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Comparative research on transition minerals in Latin America: **standards, safeguards, regulations, and challenges**

Authors:
Ruth Preciado Jeronimo
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Derecho, Ambiente y Recursos Naturales (DAR)

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List of Acronyms

ANM	National Mining Authority (Autoridad Nacional de Minería)
ASG / ESG	Environmental, Social, and Governance (Ambientales Sociales y de Gobernanza)
CEDLA	Center for Studies on Labor and Agrarian Development (Centro de Estudios para el Desarrollo Laboral y Agrario)
CEOL	Special Lithium Operation Contracts (Contratos Especiales de Operación de Litio)
CODELCO	National Copper Corporation (Corporación Nacional del Cobre)
CAF	Andean Development Corporation (Corporación Andina de Fomento)
CLPI	Free, Prior, and Informed Consent (Consentimiento previo, libre e informado)
CSMI	Consolidate Mining Standard Initiative
DAR	Environment and Natural Resources Law (Derecho Ambiente y Recursos Naturales)
EIA	Environmental Impact Assessments (Estudios de Impacto Ambiental)
EDL / DLE	Direct Lithium Extraction (Extracción Directa de Litio)
EMC / NCMS	National Critical Minerals Strategy (Estrategia Nacional de Minerales Críticos)
ENL / NLS	National Lithium Strategy (Estrategia Nacional del Litio)
IFI	International Financial Institutions (Instituciones Financieras Internacionales)
IRMA	Initiative for Resposible Mining Assurance
ITS / STR	Supporting Technical Reports (Informes Técnicos Sustentatorios)
LCC	Law for Coordination and Concurrency (Ley de Coordinación y Concurrencia)
LMAS / FLSA	Framework Law on Sectoral Authorizations (Ley Marco sobre Autorizaciones Sectoriales)
MEIA	Modified Environmental Impact Assessment (Modificación de Estudio de Impacto Ambiental)

NRGI	Natural Resource Governance Institute
MINAM	Ministry of the Environment (Ministerio del Ambiente)
ODS / SDG	Sustainable Development Goals (Objetivos de Desarrollo Sostenible)
OIT / ILO	International Labour Organization (Organización Internacional del Trabajo)
ONG / NGO	Non-Governmental Organization (Organización No Gubernamental)
PAD / DEP	Detailed Environmental Plan (Plan Ambiental Detallado)
PULFM	Unified Plan for Mining Legalization and Formalization (Plan Único de Legalización y Formalización Minera)
RLIE / LNEI	Latin American Network of Extractive Industries (Red Latinoamericana de Industrias Extractivas)
TE / ET	Energy Transition (Transición Energética)
UNDP / PNUD	United Nations Development Programme (Programa de las Naciones Unidas para el Desarrollo)
UPME	Mining-Energy Planning Unit (Unidad de Planeación Minero-Energética)
SENACE	National Service of Environmental Certification for Sustainable Investments (Servicio Nacional de Certificación para las Inversiones Sostenibles)
YLB	Bolivian Lithium Deposits (Yacimientos de Litio Bolivianos)

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Introduction

The world is currently facing a *triple planetary crisis*: global warming, biodiversity loss, and environmental pollution. This context has driven several nations to commit to accelerating the phasing-out of fossil fuels.

Source: UNDP, 2025

Since 2015, the Paris Agreement has promoted a global decarbonization process, whose main goal is to limit the increase in the average global temperature to less than 1.5 degrees Celsius, although no significant results have been achieved in the past decade. At the same time, the United Nations' Sustainable Development Goals (SDGs) define a global roadmap aimed at eradicating poverty, safeguarding the environment, and ensuring a future of peace, prosperity, and equality for all (UNDP, 2025).

In this regard, the energy transition (ET) represents a fundamental shift in the way the world generates, distributes, and uses energy. Its central purpose is to abandon fossil fuels and adopt a system based on renewable energy sources (such as solar, wind, hydroelectric, and geothermal). Essentially, this change seeks to restructure the global energy system to address climate change while promoting sustainable development. This involves more than simply integrating cleaner energy sources: it also requires increasing energy efficiency, implementing innovative technologies (such as energy storage), and fully decarbonizing crucial sectors such as electricity generation, transportation, and industry (UNDP, 2025). However, the ET has increased the demand for minerals needed to manufacture renewable energy technologies. These are referred to as critical minerals, meaning raw materials (minerals and metals) necessary to generate renewable energy, produce non-polluting technologies, and facilitate the transition toward a more sustainable, low-carbon future (Intergovernmental Forum, 2022). This global scenario is projected to lead to a 300% increase in demand for metals by 2050, including copper, iron, lead, molybdenum, nickel, and zinc (Church & Crawford, 2020).

In Latin America, over the past 30 years, large-scale mineral extraction has generated conflicts with local communities, degraded natural resources, and impacted human health. Likewise, the region's economic growth, driven by increased mineral exports, has been accompanied by high levels of poverty, inequality, and human rights violations. In other words, intensive extraction and use of critical minerals to change the global energy matrix can—and already do—cause the same environmental, social, and economic impacts as the traditional extractivist model (Andreucci et al., 2023; Ávila, 2023). In this sense, civil society and social movements have called for just ET in Latin America and the Caribbean, which requires stronger and more coordinated international cooperation.

The current demand for critical minerals for the ET must entail changes in governance in areas such as participation, institutions, procedures, and standards. Supporting coherent climate policies and financing in the region is therefore essential to achieve structural change that addresses inequalities and strengthens resilience to climate change. To this end, financing must be directed not only toward project development but also toward capacity building and thinking in the region's countries and localities regarding the development model desired in this energy transition process.

The Latin American Network of Extractive Industries (RLIE is the Spanish acronym) brings together a group of civil society organizations that have been working for sustainable development in Latin America for 16 years. Based on this shared interest, it seeks to ensure the systematic functioning of a space for dialogue and joint work, carrying out actions that influence public policies related to extractive industries, with a focus on transparency, conservation of natural resources and the environment, and respect for the fundamental rights of the region's citizens (https://redextractivas.org/).

This report is the result of various meetings, debates among RLIE members, and the preparation of four country reports from Peru, Colombia, Chile, and Bolivia. The main objective of this comparative study is to analyze regulatory changes, mining standards, and safeguards, as well as their impacts on the governance of mineral resources in Latin America in relation to the extraction of critical minerals for a just ET. The central research question is: *How is the policy of transition mineral extraction being implemented in Latin America from the standpoint of governance, regulations, standards, and safeguards?*

This study was conducted between September and November 2025 with the support of the Natural Resource Governance Institute (NRGI) and the Heinrich Böll Foundation. The comparative study is based on four national reports. On the one hand, the report on Peru prepared by Grupo Propuesta Ciudadana and the report on Colombia prepared by Fundación Foro Nacional analyzed copper governance. On the other, the report on Bolivia prepared by the Center for Studies on Labor and Agrarian Development (CEDLA) and the report on Chile prepared by Fundación Terram analyzed lithium governance.

This report is structured as follows: the first section presents the conceptual framework; the second, the methodology; the third section describes the background of the ET; the fourth part presents the comparative study analysis; the fifth section provides the conclusions; and finally, the recommendations.

Photo: CEDLA

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Conceptual Framework

Democratic governance is understood as a form of government, that is, decision-making for the design and implementation of public policies.

This comparative study will address the concept of democratic governance and regulatory changes in the extractive and environmental sectors. Democratic governance is understood as a form of government, that is, decision-making for the design and implementation of public policies, based on "the articulation of actors with diverse interests, worldviews, narratives, conceptions of time, and codes of communication, whose purpose is to seek, within the framework of existing rules and through practices of deliberation and consensus-building, agreements that guarantee the democratic, transparent, and efficient management of public goods and services, so that these may become a source of well-being" (Velásquez, 2020). Within this field, four main categories will be identified:

a. Effectiveness of citizen participation

This refers to the opportunity for all sectors of society to participate in the decision-making process on all matters of interest. Participation is fostered through enabling environments where relevant information is disseminated adequately and in a timely manner, so that all interested parties can express their opinions without restrictions. This category also includes policies, regulations, and practices that restrict civic space, as well as limitations on civil society and citizens in general to operate and express their opinions and criticisms.

b. Strengthening environmental institutions

Institutions establish the rules of the game that determine how the mining activity is governed. It is important to understand how institutions function, as they define the organization of the public sector, the policies and laws in force, and how they are implemented. The way institutions operate affects social, economic, and political life in different ways. Formal or statutory institutions exist at many different levels and can have both direct and indirect impacts on mineral exploitation and the environment.

c. Access to and disclosure of policies, plans, and projects related to critical minerals

It must be identified whether, in the ET and in the management of critical minerals, sector information is disclosed—whether at the contractual level, regarding rents and royalties, or environmental and social impacts—throughout or in part of the project cycle. *The Extractive Industries Transparency Initiative (EITI)* will be used as a global reference framework for transparency and accountability in the oil, gas, and mining sectors.

d. Regulatory changes in the extractive and environmental sector

The regulatory framework is a principle of governance whereby all persons, institutions, and entities, both public and private, including the State itself, are held accountable for publicly promulgated laws, that are applied equally, judged independently, and compatible with international human rights norms and standards. It also establishes the rule of law and legal certainty, which implies respect for the rights of citizens participating in the extractive and environmental sectors on an equal basis.

The following topics describe regulatory changes in the extractive and environmental sectors:

1. **Changes in mining sector standards and safeguards.** Standards are guiding principles or criteria expressed in a regulatory body to establish parameters of quality, conduct, or procedures for economic activity. In this case, extractive activities safeguards are a subset of standards that evolve from principles into specific rules, meeting environmental, social, and human rights requirements, with non-compliance resulting in specific consequences that at all times prevent, guarantee, mitigate, protect, and/or sanction extractive activity. In this sense, international safeguards influence corporate sustainability and contribute to the performance and governance of the mining sector.
2. **Preventive assessment of environmental, social, and climate risk.** One of the most important standards and safeguards is the principle of environmental prevention and mandatory environmental certification prior to the start of extractive operations. This ensures establishing a proper hierarchy of mitigation of environmental and social impacts through analysis and prevention plans. In this regard, the Consolidated Mining Standard Initiative (CSMI) (https://miningstandardinitiative.org/) provides a conceptual framework to analyze this safeguard.
3. **Reducing or eliminating areas considered *"no-go zones"* for purposes of biodiversity conservation or protecting indigenous territories, when they overlap critical mineral exploitation areas.** The principle of environmental protection has been affected by recent regulatory changes in Latin American countries aimed at making them more attractive to new investments such as those related to the ET. For biodiversity conservation and respect for indigenous territories, limitations have been established on granting extractive concessions. However, in recent years, regulatory changes have facilitated land tenure changes and natural resource management in biodiversity conservation units[1].


Photo: Jorge Jesús Chávez Ortiz

[1]Including property rights, concessions without free, prior, and informed consent—FPIC, forced easements, reduction or elimination of protected areas, etc.

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Methodology

This comparative study was based on the four national reports and prepared by Environment and Natural Resources Law (DAR).

This study was carried out between September and November 2025 as part of an agreement with RLIE, aimed at creating a shared working space among regional civil society organizations to undertake actions seeking to influence public policies related to mining activity. Four national reports were prepared to analyze critical minerals—copper and lithium—with the aim of understanding how countries are addressing extractive industries' governance. To analyze copper, the report from Peru was prepared by Grupo Propuesta Ciudadana, while Colombia's was prepared by Fundación Foro Nacional. Chile's Fundación Terram prepared the report on lithium while, and the lithium report from Bolivia was prepared by CEDLA. This comparative study was based on the four national reports and prepared by Environment and Natural Resources Law (DAR). The five participating organizations met on line to agree on a work plan, a conceptual framework, and a methodology. The study was organized around four thematic axes, namely, participation in decision-making, with two indicators: i) levels of participation in decision-making processes, and ii) restriction of civic space. For this comparative study, only the first indicator was considered for analysis.

The second thematic axis corresponds to institutional and procedural flexibility in approving Environmental Impact Assessments (EIAs), with the following indicators: changes in the roles and functions of institutions responsible for the mining sector; the level of independence of institutions in decision-making[2]; and the main changes in the environmental regulatory framework for the exploitation of transition minerals in regards to EIAs.

The third thematic axis addresses access to and disclosure of policies, plans, and projects related to critical minerals, with the following indicators: disclosure of sector information, whether contractual level, rents and royalties, or environmental and social impacts, throughout or in part of the project cycle; and specialized disclosure of information about critical minerals and their climate impact[3].

The fourth thematic axis addresses preventive assessment of environmental, social, and climate risk, with the following indicators: analysis of environmental, human rights, and climate change risks; the mandatory and prior nature of such assessments before any exploration or extraction of critical minerals[4]; changes in communal or individual land tenure[5]; and relaxation, banning, or authorization of extractive resource exploitation in protected areas for biodiversity conservation. It is important to note that this study was presented at an RLIE meeting and workshop, as well as at a public event held on November 25–26, 2025, in Lima, attended by representatives of RLIE member organizations.

[2]This indicator was not considered in this comparative study because not all reports included it.
[3]This indicator was not developed in the comparative study, because it was not described in the national reports due to the absence of specialized portals for disseminating information on critical minerals for the energy transition in any of the countries studied.
[4]This indicator was not included in the comparative study because not all reports contained this information.
[5]This indicator was also not developed due to lack of available information in some countries.

Table 1. Thematic Axes and Research Indicators

THEMATIC AXES	INDICATORS
Effectiveness of citizen participation in decision-making	• Levels of participation in decision-making processes for the exploitation of transition minerals (participation ladder). • Restriction of civic space.
Institutional and procedural flexibility for EIA approval	• Changes in the roles and functions of institutions responsible for the mining sector. • Level of independence of institutions in decision-making (revolving doors). • Main changes in the environmental regulatory framework for the exploitation of transition minerals related to EIAs (shortened deadlines, reduced requirements, technical opinions, creation of fast track procedures, reduced human and technical capacity for evaluation, etc.).
Access to and disclosure of policies, plans, and projects related to critical minerals	• Disclosure of sector information, whether at the contractual level, rents and royalties, environmental and social impacts, throughout or in part of the project cycle. • Specialized disclosure of data on critical minerals and their climate impact.
Preventive assessment of environmental, social, and climate risk	• Analysis of environmental, human rights, and climate change risks. • Mandatory and prior assessments before any exploration and extraction of critical minerals. • Changes in communal or individual land tenure. • Reduction, elimination, and authorization of extractive resource exploitation in protected areas for biodiversity conservation.

Source: Prepared by the authors

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Background to the Energy Transition

It is projected that between 2020 and 2040, copper demand could double, while demand for graphite, lithium, and cobalt could increase 8, 13, and 16 times, respectively.

The existing tension between development and environmental protection is likely due to the lack of balance between these principles in public policies and in the interests of social actors expressed through their influence on the State and the market, as well as in the development of specific economic projects. In fact, even the isolated attempt to adapt economic activities to operate under a *social marginal cost* curve rather than the market marginal cost curve—defined by the rules of supply and demand—means interfering with the liberal rules that define our economies (Lorenzetti & Lorenzetti, 2021). This process of market intervention must be guided by a series of principles and rules that ensure all actors accept this cost, since this time it does not stem solely from political or humanitarian interests, but from a higher one as is the survival of humanity itself, if we are to stop global warming and thereby preserve future quality of life on the planet.

Up until 1990, Latin America was mainly characterized by the implementation of an economic *policy of import substitution industrialization*. This model sought to respond to the post-war international context, which disrupted global trade networks. In this situation, international institutions promoted the production of industrial goods for local markets. During this period, mineral exports were not significant for Latin America. From the 1990s onward, a new neoliberal policy was implemented in the region, promoting a new way of managing natural resources through the participation of private capital, both national and foreign, with limited State involvement in the market. National policies and regulatory frameworks were characterized by promotion of and legal guarantees for investments in the extraction of raw materials for export to the global market (Urteaga, 2011).

This reform introduced various policies aimed at strengthening a governance model that ensured investments in large-scale mining activity. Among them were the implementation of Environmental Impact Assessments (EIAs); tax exemptions to attract investment; suspension of land-use planning processes; decentralization of government competencies; development of dialogue policies; implementation of the right to free, prior, and informed consultation, and in some countries, free, prior, and informed consent (FPIC); integrated water resource management; corporate social responsibility; and the creation of ombudsman offices, among others. All these policies were implemented through institutional changes and regulatory frameworks with governance understood to depend solely on strong institutions and norms (Rogers, 2003).

Currently, with the war in Ukraine and the competition for trade markets and commodities between the United States and China, the ET is mainly characterized by the urgency to extract large volumes of various minerals considered critical to meet technological changes. It is projected that between 2020 and 2040, copper demand could double, while demand for graphite, lithium, and cobalt could increase 8, 13, and 16 times, respectively. This context has generated significant pressure on Latin American territories, as the region holds important reserves of copper, lithium, rare earths, nickel, and graphite. Minerals such as lithium, copper, and graphite have given Latin America a central geopolitical role. In 2023, Chile and Peru extracted 34.5% of the world's copper, the metal with the highest projected demand in major ET scenarios. Overall, Latin America accounts for more than 45% of global copper extraction and holds about 42% of global reserves, particularly in Chile and Peru (Walter et al., 2025).

This implies a series of public policies that address the climate crisis with clear objectives and means aligned with those ends. A modern rule-of-law State requires operations to be aligned with respect for human rights, especially those of the most vulnerable, while also ensuring harmony with the planet (Landa A., 2023), particularly in the current climate crisis. Mineral extraction in the context of the ET has generated conflicts with local populations. The study conducted by Walter et al. (2025) analyzed twenty-five documented conflict cases in *EJAtlas* and presented various findings on the issues generating conflict. It notes that mineral exploitation is taking place in sensitive territories whose ecosystems are not fully understood. Moreover, the potential and visible impacts of mining on water and its implications for local and regional ecosystems, livelihoods, worldviews, health, and the future constitute the core concerns of communities across the continent. The study also found that indigenous communities are involved in at least 34% of documented socio-environmental conflicts, of which approximately one-quarter are related to mining and metallurgical activities.

Energy Transition Debate

The ET is a polysemic concept, not only because it has different meanings, but also because different actors have their own definition of transition (Cross-Constituency, 2025). Thus, there are concepts such as ecological transition, demographic transition (Calvo, 2022), technological transition (Shue, 2023), socio-ecological systems (Postigo, 2014), among others. In fact, civil society had already proposed breaking away from the paradigms of the traditional development model, emphasizing the need to promote a transition to change the energy matrix and reduce dependence on fossil fuels. Fifteen years ago, civil society organizations suggested that countries in the region should enter a stage of post-extractivist transitions before the general elections of 2011 (Gudynas, 2015; Monge et al., 2011).

Therefore, we must understand where the ET stands and how we characterize it. One could propose a strict methodology to define transition minerals following the European perspective, namely minerals whose demand grows faster than their supply; production conditioned by restrictions; production concentrated in a few countries; limited options for substitution with other minerals; and minerals that are essential for transition technologies (Estradé, 2024). However, the transition is more than that. The transition is a situational state of current capitalist society, which must abandon fossil fuels and use diverse energy sources if it is to survive as a society. This means changing consumption and energy supply patterns. Such change implies disrupting paradigms and production and consumption practices, since every day of business as usual reduces our maneuverability options for the future (Culture Section, 2024). For example, the longer the global elimination of fossil fuels is delayed, the fewer options we will have in the future to decide on changes to the energy matrix at global, national and local levels.

But ET is also a contested narrative, which compels us to adopt a critical perspective whenever we encounter it. ET was not considered a human development issue until recently. At most, sustainability was only recently incorporated into our vocabulary and conception of human development (Stewart, 2014), whereas for communities it had long been a central concern. In fact, the content of private sector proposals is highly operational, technocratic, and economy driven (Bertinat et al., 2025; Islas Vargas, 2025), which ultimately replaces the pursuit of human well-being with the efficiency of corporate plans wrapped in the ET narrative.

Secondly, as a narrative of a new ontology, ET does not align with civilizational transition narratives (Escobar, 2020); that is, ET is not a deep critique of capitalist, colonial, and patriarchal modernity, but rather a multifaceted critique of reality and the civilizational model. In truth, ET does not stand in the same conceptual and tactical trench as the rights of nature or other critiques of the Anthropocene, although it is likely that all these critical perspectives share common elements in responding to the same challenges of global warming and the violation of environmental human rights (Barcena Hinojal et al., 2023; Relatora Especial sobre la promoción y la protección de los derechos humanos en el contexto del cambio climático, 2025; Rodríguez Garavito, 2017), that is, to propose changes to the development model or *business as usual*.

ET stems from theoretical reflections, proposals for reforming the current model, and international cooperation—although it has also been incorporated into social movements such as trade unionism. It is certainly not a popular or populist discourse (Meléndez, 2022). Quite the opposite, just like all environmental issues and movements today, ET faces fierce attacks from political conservatism. It is a technical discourse understood by few. In fact, attempts have been made to communicate ET concepts to Amazonian communities, who wonder when this change began, since for them the traditional extractive model remains unchanged.

Geopolitics of Transition Minerals

The trade of transition minerals[6] is defined by the economic interests of the global market. Classic foreign trade indicators also make this evident. In 2000, South American total exports amounted to around US$200 billion, and by 2023 they had nearly quadrupled, exceeding US$750 billion. This increase was driven mainly by extractivism. For example, exports of agricultural and mineral goods rose from just over US$117 billion in 2000 to US$537 billion in 2023, nearly a fivefold increase. Their share also grew, as these commodities accounted for just over 58% of total exports, while by 2023 they had risen to 67% (Gudynas, 2025).

In other words, the trade patterns of critical minerals follow the same paths as the global extractivist model, which has assigned a certain role to Latin America and which many international financial institutions highlight as an opportunity for economic growth (Arbache, 2023). Twelve years ago, the United States already depended on strategic minerals and was vulnerable due to the need to import them from various regions, including Latin America. For lithium alone, nearly 95% was imported from Chile and Argentina. Copper consumption has tripled in recent decades. These percentages have not changed, nor has the timid, hesitant, and unstrategic behavior of regional countries in industrializing the use of critical minerals—something that could reduce dependence on extraction and continued emissions, becoming an ironic challenge (Alatorre et al., 2023). The region has not taken advantage of its near monopoly in extracting these minerals, nor of its influence on international prices (Bruckmann, 2012). These countries are allowing the market and conflicts between economic powers to define the supply, demand, and price of these minerals.

The trade patterns of critical minerals follow the same paths as the global extractivist model, which has assigned a certain role to Latin America.

Currently, changes are taking place in the global economy and its rules of the game. Many countries have begun their own processes to take control of or nationalize critical minerals (Serrani, 2025; Zelicovich & Actis, 2025), thereby strengthening their negotiating position in the international market. China's presence in the region and its acquisition of titles to transition minerals is increasing (Fornillo & Lampis, 2023).

[6]Lithium, cobalt, graphite, indium, and rare earths.

Likewise, protectionist measures in the United States are affecting prices in international markets, meaning Latin America will be impacted by these restrictions on international trade, especially given its dependence on raw material extraction such as gas, oil, and minerals (International Monetary Fund, 2025). A slowdown in 2026 is likely for the region, which, combined with rising public debt, may force countries to further intensify the exploitation of critical minerals. Even "improving the business environment" could imply weakening environmental and social standards, as would competition between Chinese capital and that of the global North—mainly the United States and Canada—through the establishment of critical mineral supply chains (Bnamericas, 2025).

Certainly, except for Colombia and Chile, little is heard about ET public policies in the region. This public silence makes sense given pre-existing problems such as persistent poverty and inequality, political instability, rising authoritarianism, citizen insecurity, socio-environmental conflicts, and increasing illegality. However, ET is relevant for Latin America—not only because of the environmental and social damage caused by climate change, but also because of its direct impact on ordinary citizens, manifesting in a "here and now" attitude. For example, ET could accelerate, promote, or support sustainable and affordable public transport, reduce commuting times in megacities such as Rio, Santiago, Lima, Bogota, or Mexico City, making them safer, and thus benefit both national economies and individual citizens.

Evaporation ponds in the Atacama Salt Flat, Antofagasta Region.
Photo: Fundación Terram | Cristóbal Moreno

Recent CAF reports for the region highlight the need for a just ET based on three pillars: social equity, environmental sustainability, and green employment, emphasizing benefit sharing and protection of vulnerable groups (Allub et al., 2024; Brunetti et al., 2023). This transition agenda is largely symbolic, as public policy instruments on economic management or climate fail to include this transition approach; likewise, economic policy continues to broadly promote investments—including in hydrocarbons—without differentiating by carbon footprint or impacts on water and territories. Evidence in Latin America shows that the expansion of transition minerals' production can reproduce conflicts in the absence of proper land-use planning, consultation, and robust water management—a risk the literature characterizes as green extractivism.

Although the greatest problem with critical minerals is that they are scarce, they also challenge global capacity to absorb waste from products based on these minerals (Islas Vargas, 2025). The Special Rapporteur's document on the promotion and protection of human rights in the context of climate change, includes several proposals: first, electric public transport *and integration of nature into cities as cooling solutions;* second, requirements and conditions for products with long and sustainable lifespans; third, demand for minerals that comply with circular economy principles (recycling, reuse); fourth, regulation of mineral products' safety at end-of-life; and fifth, measures to avoid dependence on fossil fuels (2025).

It is quite clear that the Paris Agreement has been a failure, as the consensus reached there has not fully materialized its potential effects this decade (Rodríguez, 2025). In a weakened multilateral world, national climate commitments will not reverse a global catastrophe in the coming decade, i.e. stopping the temperature increase at 1.5 degrees (United Nations. FCCC secretariat, 2024, 2025) seems unlikely. For example, cases are emerging where promoting the transition to a low-emission society through intensive use of renewable energy harms the exercise of human rights (Rodríguez-Garavito, 2025).

Indeed, the management of critical minerals has been described by sectors of civil society as climate colonialism—that is, green extractivism is a way of cloaking the continuation of political and economic domination over territories where communities already affected by resource extraction live (Cardoso, 2025), as well as the North over the global South (Adarve & Shortall, 2025). As mentioned, the rush for ET minerals is generating a series of negative impacts on indigenous peoples, afro-descendants, and peasant farmers, again incurring in human rights violations and discriminatory practices well known in extractive sectors (Special Rapporteur on the promotion and protection of human rights in the context of climate change, 2025).

It is also true that there are no innovative ET proposals in the debate, but if we do not resolve these initial *issues, how can we think of transitioning to another model? How can we think of transitioning to another model if we still have pending issues in our traditional extractive model?* Compliance with consultation agreements, guarantees for EIA enforcement, institutional oversight capacities, fair compensation for the use of communal lands or resources, early management of socio-environmental conflicts, greater transparency and fair payment for resource exploitation, ensuring biodiversity conservation zones, or establishing sacrifice zones for local communities in pursuit of a greater good in the energy transition, etc.

Moreover, these dilemmas are not understood in terms of a transition and what it means to avoid global warming, but rather following the conventional patterns of traditional and opaque clientelism, where interests seek to change laws based on the principles of the common good for particularisms, from which only a few prosper (Vergara, 2022). Without being fatalistic, it is difficult to break away from the cultural and social frameworks of extraction, as this is the role assigned by the market, which generates social, communicational, and cultural defenders and even polarizes the debate, often to protect the private interests underlying these models (Távara, 2015), persecute criticism, and obscure sustainable and equitable solutions. Nevertheless, we must push forward a debate, already taking place worldwide, ensuring that the private sector is held accountable for its commitment to the energy transition (Arond et al., 2025).

Although the greatest problem with critical minerals is that they are scarce, they also challenge global capacity to absorb waste from products based on these minerals.

5

Comparative Analysis

The international geopolitics of promoting critical minerals in Latin America, within the context of the ET to address climate change, is exerting pressure on the already weakened governance of countries in the Global South (Church & Crawford, 2020). Human rights violations, criminalization of protest, killings of environmental champions, and the weakening of norms and institutions are just some of the characteristics that describe the current context marked by the struggle over critical minerals. Below are the main findings of the comparative study of countries with critical lithium (Chile and Bolivia) and copper (Peru and Colombia) resources for the ET, included in this study.

At the international level, copper is emerging as an indispensable mineral for 14 low-carbon technologies, batteries and electric vehicles, electricity and hydrogen grids (Fundación FORO, 2025). Copper is the metal with the highest electrical conductivity; therefore, it is considered essential for making wind turbines, solar panels, electric vehicles, and in the modernization of electrical grids. Copper production has grown significantly, rising from 16 million metric tons in 2010 to 22 million in 2023, with forecasts of continued growth in the coming decades (Stacciarini & Gonçalves, 2025). The analysis of copper was conducted in Peru and Colombia; however, both countries show differences in the exploitation of this mineral. In Peru, large-scale copper exploitation began in the 1950s with the Cerro de Pasco and Toquepala mining operations. In 2024, Peru ranked third in global copper production, contributing 12% of world output. For Peru, copper represented 48% of the total value of mining exports, amounting to US$23.405 billion. It is important to note that the five main mining deposits are located in the high Andean region (Propuesta Ciudadana, 2025). In Colombia, copper exploitation is minimal, with only one project in the exploitation phase, called El Roble (Chocó department). However, the Strategic Minerals Determination document (Resolution 1006) foresees that Colombia could produce between 500,000 and 700,000 tons of copper annually starting in 2030. Copper exploitation in Colombia is mainly located in the Amazonian territory of Putumayo (Fundación FORO, 2025).

In recent years, manufacturing of batteries for electric vehicles has increased demand for lithium. Between 2010 and 2023, global consumption rose by 686%. It is estimated that global demand for batteries could increase sevenfold by 2030, reaching US$250 billion in the international market (Stacciarini & Gonçalves, 2025). The Lithium Triangle region, comprising the Andean salt flats of Argentina, Bolivia, and Chile, concentrates 58% of the world's lithium resources. The countries of the Lithium Triangle have divergent strategies regarding their resources. While Chile and Bolivia define lithium as a strategic resource under state control, Argentina considers it as mineral open to concessions (Barberón, 2023). In Chile, exploitation of this mineral began in 1997 with operations in the Atacama salt flat, making Chile the second largest lithium producer internationally. Its production has lower costs due to extraction methods and the specific characteristics of Chilean brines. Annual production of the four lithium compounds produced and recorded in Chile increased from 60,646 metric tons in 2013 to 303,241 metric tons in 2023, meaning lithium compound production has multiplied fivefold (Poveda Bonilla, 2024). Bolivia holds the largest lithium reserve, with 21 million tons (Ramírez et al., 2024; Sánchez et al., 2021). However, despite its potential, Bolivia contributes less than 1% of global lithium production (Fuentes & Amurrio, 2025). It is important to highlight that lithium exploitation takes place in high Andean salt flats considered fragile ecosystems—in Chile in the Atacama salt flat, and in Bolivia in the Uyuni and Coipasa salt flats.

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Table 2: Comparison of the Production Context of Critical Minerals (Copper and Lithium) in the Countries Reviewed in the Study

MINERAL	COUNTRY	STAGES OF MINING ACTIVITY INCLUDING PARTICIPATION		
		GLOBAL PRODUCTION	MAIN DEPOSITS	EXPLOITATION TERRITORY
COPPER	Peru	12% of global production (Peru ranks third worldwide in copper production).	In exploitation phase: • Cerro Verde (Sociedad Minera Cerro Verde S.A.), Antamina (Compañía Minera Antamina S.A.), Cuajone and Toquepala (Southern Peru), and Las Bambas (MMG Limited).	**High Andean zone** (80% of copper exploitation).
	Colombia	Mainly projects in exploration stages for copper. Current exploitation is not significant.	In exploitation phase: • El Roble (Chocó department). Main projects in exploration phase: • San Matías in Puerto Libertador, Córdoba; Quebradona in Jericó, Antioquia; and Mocoa initiative in Putumayo.	**Amazonian zone** (mainly Putumayo region).
LITHIUM	Chile	Second largest lithium producer worldwide.	Exploitation in the Atacama salt flat.	**High Andean salt flats** (fragile ecosystems): Atacama salt flat.
	Bolivia	Holds the largest lithium reserve worldwide.		**High Andean salt flats** (fragile ecosystems): Uyuni and Coipasa salt flats.

Source: National Reports of Peru, Chile, Colombia, and Bolivia

Effectiveness of Citizen Participation in Decision-Making

Participation Mechanisms Promoted Internationally

The neoliberal policy implemented in past decades has dispersed authority in the global economy and society. There is no global governance system; rather, there exists a disordered set of state authorities and non-state powers in conflict. This has also led to the weakening of state power (Strange, 1996). The essential role of citizen participation in the transition has been demonstrated by its ability to generate a space of trust to implement long-term energy transition plans (EITI International Secretariat, 2023).

Promoting Participation Mechanisms for Mineral Exploitation

Table 3. Comparison of international policies to promote participation mechanisms for mineral exploitation

MINERAL	COUNTRY	INTERNATIONALLY PROMOTED PARTICIPATION MECHANISMS			RATING
		Free, Prior, and Informed Consultation (1990–2011)	Inclusion of participation in EIAs (1990–2010):	Escazú Agreement (2018): Not ratified	
COPPER	Peru	√	√	Did not ratify	Stalled
	Colombia	√	√	Ratified by Law 2273 (2023)	Advanced
LITHIUM	Chile	√	√	Ratified by Decree No. 209 (2022)	Advanced
	Bolivia	√	√	Ratified by Law No. 1182 (2019)	Stalled

Source: National Reports of Peru, Colombia, Chile, and Bolivia, 2025

The preceding table shows that the citizen participation mechanisms promoted internationally were implemented between 1990 and 2010 in the countries under review. The main mechanism implemented by all four countries, both for copper and lithium exploitation, was the FPIC (Free, Prior, and Informed Consultation) under ILO Convention 169, as well as participation mechanisms in EIAs. Bolivia, Chile, and Peru reported that FPIC is the most widely approach among indigenous communities and has allowed them to defend their territories in administrative and court procedures. However, since 2015, when the ET was more clearly defined through the Paris Agreement, new international mechanisms or protocols have been promoted to strengthen citizen participation in countries holding critical minerals" reserves. Meanwhile, the Regional Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean—known as the Escazú Agreement—is a human rights treaty that regulates conditions and standards to ensure the full and effective implementation of access rights in environmental matters (Gamboa, 2021; Mora, 2022). This agreement was signed by 24 Latin American countries but ratified by only 17. Bolivia ratified the Escazú Agreement in 2021. For copper, Colombia ratified the Escazú Agreement through Law 2273 in 2023, while Chile ratified it through Decree No. 209 in 2022 for lithium. However, neither of these countries has adopted this mechanism in its current policy. This highlights the weakening of states in committing to their obligations, such as environmental rights, a sign of international weakness explained by Strange (1996).

The promotion of critical mineral extraction at present is being carried out through mechanisms conceived in the 1990s, which differ from the current context of climate change and multiple crises. At the international level, no policies have been promoted to strengthen participation mechanisms in territories holding critical minerals such as copper and lithium. Moreover, signing the Escazú Agreement is not a guarantee of compliance, as shown by data presented below regarding the weakening of environmental standards in Latin America.

In conclusion, if citizen participation mechanisms fail to support policies and projects of the energy transition in the critical minerals sector, they will likely lose legitimacy, be questioned, and result in increased socio-environmental conflicts. This process cannot be addressed solely through greater distribution of transition benefits or guarantees to prevent impacts on local communities. It also requires proper participation from the very beginning of this process.

Implementation of Participation Mechanisms in National Policy

Table 2 presents a summary of the main national policies implemented by the four countries studied to either strengthen or weaken citizen participation in the exploitation of critical minerals for the ET. First, regarding control over mineral exploitation, Chile and Bolivia consider lithium a strategic resource under exclusive state control, while Peru and Colombia consider copper as minerals open to concession.

For copper, Colombia's Constitutional Court issued ruling SU-095 in 2018, urging Congress to enact the Coordination and Concurrency Law (LCC) for the allocation of exploration and exploitation areas for mines and hydrocarbons. Unfortunately, no law has been approved to date. However, in 2023, the National Mining Authority (ANM) issued Resolutions 1099 and 558, introducing public mining hearings in the licensing process. However, these decisions do not have the status of law and could be modified by a new administration (Fundación FORO, 2025). Peru does not have a specific policy for copper; instead, this critical mineral is regulated by the general mining regulations adopted in the Consolidated Text of the General Mining Law (Supreme Decree No. 014-92-EM) approved in 1992, and the Regulation on Citizen Participation in the Mining Subsector (DS 028-2008-EM). These regulations are not aligned with climate change or ET policies (Propuesta Ciudadana, 2025). Participation mechanisms for mineral extraction—and particularly for copper—have not been strengthened in the last 15 years.

For lithium, Chile's National Lithium Strategy (ENL) of 2023 establishes processes aimed at strengthening citizen participation and FPIC for indigenous peoples (Fundación Terram, 2025). In Bolivia, the signing of lithium extraction and production agreements with Russian (Uranium One Group) and Chinese (CBC) companies points to the weakening of citizen participation mechanisms as these agreements omit participation mechanisms and FPIC (CEDLA, 2025).

Table 4. National Policies Promoting Citizen Participation in Territories with Critical Lithium and Copper Minerals for the Energy Transition

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Control	**Free concession**	**Free concession**	**Under State control**	**Under State control**
	• 1992: Consolidated Text of the General Mining Law (Supreme Decree No. 014-92-EM). • 2008: Regulation on Citizen Participation in the Mining Subsector (DS 028-2008-EM).	• 2018: The Constitutional Court of Colombia issued ruling SU-095 urging Congress to enact the Coordination and Concurrency Law. • 2023–2024: The National Mining Authority (ANM) issued Resolutions 1099 and 558 establishing the Public Mining Hearing.	• 2023: The National Lithium Strategy (ENL) establishes citizen participation and CPLI processes for indigenous peoples for the bidding and awarding of CEOL by state and private companies, also for CODELCO and SQM for the exploitation of the Atacama salt flat until 2060.	• 2008: Supreme Decree No. 29496 sets forth a governance model for natural resources under state control. • 2014: Mining Law No. 535 declares lithium and potassium as strategic elements, with Yacimientos de Litio Bolivianos (YLB) responsible for exploitation. • 2023: Agreements for lithium extraction and production using Direct Lithium Extraction (DLE) technology with Russian (Uranium One Group) and Chinese (CBC) companies, omitting participation mechanisms.
Rating	**Stalled**	**Advanced**	**Advanced**	**Regressed**

Source: National Reports of Peru, Colombia, Chile, and Bolivia, 2025

Advances in the Implementation of Participation Mechanisms

For copper, Colombia has implemented the Public Mining Hearing through the initiative of the National Mining Authority (ANM). This has strengthened citizen engagement, even at a stage prior to the granting of title, and allows for the establishment of agreements (Fundación FORO, 2025). In Peru, communities use FPIC as one of the main defense mechanisms. Furthermore, through Environmental Impact Assessments, the National Service of Environmental Certification for Sustainable Investments (SENACE) has issued tools and guidelines to improve participation processes, seeking to incorporate principles regarding gender, interculturality, and human rights (Propuesta Ciudadana, 2025).

For lithium, indigenous communities in Chile mainly resort to the ILO Convention 169 as a strategy to halt arbitrary allocations and challenge the awarding of Special Lithium Operation Contracts (CEOL). Likewise, the ENL establishes processes for citizen participation and FPIC for indigenous peoples (Fundación Terram, 2025). In Bolivia, the primary operational defense mechanism in the judiciary is also FPIC (CEDLA, 2025).

Table 5. Main Limitations to Participation Mechanisms in Contexts regarding Critical Lithium and Copper Development

MINERAL	COPPER		LITHIUM	
Limitations	**Peru**	**Colombia**	**Chile**	**Bolivia**
Conflicts with the State due to mechanisms to prevent participation	√	√		√
Participation without decision-making	Informative (level 3)	Consultation (level 4)	Information (level 3) Exploitation	Non-participatory (level 1)
Participatory mechanisms in Environmental Impact Assessment stages	Exploitation	Concession	Stalled	No consultation
Non-binding participatory mechanisms			√	
Participation mechanisms without legal status		√		
Articulation of participation mechanisms with co-opted planning instruments		√		
Participation mechanisms and environmental impacts in their territory	√ (area and impacts)			√
Weak and fragmented social actors	√			
Bureaucratic and procedural participation mechanisms	√			
Condition	**Stalled**	**Advanced**	**Stalled**	**Regressed**

Source: National Reports of Peru, Colombia, Chile, and Bolivia, 2025

Limitations in the Implementation of Participation Mechanisms

Below are listed the main limitations mentioned in the national reports that weaken citizen participation in copper and lithium critical mineral exploitation.

A first limitation is that tensions and conflicts have emerged between authorities and communities as a result of attempts to prevent the implementation of participation mechanisms. Reports from Colombia, Peru, and Bolivia indicate that their respective States constantly impede local communities from participating in the governance of natural resources. Participatory spaces are generally implemented only after disputes or serious conflicts emerge (CEDLA, 2025; Fundación FORO, 2025; Propuesta Ciudadana, 2025).

A second limitation is the absence of participation in decision-making. Reports from Chile and Colombia indicate that participatory spaces do not allow communities to influence decisions regarding the use of the territories where they live. In general, they are informative spaces about decisions already made by the central government regarding mining projects. In other words, communities and local authorities cannot prohibit mining activity in their territories. Moreover, dialogue is limited to describing the mining project, while social, environmental, and cultural impacts are made invisible (Fundación FORO, 2025; Fundación Terram, 2025). Table 6 shows a classification of the level of participation in each country according to Arnstein's ladder (1969). The first level is occupied by spaces of manipulation, while the highest level corresponds to spaces of citizen control (see Figure 1). According to the information reported by each country, Bolivia is at the first level, since contracts signed with China and Russia have excluded participation mechanisms for lithium exploitation. In Chile and Peru, participation mechanisms are only informative processes. In Colombia, the Public Mining Hearing mechanism promoted by the ANM (Resolutions 1099 and 558) could be considered at level 4 (consultation), as it promotes dialogue between national and territorial actors` from the beginning of the project. Meanwhile, Chile and Peru are classified at level 3, due to spaces that are primarily informative.

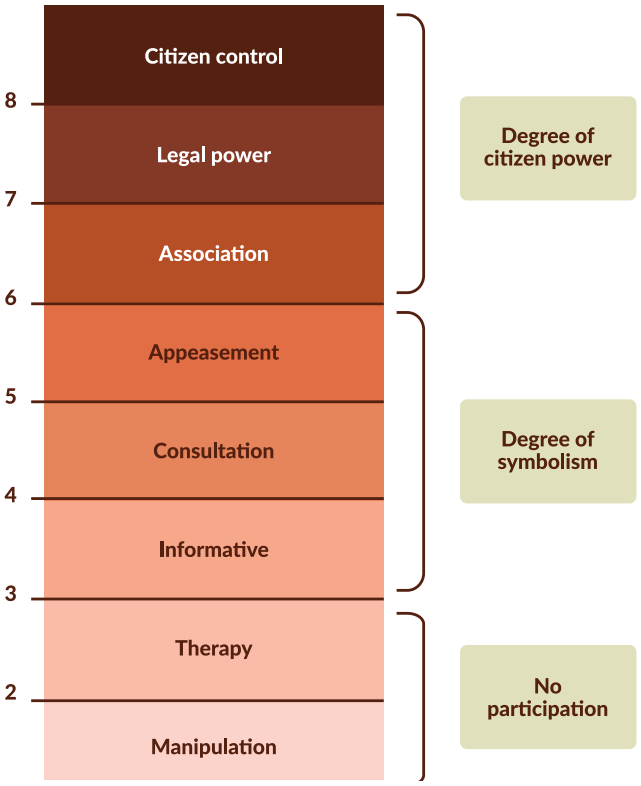

Figure 1: Ladder of participation (eight steps)
Source: Arnstein, 1969

Table 6. Levels of Participation by Country in Arnstein's Ladder

COUNTRY	ARNSTEIN'S LADDER (1969)
Chile	Informative (level 3)
Bolivia	Non-participatory (level 1)
Colombia	Consultation (level 4)
Peru	Informative (level 3)

Source: National Reports of Chile, Bolivia, Colombia, and Peru

All four countries present limitations in implementing citizen participation mechanisms.

A third limitation is that participatory mechanisms are implemented in the later exploitation stage of mining activity. Table 7 shows the stages of mining activity and the implementation of participation mechanisms in those stages. For copper, it was observed that Colombia, through the Public Mining Hearing mechanism, establishes participation mechanisms before the mining concession. In Peru, however, the participatory mechanism is implemented during the exploitation phase. For lithium, Bolivia has totally excluded consultation mechanisms at all stages of mining activity in the contracts signed with China and Russia. In Chile, the participation mechanism is implemented during the exploitation stage (CEDLA, 2025; Fundación FORO, 2025; Fundación Terram, 2025; Propuesta Ciudadana, 2025).

Table 7. Stages of Mining Activity where Participation is Implemented

MINERAL	COUNTRY	STAGES OF MINING ACTIVITY WHERE PARTICIPATION IS IMPLEMENTED			
		Concession	Exploration	Exploration	Mine Closure
Copper	Peru			√	
	Colombia	√ (Mine Closure)			
Lithium	Chile			√	
	Bolivia	No consultation	No consultation	No consultation	No consultation

Source: National Reports of Peru, Chile, Colombia, and Bolivia

A fourth limitation is that participatory mechanisms are not binding. The report from Chile specifies that mechanisms such as FPIC and citizen participation processes in environmental management instruments are not binding (Fundación Terram, 2025). Likewise, participation mechanisms do not have the rank of law. The report from Colombia notes that the Public Mining Hearing is a procedure regulated through resolutions of the National Mining Authority, which do not carry the same weight or stability as a national law. This puts progress at risk because it makes provisions vulnerable; for example, advances could be reversed if a new administration comes to power in 2026 (Fundación FORO, 2025).

A fifth limitation is that in many cases, participation mechanisms are only weakly connected to planning and land-use instruments. The report from Colombia explains that planning instruments have been used in seeking to reach agreements between mining project proponents and local authorities. However, because of the high cost of updating planning procedures and the influence of private interests, participation mechanisms are often financed with resources from extractive companies, which undermines the credibility of the negotiation process (Fundación FORO, 2025).

A sixth limitation is that participation mechanisms may not take into consideration the environmental impacts in the territory. In Peru (for copper) and Bolivia (for lithium), limitations have been reported regarding the area of influence and how indigenous peoples understand their territories as analyzed in Environmental Impact Assessments. Questions arise about who has the authority to define whether a territory has been impacted or not (Propuesta Ciudadana, 2025). For example, in Bolivia the Court required the preparation of a "strategic Environmental Impact Assessment on water resources, fossil waters, and how they will or will not affect populations" (CEDLA, 2025). This means that the analysis must go beyond specific areas of influence and consider the watershed, surface and groundwater flows, and cumulative impacts.

A final limitation is that participation mechanisms can become bureaucratic and highly procedural. The report from Peru explains that, in practice, participatory spaces are restricted spaces. Civil society organizations claim these spaces behave as bureaucracies where no influence can be exerted. Generally, these spaces are instruments for achieving extraneous objectives and do not serve the purpose of gathering and valuing the concerns of the population. On the contrary, they become validation spaces for decisions already made. Thus, they lose credibility and legitimacy (Propuesta Ciudadana, 2025).

The general balance regarding participation that can be observed is that, in the case of copper in Colombia, although there is no specific policy for copper, the Public Mining Hearing mechanism promoted by the National Mining Authority seeks to improve standards and participatory mechanisms. Peru lacks a specific policy for copper, but rather includes it in its general mining policy. Moreover, it has been stagnant since 2011, as neither policies nor regulations have been developed since then to promote citizen participation in mining projects, particularly for the critical mineral of copper.

For lithium, Chile shows progress after it ratified the Escazú Agreement (Decree No. 209) in 2022, which grants people and communities access to information, participation, and justice. In 2023, it also implemented the ENL, which establishes citizen participation processes and CPLI for indigenous peoples regarding the exploitation of the Atacama salt flats until 2060. In Bolivia, a setback has been observed since 2023, as agreements signed with China and Russia have excluded citizen participation procedures for lithium exploitation. Chile, Bolivia, and Peru have described CPLI as the most widely used participatory instrument by indigenous peoples when defending their territories before courts of law.

All four countries present limitations in implementing citizen participation mechanisms resulting in conflicts with the State, which seeks to prevent the implementation of participation mechanisms; participatory processes do not allow decisions to be made regarding the viability of mining projects; their mechanisms are non-binding and lack legal standing; and are bureaucratic and procedural.

In general, Colombia and Chile have made progress in implementing citizen participation mechanisms over the past three years. Peru has remained stagnant without new policies or regulations since 2011, and Bolivia has experienced a serious setback due to agreements signed with China and Russia for lithium exploitation. Only Chile, through its ENL, has established specific participation mechanisms for the exploitation of a transition mineral. Meanwhile, Peru, Colombia, and Bolivia rely on general participation mechanisms for mining.

Table 8. Balance of the Effectiveness of Citizen Participation in Decision-Making

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Implementation of international policies that promote participation mechanisms for mineral exploitation	Stagnated	Advanced	Advanced	Stagnated
National policies that promote citizen participation in territories with critical minerals of lithium and copper for the energy transition	Stagnated	Advanced	Advanced	Regression
Main limitations to implement participation mechanisms when critical minerals of lithium and copper are involved	Stagnated	Advanced	Stagnated	Regression
Final rating	**Stagnated**	**Advanced**	**Advanced**	**Regression**

Source: Prepared by the authors

Table 9. Final score

COPPER		LITHIUM	
Peru	**Colombia**	**Chile**	**Bolivia**
–	↑	↑	↓

Source: Prepared by the authors

More Flexible Institutions and Procedures for the Approval of Environmental Impact Studies

Changes in the Roles and Functions of Institutions Governing the Mining Sector

Regarding copper, Peru, in 2024, the Ministry of the Environment (MINAM) published Supreme Decree 009, to formally update and reorganize the National Service of Environmental Certification for Sustainable Investments (SENACE) and set up the Reorganization Commission with a term of 90 business days. This regulation included the participation of private entities as advisors in the reorganization commission. In addition, other regulations have been approved that affect the rigor of the procedure established for Environmental Impact Assessments (EIAs). For example, Supreme Decree 013-2024-EM creates a mechanism for late corrections. Likewise, Supreme Decree 011-2024-EM was approved authorizing 10% of expansion of the daily mineral processing installed capacity without requiring to undergo the procedure for Modification of the Processing Concession (Propuesta Ciudadana, 2025).

By contrast, Colombia has strengthened its institutional framework through the enactment of Law 2250 of 2022, which establishes a special legal framework for mining legalization and formalization. This law has reinforced controls for granting new licenses for large-scale open-pit mining, as well as creating new instruments such as the Single Plan for Mining Legalization and Formalization (PULFM) (UPME), among others (Fundación FORO, 2025).

In the case of lithium, Chile's Supreme Decree No. 30 of 2023, modified the regulations governing the EIA System to adapt it to the Climate Change Law and the Escazú Agreement. However, in 2025, the Committee of Ministers for Sustainability and Climate Change modified the regulation of the EIA System with the aim of relaxing environmental standards for projects subject to environmental qualification (Fundación Terram, 2025). In Bolivia, Supreme Decree No. 3549 of 2018 weakened preventive environmental controls, eased requirements for obtaining environmental licenses, reduced evaluation deadlines, and excluded certain projects from the procedure for approving environmental impact studies (CEDLA, 2025).

Toconao; the town of Toconao, Antofagasta Region.
Photo: Fundación Terram | Cristóbal Moreno

In general, among the four countries under review, only Colombia has strengthened its institutional framework to adapt to the new global demand for minerals. On the contrary, Chile, Bolivia, and Peru have weakened their institutional frameworks (Table 10).

Table 10. Changes in the Roles and Functions of Institutions in Charge of the Mining Sector

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Regulation	DS 009, 2024	Law 2250, 2022	DS No. 30, 2023	DS No. 3549
Controls for granting licenses	Not mentioned	Strengthens controls when granting new licenses for large-scale open-pit mining	Not mentioned	Weakens preventive environmental control by institutions
Instruments	Generates dispersed instruments that oversight entities must use	New instruments	Not mentioned	Not mentioned
Flexibilization of environmental standards	Not mentioned	Not mentioned	It relaxes environmental standards for projects subject to environmental assessment.	Not mentioned
Institutional changes	Declares the reorganization of the National Service of Environmental Certification (SENACE). Allows private companies to provide advisory services for the reorganization.	Not mentioned	Not mentioned	Not mentioned
Conclusion	**Setback**	**Progress**	**Setback**	**Setback**

Source: National Reports of Peru, Chile, Colombia, and Bolivia

Less strict Approval of Environmental Impact Assessments

The case of copper in Peru, over the last 10 years there has been constant pressure from the private sector to reduce and relax the environmental evaluation process. In 2014, Law 30230, known as the "environmental shock package", streamlined processes for private investment. Later, in 2023, Supreme Decree 013-2023-MINAM Law 30230 amended the evaluation process. Among the main changes were the changes to the baseline for impact assessments and the removal of certain competencies from SENACE (Lasheras & Ramos, 2022; Salazar, 2018). Then, in 2024, Supreme Decree 005-2024-MINAM sought to further cut deadlines and relax processes, removing SENACE's competencies in the evaluation process. Likewise, Supreme Decree 004-2024-MINAM reduced the admissibility period for EIAs and prohibited halting an ongoing evaluation when a reviewing entity failed to deliver its report within the established timeframe (Propuesta Ciudadana, 2025). In Colombia, no actions have been identified that relax regulations on licensing copper mining titles. This is a consequence of the position of the current Gustavo Petro administration. However, a new administration could make EIAs less strict, given that copper is positioned as one of the minerals with the highest international demand (Fundación FORO, 2025).

For lithium, Chile's Framework Law for Sectoral Authorizations No. 21.770 (LMAS) enacted in 2025, introduces changes to various legal bodies. It reduces permit processing times by 30% to 70%, modifies more than 40 sectoral laws, establishes new regulatory powers, and adopts Alternative Enabling Techniques (THA is the Spanish acronym) principles to modify low-risk environmental permitting. It does not modify environmental law itself, but it does relax the granting of permits involving environmental commitments in sectoral areas such as water and mining (Fundación Terram, 2025). In Bolivia, Supreme Decree No. 3549 prioritized speedy implementation of industrialization projects over technical rigor and ecosystem safeguards in EIA management. Shorter approval times for EIAs increases pressure on the human and technical resources of institutions granting environmental licenses. Furthermore, project proponents can provide information as a sworn statement. This situation jeopardizes the social license to operate and undermines trust in environmental institutions (CEDLA, 2025).

Shorter approval times for EIAs increases pressure on the human and technical resources of institutions granting environmental licenses.

Photo: Jorge Jesús Chávez Ortiz

Table 11. Comparative Flexibilization for the Approval of Environmental Impact Studies

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Regulation	DS-013-2023-MINAM	No flexibility actions	Framework Law on Sectoral Authorizations No. 21.770	DS No. 3549
Modification of EIA components	Modifies EIA baseline		Replaces low-risk environmental permits under the concept of Alternative Enabling Techniques (THA). Relaxes the granting of permits in sectoral areas such as water and mining	Exempts certain projects from EIA.
Shorter approval time	Reduces admissibility period	Not mentioned	Not mentioned	Reduction of approval time
Flexibilization of procedures	Flexible processes. Modifies SEIA regulation. Does not halt ongoing processes	Not mentioned	Streamlines permit processing by 30% to 70%. Modifies more than 40 sectoral laws and establishes new regulatory powers	Relaxes technical rigor and ecosystem safeguards. Exempts certain projects from EIA. Accepts information provided by the proponent as a sworn statement
Elimination of institutional competencies	Removes SENACE's competencies in technical opinions	Not mentioned	Not mentioned	Not mentioned
Conclusion	**Setback**	**Progress**	**Setback**	**Setback**

Source: National Reports of Peru, Chile, Colombia, and Bolivia

In summary, Colombia is currently promoting and exploring copper mining; it is the only country that has strengthened its regulations regarding mining title licensing; this is a political stance of the current government. In contrast, Peru, Chile, and Bolivia, which have been exploiting copper and lithium for longer, respectively, have relaxed the Environmental Impact Assessment (EIA) approval process. The main changes include reduced permit processing times, the use of sworn statements for assessment studies, changes to the baseline components, and decreased inter-institutional coordination (see Table 12).

Table 12. More flexible institutional and procedure requirements for Approving Environmental Impact Assessments

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Changes in the roles and functions of institutions in charge of the mining sector	Setback	Progress	Setback	Setback
More flexible approval of Environmental Impact Studies	Setback	Progress	Setback	Setback
Final assessment	**Setback**	**Progress**	**Setback**	**Setback**

Source: Prepared by the authors

Table 13. Final Scoring

COPPER		LITHIUM	
Peru	**Colombia**	**Chile**	**Bolivia**
↓	↑	↓	↓

Source: Prepared by the authors

Access to Disclosure of Policies, Plans, and Projects on Critical Minerals

Disclosure of sector information—whether contractual level, revenues and royalties, and environmental and social impacts, that is, throughout all or part of the project cycle

1. **Extractive Industries Transparency Initiative (EITI)**

   EITI is the global reference for transparency and accountability in the oil, gas, and mining sectors. This standard provides a framework for information disclosure and multi-stakeholder oversight. EITI has been designed to empower governments, industry, and civil society to promote informed understanding of natural resource management, strengthen governance and accountability in both public and corporate spheres, and provide data to support public policy creation and dialogue (EITI 2023). For copper, Peru was the first country in Latin America to adopt the standard in 2007; it mainly provides information on the use of resources derived from mining, which are transferred to subnational governments as the mining canon. In total, nine National Reports have been published. These reports have included information on social and environmental expenditures, CPLI, among others (Propuesta Ciudadana, 2025). In Colombia, the country has been a member of EITI since 2014; however, it has not presented the corresponding national reports. For lithium, Chile recently joined EITI in September 2025 while Bolivia has not joined this initiative.

2. **Issues in State Institutional Platforms**

   For copper, Peru boasts strong transparency sector policies that allow access to relevant information regarding mineral extraction through two institutions: the Ministry of Energy and Mines and SENACE. Nevertheless, deficiencies remain in access to information on social and environmental issues (Propuesta Ciudadana, 2025). In Colombia, information provided by mining sector institutions presents gaps and contradictions across different State portals regarding royalties or progress of copper projects. Generally, available data is limited to technical sheets and does not include key information for citizen monitoring, such as project socialization dates, holding of public mining hearings, or other citizen participation spaces, which would provide better analytical elements for decision-making (Fundación FORO, 2025).

   For lithium, Chile's National Lithium Strategy provides insufficient access and disclosure of information in the early stages of decision-making, both in defining which salt flats to conserve or develop, and in the contractual stage currently underway. The lack of transparency has generated uncertainty and distrust among civil society organizations and affected communities (Fundación Terram, 2025). In Bolivia, opaque contracts signed with China and Russia in 2023 and the lack of access to information have prevented effective citizen and legislative oversight (CEDLA, 2025).

3. **Initiatives of Platforms and Other Forms of Disclosure**

   For copper, Colombia has the AnnA Minería platform, but it has some restrictions for users who are not registered as proponents or applicants for mining titles (Fundación FORO, 2025). For lithium, in Chile, through participatory processes with regional workshops and digital consultation mechanisms in the main mining regions, public consultation of the National Critical Minerals Strategy (EMC) is being promoted using digital tools (Fundación Terram, 2025). For lithium, Bolivia's report mentions good governance standards (ESG, IRMA) include access to and disclosure of information (Initiative for Responsible Mining Assurance, 2022); however, it does not specify whether they have been implemented.

   The relevance of access to information on critical minerals can be seen, for example, in the fiscal risks brought by the energy transition in the region, since it will be necessary to properly manage national accounts to face costs of US$2.6 billion in foregone revenues from fossil fuels by 2035 if renewable energy is pursued (Blackman et al., 2025). As in this example, transparency in the critical minerals sector becomes essential to clarify the benefits and costs of the energy transition.

   Although the region has incorporated special legislation on access to information and state transparency obligations, in the extractive and critical minerals sector, for copper, Peru shows a positive trend as it belongs to the international EITI standard and also makes information available through institutional portals of the Ministry of Energy and Mines and SENACE. In Colombia, there are restrictions on access to information. For lithium, in Chile, public institutions have limited information portals. In Bolivia, there is a clear setback in access to and disclosure of information (see Table 14).

Table 14. Disclosure of Sector Information for Copper and Lithium Minerals

MINERAL	COPPER		LITHIUM	
Country	**Colombia**	**Peru**	**Chile**	**Bolivia**
EITI. Extractive Industries Transparency Initiative (EITI)	Delay in submission of Colombia's report	In Peru, a pioneer worldwide, the standard has been decentralized, and it is possible to know how mining resources are used and transferred to subnational governments		Initiative for Responsible Mining Assurance, 2022). Good governance standards (ESG, IRMA) include access to and disclosure of information (Initiative for Responsible Mining Assurance, 2022)
Issues in platforms of state institutions.	Contradictions in information on mining projects. Contradictions in figures on copper exploitation royalties. Information on strategic minerals is not updated		ENL provides insufficient access and disclosure of information or decision making in early stage	Contracts with companies lack transparency and make it difficult to access complete plans and projects for critical minerals
Platforms and Other Forms of Disclosure	Restricted access AnnA Minería platform. ANM website: technical sheets do not include key information for citizen monitoring	Ministry of Energy and Mines regularly publishes mining information through a Mining Yearbook and a monthly Mining Statistical Bulletin. SENACE publishes executive summaries and EIAs evaluated by the entity and those in process. It also publishes complementary environmental instruments, such as Technical Support Reports (ITS) and MEIAs	The EMC is currently undergoing public consultation (Ministry of Mining, 2025). Dissemination is being implemented through participatory processes, including regional workshops and digital mechanisms	Since 2010, YLB published its institutional reports until 2021. The publication of these important institutional documents was interrupted, creating an information gap essential for project monitoring and oversight
Conclusion	**Stalled**	**Progress**	**Stalled**	**Regression**

Source: National Reports of Peru, Chile, Colombia, and Bolivia

Vicunas in the Atacama Region, Maricunga Salt Flat Vicunas at the Social Site, and Climate RiskRamsar Negro Francisco Lake Complex, Santa Rosa Lagoon, Atacama Region. Photo: Fundación Terram | Cristóbal Moreno

Table 15. Final score

COPPER		LITHIUM	
Peru	Colombia	Chile	Bolivia
↑	–	–	↓

Source: Prepared by the authors

Preventive Assessment of Environmental, Social, and Climate Risk

Analysis of environmental, human rights, and climate change risk

The four countries have competent national institutions responsible for risk analysis, mainly social and environmental, through the Environmental Impact Assessment (EIA) instrument. Unfortunately, none of the four countries has incorporated climate change or human rights issues as considerations that reinforce risk prevention in critical mineral projects within the evaluation instrument; therefore, all four countries have been classified as limited (see Table 16).

Table 16. Preventive Assessment of Environmental, Social, and Climate Risk

MINERAL	COPPER		LITHIUM	
Country	**Colombia**	**Peru**	**Chile**	**Bolivia**
Competent institution	Authorization by ANLA if the projected total removal of useful and waste material is greater than or equal to two million tons/ year (Republic of Colombia, 2015) or by the Regional Autonomous Corporations (CAR) below this figure	The overarching framework is provided by SEIA and complemented by the Regulation on Environmental Protection and Management for Mining Exploitation, Processing, General Work, Transport, and Storage Activities (DS 040-2014-EM)	The National Lithium Commission was tasked with developing a set of proposals to inform a National Lithium Policy. Within this framework, the commission implemented a pilot Strategic Environmental Assessment (SEA) in the formulation of the National Lithium Policy	Environmental Law No. 1,333. However, there is no specific regulation for environmental management in the lithium sector, where the mining sector framework is applied
Climate change risk	No	No	No	No
Human rights risk	No	No	No	No
Social risk	Yes	Yes	Yes	Yes
Environmental risk	Yes	Yes	Yes	Yes
Instruments	Guidelines for participation and social dialogue on which EIAs are based	EIAs make up the environmental and social evaluation tool for medium and large-scale mining	OECD guidelines integrated social, economic, and environmental dimensions	Instruments such as EIA and Environmental Monitoring Re
Conclusion	**Stagnation**	**Stagnation**	**Stagnation**	**Stagnation**

Source: National Reports of Peru, Chile, Colombia, and Bolivia

None of the four countries has incorporated climate change or human rights issues as considerations that reinforce risk prevention in critical mineral projects.

Reduction, Elimination, or Authorization to Extract Resources from Biodiversity Protecttion Coonservation Areas

For copper, in Colombia, due to the public utility and social interest character of copper mining, through the land restitution process, a project of this nature can be developed on land requested for restitution, since purchase, expropriation, or imposition of easements may occur. This dispute over lands comprised in the restitution process lies in a gray area, as there is no unified legal framework to resolve cases of overlap between mining projects and excluded areas (Fundación FORO, 2025). In Peru, there is also a threat to protected areas that overlap with mining projects. Currently, Law No. 11822 aims to modify the boundaries of natural protected areas, among other measures (Propuesta Ciudadana, 2025).

For lithium, in Chile, within the framework of the National Lithium Strategy (ENL), a Network of Protected Salt Flats was created to comply with the Kunming-Montreal Global Biodiversity Framework of the Convention on Biological Diversity. However, the criteria permitted to classify as protected certain salt flats that are not strategic for lithium production; conversely, salt flats of greater importance for lithium exploitation were left unprotected. This selective logic shows that the conservation policy was not designed to maximize protection of biodiversity at risk, but rather to provide an image of sustainability image while allowing the continuation of strategic lithium projects. A second critical element concerns the so-called zones of scientific interest for mining, a legal figure theoretically intended to foster research and safeguard areas of particular scientific value. In practice, however, this instrument has been used ambiguously: while it restricts some activities, it has also served as an administrative framework for granting exceptions to legitimize mining exploitation in territories that should enjoy greater protection. In short, these criteria have been used ambiguously to allow lithium extraction in protected areas (Fundación Terram, 2025). In Bolivia, lithium and critical mineral exploitation exerts direct pressure on high-conservation areas. This dynamic translates into a worrying trend to invade, downsize or even eliminate areas classified as exclusion zones. From an environmental perspective, extraction can generate negative impacts on fragile ecosystems, affect water sources and biodiversity essential for community subsistence. From a social perspective, intrusion into indigenous territories can lead to land loss, forced displacement, cultural erosion, and the breakdown of traditional ways of life (United Nations, 2007, Declaration on the Rights of Indigenous Peoples) (CEDLA, 2025).

Table 17. Reduction, Elimination, and Authorization of Extraction of Resources in Protected Areas for Biodiversity Conservation

MINERAL	COPPER		LITHIUM	
Country	**Colombia**	**Peru**	**Chile**	**Bolivia**
Regulatory changes that favor mining activity in protected areas	Land restitution process	Bill No. 11822. At the same time, several salt flats with high ecological value and particularly fragile water ecosystems were excluded, but they overlap areas of interest for lithium exploitation	The creation of a Network of Protected Salt Flats leaves out several salt flats with high ecological value and fragile aquatic ecosystems, but which overlap areas of interest for lithium mining	Regulatory and territorial flexibilization facilitates access to valuable lithium resources, an imperative that seems to prevail over environmental and cultural safeguards
Classification	**Setback**	**Setback**	**Setback**	**Setback**

Source: National Reports of Peru, Chile, Colombia, and Bolivia

Source: The Guardian (2025). Used for editorial purposes with attribution.

A balance of the fourth axis on preventive assessment of environmental, social, and climate risk, according to the evaluation of indicators (see Table 18), show regressive score for all four countries.

Table 18. Balance of Preventive Assessment of Environmental, Social, and Climate Risk

MINERAL	COPPER		LITHIUM	
Country	**Peru**	**Colombia**	**Chile**	**Bolivia**
Analysis of environmental, human rights, and climate change risk	Limited	Limited	Limited	Limited
Reduction, elimination, or authorization of resource extraction in protected areas for biodiversity conservation	Setback	Setback	Setback	Setback
Final assessment	**Setback**	**Setback**	**Setback**	**Setback**

Source: Prepared by the authors

Table 19. Final Assessment

COPPER		LITHIUM	
Peru	**Colombia**	**Chile**	**Bolivia**
↓	↓	↓	↓

Source: Prepared by the authors

Table 15 shows the final assessment of the four thematic areas analyzed in this comparative study. It shows that, for the first thematic area, the effectiveness of citizen participation in decision-making, Peru's efforts have stagnated in regards of copper, while Colombia has strengthened its participation mechanisms. In the case of lithium, Chile has moved forward, while Bolivia has regressed. Regarding the second thematic area, institutional and procedural flexibility for the approval of Environmental Impact Assessments (EIAs), only Colombia has strengthened its institutions and procedures for copper, while Peru regressed. Chile and Bolivia have relaxed their lithium standards. The third thematic area concerns access to and dissemination of policies, plans, and projects for critical minerals. Peru has strengthened access to information mechanisms for copper, while Colombia stalls. For lithium, Chile stagnates, while Bolivia regresses. Finally, in the fourth axis on preventive assessment of environmental, social and climate risk, it can be observed that the four countries are in clear decline.

Table 20. Consolidated analysis of thematic axes

THEMATIC AREAS	COPPER		LITHIUM	
	Peru	Colombia	Chile	Bolivia
Efficiency of citizen participation in decision-making	▬	↑	↑	↓
Institutional and procedural flexibility for the approval of environmental impact studies	↓	↑	↓	↓
Access to and dissemination of policies, plans, and projects for critical minerals	↑	▬	▬	↓
Preventive assessment of environmental, social, and climate risks	↓	↓	↓	↓

Source: Prepared by the authors

Final thoughts

Other studies and reports have analyzed the institutional and legal frameworks of the energy transition in the region (Economic Commission for Latin America and the Caribbean, 2024; TrustLaw, 2024), and we can appreciate how difficult it is to answer the main question of how the policy of extracting transition minerals, such as copper and lithium, is being implemented in Latin America. Regarding governance, regulations, standards, and safeguards, this research analyzes the situation of critical minerals under the concept of democratic governance. The main conclusion is that in Peru, Colombia, Chile, and Bolivia, the extraction of critical minerals for the energy transition is being implemented in a governance context that is weak and in clear regression in the region. This means that the current form of government has undermined the design and execution of policies articulated with actors and interests, through practices of dialogue and agreements that guarantee democratic, transparent, and efficient management, with the objective of ensuring citizen well-being (Velásquez, 2020).

In the coming years, Latin America will play a central geopolitical role in the extraction of critical minerals for the energy transition. However, as other studies show, there is poor ambition among Latin American countries to decarbonize their economies or move toward a more sustainable and just society (Alfonso et al., 2023), and even an unclear outlook for planning toward an energy transition (Martínez Pulido et al., 2025). As this study shows, the countries analyzed present weak governance, as described below:

a) Limited effectiveness of citizen participation in decision-making

At the international level, the promotion of critical mineral extraction is being carried out with mechanisms conceived in the 1990s, promoted by the United Nations, such as FPIC (Free, Prior, and Informed Consent) and the incorporation of participation in EIAs, which have not been fully integrated into current policies to tackle global warming. Furthermore, no policies have been promoted to strengthen participation mechanisms in territories holding critical minerals such as copper and lithium. Moreover, the signing of the Escazú Agreement does not guarantee the implementation of participation schemes, as some countries have not ratified it, and others, despite ratifying it, have not adapted to this new standard, or show reluctance to do so.

Colombia shows progress in implementing participation mechanisms through the *Public Mining Hearing* in the ANM. Peru remains stagnant without policies or regulations promoting participation since 2011. For lithium, Bolivia shows a serious setback following agreements signed with China and Russia. On the other hand, Chile, through its National Lithium Strategy (ENL), has established specific participation mechanisms for lithium exploitation. Although the countries analyzed maintain regulatory frameworks for participation mechanisms in mining activity, all four countries present limitations in implementing citizen participation mechanisms, including conflicts with authorities and the private sector regarding their implementation.

b) More flexible institutions and procedures for the approval of EIAs

For the indicator *of changes in the roles and functions of institutions in charge of the mining sector*, in general, in the case of copper, Colombia has strengthened its institutional framework to adapt to the new global demand for minerals (progress). By contrast, Peru, with more than 50 years of large-scale copper exploitation, has weakened its institutional framework. For lithium, both Chile and Bolivia have weakened their institutional frameworks.

For the indicator *describing flexibility for the approval of Environmental Impact Studies*, in the case of copper, Colombia is only beginning to promote and explore copper extraction, and it is the only country that has strengthened its regulations on mining title licensing. This corresponds to the political position of the current government. By contrast, Peru, with more than 50 years of large-scale copper exploitation, has relaxed EIA approval. For lithium, both Chile and Bolivia have relaxed the standards followed for EIA approval (shortening evaluation times, eliminating evaluation competencies, removing information requirements for evaluation, etc.).

c) Limited access and disclosure of policies, plans, and projects on critical minerals

Latin America adopted legislation on access to information more than twenty years ago, which has gradually consolidated and extended at the sectoral level. For copper, Peru shows a positive trend, as it enforces the international EITI standard and also makes information available through institutional portals of the Ministry of Energy and Mines and SENACE. Colombia is also a member of EITI; however, it has delayed the timely disclosure of its national report, as has also occurred in Peru in recent years. For lithium, in Chile, public institutions have portals with limited information. Disclosure of the National Critical Minerals Strategy (EMC) is carried out through regional workshops and digital mechanisms. In Bolivia, agreements with China and Russia have restricted access to information.

As can be observed, of the four countries studied, only Peru shows progress, though with several challenges; Colombia and Chile are slowly adopting terms for information disclosure, and Bolivia faces restrictions on access to information. It is important to note that none of the four countries has information disclosure platforms specifically dedicated to critical minerals.

d) Limited Preventive Assessment of Environmental, Social, and Climate Risk with no analysis of environmental, human rights, and climate change risk

Unfortunately, none of the four countries has incorporated risk analysis on climate change or human rights impacts within the evaluation instrument; however, all four countries have developed EIA guidelines and instruments on some matters related to these two themes.

e) Reduction, Elimination, and Authorization for Extraction of Resources in Protected Areas for Biodiversity Conservation

In general, there is a clear setback in the four countries. Legal initiatives and regulatory changes weaken natural protected areas or intangible zones for transition mining activity. For copper, Colombia, with the land restitution process, and Peru, with Bill No. 11822. For lithium, Chile has created a Network of Protected Salt Flats, and Bolivia adopted more flexible territorial regulations. In sum, regarding the fourth axis on preventive assessment of environmental, social, and climate risk, evaluation indicators show all four countries are on a regressive path.

The greatest challenge imposed by global warming is the construction of a policy based on the foresight of public actions for mitigation and adaptation (Pajares Garay, 2014), guided by a series of principles that can help us avoid a certain global collapse (Aranha Corrêa do Lago, 2025). These principles are related to how costs are allocated, who assumes the responsibility for prevention with respect to global warming, how we adapt to the consequences that will not be avoidable as a society, ensuring a fair, transparent, and participatory process in the distribution of resources, and determining what emissions we can allow ourselves in the short term to achieve the goal of reducing them in the long term. The construction of principles for establishing the transition must answer how we adjust and who benefits from the adjustment. If not everyone adjusts, and if the impact of adjustment is greater, then we are not fulfilling the purposes of the energy transition.

An equitable transition would involve rationing energy demand, satisfactory financing of mitigation, and acceptance of the limited natural supplies to be exploited. None of this can be considered within the challenges of political instability in the region (Red Latinoamericana de Industrias Extractivas, 2021). Therefore, given the threat of global warming in the coming decade, we must establish certain standards that help us limit both production and consumption. But this limitation must rely on the most scientifically viable option in the current context: the use of technology that does not produce as many greenhouse gas emissions and, in the short term, allows us to reach the 1.5-degree Celsius threshold. This conclusion, then, must be analyzed in terms of whether it is fair for all, and how.

The answer to this question is political, ranging from the debate and questioning of the argument of respect for national sovereignty to corporate business interests. We must not forget the moral purpose of tightening the belt for everyone, and we must question what impedes us from doing so (Shue, 2023). The use of critical minerals cannot therefore respond to the traditional unsustainable forms of the contemporary extractive model. This is why it is important to analyze the fairness of this transition: democratic governance and the potential environmental and social risks of these investments. Today, the transition is not faithfully fulfilling either of these two reasons.

Recommendations

This study presents an overview of governance in Latin America regarding the exploitation of critical minerals in the energy transition process. Within the framework of the RLIE, it is recommended to extend research to other Latin American countries that belong to the network and face similar challenges, in order to articulate joint actions for intervention and visibility. In addition, it is important to coordinate with academia and universities to learn about research and trends and to propose a symmetrical consensus within the New Green Deal. For example, the debate on the concept of participation or negotiation, where the staging of actors' power takes place (see Preciado Jeronimo, 2023).

Based on this comparative study, a research agenda could strengthen debate and exchange among RLIE members, and thereby articulate different sources of financing and ongoing projects toward a common goal.

It is also recommended to encourage exchange programs among civil society organizations to identify opportunities and lessons learned from energy transition models in the region and beyond. For example, Peru shows strengths for information disclosure, Chile in the implementation of a specific strategy for the lithium transition mineral, and Colombia in institutional matters. Sharing these experiences and innovations from each country can contribute to strengthening RLIE and governance in Latin America.

Another recommendation is to create an observatory on the governance of critical minerals at the Latin American level, enabling RLIE members to become aware of indicators to measure progress or setbacks in public policies. It would also allow monitoring compliance with standards and regulations.

There is a trend toward weakening citizen participation mechanisms, despite the existence of innovative mechanisms such as the Escazú Agreement. It is urgent to generate initiatives for coordination among countries that seek aggregation through proposals emerging from each nation, and to promote spaces for regional coordination with bottom-up policies.

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