. Chile was not included in the 2021 ranking. In terms of government plans, PNM2050 includes institutional strengthening among its strategic objectives. The fundamental objective is for the state to provide conditions for the development of the mining sector. This includes: "Having a modern and transparent institutional framework with efficient management, ensuring the development of the industry for the benefit of the country, having a legal framework for the mining sector for sustainable development in the long term, promoting the appreciation of mining by society, strengthening the development framework aimed at the sustainability of small and medium mining, taking advantage of all the country's wealth, and strengthening Codelco and Enami as state-owned companies and international benchmarks."<sup>117</sup> Specific objectives include strengthening entities such as the Ministry, SERNAGEOMIN, strengthening oversight, establishing clear and stable rules, including fiscal rules, and optimizing procedures.

<sup>116</sup> <https://www.gov.br/mme/pt-br/assuntos/secretarias/geologia-mineracao-e-transformacao-mineral/pnm-2050>

<sup>117</sup> Ministry of Mining (2021) *Ibidem*. Pg. 34

## *Diagnosis*

Chile presents the best results for the region in both the Fraser PPI ranking and the NRG1 natural resource governance index. In the former, however, the latest measurement showed a drop in its global positioning due to the uncertainty of the 2022 elections.

PNM2050 included a strategic objective related to institutional strengthening that included criteria included in the PPI questionnaire. These include stability of rules of the game, procedures, environmental, social and tax regulatory clarity. Regarding the latter, the discussions carried out in 2022 on the Chilean Political Constitution as well as reforms to the Chilean tax regime could affect the PPI ranking in its next version.

## **Colombia**

### *Legislation, policies, practices and recent developments*

Colombia's PPI score decreased due to the perception of uncertainty on the part of mining sector entrepreneurs, mainly due to the presidential elections, which have been the main reason for private sector speculation. This has resulted in Colombia dropping from 64th to 62nd place between 2020 and 2021 and thus occupying 51st place among 84 mining jurisdictions in 2021.<sup>118</sup>

In terms of the NRG1 natural resource governance index in 2021, Colombia's mining sector has a "good" performance rating. The assessment, which focused on gold mining (due to its wide dispersion in the country and the large number of titles. In 2020, gold and precious metals accounted for 37% of a total of USD 7700 million in mining exports), shows progress from the 2017 assessment result. Value extraction, where licensing and taxation and local impact are evaluated, made significant progress, rising from 69 points in 2017 to 75 in 2021. However, revenue management, which evaluates the national budget process, subnational distribution of revenues from natural resources and sovereign wealth funds, received the highest score of 83/100.<sup>119</sup>

## *Diagnosis*

Colombia has improved its mining titling governance thanks to the ANNA Mining online platform developed and implemented by the National Mining Agency (ANM). During 2021, the ANM was able to evaluate 100% of its stock of Concession Contract Proposals submitted up to 2018, adding to this effort those submitted during 2019 and 2020. As of November 30, 2021, 78% of the proposals submitted during 2021 had been evaluated, exceeding the goal set for that year, which had been agreed at 70%. As a result, a total of 1,470 Contract Proposals were made viable.<sup>120</sup> However, there is still room for

<sup>118</sup> Fraser Institute (2021), <https://www.fraserinstitute.org/categories/mining>

<sup>119</sup> NRG1, Natural Resource Governance Index 2021, Colombia, <https://resourcegovernanceindex.org/country-profiles/COL/mining?years=2021>

<sup>120</sup> National Mining Agency (ANM). Rendición de cuentas 2021. <https://www.anm.gov.co/?q=la-anm-presento-a-los-colombianos-el-balance-de-su-gestion-2020-2021>.

improvement in the granting of titles with more expedited procedures and more robust due diligence.

Regarding local impacts, there has been progress in the regulation of environmental impact studies by the National Environmental Licensing Authority (ANLA), as well as in the processing of environmental licenses through the VITAL platform. However, it is not yet possible to consult licenses online. In terms of transparency, there has been no progress in the mandatory disclosure of tax and royalty payments and beneficial ownership information, requirements of the EITI transparency standard, which could negatively affect the second validation process to be carried out in October 2022.<sup>121</sup> In terms of revenue management, according to the NRGi results, the mining sector remains at the "good" governance level with 83 points, thanks to the solid practices and robust systems of transparency and access to information developed for the general royalty system.

Although the country has a favorable international assessment of the sector's governance, there is a perception of uncertainty on the part of investors that may affect investments in new mining projects in the country. There is an opportunity to generate a diagnosis with the new policies that the current government will develop and implement for the mining sector between 2022 and 2026.

## Peru

### *Legislation, policies, practices and recent developments*

Between 2020 and 2021 Peru saw a decrease in its PPI score of almost 29 points, the largest in the region. Respondents raised significant issues around environmental regulations, regulatory duplication and inconsistencies, and safety, which - along with uncertainties about possible modifications to the sectoral fiscal framework and interventions in the sector - caused Peru to rank 69th out of 84 jurisdictions surveyed, dropping 27 places from the previous year.<sup>122</sup>

As for the perception of the NRGi in 2021, Peru's mining sector scored 75 out of 100, improving 13 points over the 2017 NRGi. This increase is due to better governance recorded in value extraction components, such as revenue management, which moved into the "good" performance band. Revenue management registered the greatest improvement - a 21-point increase - driven by the quality of the updated information on the Ministry of Energy and Mines' portal on reserves, production and exports of the Peruvian mining sector.<sup>123</sup>

<sup>121</sup> NRGi, *Natural Resource Governance Index 2021, Colombia*,

<https://resourcegovernanceindex.org/country-profiles/COL/mining?years=2021>

<sup>122</sup> Fraser Institute (2021), <https://www.fraserinstitute.org/categories/mining>

<sup>123</sup> NRGi, *Natural Resource Governance Index 2021*, <https://resourcegovernance.org/analysis-tools/publications/indice-de-gobernanza-de-los-recursos-naturales-2021>

## *Diagnosis*

Although the results of the standards chosen for the analysis of the governance component are reversed in 2021, they can be explained in two dimensions: (i) the drop in PPI points is the conjunctural result of a perception of the private sector to the uncertainty of political character and stability of the country with a high perception of risk of nationalization and change of regulations of the mining sector, in addition to an increase of regulations especially of environmental character that are not articulated with the Ministry of Energy and Mines or with the sector in general; and (ii) for its part, the country has improved its governance, as measured by the natural resources governance index, due to an improvement in the access to information by the Ministry of Mines. However, there is still high uncertainty on the part of investors because from an environmental point of view, there is a wide implementation gap between the legal framework and its application. However, the private sector, together with the government, has implemented a series of Executive Boards (sectorial and transversal) that will seek to eliminate bottlenecks that prevent the productive take-off of different economic sectors.<sup>124</sup>

<sup>124</sup> Ministry of Economy and Finance, 2017.

[https://www.mef.gob.pe/en/?option=com\\_content&language=en-GB&Itemid=101108&view=article&catid=100&id=5504&lang=en-GB](https://www.mef.gob.pe/en/?option=com_content&language=en-GB&Itemid=101108&view=article&catid=100&id=5504&lang=en-GB)



**3.**

**Investment,  
capabilities and  
next steps**

This chapter analyzes the capacity and capability conditions of public institutions in Brazil, Chile, Colombia and Peru, as well as the possible impacts on mining investment when implementing green mining standards, and proposes a roadmap to advance in the construction of good regulatory practices.

## 3.1. Investment analysis, capacity and capability

### 3.1.1. Efficiency in the use of resources

From the point of view of water and biodiversity management, the governance frameworks identified by international best practices show that there are gaps between local regulation and private sector guidelines. Existing regulations are generally limited to a delivery of results (mostly static), tests and models that are applied prior to the granting of the mining title. However, for countries such as Peru, where there is legislation that includes environmental management in the licensing process, additional regulation on this issue is considered unnecessary, as the imposition of a new regulation could create a barrier to investment. Furthermore, additional water management and biodiversity regulations may negatively impact operations.

Also, more regulations would imply greater capacities and skills from public institutions to follow up on these new regulations. Different documents consulted for this work show that there are gaps between the number of officials dedicated to the evaluation of proposals or licensing with regard to those dedicated to the inspection of mining projects. There are also opportunities to implement new technologies that enable efficient surveillance and control from the public sector.

It should be noted that Brazil, Chile and Colombia do not have legislation that requires the inclusion of robust governance frameworks for water and biodiversity management in their environmental licenses. While there are requirements during licensing processes, there are opportunities to improve the participation of civil society and communities in the governance of these processes. At the same time, it should be noted that IBRAM and ACM, the mining company associations in Brazil and Colombia, respectively, are adopting standards such as TSM, with which the mandatory levels of activities related to broader governance frameworks different from those framed in local regulations will be applied voluntarily by the mining companies that are part of these associations.



### 3.1.2. Circular principles and waste generated

There are opportunities to improve policies and/or regulations in LAC in terms of circular models for waste generated. Although there are regulations on tailings management, with different levels of depth, most of the activities are carried out voluntarily by the mining companies, either on their own initiative or following good practices.

From a standards standpoint, there is no single protocol that specifically indicates actions to be taken. However, standards such as the TSM and IFC standards outline specific actions to be taken into account in some areas for tailings and mine closure issues. These actions consider principles of circular economy and community safety.

It is important to note that, in the case of tailings plants, although local regulations in Brazil and Chile are strong, there are gaps when compared to international standards such as TSM. International standards include practices of inclusion, participation and analysis of risks that communities may have, in addition to the principles of utilization and circular models of the waste obtained in the process. In the case of Colombia and Peru there is no specific law for tailings - the issue is addressed in other existing regulations - and the actions to be taken are mostly stipulated in the environmental impact studies. Colombia and Brazil do not have a specific law on mine closure. The minimum activities to be considered are stipulated in the environmental and mining frameworks of these two countries.

On the other hand, the issue of mining environmental liabilities, which is a result of the development of the activity due to bad practices, has generated negative impacts on the environment. Only Peru has an exclusive law on environmental liabilities. Chile and Brazil go into this issue in greater depth in some regulations and plans; however, these issues could be made clearer. In the case of Colombia, the regulations do not exist and only environmental liabilities have been identified in a general manner.

There is a great opportunity to improve regulation in the areas mentioned above, given that there is no perception in any of the four countries that the sector is over-regulated in these areas, so that clear regulations will not represent a barrier to investment; on the contrary, it will define the type of investment that is established in the country.

For Colombia and Brazil, the adoption of standards such as TSM will help in terms of reputation and best practices for the mining sector, so that any improvement to local regulations on tailings, mine closure and environmental liabilities can boost local best practices and strengthen controls and monitoring of mining operations by public institutions and the community.

### 3.1.3. Climate change and energy efficiency

Brazil, Chile, Colombia and Peru are currently taking general actions in line with the international commitments adopted to combat climate change. However, local regulations and regulatory frameworks to improve energy efficiency are diverse and remain to be regulated, and are mostly indicative for the industry. This implies that, to date, the actions of the mining companies are entirely voluntary. These actions, for the most part, are taken in accordance with practices or guidelines dictated by international standards such as TSM and ICMM.

Specific initiatives are underway in Chile and Colombia in the production and use of green hydrogen with clear roadmaps and opportunities identified for the mining sector. The sector needs multiple cost-efficient alternatives to decarbonize. This requires storing renewable electricity at competitive costs; providing low- or zero-carbon fuel alternatives for the transportation sector; electrifying in remote locations without access to distribution networks; reusing as much of the existing efficient infrastructure as possible to be competitive, among others. The use of hydrogen as an energy carrier can be a concrete alternative for advancing decarbonization and can be used in multiple applications, with potentially massive adoption when reaching competitive costs.<sup>125</sup>

However, the expert perception about Peru is that regulating the mining sector and making it more regulated on climate change issues may be seen as a restriction for foreign investment. An additional regulatory imposition on this issue may generate negative impacts as not all mining companies (medium and small) would be able to meet the minimum requirements of the government. On the other hand, for Brazil, Colombia and Chile the perception is that clearer regulations would help define joint roadmaps between the mining sector and the government to address these issues, as well as to provide minimum standards and requirements for mining companies that are currently established and do not execute any action or plan regarding energy efficiency and climate change.

All those interviewed and the studies reviewed agree that public institutions in the region are not capable of following up on any type of regulation or additional action taken on this issue because the level of management by the institutions in charge of monitoring and controlling the mining sector is overwhelmed. The challenge is to incorporate new technologies that help improve efficiency in the control and monitoring of mining operations.

<sup>125</sup> Alta Ley, (2021), *Minería Verde Oportunidades y Desafíos*, [https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021\\_Mineria-Verde\\_Oportunidades-y-Desafios\\_version-ligera.pdf](https://corporacionaltaley.cl/wp-content/uploads/2021/05/2021_Mineria-Verde_Oportunidades-y-Desafios_version-ligera.pdf)

### **3.1.4. Efficiency in mining safety**

The perception that exists from a safety and health point of view is that governments and mining companies in Brazil, Chile, Colombia and Peru have established a clear responsibility for management and performance, embodying and following international regulations and agreements that are in line with standards such as TSM.

Therefore, from the investment point of view, there is no perception of over- or under-regulation, but rather there is an understanding that the stronger the regulations for these issues, the more life would be prioritized and the higher the reputation of mining companies in the development of the activity. Therefore, additional regulation in line with international guidelines does not present a barrier to investment, but there may be a lack of institutional capacity to monitor it.

### **3.1.5. Quality of life and inclusion**

In all four countries, citizen participation mechanisms for mining are tied to those defined in environmental frameworks, specifically those stipulated in environmental impact assessments. Peru, Colombia and Chile have guidelines that require indigenous communities to be consulted prior to project implementation, and although Brazil adheres to international conventions such as 169, there are still gaps in regulation. The interpretation for the four countries is that these consultations do not generate a veto on institutional decisions and project development.

There is a consensus perception of opportunities for regulatory improvement in Brazil, Chile, Colombia and Peru, since the scenarios for citizen participation between environmental and social issues are not differentiated and are being addressed in the same scenario, which generates disagreements among communities. These differentiated spaces are in line with the best practices of international standards, such as TSM. In addition, from the investment perception in these four countries, it is agreed that the risks associated with the interaction with the communities are foreseen by the mining companies. Therefore, creating spaces to improve the environment and private sector relations can help to improve the development of mining activity, for which it is essential that mining activity moves away from a welfare approach and is oriented to the development priorities defined by the territories.

In terms of gender equity, the perception of the four countries is that it is a public policy priority with implications in terms of both rights and productivity. Colombia is the only country analyzed that has a regulatory instrument at the resolution level to promote the participation of women in mining, although its actions are not mandatory but voluntary, while in Chile there is an inter-institutional working group where gender equity issues are discussed. Considering the interest in terms of ESG standards on the issue of diversity and inclusion, having explicit policy actions on this issue could encourage investments by companies that have prioritize these criteria.

### 3.1.6. Traceability, digitization and transparency

The implementation of traceability, transparency and digitalization tools strengthens access to relevant information to understand the environmental, social and productive performance of mining companies.

In none of the four countries is there a specific automation, digitization and traceability policy for the mining sector, nor is there a single standard that involves fully digital actions. However, some protocols - such as TSM - encourage the implementation of online reporting systems and access to real-time production data and environmental measurements.

In the area of mining transparency, Brazil and Chile do not belong to the EITI initiative, Peru has been temporarily suspended and Colombia is in the process of its second verification. Through the Mining Transparency Project, Chile seeks to encourage the application of information transparency standards in Chilean mining industry companies, as well as to generate a platform that manages to group the most relevant and interesting information for the different stakeholders. In Brazil, companies listed on stock exchanges have reporting obligations; however, there is no single source of fiscal and regulatory information on the sector in which the private sector, civil society and government participate.

Currently, countries are making progress in traceability and digitization. Chile is the regional leader in remote operations centers: seven of the eighteen main mining sites already have an operational remote mining center. Codelco was one of the first mining companies in Chile to implement a remote room (known as the Integrated Operations Center). However, the new deposits will have a "brain" where online information on mining processes is recorded and analyzed, thus achieving a real-time view of the operation as a whole, which enables integrated management decision-making.<sup>126</sup> Other operators with similar systems include Antofagasta Minerals, Teck and AngloAmerican. In the case of Peru, most of the Peruvian mining companies have incorporated digitalization issues in their operations, as is the case of Quellaveco, which would be the first fully digital mine in Peru, also driven by renewable energies.<sup>127</sup>

<sup>126</sup> *Minería-Panamericana, (2022), Automatización en minería: El futuro es ahora, <https://www.mineria-pa.com/reportajes/automatizacion-en-mineria-el-futuro-es-ahora/>*

<sup>127</sup> *Rumbo Minero, (2022), Automatización, digitalización y control para la industria minera: mayor productividad y eficiencia en los procesos mineros, <https://www.rumbominero.com/revista/informes/automatizacion-digitalizacion-y-control-para-la-industria-minera-ed-145/>*

The perception in the four countries regarding this issue is positive. All believe that greater access to information improves the reputation of the sector and provides more transparency to all stakeholders. There is an opportunity for improvement from the local regulations in each country to implement digitalization and process automation processes. Satellite monitoring, the processing of mining and environmental licenses, and real-time production reporting are major advances. The automation, digitization and reporting of information in real time would result in more effective and efficient government institutions because the time required to make decisions would tend to decrease.

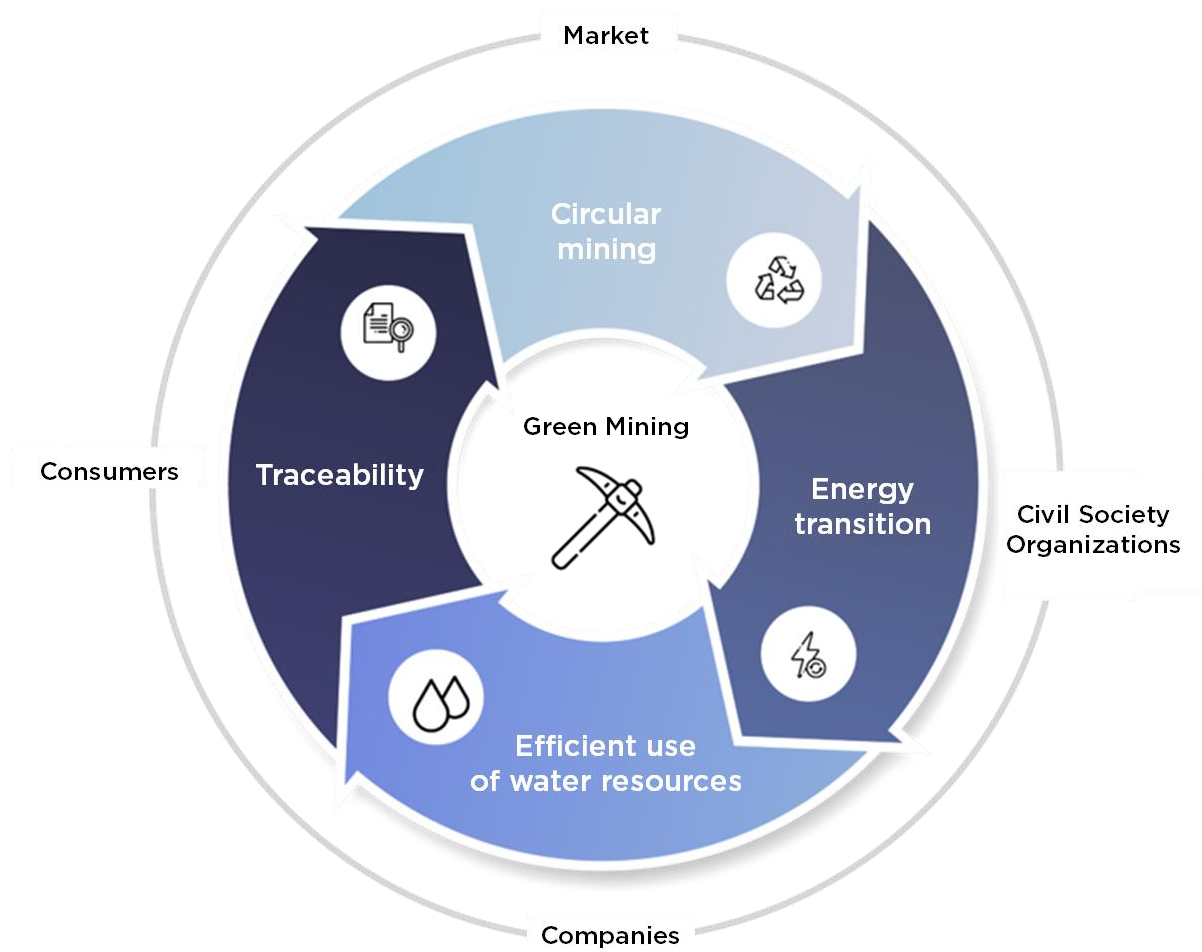
In conclusion, in terms of investment, capacity and skills, the countries studied show significant progress in several of the aspects analyzed, and there are also opportunities to review their regulations on issues related to green mining. These revisions and adjustments to bring them closer to the standards and best practices adopted and used by the private sector could attract capital from quality investors and greater leverage of the mineral resources of these countries, to the benefit not only of these investors but also of the governments and, above all, of the communities. It is important to note, however, that this regulatory adjustment in search of more and better investments must necessarily be accompanied by greater inspection capacity, the use of state-of-the-art technologies and greater digitalization in order to facilitate management.

### 3.2. Roadmap for Green Mining

This Green Mining Roadmap (HRMV) aims to contribute to the development and implementation of policies and regulations to promote sustainable mining in Brazil, Chile, Colombia and Peru, reinforcing the countries' commitment to sectoral best practices and development that will contribute to green mining. In this sense, the Green Mining Roadmap should promote investments that boost sustainability in the mining sector in Brazil, Chile, Colombia and Peru.

To develop this roadmap, the definition by Alta Ley on green mining was considered, in which thematic areas are established for diagnosis and implementation in a first stage (See Graph 1)<sup>3</sup>:

Diagram 1: Green Mining Diagram



Source: Alta Ley (2021)

Now, with regard to the methodological basis obtained from Alta Ley. This study adapts and adds thematic areas to achieve green mining from five main axes that contain the topics and subtopics previously identified with the ESG analysis tools. It also adds a transversal axis on occupational health and safety compliance.

The organization in the different axes seeks to visualize the suggested measures, aimed at improving regional regulations in order to have a clear, coherent and fair regulatory framework for the efficient use of resources in environmental, social and governance issues identified in the previous point. For this analysis, the axes defined (see Figure 2) are as follows:

- **Efficiency in the use of resources:** Addresses environmental issues, specifically those related to water management and biodiversity.

- **Circular mining:** Contains challenges for tailings, mine closure and environmental liabilities.
- **Energy transition:** Identifies actions needed for climate change and efficient energy use.
- **Quality of life and inclusion:** Considers actions for gender equity and community relations.
- **Traceability, digitalization and transparency:** Addresses actions necessary to achieve greater traceability, digitalization and transparency from the institutional level.
- **Safety efficiency (transversal axis):** Ensures that any actions, policies, plans, rules and regulations comply with international worker safety and health standards, prioritizing peoples' life and health.

**Diagram 2: Axes of the Regional Roadmap**



*Source: Author*

For each of the suggested axes and measures, each country will have to define specific lines of work to understand the areas of action. The detail of the lines of work will not be addressed in this consultancy as it exceeds its scope. However, it is suggested that this detail should at least contain the different national and regional management bodies involved in its execution.

There are two phases in which the lines of work will be addressed:

- **Phase 1.** Laying the groundwork: Actions to be carried out in the short term (less than one year), such as consolidation of concepts, designs, preparation of baseline studies for each country and regional plans, in order to establish solid foundations for the correct development of the regional roadmap.
- **Phase 2.** Enabling and promoting regional development: Tasks aimed at materializing public policy measures that lead governments to promote green mining in the region. These will be carried out in the short/medium term (a period greater than one year and less than five years).

**Monitoring and updating of the Roadmap:** It will be necessary to periodically review the Regional Roadmap in sufficiently short cycles given its temporality. Annual revisions are recommended. These reviews will be based on specialized technical studies and will make it possible to determine the degree of implementation of defined measures, as well as compliance with the established goals.

**Governance of the Roadmap:** The monitoring of the Roadmap will be led by a Follow-up Committee, which will be responsible for ensuring the implementation of the outlined measures. The Committee will be composed of members of the Ministries of Mines or designated government representatives. In addition, relevant community stakeholders and representatives of mining associations in each country should participate.

The Committee will be responsible for coordinating, with the various stakeholders, the implementation of the measures set forth in the main lines of action. To this end, the organization of a technical secretariat will be evaluated, which could be headed by an international organization such as the IDB, in order to assist in the management of the committee's activities, as well as to ensure compliance with and execution of the measures indicated in each of the lines of action. It is important to note that since it is a regional road map, the levels of action in each country are different and therefore actions may differ over time, which makes it necessary for the technical secretariat to follow up with each of the member countries.



### 3.2.1 Action Plan

The roadmap - see figure 3 - proposes strategies for each area of work, laying foundations and driving regional development.

The first step will be to define opportunities for regional policy dialogue (to be discussed in section 3) to address green mining issues.

Four actions are proposed under the **resource efficiency** axis. To lay the groundwork, we propose (1) defining what is meant by governance of water resources and biodiversity at the regional level among the different countries of the region. It is also proposed to (2) disseminate good governance practices based on international standards. For the empowerment phase, it is proposed to (3) develop a reference standard that defines governance in these matters and (4) define support mechanisms for the development of public policy.

The **circular mining** axis proposes 3 actions. The bases would be focused on (1) defining regulatory frameworks regarding issues such as tailings, mine closure and environmental liabilities. Additionally, these normative frameworks would be (2) discussed in the previously identified exchange spaces. In the empowering and driving phase (3), local regulatory frameworks would be adjusted to these practices.

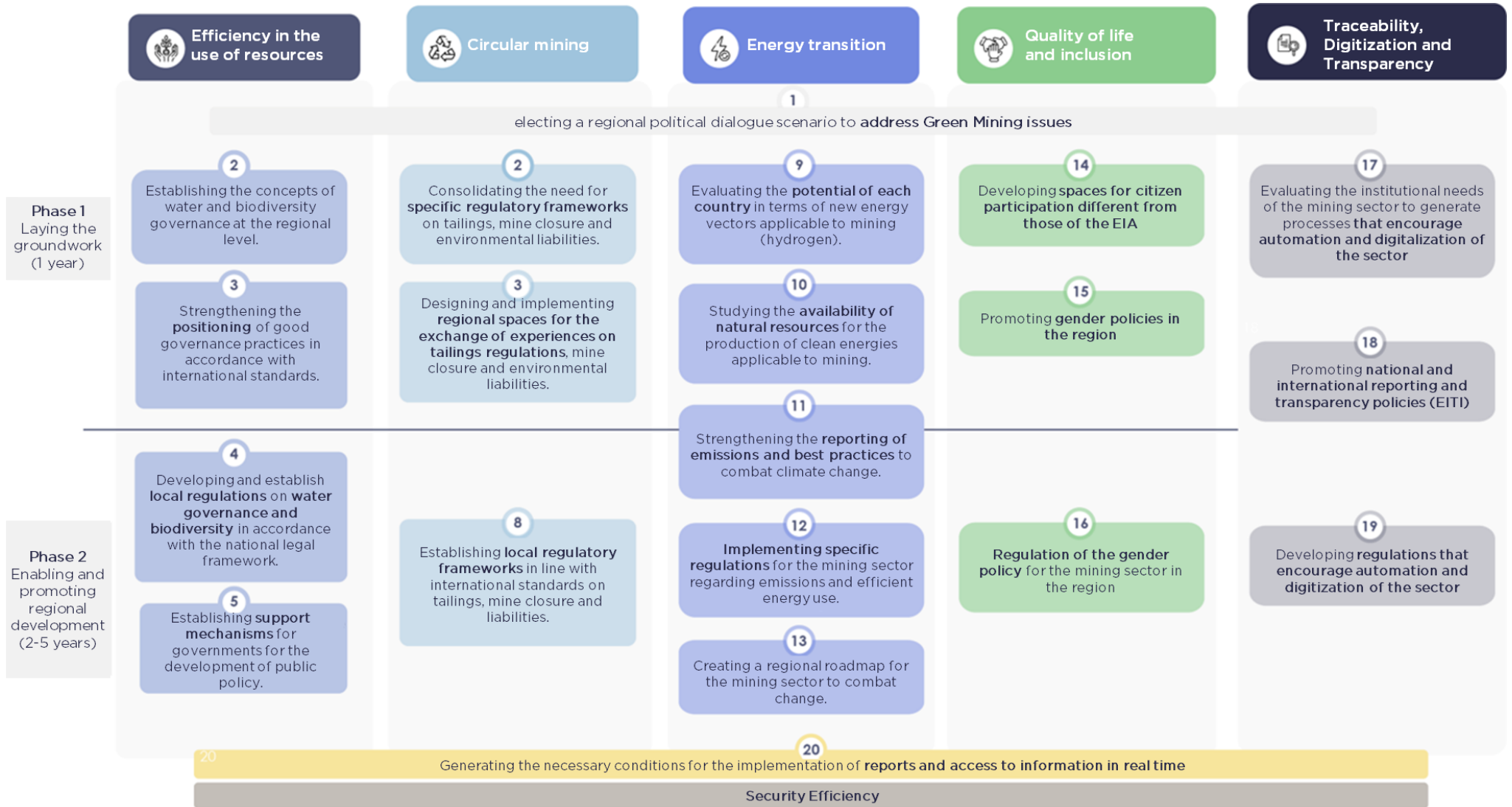
Five activities are proposed in the **energy transition** axis. The bases would be based on (1) assessment of the potential and (2) analysis of availability of each country's alternative energy supply for the mining sector, in addition to (3) strengthening the voluntary reporting of greenhouse gas emissions in the mining sector. Empowerment activities would include (4) the implementation of specific regulations for emissions reduction and energy efficiency, as well as (5) the creation of a regional roadmap to combat climate change.

The **quality of life and inclusion** axis would include 3 activities. The bases would include the (1) definition of how to empower spaces for citizen participation other than EIAs, as well as (2) the promotion of a gender policy for the mining sector in the region. The empowerment phase would include (3) promoting the regulation of gender policy in different countries.

The **traceability, digitalization and transparency** axis would consist of 3 activities. For the grassroots, this would include (1) assessing the sector's automation and digitization needs, as well as (2) encouraging the adoption of transparency standards such as EITI. The empowerment phase would include (3) the implementation of specific policies for digitization.

Finally, there would be an activity aimed at the generation of reports and access to roadmap information.

Diagram 3. Regional Roadmap



Source: Author

### 3.2.2. Regional dialogue opportunities

The following regional dialogue opportunities are proposed.

- **Annual Conference of Mining Ministries of the Americas (CAMMA):** The objective of this meeting is to define policies that position mining as the axis of social and economic development in Latin America and the Caribbean.
  - Advantages: It is the most important mining policy dialogue in the region, each year bringing together ministers, experts and representatives of international organizations specialized in the management of responsible mining development with high economic and social impact.
- **Latin American Mining Meeting - ELAMI:** Brings together key players from the public sector, industry and civil society to discuss the contribution of Latin American mining to the energy transition.
  - Advantages: This is an initiative of the mining industry associations of 7 Latin American countries (Argentina, Brazil, Chile, Colombia, Ecuador, Panama and Peru), and is supported by the Inter-American Development Bank (IDB).
- **EITI:** Meeting within the framework of the group of countries implementing the standard.
  - Advantages: International initiative with high recognition and acceptance by mining stakeholders.
- **Interministerial working group:** Creation of an international working group that aims to bring together all relevant public and private actors from entities and disciplines linked to the life cycle of the mining industry and its value chains in Brazil, Chile, Colombia and Peru, strengthening ties and supporting the willingness to deepen existing multilateral cooperation. For the creation of this working group, efforts can be directed in two directions. 1) It can take place under the framework of any of the previously mentioned dialogue scenarios or 2) Establish a new initiative focusing on issues and minerals relevant to the region.

### 3.3. Conclusions on investment, capacity and capability and roadmaps

In terms of efficiency in the use of water resources and biodiversity, there are opportunities to improve governance schemes in the countries through greater community participation, which should be accompanied by institutional strengthening. In terms of circular principles and waste generated, there are opportunities for improvement to strengthen regulations so that issues such as tailings, mine closures and environmental liabilities are brought closer to international standards. Likewise, the capacities of the authorities to oversee these issues must be strengthened.

In terms of climate change and energy efficiency, both the regulations and the authorities' skills can be strengthened to ensure compliance with global standards in this area. Regarding mine safety, there are perceptions of adequate standards to address this issue. However, there are opportunities to improve their monitoring and inspection. In terms of quality of life and inclusion, there are perceptions that point to the need to incorporate specific policies to create spaces for social dialogue beyond environmental processes, as well as to create gender equity policies. Finally, in terms of traceability, digitization and transparency, opportunities are identified to improve digitization processes to ensure sustainability standards, as well as the implementation of transparency initiatives such as the EITI.

Finally, a regional roadmap was proposed to advance the sustainability and responsibility of green mining in LAC. For the work axes, with the exception of safety, which is at a high level, twenty interventions or actions were identified to be taken by the region's governments to close gaps between local or national norms and the global standards of the mining industry. These actions are divided between those that allow foundations to be laid for a common understanding of the challenges and opportunities in these areas, as well as activities to enable and promote attention to the weaknesses in the areas evaluated through the revision of the regulatory frameworks for each of the areas.



**4.**

**Final conclusions  
and  
recommendations**

There are important advances in terms of legislation, regulations, policies, practices and recent developments to make green mining more entrenched in LAC. However, it is essential to continue working to close the gaps between industry practices and national regulations. The analysis presented here indicates that institutional capacity is a determining factor in the monitoring of existing regulations in the countries studied. Therefore, it is important to strengthen the rapprochement and commitment between the private sector, government institutions and interested communities, as well as the assistance of multilateral organizations that seek to support developing countries in meeting the objectives of combating climate change and developing economic sectors, including a sustainable mining sector.

Having conclusions focused on each of the chapters made it possible to identify specific areas of work, with a focus on national and regional issues in each of the different pillars of the roadmap. Among the most prominent are:

1. The definition of regulatory frameworks for tailings, mine closure and environmental liabilities for countries lacking regulations or whose current regulations do not reflect the practices and activities that the sector is carrying out to develop each of these activities.
2. There are opportunities for regulatory improvement in all countries for climate change and energy efficiency, which are the basis of the energy transition in these four Latin American countries.
3. As for citizen participation scenarios, these are being addressed mainly within the framework of environmental licensing processes and are not sufficient to address the concerns of communities regarding environmental and social issues. The Escazú agreement ratified in some countries of the study will create new dynamics for timely access to environmental information and participation in decision-making affecting the environment.
4. Progress is being made on the importance of advancing gender diversity issues and opportunities to incorporate these provisions into the countries' policies and regulations.
5. Finally, for issues related to the use of the latest technology and transparency in the mining sector, opportunities for improvement are identified for the digitization and real-time reporting of information to ensure constant and easily accessible communication between government authorities, companies and communities.

This study recommends deepening and elaborating a specific diagnosis for each of the axes and measures suggested in the roadmap for each country, where specific lines of work will have to be defined to understand the areas of action. The detail of the lines of work will show the precise short, medium and long term actions to be followed by the policy makers, as well as the details of the different national and regional management bodies involved in their execution.

In addition, it is recommended that an existing or new regional dialogue space or instance be defined to bring together all relevant public and private stakeholders from entities and disciplines linked to the life cycle of the mining industry and its value chains in Brazil, Chile, Colombia and Peru, strengthening ties and supporting the will to deepen existing multilateral cooperation. This space should address the issues identified and will serve as a meeting point for the exchange of experiences and the definition of joint actions for the development of a sustainable and inclusive mining sector.

## Appendix 1 - Details of standards used

### Environmental issues

Table 6 Environmental aspects - Appendix

Water	Environment	Tailings and mine closure		Climate change	Energy efficiency
Water management	Biodiversity conservation management	Tailings management	Mine closure management	Actions on climate change	Energy use and GHG emissions management

#### 4.1.1. Water

For the water component, water management was analyzed using the TSM standard Water Stewardship Protocol, which aims to evaluate the water responsibility of mining companies through plans and management systems related to water. It also seeks to verify companies' interaction with water users and communities of interest, as well as participation in planning and governance forums at the basin scale. This protocol requires that clear water objectives and targets be set, in order to measure performance and generate reports to aid decision making with constant communication to the general public.

The protocol consists of the verification of 4 indicators (Water Governance, Operational Water Management, Watershed Planning and Water Reporting and Performance) which are under the evaluation of more than around 50 specific actions to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>128</sup>:

- Establish senior management commitments and communicate them to employees and communities of interest regarding water responsibility.
- Generate interactions to better understand how relevant communities of interest present in relation to water use water resources including factors such as beliefs, customs and local traditional knowledge in relation to water.

<sup>128</sup> TSM, (2021) Water Stewardship Protocol, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/water-stewardship/>



- Direct or indirect participation in basin governance forums or groups with the communities of interest.
- Generate public reports on water that include performance against set objectives and targets
- Train relevant employees and contractors according to their roles and responsibilities

#### 4.1.2. Environment

For the Environment component, the management of biodiversity conservation was analyzed using the TSM standard called Biodiversity Conservation Management, which aims to measure the management of biodiversity conservation through plans and management systems implemented on important aspects of biodiversity. These plans must have clear corporate commitment and responsibilities and must be communicated to the relevant employees in order to support biodiversity conservation management issues. It also requires the preparation of reports on biodiversity conservation, in order to provide information for decision-making. Biodiversity conservation reporting should include elements such as policies, monitoring, initiatives and biodiversity must be communicated to the public.

The protocol consists of the verification of 3 indicators (Corporate biodiversity conservation commitment, accountability and communications, Mine site biodiversity conservation planning, implementation and performance, Biodiversity conservation reporting) which are under the evaluation of more than 30 specific actions to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>129</sup>:

- Establish a manifesto by senior management and communicate it to the communities of interest and employees. This manifesto has to be in line with the intent of the biodiversity preservation and mining framework.
- Consult with key communities of interest regarding biodiversity conservation management.
- Create biodiversity conservation reports and communicate them internally and externally to all stakeholders.

<sup>129</sup> TSM, (2020) Biodiversity Conservation Management, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/biodiversity-conservation-management/>

### 4.1.3. Tailings and mine closure

For the analysis of the Tailings component we used the TSM standard called Tailings Management Protocol, which has as its objective the management of tailings deposits and internal accountability and review mechanisms.

It also includes the application of good tailings management practices and community involvement. This protocol addresses community engagement in relation to tailings as part of a broader issue of engagement with respect to tailings risks to communities. The Protocol requires companies to have processes in place to engage in discussions with communities of interest about potential risks to the public associated with the company's activities, including tailings management. As well as emergency response plans (ERP) and emergency preparedness plans (EPP), an operating, maintenance and monitoring manual specific to the tailings impoundment should be developed and implemented.

The protocol consists of the verification of 5 indicators (Tailings management policy and/or commitments, Tailings management system and emergency response plans. Tailings Management Accountability, Annual Management Review and Operation, Operations, Maintenance and Surveillance manuals (OMS) which are under evaluation for more than 45 specific actions to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>130</sup>:

- Implementation of a tailings management policy and commitments
- Internal audit for verification of tailings management system in accordance with the Tailings Guide developed by TSM.<sup>131</sup>
- Internal audit for verification of tailings management accountability, development and implementation of an OMS manual and annual review of tailings management compliance with the Tailings Guide.

<sup>130</sup> TSM, (2019) Tailings Management Protocol, <https://mining.ca/towards-sustainable-mining/protocols-frameworks/tailings-management-protocol/>

<sup>131</sup> TSM, (2021) A Guide to the Management of Tailings Facilities, <https://mining.ca/download/31758/>

For the analysis of the Mine Closure component we used the IFC standard - Environmental, Health and Safety Guidelines - Mining Sector. The guidelines establish activities for closure, which should be taken into account during the initial planning and design phases. Mining companies should develop a draft Mine Closure and Rehabilitation Plan (MRRP) prior to commencing production, clearly identifying earmarked and sustainable funding sources to carry it out. The Closure and Rehabilitation Plan (with guaranteed funds) should take into account both physical rehabilitation and considerations of a socio-economic nature, should be an integral part of the project life cycle. Among the most noteworthy, the following should be taken into account<sup>132</sup>:

- The closure plan should be regularly updated and modified to reflect changes in mine development and operational planning, as well as environmental and social conditions and circumstances.
- The duration of post-closure monitoring will be defined on a risk-based basis; however, site conditions typically require a minimum period of five (5) years or more after closure.
- Business feasibility analyses during the planning and design phases should include costs associated with mine closure and post-closure activities. Such analyses should include, at a minimum, the availability of all necessary funds (through appropriate financial instruments) to cover closure costs at all stages of the mine life cycle, including provisions for early or temporary closure.
- Financing will be provided through a financial guarantee cash accumulation system. The two accepted systems of cash accumulation are capitalized escrow accounts (including government-managed agreements) and sinking funds. There must be an acceptable form of financial guarantee provided by a reputable financial institution.
- All structures (e.g., tailings impoundments) must remain stable so that their failure or physical deterioration cannot endanger public health and safety. Tailings structures should be dismantled to minimize the accumulation of surface water and to allow water from the surface of the structure to be diverted by drains or outfalls, which can cope with the maximum possible flooding.

#### 4.1.4. Climate change

For the Climate Change component, climate change actions were analyzed using the TSM standard called the Climate Change Protocol.

The protocol aims to facilitate the mining sector's continuous improvement in managing the risks and opportunities associated with climate change, including mitigation and adaptation strategies, target setting and reporting. The implementation of this protocol aims to provide support to mining companies in order to achieve the objectives of the Paris Agreement at the corporate level.

The protocol consists of the verification of 3 indicators (Corporate Climate Change Management, Facility Climate Change Management, Facility Performance Objectives and Reporting) which are under the evaluation of more than 60 specific actions to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>132</sup>:

- Create a demonstrated business strategy on climate change that is supported by defined actions, including the strategy in business planning for existing activities and in considerations for new projects.
- Establish an energy and GHG emissions management system, focusing on scope 1 and 2 GHG emissions.
- Establish a process for the management of physical climate impacts and adaptation that includes at least identification, prioritization and implementation of measures that respond to identified physical climate impacts, establishment that measures the level of importance of climate change mitigation and adaptation in relation to relevant or affected communities of interest, processes to promote employee and contractor awareness of climate change mitigation and adaptation, among others.

#### 4.1.5. Energy efficiency

For the Energy Efficiency component, the Management of Energy Use and GHG emissions was analyzed, for which the TSM standard called Energy and GHG Emissions Management Protocol was used. The objective of the protocol is to provide guidance to facilities to measure the management of energy use and greenhouse gas (GHG) emissions. The assessment protocol establishes general expectations regarding the management of energy use and GHG emissions from the mining sector.

<sup>132</sup> TSM, (2019) Energy and GHG Emissions Management Protocol, <https://mining.ca/resources/guides-manuals/tsm-energy-and-ghg-emissions-management-protocol/>

The protocol consists of the verification of 3 indicators (Management systems for energy use and greenhouse gas emissions, Reporting systems for energy use and greenhouse gas emissions, Performance targets for energy use and greenhouse gas emissions) which are under the evaluation of more than 30 specific actions approximately to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>133</sup>:

- Establish a comprehensive system for managing energy use and GHG emissions.
- Comprehensive report on energy use including clearly defined, uniformly applied metrics, quantity of compensations, expressed as a percentage of emissions, source and nature of crediting of compensations, among others. This is to be communicated to all internal and external stakeholders.

## Social issues

**Table 7 Social aspects - Appendix**

Community and natural resources	Law and working conditions	Human rights	
Indigenous and community relationships	Health and safety	Prevention of child and forced labor	Gender equity

### 4.1.6. Community and natural resources

For this component we analyzed relations with the community and indigenous peoples, using the TSM standard called the Indigenous and Community Relationships Protocol. The protocol allows for the evaluation of relations with indigenous peoples and the community of interest. This provides tools to confirm that processes have been implemented to identify Communities of Interest (COI), including indigenous organizations, affected or potentially affected by the company's operations and activities. Processes should ensure that IOCs are periodically reconsidered during the life cycle, as well as supporting the development and maintenance of meaningful relationships to achieve an understanding of mutual views, build effective relationships, and create mutual value and shared benefits. In addition, processes for the active development of meaningful relationships and implementation of participation and decision making with indigenous communities are evaluated. This includes the objective

<sup>133</sup> TSM, (2019) Energy and GHG Emissions Management Protocol, <https://mining.ca/resources/guides-manuals/tsm-energy-and-ghg-emissions-management-protocol/>

of achieving free, prior and informed consent (FPIC) of impacts that directly affect indigenous peoples before proceeding with project development.

The protocol consists of the verification of 5 indicators (Community of Interest (COI) identification, Effective COI Engagement and Dialogue, Effective Indigenous Engagement and Dialogue, Community Impact and Benefit Management, COI Response Mechanism) which are under the evaluation of more than 85 specific actions approximately to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>134</sup>:

- Establish processes to engage with COIs in identifying, prioritizing and attempting to avoid or mitigate actual and potential adverse impacts related to facility activities that directly affect COIs.
- Generate processes for COIs to periodically reconsider, in addition to communications written in the local language of the COIs (if necessary) and in a clear and understandable language for the COIs.
- Establish participatory processes including measures to facilitate and motivate the participation of underrepresented COIs and to determine which COIs are most affected by the actual and potential adverse impacts identified.
- Work with directly affected indigenous communities to identify opportunities for collaboration possibly including, but not limited to, local education, training, employment, business opportunities, income opportunities, and economic development projects.

<sup>134</sup> TSM, (2020) *Indigenous and Community Relationships Protocol*, <https://mining.ca/resources/guides-manuals/tsm-indigenous-and-community-relationships-protocol/>

#### 4.1.7. Law and working conditions

For this component, Safety and Health was analyzed using the TSM standard called Safety and Health Protocol. The protocol assesses that mining companies have established clear accountability for safety and health management and performance, and that those commitments have been established and communicated to employees, contractors and suppliers. In addition, it checks that processes are in place to effectively manage and plan safety and health controls so that incidents are prevented; that safety and health are recognized as a shared responsibility; and that hazard identification, risk assessment and the establishment of controls are integral to an effective management system.

The protocol consists of the verification of 5 indicators (Commitments and Accountability, Planning and Implementation, Training, Behavior and Culture, Monitoring and Reporting, Performance) which are under the evaluation of more than 60 specific actions to obtain a level of excellence and leadership compliance (AAA level).

In order to obtain a minimum qualification (level A, compliance with the standard), which this consultancy takes as a basis for its analysis, the company has to carry out a series of actions, the most representative of which are to<sup>135</sup>:

- Establish processes to ensure that employees, contractors and suppliers working at the facility are aware of the company's safety and health commitments.
- Implementation of a planned, documented and functional safety and health training program.
- Communicate safety and health performance to the public at least once a year.

#### 4.1.8. Human rights

In order to analyze this component we studied two (2) standards:

- The TSM Preventing Child and Forced Labor Protocol. The objective of the protocol is the verification of mining companies regarding the prevention of child labor and forced labor. The protocol sets out the general approach adopted to verify that there are processes in place to ensure that there are no cases of child labor or forced labor as defined by the ILO Conventions in the companies participating in the TSM initiative.

<sup>135</sup> TSM, (2020) Safety and Health Protocol, <https://mining.ca/resources/guides-manuals/tsm-safety-and-health-protocol-2020/>

- The protocol consists of the verification of 2 indicators (Prevention of Forced Labor and Prevention of Child Labor) which are under the evaluation of more than 4 specific actions to obtain a level of compliance<sup>136</sup>.
- The IGF has developed a series of recommendations in its publication Gender Perspective in Mining Governance for governments to adopt mining frameworks that promote gender equity. The recommendations include legislative and institutional aspects, land purchase policies, incorporation in impact assessment processes, community development, security and crisis management.<sup>137</sup>

## Governance issues

**Table 8 Governance aspects - Appendix**

Transparency	Sector governance
Transparency guidelines and/or initiatives	Governance perspectives

### 4.1.9. Transparency

For this component, Transparency Guidelines and/or Initiatives were analyzed, for which the Extractive Industries Transparency Initiative (EITI) was used. The overall purpose and objective of the initiative is to strengthen transparency of natural resource revenues recognizing that this can reduce corruption, and that revenues from extractive companies can transform economies, reduce poverty and increase the quality of life of the entire population in resource-rich countries<sup>138</sup>.

### 4.1.10. Sector governance

For this component, we analyzed the Governance Perspectives carried out by third parties with international recognition, for which two sources were used:

Fraser Institute survey: This study presents the results of an annual survey of 2,200 mining and exploration company professionals from around the world and assesses how mineral reserves and public policy factors, such as taxation or regulatory uncertainty, affect mining investment.

<sup>136</sup> TSM, (2019) Preventing Child and Forced Labour Protocol, <https://mining.ca/resources/guides-manuals/tsm-preventing-child-and-forced-labour-protocol/>

<sup>137</sup> GF (2021)

<sup>138</sup> Extractive Industries Transparency Initiative (EITI), <https://eiti.org/es/documents/logros-y-opciones-estrategicas-evaluacion-de-la-iniciativa-para-la-transparencia-de-las>



The Policy Perception Index (PPI) is a composite index that measures the overall policy attractiveness of the 84 jurisdictions for the 2021 version of the survey. The index is composed of survey responses to policy factors that affect investment decisions. Policy factors examined include uncertainty regarding the administration of existing regulations, environmental regulations, duplication of regulations, the legal system and tax regime, uncertainty regarding protected areas and disputed land claims, infrastructure, socioeconomic and community development conditions, trade barriers, political stability and labor regulations, quality of the geological database, security and availability of labor and skills<sup>139</sup>.

Natural Resource Governance Institute (NRGI): Mainly dedicated to improving countries' governance over their natural resources to promote sustainable and inclusive development. The Natural Resources Governance Index (NRGI) is a diagnostic tool to measure the governance of the mining, oil and gas sectors. It also highlights opportunities for policy and practice reform at global, regional and national levels. Of the three components, the first (value extraction) covers the governance of the allocation of extraction and exploration rights, environmental and social impacts, revenue collection and state-owned enterprises. The second component (revenue management) covers the governance of national budgets, subnational revenue sharing and sovereign wealth funds. The third component of the index assesses a country's (general governance conditions). This component builds on the Global Governance Indicators and the Open Data Inventory to measure the broader governance context<sup>140</sup>.

<sup>139</sup> Fraser Institute (2021), <https://www.fraserinstitute.org/categories/mining>

<sup>140</sup> NRGI, Natural Resource Governance Index 2021, <https://resourcegovernance.org/analysis-tools/publications/indice-de-gobernanza-de-los-recursos-naturales-2021>

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