



Faculty of Legal Sciences

School of International Studies

**The Andean Community's Response to Mining and
Environmental Degradation**

Project prior to obtaining a Bachelor's Degree in
International Studies

Author:

Mateo Sebastian Sarmiento Zhunio

Advisor:

Ana Isabel Malo Martínez

Cuenca – Ecuador

2026

This document is dedicated to my family, my partner,
and my friends, who, day after day, have been a
cornerstone of my personal growth and, above all, of
the completion of this thesis. In particular, to my
parents, Tania and Giovanni, my grandparents, and my
girlfriend Stephanie, whose love, support, and
companionship have been with me every step of the
way.

ACKNOWLEDGMENTS

I am deeply grateful to my mother, Tania, for the countless sleepless nights during which she made me feel supported and loved. To my father, Giovanni, for teaching me that, even when the road is difficult, it can be overcome with effort and dedication. To my sister, Camila, for your tireless antics and your boundless eloquence, which made my life happier and more bearable. Thank you for inspiring me with your art and empathy, and for filling my days with joy, sensitivity, and love.

To my grandparents, who have been a blessing in my life, as I had the good fortune to spend time with and share experiences with most of them.

To my paternal grandparents, Walther and Fanny, who still accompany me with their love and presence. And to my maternal grandparents, Mariana and, in memory of her husband, my grandfather Alejandro, whom I consider my second father, for giving me the strength I needed to keep going. I treasure your final blessing in my heart; thank you for raising me with so much love and for always watching over me, even when you were no longer here.

Table of Contents

ACKNOWLEDGMENTS	ii
Table of Contents	iii
List of Tables	v
ABSTRACT	vi
RESUMEN	vii
INTRODUCTION	1
CHAPTER 1 LEGAL FRAMEWORK AND ENVIRONMENTAL POLICIES OF THE ANDEAN COMMUNITY	2
1.1 The Andean Community as a regional integration framework with supranational regulatory capacity	2
1.1.1 Legal Foundations of Regulatory Authority	2
1.1.2 Basic Institutional Structure	3
1.2 Forms of Mining in the Region.....	4
1.2.1 Regulatory Framework of Decision 774	6
1.2.2 Control and Cooperation Mechanisms	6
1.3 Mining as a Cross-Border Problem	7
1.3.1 Characteristics of cross-border illegal mining	7
1.3.2 Links to Organized Crime	8
1.3.3 Socio-environmental Impacts.....	8
1.4 Cross-border environmental coordination in response to mining and environmental degradation.....	9
1.4.1 Concept and Modalities of Coordination	9
1.4.2 Framework of Decision 774 and Decision 763	9
1.4.3 Mechanisms for inter-agency cooperation	10
1.5 Lack of Access to Environmental Information and Traceability.....	10
1.5.1 Obstacles in Andean Countries	11
1.6 Indigenous Peoples and Institutional Legitimacy	12
1.6.1 Consultation and Consent.....	12
1.6.2 Institutional Legitimacy	13
1.7 Structural Limitations of the Andean Institutional Response	14
1.7.1 Gap between regulatory design and implementation	15
1.7.2 Institutional asymmetries between countries	15
1.7.3 Operational Weaknesses of Regional Bodies.....	16
1.8 Institutional Framework of the CAN	17
1.8.1 Evolution of the Regulatory Framework and Environmental Policies	19
1.8.2 Regional Coordination Mechanisms and Environmental Management.....	25
CHAPTER 2 IMPLEMENTATION OF CAN INSTRUMENTS IN MEMBER COUNTRIES.....	28
2.1 Legal Instruments (Andean Decisions).....	28
2.2 Bodies and Institutions.....	37

CHAPTER 3 SCOPE OF THE CAN’S INSTRUMENTS AND REGULATORY FRAMEWORK ON MINING ACTIVITIES IN ECUADOR.....	40
3.1 Ecuador within the CAN Framework: Mining Context and Andean Regulatory Reception	40
3.2 Impact of Decision 523 in Ecuador	42
3.3 Impact of Decision 774 (Andean Policy to Combat Illegal Mining) in Ecuador	43
3.4 Impact of CAMI in Ecuador	44
3.5 Socio-environmental Impacts in Ecuador: The Gap Between Andean Regulations and Territorial Reality.....	45
CONCLUSIONS	49
REFERENCES	51

List of Tables

Table 1 Findings regarding territorial impacts in Ecuador	46
--	----

The Andean Community's Response to Mining and Environmental Degradation

ABSTRACT

The general objective of this research is to analyze the institutional response and regulatory framework of the Andean Community (CAN) regarding mining and its effects on environmental degradation. It examines its legal framework and its implementation in member countries and also determines its impact in Ecuador. Methodologically, a historical-evolutionary analysis is conducted, addressing instruments such as Decisions 391, 523, 763, 774, and 864, within the theoretical framework of regional integration studies and supranational environmental governance. Among the main findings, there is evidence of a profound structural gap between the design of CAN regulations and their effective application. There are marked institutional asymmetries among member countries that create conditions conducive to regulatory arbitrage, so that, given the deficits in cross-border control, criminal networks linked to illegal mining can in practice relocate to jurisdictions with weaker enforcement capacity. In the case of Ecuador, although the State has incorporated CAN guidelines into its domestic legal framework, strengthening criminal sanctions for illegal mining in accordance with Decision 774, the effectiveness of these regulations is limited in their effective territorial application. This situation highlights a tension between the orientations of the extractivist model adopted by the Ecuadorian state and the environmental commitments made within the regional framework, which results in greater exposure of ecosystems and the territories of indigenous peoples to the impacts of mining expansion.

Keywords: Andean Community, environmental degradation, environmental management, illegal mining, legal mining, indigenous peoples.

La Respuesta de la Comunidad Andina frente a la Minería y Degradación Ambiental

RESUMEN

El presente trabajo de investigación tiene como objetivo general analizar la respuesta institucional y la normativa de la Comunidad Andina (CAN) frente a la minería y sus efectos de degradación ambiental, se examina su marco jurídico, la implementación en los países miembros y también se determina su impacto en el Ecuador. Metodológicamente se hace un análisis histórico-evolutivo abordando instrumentos como las Decisiones 391, 523, 763, 774 y 864, bajo el enfoque teórico de la investigación regional y la estructura ambiental supranacional. Entre los principales hallazgos, se evidencia una profunda brecha estructural entre el diseño de la normativa de la CAN y su aplicación efectiva. Existen marcadas asimetrías institucionales entre los países miembros que generan condiciones propicias para un arbitraje regulatorio, de modo que, ante los déficits de control transfronterizo, las redes criminales vinculadas a la minería ilegal pueden desplazarse en la práctica hacia jurisdicciones con menor capacidad sancionatoria. En el caso de Ecuador, aunque el Estado ha incorporado en su ordenamiento interno las directrices de la CAN, endureciendo las sanciones penales frente a la minería ilegal en concordancia con la Decisión 774, la efectividad de estas normativas se ve limitada en su aplicación territorial. Esta situación evidencia una tensión entre las orientaciones del modelo extractivista adoptado por el Estado ecuatoriano y los compromisos ambientales adquiridos en el marco regional, lo que se traduce en una mayor exposición de los ecosistemas y de los territorios de los pueblos indígenas a los impactos de la expansión minera.

Palabras clave: comunidad andina, degradación ambiental, gestión ambiental, minería ilegal, minería legal, pueblos indígenas.

INTRODUCTION

The Andean region, characterized by its high biological richness and interconnected ecosystems, currently faces one of its greatest threats: the uncontrolled expansion of mining activity and the resulting environmental degradation. This problem is largely driven by illegal and informal mining, which has evolved from a national issue into a cross-border problem. Transnational criminal networks have found in illegal mining a source of financing that, while operating outside the law, pollutes shared watersheds, accelerates deforestation, and violates the territorial rights of indigenous peoples.

In response to this socio-environmental crisis, the Andean Community (CAN) has developed an institutional response grounded in its supranational normative capacity. Through its regulatory instruments, which are binding on its member states (Bolivia, Colombia, Ecuador, and Peru), the CAN has evolved from a purely commercial approach toward the construction of a regional environmental framework. Decisions such as Decision 391 on genetic resources, Decision 523 on biodiversity, Decision 774 to combat illegal mining, and Decision 864, which adopts the Andean Environmental Charter, represent an effort to harmonize environmental protection across the subregion.

However, an analysis of these instruments reveals a profound institutional paradox. Despite having an advanced regulatory framework, there is a structural gap between the Decisions issued at the regional level and their effective implementation within national territories. The marked institutional, legal, and budgetary asymmetries among member countries create conditions that weaken regulatory control mechanisms, which in practice make it easier for criminal organizations to exploit regulatory differences between jurisdictions and opt for those with weaker enforcement capacity or more porous cross-border controls.

In this context, the general objective of this research is to analyze the institutional and regulatory response of the Andean Community to mining and its effects on environmental degradation. The study examines the implementation of the Community's legal framework in member countries and specifically determines the scope and limitations of these instruments in these countries, with a more in-depth focus on the Ecuadorian case.

CHAPTER 1

LEGAL FRAMEWORK AND ENVIRONMENTAL POLICIES OF THE ANDEAN COMMUNITY

1.1 The Andean Community as a regional integration framework with supranational regulatory capacity

The Andean Community constitutes a regional integration framework characterized by the possession of supranational capacity that transcends simple intergovernmental coordination. Founded by the Cartagena Agreement signed on May 26, 1969, the CAN has evolved into a regional organization with international legal personality, particularly following the entry into force of the Trujillo Protocol in 1996, which amended Chapter II of the founding treaty (Pico Mantilla, 1992). This institutional transformation endowed the CAN with a structure capable of generating legal norms with direct binding effects on the domestic legal systems of member states, thereby establishing an autonomous community legal order (Romero Zambrano, n.d.).

1.1.1 Legal Foundations of Regulatory Authority

Article 6 of the Cartagena Agreement establishes the regulatory powers of the Agreement's Commission, now the Commission of the Andean Community, providing that it shall issue mandatory regulations in matters within its competence. This provision, which is supplemented by the Trujillo Protocol, demonstrates the CAN's capacity to produce secondary legislation with a supranational hierarchy. The Court of Justice of the Andean Community (TJCA) has extensively elaborated on the characteristics of this legal system, establishing in its ruling in Case 2-N-86 (June 10, 1987) that "the legal system of the Cartagena Agreement is binding, mandatory in all Member Countries, and must be respected and complied with by all of them" (Gómez Apac, 2019).

The legal nature of Andean law is characterized by three fundamental pillars that determine its effectiveness and scope: primacy, direct applicability, and binding effect. The principle of primacy was enshrined by the Commission during its Twenty-ninth Regular Session in June 1980, when it declared the "full validity" of the principle according to which "the legal order of the Agreement prevails, within the scope of its competencies, over national laws, and Member Countries may not oppose its measures or unilateral acts" (Gómez Apac, 2019). This

principle implies that, in the event of a conflict between a Community rule and a domestic rule, the Community rule shall prevail, benefiting both primary and secondary legislation (Quindimil López, 2009).

The direct applicability of Andean decisions is based on Article 3 of the Treaty Establishing the Court of Justice, which states that “the decisions of the Andean Council of Ministers of Foreign Affairs or of the Commission and the resolutions of the General Secretariat shall be directly applicable in the Member States as of the date of their publication in the Official Gazette of the Agreement” (General Secretariat of the Andean Community, 1979). The Court has explained that this characteristic means that “the Community norm automatically acquires the status of positive law within the domestic legal order of the States to which it is addressed” (Gómez Apac, 2019, p. 52) Consequently, Andean Community law becomes part of the domestic legal system without the need for acts of domestic incorporation, and “any action under domestic law, whether legislative, executive, or judicial, that seeks to incorporate the Community norm into the national legal system is unnecessary, irrelevant, and counterproductive” (Gómez Apac, 2019, p. 52).

The binding effect derives from Article 4 of the Treaty Establishing the Court, which imposes on Member States the obligation to “adopt the measures necessary to ensure compliance with the norms that constitute the legal order of the Andean Community” and to undertake “not to adopt or employ any measure that is contrary to such norms or that in any way hinders their application” (General Secretariat of the Andean Community, 1979). The Court has reiterated that Andean rules “acquire, by their very nature, binding force and are enforceable as of their respective dates of entry into force” (Gómez Apac, 2019, p. 48).

1.1.2 Basic Institutional Structure

The institutional architecture of the CAN comprises governing bodies, technical bodies, and mechanisms that make up the Andean Integration System. The Andean Council of Ministers of Foreign Affairs (CAMRE), created by the Protocol of Trujillo, is the body responsible for formulating the foreign policy of the Andean countries on integration issues and for issuing decisions by consensus (Article 17 of the Cartagena Agreement). Its pronouncements take the form of Decisions that are binding on the member states (Andean Community, 1996).

The Commission of the Andean Community, composed of delegates from the Member Countries, is responsible for formulating, implementing, and evaluating integration policy; establishing mandatory regulations within its sphere of competence; and issuing decisions by absolute majority. The General Secretariat of the Andean Community (SGCAN), headquartered in Lima, performs executive functions, administers the integration process, ensures compliance with community commitments, presents initiatives and proposals for decisions, and coordinates the implementation of environmental strategies (General Secretariat of the Andean Community, n.d.).

The Court of Justice of the Andean Community has been in operation since May 28, 1979, and exercises functions of reviewing the legality of acts by community bodies, monitoring and sanctioning non-compliance by Member Countries, which serves as a guarantee of the joint application of community law, and exercising exclusive jurisdiction over disputes between Member Countries. Since its judgments are exempt from homologation or exequatur and may be addressed directly to the authorities of the Member Countries (General Secretariat of the Andean Community, 1979).

1.2 Forms of Mining in the Region

An analysis of the Andean institutional response to mining necessarily requires a precise conceptual definition of the different forms of mining activity that coexist in the region. Terminological confusion between legal mining, Artisanal and Small-Scale Mining (ASM), informal mining, and illegal mining has led to ineffective and, at times, counterproductive public policies, as uniform approaches have been applied to heterogeneous realities that demand differentiated responses (Hentschel, 2002).

a. Legal Mining

This is defined as activity carried out with authorization to commence or resume operations and a valid concession title issued by the competent authority, in compliance with environmental licensing requirements, a certificate of absence of archaeological remains, and other obligations established in sectoral regulations (Peruvian Ministry of Energy and Mines, 2016). This type of mining operates within a comprehensive regulatory framework that includes

labor, labor-, tax, and environmental obligations, and contributes to the treasury through the payment of royalties, mining fees, and taxes.

b. Artisanal and Small-Scale Mining (MAPE)

This encompasses formal or informal mining operations with predominantly simplified forms of exploration, extraction, processing, and transportation, characterized by low capital intensity and high labor intensity (Organization for Economic Cooperation and Development (OECD), 2013). According to ECLAC, ASM is distinguished by its intensive use of labor, low technological development, poor safety and hygiene conditions, the generation of local production chains, and its role as an employment alternative for sectors affected by poverty (ECLAC, 2000; Chaparro, 2000). Approximately 40 million people depend directly on the MAPE globally, and 150 million do so indirectly (IGF (Intergovernmental Forum on Mining), 2026).

c. Informal mining

This refers to mining activity carried out using equipment and machinery that does not meet the characteristics of the activity being performed, or without complying with administrative, technical, social, or environmental standards, in areas not prohibited for mining activity, by individuals who have initiated a formalization process (Legislative Decree No. 1105, 2012). This category implies a transition toward formality, where the operator has expressed an intention to comply with regulations but has not yet met all requirements.

d. Illegal mining

This is the central focus of CAN Decision 774, defined as activities related to the exploration, extraction, exploitation, transportation, marketing, and storage of mineral resources that are carried out without authorization from the competent authority, or in areas where such activities are prohibited, or using prohibited equipment, devices, or chemicals (Andean Council of Foreign Ministers, 2012b). This practice operates entirely outside the law, with no possibility of legalization, and is systematically linked to transnational organized crime, money laundering, and serious human rights violations (United Nations Office on Drugs and Crime (UNODC), 2023).

1.2.1 Regulatory Framework of Decision 774

Decision 774 was adopted in 2012 and constitutes the CAN's most specific regulatory instrument regarding illegal mining. Its main objectives are: to address illegal mining and related activities in a comprehensive, cooperative, and coordinated manner; to optimize the control and monitoring of the import, export, transport, processing, marketing, and transactions of minerals derived from illegal mining; and to control machinery, equipment, supplies, and hydrocarbons used in illegal mining (Andean Council of Foreign Ministers, 2012b). Member Countries commit to adopting legislative, administrative, and operational measures for prevention and control, while also strengthening asset forfeiture mechanisms, combating money laundering and related crimes, strengthening control and traceability of machinery and supplies, planning and executing coordinated operations in border areas, collaborating in the identification and prosecution of organized structures, restore affected transboundary ecosystems, implement economic and social development programs in border integration zones; and exchange experiences on the formalization of artisanal mining.

1.2.2 Control and Cooperation Mechanisms

It is essential to distinguish between the obligations that Decision 774 formally imposes on member states and the phenomena that erode them in practice. In its regulatory framework, Decision 774 establishes in Article 4 a list of cooperation measures, which include strengthening asset forfeiture mechanisms, combating money laundering and similar crimes, the control and traceability of machinery and supplies, the planning and execution of coordinated operations in border areas, collaboration in identifying and prosecuting organized structures, the restoration of affected transboundary ecosystems, the implementation of economic and social development programs in border integration zones, and the exchange of experiences regarding the formalization of artisanal mining (Andean Council of Foreign Ministers, 2012b). For its part, Article 5 establishes a set of prevention and control measures, which include the adoption of mechanisms for the formalization or regularization of small-scale mining; the confiscation, destruction, or rendering inoperable of heavy machinery, equipment, and supplies used in illegal mining; the imposition of deterrent sanctions, including criminal liability; the control of the commercialization of chemical supplies and hydrocarbons; and the implementation of responsible mineral supply chains (Andean Council of Ministers of Foreign Affairs, 2012b). Likewise, Article 6 regulates the procedures for the confiscation, seizure, destruction, and

rendering inoperable of assets used in illegal mining activities (Andean Council of Ministers of Foreign Affairs, 2012b). Taken together, these provisions function as mandates for technical, legislative, and operational harmonization directed at member states.

However, the existence of these community obligations does not automatically neutralize the phenomenon of regulatory arbitrage, which refers to the exploitation of regulatory differences between national jurisdictions by transnational organized crime actors to maximize profits and minimize the risk of sanctions (Altomonte & Sánchez, 2016). This problem manifests itself when criminal organizations shift their operations to countries with lower penalties or weaker criminal definitions, take advantage of lax environmental standards, exploit the lack of interoperability between national control systems to conceal the illicit origin of minerals, and benefit from the absence of cross-border coordination to move people, machinery, and mining products (Altomonte & Sánchez, 2016). Consequently, regulatory arbitrage is not a concept provided for or legitimized by Decision 774, but rather an external dynamic that affects the effectiveness of the cooperation and prevention measures established therein, constituting one of the main structural limitations of the CAN response to illegal mining.

1.3 Mining as a Cross-Border Problem

Illegal mining in the Andean region constitutes a cross-border problem that exceeds the unilateral response capabilities of national states, requiring institutional coordination mechanisms that operate at the regional level. Its transnational nature manifests itself in multiple dimensions that link it to organized crime, money laundering, and the environmental degradation of shared ecosystems.

1.3.1 Characteristics of cross-border illegal mining

According to UNODC (2025), illegal mining exhibits characteristics typical of transnational organized crime: an organized structure comprising groups of three or more individuals with defined roles; temporary permanence with existence over a certain period of time; economic aims oriented toward obtaining financial or material gain; use of violence and coercion to ensure territorial control; infiltration of state institutions through corruption; money laundering schemes to legitimize profits; and transnational trafficking operations in border areas.

Illegal mining operations take place entirely outside state control: without a mining concession, without an environmental license, without authorization to commence activities, without prior consultation with affected communities, without labor regulations or contracts, and with systematic tax evasion. This total absence of regulation allows for the use of prohibited heavy machinery (dredges, backhoes), operations in prohibited zones (protected natural areas, rivers, lagoons, watershed headwaters), and the use of toxic chemicals such as mercury under uncontrolled conditions (UNODC, 2025).

1.3.2 Links to Organized Crime

Illegal mining is linked to money laundering through complex circuits that include: extraction, stockpiling, transport, and sale to intermediaries in the gold circuit; consolidation, transfer, investment, and re-entry into the money circuit; and concealment mechanisms such as front companies, under-invoicing of exports, use of pawnshops, alternative money transfer systems, and trade in gold scrap (GAFILAT & Fundación Gajate, 2021; UNODC, 2025). This connection to transnational organized crime transforms illegal mining into a regional security threat that demands coordinated responses among intelligence agencies, specialized prosecutors' offices, and security forces of member countries.

1.3.3 Socio-environmental Impacts

The impacts of illegal mining transcend national borders and affect shared ecosystems. In the environmental sphere, it causes accelerated deforestation, mercury contamination that affects entire food chains, soil erosion, and the destruction of aquatic ecosystems. In the health dimension, it causes mercury poisoning in riverside communities, respiratory diseases from exposure to dust and toxic fumes, and skin conditions. In the social dimension, it is linked to human trafficking, labor exploitation, child labor, prostitution, and gender-based violence. In the economic dimension, it results in lost royalties for governments, unfair competition with the formal mining sector, and the distortion of local markets. In the institutional dimension, it fosters corruption, state capture by criminal networks, and the weakening of environmental oversight (United Nations Office on Drugs and Crime (UNODC), 2023).

1.4 Cross-border environmental coordination in response to mining and environmental degradation

The Andean institutional response to illegal mining and environmental degradation is based on cross-border coordination mechanisms that operate in different forms and at different levels. Regional environmental institutionality refers to the set of rules, agencies, procedures, and coordination mechanisms that states establish to jointly address environmental challenges that transcend their national borders (Fang et al., 2008).

1.4.1 Concept and Modalities of Coordination

Transboundary environmental coordination is defined as the set of concerted actions among States to jointly manage shared natural resources and address environmental issues that transcend political borders. This coordination can take three fundamental forms.

a. Technical coordination

This involves the exchange of scientific information, environmental data, impact studies, and best practices among technical authorities in the countries involved. It includes the harmonization of monitoring methodologies, standardization of indicators, and development of shared information systems (International Union for Conservation of Nature (IUCN), 2020).

b. Legislative coordination

This involves harmonizing national regulatory frameworks to address common issues, including the adoption of supranational community regulations such as the Decisions of the Andean Commission, which must be incorporated into the domestic legal systems of member states. (General Secretariat of the Andean Community, n.d.)

c. Operational coordination

This encompasses joint actions for enforcement, monitoring, and response to environmental emergencies, including binational operations against illegal mining, shared early warning systems, and response mechanisms for cross-border spills or pollution. (General Secretariat of the Andean Community, n.d.)

1.4.2 Framework of Decision 774 and Decision 763

Decision 774 establishes eight specific areas of regional cooperation: adoption of legislative, administrative, and operational measures; strengthening of asset forfeiture

mechanisms; combating money laundering; control and traceability of machinery and supplies; coordinated operations in border areas; collaboration in identifying and prosecuting organized structures; restoration of transboundary ecosystems; and implementation of economic and social development programs in border integration zones (Andean Council of Foreign Ministers, 2012b)

Decision 763, adopted in 2011, establishes the Andean Strategy for Integrated Water Resources Management, recognizing that the Andean region contains 10% of the world's freshwater and has multiple transboundary river basins. Its principles include sovereignty, solidarity, knowledge, and flexibility, and it outlines actions across six areas: knowledge management, institutional strengthening, subregional cooperation, conservation and sustainable use, response to climate change, and management of transboundary basins (Andean Council of Foreign Ministers, 2011).

1.4.3 Mechanisms for inter-agency cooperation

Cooperation mechanisms among CAN environmental agencies include annual reporting mechanisms, joint action plans, and periodic reports. Decision 763 establishes that the Council of Ministers of the Environment must report annually on progress in implementing the Andean Strategy for Integrated Water Resources Management, through the General Secretariat. The CAN Technical Committees must submit work plans to the General Secretariat and report on progress every six months (Andean Council of Ministers of Foreign Affairs, 2020b).

The Andean Committee of Environmental Authorities (CAAAM), reactivated in June 2023 during Colombia's Pro Tempore Presidency, is responsible for overseeing the implementation of regional instruments such as the Regional Biodiversity Strategy and the Andean Strategy for Integrated Water Resources Management (Colombian Ministry of Foreign Affairs, 2023).

1.5 Lack of Access to Environmental Information and Traceability

Access to environmental information is a fundamental pillar for effective cross-border coordination and the traceability of environmental impacts. Without timely, reliable, and comparable information, it is impossible to identify shared challenges requiring a coordinated response, assess compliance with regional commitments, design evidence-based policies,

facilitate informed public participation, and establish early warning systems (Global Forest Watch, 2018; Peruvian Ministry of the Environment, 2017)

Traceability in mining requires information systems that allow for tracking the origin of minerals, identifying the actors involved in the supply chain, and verifying compliance with environmental and social standards. The OECD Due Diligence Guidance for Responsible Mineral Supply Chains establishes five fundamental steps: establishing robust corporate governance systems; identifying and assessing risks in the supply chain; designing and implementing a response strategy; conducting independent third-party audits; and publicly reporting on due diligence (Organization for Economic Cooperation and Development (OECD), 2013).

1.5.1 Obstacles in Andean Countries

The main obstacles to accessing environmental information in Andean countries include: institutional fragmentation, with information scattered across multiple entities without effective consolidation mechanisms, stemming from weak and disjointed environmental management systems where agencies lack a clear definition of their responsibilities (United Nations Environment Programme (UNEP) & General Secretariat of the Andean Community, 2003); lack of standardization, where each country uses different methodologies and indicators, making comparison difficult, an asymmetry that the Andean Community itself has acknowledged by noting the need to standardize and harmonize measurement methods so that results are comparable (Andean Community Commission, 2008); national security restrictions, since information related to strategic resources may be classified as secret or confidential under legal exceptions that, although intended to guarantee territorial integrity, ultimately limit environmental transparency (Regional Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement), 2018); limited technical capacities, with precarious or nonexistent information systems in some countries, evidenced by insufficient institutional operational capacity, the absence of accredited laboratories, outdated equipment, and scarce resources allocated to monitoring programs (Decision 699, 2008); and a culture of institutional secrecy that resists publishing information that could generate conflicts or lawsuits, inherited from erroneous interpretations of the concept of national security that historically restricted public access to environmental data (Zabarburu Chávez, 2015)

1.6 Indigenous Peoples and Institutional Legitimacy

The participation of indigenous peoples in regional environmental management constitutes a fundamental criterion of institutional legitimacy. The recognition of the right to free, prior, and informed consultation (FPIC) as an international standard has transformed the way in which States must engage with indigenous peoples whose territories are affected by development projects, including mining activities (UNHCR, n.d.).

Convention No. 169 of the International Labour Organization (ILO) (1989), ratified by the four member countries of the Andean Community, establishes in Article 6.1(b) that governments must “establish means by which these peoples may participate freely, at least to the same extent as other sectors of the population, at all levels in the adoption of decisions that concern them” (International Labour Organization (ILO), 1989). Likewise, Article 15.2 of the same instrument provides that States must “establish or maintain procedures through which they will consult these peoples, with a view to determining whether the interests of these peoples would be adversely affected and to what extent, before undertaking or authorizing any program of exploration or exploitation of such resources on their lands” (International Labour Organization (ILO), 1989). This mandate is complemented and reinforced by the United Nations Declaration on the Rights of Indigenous Peoples. General Assembly Resolution (A/RES/61/295, 2007), which establishes the obligation of States to consult and cooperate in good faith with indigenous peoples in order to obtain their free and informed consent prior to approving any project affecting their lands, territories, and resources. Together, these two instruments, constitute the international standard applicable to mining activities in indigenous territories within the regulatory framework of the CAN.

1.6.1 Consultation and Consent

It is essential to distinguish between consultation and consent, two concepts that are frequently confused but have different legal consequences.

Free, Prior, and Informed Consultation (FPIC), enshrined in Article 6 of ILO.(1989) Convention No 169 , establishes the State’s obligation to consult with indigenous peoples whenever measures are envisaged that are likely to directly affect them. This consultation must be conducted in good faith and with the aim of reaching an agreement or obtaining the consent of the affected peoples (International Labour Organization (ILO), 1989). In specific cases, such

as the relocation of communities from their territories, free, prior, and informed consent is not merely an objective but a binding requirement.

Free, Prior, and Informed Consent (FPIC) applies when the measure significantly impacts the rights of the people. It is binding: without consent, the measure cannot be implemented. It is required when there is a displacement or relocation of the people, the storage of hazardous materials on indigenous territories, or a high social, cultural, and environmental impact that jeopardizes their livelihoods (Bacca Benavides, 2022).

The Inter-American Court of Human Rights, in the case of the Saramaka People v. Suriname, established that when large-scale development projects may affect the integrity of an indigenous people's lands and natural resources, the State has a duty not only to consult but also to obtain their free, prior, and informed consent (Inter-American Court of Human Rights (IACHR), 2007). Likewise, in the case of the Kichwa Indigenous People of Sarayaku v. Ecuador, the IACHR elaborated on the essential elements of free, prior, and informed consultation regarding natural resource extraction projects in ancestral territories, establishing that consultation must be: (i) prior, conducted in the early stages of planning; (ii) free, without coercion, intimidation, or manipulation; (iii) informed, with access to complete information about the project, its risks, and benefits; and (iv) effective, ensuring that the views of indigenous peoples have a real impact on the state's decision (Inter-American Court of Human Rights (IACHR), 2012). While the Saramaka case sets the standard for consent regarding high-, high-impact projects that jeopardize the cultural and physical subsistence of indigenous peoples, the Sarayaku case specifies the parameters of genuine consultation when the project, although extractive, does not reach that critical threshold. Thus, the inter-American system establishes two levels of guarantee: effective prior consultation as a general rule, as established by Sarayaku in paragraphs 164 and 177, and free, prior, and informed consent as an exceptional requirement for large-scale projects that jeopardize the cultural and physical subsistence of the people, in accordance with paragraphs 134 and 137 of Saramaka (Bacca Benavides, 2022; Inter-American Court of Human Rights (IACHR), 2007, 2012).

1.6.2 Institutional Legitimacy

Indigenous participation is a key indicator of institutional environmental effectiveness because it reveals the democratic quality of processes, improves the quality of decisions by

incorporating traditional knowledge, generates social legitimacy for the decisions adopted, and prevents conflicts that may lead to subsequent confrontations. However, the practical implementation of prior consultation faces significant limitations: regulatory gaps, as Ecuador lacks an organic law regulating prior consultation, thereby violating an express constitutional mandate. Article 57, paragraph 7 of the Constitution of the Republic of Ecuador establishes the collective right to free, prior, and informed consultation regarding plans for the exploration, exploitation, and commercialization of non-renewable resources (Constituent National Assembly of Ecuador, 2008), but this constitutional mandate has not been implemented through a specific organic law. Instead, procedural regulations have been scattered across lower-level regulations, such as Ministerial Agreement No. MEM-MEM-2024-0002-AM, which issues the Manual for the Implementation of Prior Consultation in Mining Concessions (Ministry of Energy and Mines of Ecuador, 2024), administrative instruments that lack the necessary legal hierarchy to guarantee the effectiveness of the right. In light of this regulatory gap, the Constitutional Court of Ecuador has had to resort to the direct application of international standards. In Judgment No. 273-19-JP/22 (Sinangoe case), the Court determined that, in the absence of an organic law regulating the prior consultation procedure, the standards of ILO Convention 169 and the jurisprudence of the Inter-American Court of Human Rights (particularly the *Sarayaku v. Ecuador* case) are directly applicable in the Ecuadorian legal system, binding all public authorities (Melo-Urresta et al., 2025). Likewise, in Ruling No. 60-19-AN/23, the Constitutional Court reiterated the State's obligation to regulate the right to prior consultation in accordance with international standards, urging the National Assembly to consolidate the bills related to prior consultation currently under legislative consideration (Constitutional Court of Ecuador, 2024). This reliance on constitutional jurisprudence to fill legislative gaps highlights the institutional fragility of Ecuador's regulatory framework regarding indigenous participation.

1.7 Structural Limitations of the Andean Institutional Response

An analysis of the Andean institutional response to illegal mining and environmental degradation cannot overlook the structural limitations that constrain its effectiveness. These limitations operate at multiple levels: the gap between regulatory design and its effective

implementation, institutional asymmetries among member countries, and the operational weakness of regional bodies.

1.7.1 Gap between regulatory design and implementation

The Inter-American Development Bank (IDB) and the World Justice Project identified a significant gap between environmental laws and their effective enforcement in Latin America. The main factors explaining this gap include: a lack of sufficient budgetary resources to implement and enforce environmental regulations, a shortage of qualified personnel in government environmental agencies, inter-institutional coordination problems where multiple entities operate in isolation, a lack of transparency and accountability in environmental decision-making processes, and violence against environmental defenders that creates a climate of intimidation (OpenDemocracy, 2021).

In the specific context of the CAN, this gap manifests itself in instruments that have been approved but not implemented: the Andean Strategy for Integrated Water Resources Management was approved in 2011 and its Action Plan in 2012, but reported progress has been limited. The reactivation of the Andean Committee of Environmental Authorities only in 2023, after years of inactivity, highlights the lack of institutional sustainability. The implementation of regional instruments depends on each national government's prioritization of the Andean environmental agenda, leading to discontinuities when administrations change.

1.7.2 Institutional asymmetries between countries

The four member countries of the CAN have significant differences in their environmental institutional structures. Colombia has the National Environmental Licensing Agency (ANLA) for national licensing projects and Regional Autonomous Corporations (CAR) for regional environmental management. The country has classified illegal mining as a crime since 2000 (Organization for Economic Cooperation and Development (OECD), 2014). Ecuador underwent a profound institutional reform in 2025, when the Ministry of Environment, Water, and Ecological Transition (MAATE) was absorbed by the Ministry of Energy and Mines via Executive Decree No. 94 of August 14, 2025, and renamed the Ministry of Environment and Energy, creating a conflict of interest by subordinating environmental protection to the promotion of extractive activities (Presidency of the Republic of Ecuador, 2025; Mongabay Latam, 2025). Previously, the MAATE functioned as the governing body, alongside the Water

Regulation and Control Agency (ARCA), for the oversight of water resources, but lacked an organic law regulating prior consultation (Organization for Economic Cooperation and Development (OECD), 2014). Peru has a National Environmental Management System involving multiple entities and incorporated the crimes of illegal mining into the Penal Code via Legislative Decree 1102 of 2012. Bolivia concentrates environmental responsibilities within the Ministry of Environment and Water (MMAA). Law No. 1093 of 2018 classified illegal mining as a crime in the Bolivian Penal Code, although this classification is primarily linked to the unlawful removal of mineral resources (theft, robbery, receiving stolen goods) without authorization from the mining authority, and not necessarily to the causing of environmental damage as a constituent element of the crime (Plurinational Legislative Assembly of Bolivia, 2018).

These differences create unfair competition, allowing illegal mining operators to relocate to countries with less stringent penalties; difficulties in judicial cooperation, where differing definitions of crimes complicate international legal assistance; and inconsistencies in the regional response, where the same conduct may be punishable in one country but not in another. These structural asymmetries persist as one of the main obstacles to the effective implementation of Decision 774, hindering the harmonization of criminal laws and full operational cooperation among member states (Colombian Ministry of Foreign Affairs, 2025; Andean Committee on Illegal Mining (CAMI), 2025).

1.7.3 Operational Weaknesses of Regional Bodies

The General Secretariat of the CAN and its associated technical bodies face structural limitations that compromise their responsiveness. The reliance on consensus for decision-making hinders action on urgent issues, requiring unanimous agreements from all four member countries to adopt effective measures (General Secretariat of the Andean Community, 2025). The lack of financial autonomy, with resources derived exclusively from voluntary contributions by member states, limits long-term planning capacity and creates operational instability, as the CAN's budget is allocated annually without guarantees of continuity (Colombian Ministry of Foreign Affairs, 2025). The absence of enforcement mechanisms prevents the CAN from imposing sanctions on countries that fail to meet their environmental commitments, leaving it limited to issuing non-binding recommendations or rulings that depend on state goodwill for compliance (General Secretariat of the Andean Community, 2025). The

annual rotation of the Pro Tempore Presidency creates discontinuities in the environmental agenda, hindering the sustainability of medium- and long-term projects (Colombian Ministry of Foreign Affairs, 2024a). Furthermore, despite mandates for periodic reporting, weak monitoring lacks effective mechanisms for verifying compliance, as evidenced by the several-year delay in approving the reports of the Andean Mercury Observatory (Andean Committee on Illegal Mining (CAMI), 2025).

These structural limitations do not imply that the Andean institutional response is futile, but they do shape a framework for action where effectiveness depends fundamentally on the political will of member states and the capacity to establish coordination mechanisms that compensate for the identified asymmetries and weaknesses (Colombian Ministry of Foreign Affairs, 2025; General Secretariat of the Andean Community, 2025).

1.8 Institutional Framework of the CAN

The institutional architecture of the Andean Community in addressing environmental challenges is grounded in its status as a supranational body, whose decisions are binding under the domestic law of member countries (Casas & Elvira Correa, 2007; Andean Community, 1996). The Andean Integration System (SAI) coordinates the set of bodies that ensure this response does not remain merely declaratory, but is expressed in operational and binding decisions (Andean Community, 1996). Within this context, the Andean Council of Foreign Ministers and the Commission of the Andean Community are the competent bodies to issue regulations that can serve as a firm front against these issues in the context of environmental degradation (Sánchez, 2016; Villabella Armengol, 2015).

The process of institutionalizing environmental provisions within the CAN has been gradual; the 1969 Cartagena Agreement, in its original wording, did not mention the term “environment,” which reflects the commercial priority of integration at that time. It was through subsequent reforms, such as the 1996 Trujillo Protocol, that the need for joint actions for environmental conservation and the sustainable use of renewable and non-renewable natural resources was expressly recognized (Andean Council of Foreign Ministers, 1996; Villabella Armengol, 2015). This evolution allowed the General Secretariat of the Andean Community (SGCAN) to assume functions of technical coordination and monitoring of regional environmental policies (CONDESAN, 2012).

In line with this approach and in response to the expansion of illegal mining, the CAN established the Andean Committee on Illegal Mining (CAMI) through Decision 774 of 2012. This committee functions as a hybrid mechanism that brings together not only environmental authorities but also those from defense, interior, and mining sectors, based on the recognition that environmental degradation caused by illicit mining is part of the operations of transnational criminal organizations. Thanks to this structure, the institutional response takes on a multidimensional character, ranging from ecosystem restoration to the criminal prosecution of money laundering associated with illegally extracted minerals.

This multidimensional approach is sound in theory, as it recognizes that ecological damage is not an isolated phenomenon, but rather part of a larger structure that falls under the jurisdiction of the member states of the Andean Community. From this perspective, we can infer that establishing a committee that encompasses so many agencies within any state (defense, interior, mining, environment) creates a major bureaucratic problem; though we must understand that the effectiveness of any supranational body does not lie in the number of ministries or related agencies within a state, but rather in how efficiently they can exchange financial and operational information and whether they can provide an effective response to the problem at hand.

However, when we compare this institutional design with how it actually functions, we see real structural limitations that significantly reduce CAMI's ability to fulfill its purpose. In practice, CAMI has neither its own budget nor permanent technical staff, so its operation depends almost exclusively on the political will of the delegates each country sends to its meetings and on external funding from organizations such as the OAS (Colombian Ministry of Foreign Affairs, 2024b). A clear example of this weakness is the Andean Mercury Observatory; the corresponding reports for the second half of 2021 and for the two halves of 2022 and 2023 were only approved in November 2024, which highlights a gap of several years between the generation of information and its political validation on a given issue (Colombian Ministry of Foreign Affairs, 2024b).

Added to this is the fact that Decision 774 of 2012 of the Andean Council of Ministers of Foreign Affairs, which has coexisted for over a decade with vastly different criminal laws among member countries, has not yet succeeded in producing real convergence regarding

penalties (Andean Council of Ministers of Foreign Affairs, 2012a). In Ecuador, illegal mining is classified as a crime under Article 260 of the Comprehensive Organic Criminal Code (COIP), with penalties ranging from five to ten years of imprisonment, while Peru initially regulated illegal mining through Legislative Decree No. 1100 of 2012, which established interdiction and formalization measures. In the Peruvian context, interdiction measures are understood as operations involving the seizure and immediate destruction of machinery, equipment, and supplies used in illegal mining activities, while formalization constitutes an administrative procedure allowing small-scale informal operators to regularize their status, obtain permits, and comply with minimum environmental requirements (Andean Council of Foreign Ministers, 2012a; Ministry of the Interior, 2026). The Peruvian provision was added in Legislative Decree No. 1102 of 2012, which incorporated the crime of illegal mining into the Penal Code under Article 307-A, punishing those who carry out extractive activities without authorization from the competent authority with imprisonment of not less than five nor more than eight years (Legislative Decree No. 1102, 2012). To obtain this authorization, Peruvian regulations require a valid mining title, an environmental management plan approved by SENACE or the DGAAM, and certification that there are no archaeological remains in the area of operation (Ministry of the Interior, 2026).

Given this context, there is a major push for change in this structure. The approval of the 2025–2030 Action Plan constitutes a significant sign of regional political will and (Andean Committee on Illegal Mining (CAMI), 2025). The success of this Action Plan hinges on overcoming an unavoidable structural problem: genuine legislative harmonization. As long as one country classifies illegal mining as a serious crime requiring criminal prosecution, while its neighboring country grants legal extensions or allows for formalization processes, criminal networks will simply adopt a “low-risk” strategy: by moving just a few kilometers, they face a lower risk of being punished. Regional integration, in this regard, has shown that such diplomatic agendas are insufficient if national criminal codes are not maintained under a single standard capable of effectively punishing these actions.

1.8.1 Evolution of the Regulatory Framework and Environmental Policies

This section outlines that regulatory evolution and identifies the key decisions that currently shape Andean environmental policy regarding extractive activities.

The Andean Community's environmental regulatory framework has shifted from a sectoral and fragmented approach toward a more integrated management of ecosystems and environmental stewardship. This shift is evident in a series of decisions aimed at mitigating the impacts of extractive activities and protecting the biological heritage of the Andean region. Among these are Decision 523 of 2002 on biodiversity, Decision 774 of 2012 on illegal mining, and, more recently, Decision 864 of 2020, which approved the Andean Environmental Charter (Andean Council of Ministers of Foreign Affairs, 2002, 2012a, 2020a).

The starting point for this regulatory evolution was Decision 391 of 1996, which established the Common Regime on Access to Genetic Resources of the Member Countries of the Andean Community, strengthening the position of the States against the misappropriation of biodiversity in contexts where both mining and other processes of biological colonization posed concrete threats (Andean Council of Ministers of Foreign Affairs, 1996). This Decision did not merely declare the strategic value of the subregion's biological heritage, but also regulated access to genetic resources and their derived products, establishing among its primary objectives the fair and equitable sharing of benefits arising from such access, the conservation of biological diversity, and the strengthening of scientific, technological, and negotiating capacities of the Member Countries' s (Andean Council of Ministers of Foreign Affairs, 1996). Likewise, it incorporated recognition of the intangible components associated with these resources, particularly regarding the knowledge, innovations, and practices of indigenous and local communities, which gives it a socio-environmental dimension that transcends technical regulation and links access to natural resources with the protection of ancestral territories (Andean Council of Ministers of Foreign Affairs, 1996).

In this sense, Decision 391 can be understood as the first precedent for a supranational environmental principle in the Andean region, as it brought the regulation of strategic resources under criteria of conservation and equity to the common level. In line with the arguments put forward by Altomonte & Sánchez (2016), I consider that Decision 391 was a regulation ahead of its time and context. By directly linking access to genetic resources with traditional knowledge, the CAN recognized long before other regions in the world that environmental protection in the Andes cannot be separated from the territorial protection of indigenous peoples. From my perspective, it was the first major supranational step toward granting local communities the status of guardians, with rights over their own environment.

A milestone that marked a turning point in the Andean environmental framework was the adoption of Decision 523 of 2002, which approved the Regional Biodiversity Strategy for the Countries of the Andean Tropics. This Decision was pioneering in recognizing biodiversity as a competitive advantage for the region and in defining lines of action for the conservation of transboundary ecosystems (Andean Council of Foreign Ministers, 2002). On this basis, the Andean Environmental Agendas for 2006–2010 and 2012–2016 were developed, aimed at operationalizing these international commitments regarding climate change, water resources, and biodiversity. Specifically, the 2006–2010 Agenda led to the formulation of the Andean Strategy on Climate Change and the coordination of joint positions before the United Nations Framework Convention on Climate Change (UNFCCC), while the 2012–2016 Agenda made progress in the management of transboundary ecosystems and the development of a regional map of shared river basins. Monitoring of both agendas was carried out by the Andean Committee of Environmental Authorities (CAAAM), which developed annual operational plans for each thematic area (General Secretariat of the Andean Community, 2006, 2012).

Regulatory developments took a qualitative leap forward with Decision 763 of 2011, which approved the Andean Strategy for Integrated Water Resources Management (EA-IWRM). This instrument has a significant bearing on the mining sector, as it recognizes water as a fundamental human right and promotes the efficient use of the resource, as well as the prevention of pollution in shared watersheds (Andean Council of Ministers of Foreign Affairs, 2011). The EA-GIRH is based on the premise that water flows according to natural boundaries rather than political borders, which necessitates the harmonization of water quality standards to prevent the environmental liabilities of a mining operation in one country from degrading the resources of its neighboring country (Altomonte & Sánchez, 2016; Andean Council of Ministers of Foreign Affairs, 2011).

A concrete example of these transnational water-related tensions, according to (Altomonte & Sánchez, 2016; Andean Council of Foreign Ministers, 2011), is found in the Napo River basin in the Ecuadorian Amazon. Studies conducted by Ikiam University determined that all rivers where the company Terraearth, linked to illegal mining activities in the Yutzupino and Naranjalito sectors, operated were declared “dead rivers,” devoid of any aquatic life (De La Fuente, 2024). Water samples revealed concentrations of lead, mercury, copper, and aluminum that exceed the permissible limits established in Ecuadorian environmental regulations by six to

nine times, directly affecting Kichwa communities that depend on the river for drinking water and fishing (Quiroz, 2025). This case clearly illustrates the problem that Decision 763 sought to prevent: environmental liabilities generated at one point in the watershed are carried downstream without regard for jurisdictional boundaries, affecting populations that did not participate in any decisions regarding the mining activity that is polluting them.

This unfortunate scenario reveals a serious disconnect in the region's water management. Decision 763 establishes sound principles of integrated management on paper, but in practice, member states continue to manage water with a fragmented approach. The case of the "dead rivers" in the Napo demonstrates that this lack of a binding, sanctioning supranational mechanism within the CAN reduces these Andean strategies to mere suggestions. If the CAN fails to establish mechanisms capable of imposing cross-border economic or criminal liabilities that can be enforced for environmental damages, the communities living near these rivers will continue to subsidize, with their health and means of survival, the cost of living imposed by irresponsible or illegal extractivism.

A year later, the regulatory response that continued the fight against environmental degradation associated with mining was Decision 774 of 2012. This regulation not only defines illegal mining from a community perspective but also empowers states to confiscate, seize, or destroy machinery used in illicit activities that cause irreversible damage to ecosystems. Finally, the adoption of the Andean Environmental Charter, approved under Decision 864 of 2020, represents the most recent political commitment, prioritizing the fight against environmental crimes and the defense of the rights of nature as central pillars of current Andean integration.

Based on this regulatory framework, understood as a continuous evolution of the aforementioned decisions, we can identify a partial correlation between the legal frameworks of each member country of the Andean Community, as well as a connection to environmental crimes, which, by definition, are acts that harm or endanger natural resources, biodiversity, and the balance of ecosystems, thereby violating environmental protection regulations. However, it must be noted that their incorporation into the legal frameworks of the CAN countries has been notably uneven.

Ecuador's 2008 Constitution enshrined the rights of nature in Article 71, marking a global legal milestone by granting nature the status of a rights-bearing subject. This constitutional

recognition was subsequently reinforced at the criminal law level through the Comprehensive Organic Criminal Code (COIP), which classifies in Articles 245 through 247 as criminal acts those that threaten biodiversity, pollute water bodies, and destroy ecosystems. Additionally, illegal mining is classified as a serious crime punishable by up to ten years of imprisonment, which in theory makes Ecuador the country with the most severe criminal response in the subregion (Constituent National Assembly of Ecuador, 2008; National Assembly of Ecuador, 2014).

In Peru, environmental crimes are regulated under Title XIII of the Penal Code, which groups criminal offenses into four main categories: Environmental Pollution, Illegal Trafficking of Species, Crimes against Natural Resources, and Functional Liability of Authorities who fail to fulfill their duty of oversight. While Title XIII represents a significant legal and normative advance, its actual scope cannot be understood without analyzing the central criminal offense of the category, the crime of environmental pollution under Article 304 of the Penal Code. It has been noted that this criminal offense is particularly broad, and that breadth is not, in itself, a coincidence, as it stems from a legislative framework defined as a “crime of danger,” meaning that it is not required for the environmental damage to be fully realized for the criminal sanction to apply. It is sufficient that the extractive activity, carried out without authorization or in violation of the maximum limits permitted by the license, deteriorates or may deteriorate the quality of water, air, or soil (Peruvian Ministry of the Environment, 2017).

In Colombia, the response combines criminal and administrative tools. On the one hand, Law No. 2111 of 2021 amended the Penal Code to expand the list of environmental crimes, incorporating offenses such as deforestation and increasing penalties associated with pollution and the illegal management of hazardous waste. On the other hand, Law No. 1333 of 2009 established the environmental sanctioning procedure, defining an environmental violation as any action that violates environmental regulations or causes harm to the environment, and thereby empowers the authority to impose measures such as fines, suspension of activities, and permanent confiscation of machinery used to commit the violation. This dual criminal and administrative approach makes Colombia the country with the most developed sanctioning framework in terms of formality, although its effectiveness is severely limited in territories where organized armed groups operate in cross-border areas.

It is important to clarify what, at first glance, appears to be a regulatory contradiction between Ecuador and Colombia. When it is stated that Ecuador has the most severe criminal response, reference is made to the criminal classification and the applicable penalties established in the COIP, as they can reach up to 10 years in prison. In the case of Colombia, when noting that it has a more developed structure, reference is made to the maturity and integrity of its environmental framework, as set forth in Law 1333 of 2009; the Colombian government refers to a more innovative and rapid administrative mechanism that specializes in imposing fines, preventive closures of operations, and the seizure of assets, which operates in parallel with the judicial process.

Bolivia, on the other hand, is the weakest case, as its provisions are scattered between the General Environmental Law No. 1333 of 1992 and the Mining Code, without systematic inter institutional coordination that would allow for effective criminal prosecution. Added to this is the fact that the Bolivian state has historically prioritized mining as a source of tax revenue, which has created an environmental institutional framework that acts in the interests of extractive industries rather than being oriented toward controlling them.

This asymmetry among the countries of the Andean region is precisely one of the factors limiting the effectiveness of Decision 774 of 2012, as criminal actors simply relocate to states with jurisdictions that have weaker enforcement capabilities. This phenomenon is known in the literature on transnational organized crime as regulatory arbitrage, which implies that illegal mining networks do not operate as static actors, but rather as structures that adapt easily, mapping and exploiting regulatory gaps between neighboring countries to ensure their operational continuity. In practice, this means that an effective operation in Ecuador or Colombia does not dismantle such a network, but rather temporarily pushes it toward border areas of Peru where institutional response capacity operates with less efficiency, reproducing the problem in new territories without resolving it structurally. Until the CAN countries make progress toward a genuine harmonization of their criminal frameworks and the symmetrical strengthening of their institutional capacities, this disparity will continue to be exploited by actors in cross-border illegal mining, who, as explained, operate as highly adaptable structures that actively exploit regulatory gaps between neighboring countries to ensure their operational continuity.

In summary, the evolution of the Andean regulatory framework has enabled the construction of an increasingly modern legal system that addresses environmental degradation; however, its effectiveness is significantly constrained by profound disparities in the capacity of member states regarding sanctions and institutions. These gaps create a disparity that results in highly complex situations which can facilitate illegal economic activities in states with weaker regulations, thereby limiting the transformative capacity of decisions such as Decisions 391, 523, 763, 774, and 864. The following section examines how regional coordination mechanisms seek to address these gaps in practice.

1.8.2 Regional Coordination Mechanisms and Environmental Management

The effectiveness of the Andean regulatory framework depends on a series of coordination mechanisms that facilitate information exchange, cross-border monitoring, and technical harmonization. The objective of this section is to examine how these mechanisms actually operate in practice and to what extent they succeed in bridging the gap between CAN Decisions and their implementation in the member territories. For this reason, the success of Andean environmental management depends not only on the quality of the regulations but also on the strength of the mechanisms for their application and monitoring (Altomonte & Sánchez, 2016; General Secretariat of the Andean Community, 2006).

The first example of effective coordination is the Andean Committee of Environmental Authorities (CAAAM), established by Decision 435 of 1998. This Committee advises the bloc on the definition of sustainable development policies and articulates common positions in multilateral forums, but it has also served as the platform from which the Regional Project for Adaptation to the Impact of Accelerated Glacier Retreat in the Tropical Andes (PRAA) was launched, linking Ecuador, Peru, and Bolivia in the joint monitoring of important water reserves and in the design of adaptation measures based on shared information (Ministry of the Environment of Ecuador, 2014).

In this context, the case of the Cordillera Blanca in Peru is particularly significant and provides a good overview. This mountain range contains approximately 40% of the country's tropical glaciers and supplies water to nearly 250,000 people in the Santa River basin through the PRAA; the information generated on glacial retreat and future water availability is focused on adaptation strategies coordinated with the authorities of Ecuador and Bolivia, enabling a

better shared understanding of the impacts on regional water management (Ecuadorian Ministry of the Environment, 2014).

A second example of coordination is the Andean Mercury Observatory, a technical mechanism of CAMI responsible for monitoring concentrations of this metal in transboundary basins, with participation from the four member countries. Its importance lies in the fact that it generates comparable data series on mercury pollution in shared rivers, which in theory should guide joint decisions regarding the control and resolution of this problem. However, the reports covering the 2021–2023 period were approved several years late, demonstrating that political validation does not always keep pace with the urgency demanded by the severity of the problem (Andean Committee on Illegal Mining (CAMI), 2025; General Secretariat of the Andean Community, 2021).

The third case is the 2025–2026 Work Plan between Peru and Ecuador to combat illegal mining along the border, as outlined in Decision 774. This plan includes joint operations in critical areas, protocols for the exchange of criminal intelligence between prosecutors' offices and interior ministries, and mechanisms to coordinate the seizure and destruction of machinery used in illegal mining in the Zarumilla River basin and other sensitive areas (Peruvian Public Prosecutor's Office, 2025). In addition, it incorporates training initiatives on the enforcement, investigation, and prosecution of environmental crimes in both states, with the aim of strengthening coordinated efforts and dismantling the networks operating on both sides of the border, as recommended by the Andean Policy, which calls for cooperation and coordinated actions in cross-border integration zones (Andean Council of Foreign Ministers, 2012a). The plan was approved at the Second Meeting of the Joint Commission to Combat Illegal Mining, held in Quito – Ecuador, and I know it is explicitly presented as an instrument for implementing community objectives to jointly and cooperatively address illegal mining and related crimes, as well as to optimize the control of seized machinery, equipment, and supplies and money laundering related to this activity (Peruvian Ministry of Foreign Affairs, 2025).

Based on these three examples, I believe that the Andean region has succeeded in creating coordination mechanisms that go beyond mere declarations, as they generate shared technical information and enable specific joint actions. However, it can also be said that many of these mechanisms operate reactively and with limited resources, which significantly hampers their

ability to fundamentally alter these patterns of illegal mining expansion and environmental degradation. Coordination is real, but I still consider it fragile and largely dependent on the joint political will of governments, which compels us to consider how to grant greater autonomy to these mechanisms and generate institutional stability with a view to sustaining true integration in the Andean region.

CHAPTER 2

IMPLEMENTATION OF CAN INSTRUMENTS IN MEMBER COUNTRIES

2.1 Legal Instruments (Andean Decisions)

a. Decision 391: Common Regime on Access to Genetic Resources

Adopted in 1996, Decision 391 was hailed as a highly innovative instrument on a global scale, designed to protect the biological and genetic heritage of the Andean countries against biopiracy and misappropriation (Altomonte & Sánchez, 2016; Andean Council of Ministers of Foreign Affairs, 1996). *(For an analysis of the legal foundations, in terms of equity and the protection of traditional knowledge, on which the Decision is based, see Chapter 1, section 1.8.1)* . Although mining is not its direct objective, the protection of genetic resources is of paramount importance in the context of the Andean region, since the uncontrolled expansion of the extractive frontier and the consequent degradation of these resources are major components of the imminent threats that demand state responses which, in practice, have taken on very different scopes (Poveda Bonilla, 2022).

Despite their direct applicability to Andean law, the actual functioning of these genetic resource access contracts forced the States to create their own administrative systems, which have consolidated over time but with very evident asymmetries among them. The main idea is clear: Andean regulations can only function if they are articulated as a national bureaucratic structure; when this state framework is incomplete, the CAN's mandate ends up adrift.

With this in mind, in Bolivia, the incorporation of the Andean regime was implemented through Supreme Decree No. 24676 of 1997, which designated the environmental authority as the competent national entity and established the National System of Genetic Resources (Plurinational Legislative Assembly, 1997). This early regulation defined application formats and benefit-sharing schemes, providing an initial indication of legal alignment with CAN standards, although its current operational effectiveness is severely limited by serious budgetary shortfalls in Bolivia's environmental sector (Lea, 2024).

In Ecuador, the process required a bit more time to mature administratively. The Andean regulation became operational with the issuance of the "National Regulation on the Common

Regime for Access to Genetic Resources,” through Executive Decree No. 905 of 2011, which was amended in 2018 to allow for greater flexibility in research. Under the administration of the Ministry of the Environment, and in coordination with entities such as SENESCYT, operational mechanisms such as the “Framework Agreement” were introduced to ensure the viability of these non-commercial academic research projects. From a more analytical perspective, the Ecuadorian framework placed special emphasis on the intangible, requiring very rigorous prior consultation processes to safeguard the ancestral knowledge of peoples and nationalities, in clear alignment with the principle of equity in Decision 391. However, to better understand this issue, it is important to highlight a contradiction in the actions of the Ecuadorian State: while it applies great procedural rigor to the biological safeguarding of these territories under the framework of CAN Decisions, at the same time it maintains a system of mining concessions that paves the way for mega-extractive projects and accepts the expansion of mining within the same megadiverse Amazonian ecosystems (Becerra Guamán & Maldonado Ruiz, 2025). This lack of harmony means that the implementation of Decision 391 has been highly significant in bureaucratic terms, but remains very fragile as a legal protection mechanism to address the degradation of the habitats that sustain these genetic resources.

In Peru, implementation encountered deep-seated structural obstacles stemming from a historical fragmentation of responsibilities, in which different authorities separately managed agricultural resources (INIA), wildlife (SERFOR), and hydrobiological resources (PRODUCE) (Peruvian Ministry of the Environment, 2021). To address this fragmentation, which significantly hindered the implementation of the Andean Community (CAN) regulations and their alignment with the Nagoya Protocol, the Peruvian government issued Supreme Decree No. 019-2021-MINAM, which approved the “Regulations on Access to Genetic Resources and Their Derivatives” (Peruvian Ministry of the Environment, 2021). This regulation consolidated service windows, definitively clarified inter-institutional responsibilities, and established standardized mechanisms to ensure the fair distribution of benefits from these resources, thereby closing the operational gaps that had hindered the system for more than two decades and limited research in Peru.

Colombia, on the other hand, opted for a different approach to implementation. Instead of issuing a general regulatory decree, the Ministry of Environment and Sustainable Development directly implemented Decision 391, streamlining access to genetic resources and their derived

products through specific administrative resolutions that approve contracts in a streamlined and individualized manner (Ministry of Environment and Sustainable Development, 2025a). Concrete examples of this practice can be seen in Resolution No. 0218 of 2025, which establishes an Individual Bioprospecting Contract with the University of Medellín (Ministry of Environment and Sustainable Development, 2025a). Similarly, Resolution 1053 of 2025 grants a “Framework Contract” to the SINCHI Institute for the study of Amazonian biodiversity (Ministry of Environment and Sustainable Development, 2025). This method represents an appropriate implementation, which prioritizes administrative agility over extensive regulatory codification.

A review of the implementation of Decision 391 in Bolivia, Ecuador, Peru, and Colombia shows that the Andean regime for access to genetic resources is still far from constituting a mature and uniform system in the region. Although all the states have formally incorporated the regional regulations and have developed some form of administrative structure to process these contracts for access to genetic resources and their derived products, the degree of actual operational effectiveness begins to vary significantly depending on each country’s bureaucratic capacity, institutional clarity, and economic priorities. In contrast, more recent experiences such as Peru’s regulatory restructuring or the streamlined resolution process adopted by Colombia demonstrate that, when there is a clear administrative framework and a minimum level of coherence between CAN regulations and national policies, the Andean regime can translate into concrete procedures that facilitate the protection and benefit-sharing of resources. Overall, what the life cycle of Decision 391 reveals is that its effectiveness depends less on the supranational text itself and much more on the way each State organizes, finances, and harmonizes its own environmental bureaucracy with a development model that does not, in practice, sacrifice the genetic base it aims to protect.

b.- Decision 523: Approval of the Regional Biodiversity Strategy

Adopted in 2002, Decision 523 constitutes the binding legal act through which the Andean Council of Ministers of Foreign Affairs formally approved the “Regional Biodiversity Strategy for the Countries of the Andean Tropics” (Andean Council of Ministers of Foreign Affairs, 2002). *(The integrationist context of its adoption and its role as a central instrument of regional environmental policy can be found in Chapter 1, section 1.8.1).* Upon incorporation into

domestic law, this Decision acts as a mandate directed at both the Andean Committee of Environmental Authorities (CAAAM) and national governments, requiring the updating of their environmental policies and promoting the inclusion of specific lines of action for the joint protection of transboundary ecosystems (Andean Council of Foreign Ministers, 2002). Its implementation did not take the form of direct criminal law reforms, but rather the obligation of the ministries of the environment to design concrete public policy instruments, integrating its principles into each State's systems.

The concrete impact of the Regional Biodiversity Strategy is seen, above all, in how well countries manage to align their priorities with the National Biodiversity Strategies and Action Plans (NBSAPs), which in turn implement the commitments made under the Convention on Biological Diversity (CBD) (Peruvian Ministry of the Environment (MINAM), 2024). In Ecuador, the “National Biodiversity Strategy 2025–2030,” developed under the leadership of the Ministry of the Environment, Water, and Ecological Transition and with funding from the GEF and UNDP, very precisely incorporates the regulations defined by the CAN (Ministry of Environment and Energy, 2025a). The document sets binding targets for the control of invasive species, the promotion of biotrade, and the creation of mining-free economic alternatives for vulnerable communities, thus clearly outlining the lines of action of the Andean regional strategy (Ministry of Environment and Energy, 2025a).

In Peru, the Regional Biodiversity Strategy has also been quite clearly incorporated into its national planning through the “National Biodiversity Strategy to 2050,” which explicitly recognizes the strategic role of shared ecosystems in the Andean and Amazonian regions, and establishes direct links with the Kunming-Montreal Global Biodiversity Framework, thereby aligning its domestic goals with multilateral commitments (Peruvian Ministry of the Environment (MINAM), 2024). In this regard, the Peruvian government places special emphasis on strengthening the territorial governance of indigenous peoples as central actors in the protection of transboundary biodiversity, reviving a priority that the Andean policy itself had identified since its initial formulations in 2002.

In Bolivia and Colombia, ecological planning instruments have also quite clearly incorporated the guidelines of the Regional Biodiversity Strategy. Their national plans explicitly recognize that the accelerated expansion of the agricultural frontier, the unregulated advance of

mining, and deforestation constitute the main causes of environmental degradation, in direct alignment with the regional assessments prepared by the CAN (Andean Council of Foreign Ministers, 2020b). Thus, the Regional Biodiversity Strategy achieves a high level of implementation as a public policy tool, as its principles have guided the day-to-day work of technical teams within environmental ministries, enabling the alignment of high-level ecological agendas and the maintenance of a common framework in the face of the advance of extractivism in the Andean region.

c.- Decision 774: Andean Policy to Combat Illegal Mining

Decision 774, adopted in 2012, represents the most direct response the CAN has given to the socio-environmental devastation caused by illicit extractive economies in the subregion (Altomonte & Sánchez, 2016; Andean Council of Ministers of Foreign Affairs, 2012b). This instrument empowers member countries to immediately confiscate, seize, destroy, and render inoperable heavy machinery, equipment, and supplies used in illegal mining activities, with the aim of weakening the logistical capacity of criminal networks (Andean Council of Ministers of Foreign Affairs, 2012b; General Secretariat of the Andean Community, 2012).

To implement this Decision and ensure its long-term continuity, the CAN formulated the “Action Plan 2025–2030,” which guides implementation toward 39 specific agreements designed to strengthen investigative protocols, the traceability of supplies, and the coordination of simultaneous operations among the bloc’s member countries (Andean Committee on Illegal Mining (CAMI), 2025).

Colombia was the country that adopted it most quickly and with the greatest legal force. In 2012, Decree 2235 was issued, specifically designed to regulate Article 6 of Decision 774, ordering the National Police and the Armed Forces to destroy on-site backhoes and dredgers operating without a mining title or environmental license (Presidency of the Republic of Colombia, 2012). This framework was subject to judicial review and validated by the Colombian Council of State itself, which upheld Andean law by accepting that the restriction on private property rights regarding the destroyed machinery is fundamentally legitimate based on supranational commitments to environmental protection (Council of State, 2014). Recently, Decree 1035 of 2024 significantly strengthened this framework, helping to optimize mechanisms for inter-institutional information exchange that can facilitate intelligence

operations and the destruction of machinery in cases where it is found in flagrante delicto (Presidency of the Republic of Colombia, 2024). Following this regulatory line, we can see that there is a full and coherent implementation of the Andean instrument within the Colombian legal framework.

In the case of Ecuador, the mandates of Decision 774 have been implemented, but without resorting to specific regulations; rather, the country relies heavily on the direct application of its criminal code (COIP) and on coordinated action with the Armed Forces, the National Police, and the mining authority. The effectiveness of this implementation is reflected in recent data; for example, in 2025 alone, the Ecuadorian government carried out 386 strategic operations against illegal mining in highly conflict-ridden provinces such as Zamora Chinchipe, Loja, Napo, and Azuay (Ministry of Environment and Energy, 2025c). These interventions resulted in the destruction of various pieces of heavy machinery, the dismantling of these illicit camps, and the seizure of thousands of gallons of fuel used in gold mining (Ministry of Environment and Energy, 2025c). From a slightly deeper perspective, these actions demonstrate that the Ecuadorian state consistently implements what the CAN stipulates regarding environmental matters and how it is enforced within the country.

The Peruvian case reveals structural and regulatory weaknesses that pose a problem when assessing the regional effectiveness of Decision 774. Despite recent efforts to strengthen criminal penalties, such as Legislative Decree No. 1695 of January 2026, which increases penalties for illegal mining to up to nine years and incorporates these offenses under the scope of the Law Against Organized Crime (Ministry of the Interior, 2026), the implementation of Decision 774 is practically at a standstill (Ministry of the Interior, 2026).

At the heart of this institutional deadlock is the Comprehensive Mining Registration System (REINFO), created by Legislative Decree No. 1293 of 2016 as a transitional mechanism to regularize artisanal and small-scale miners, which, after granting successive extensions, into a de facto avenue for illegal operators to continue working under the guise of legality, neutralizing state action (General Secretariat of the Andean Community, 2025). The repeated extensions issued by REINFO have created a legal shield that prevents police and environmental authorities from seizing and destroying the machinery of those who continue to devastate Amazonian ecosystems while their formalization files never reach an effective conclusion

(General Secretariat of the Andean Community, 2025). This political instrumentalization of REINFO constitutes a regulatory setback, as it directly violates the principle of environmental prevention and effectively undermines the regional intervention efforts promoted by the CAN by offering a bureaucratic refuge to transnational criminal structures.

This regulatory and operational contradiction led to an unprecedented event in the history of Andean integration. In October 2025, the General Secretariat of the Andean Community issued Ruling No. 007-2025 in response to a landmark complaint filed by the Coordinating Committee of Indigenous and Peasant Communities of the Nanay Basin (CONACCUNAY) and citizens of the Loreto region (General Secretariat of the Andean Community, 2025). In this complaint, they alleged that state inaction and the REINFO extension system allowed for the permanent invasion of mining dredges into their territories, causing accelerated deforestation and irreversible mercury contamination of their water sources, a direct violation of their rights and of the CAN's commitments (National Mining Society, 2025). The ruling concluded that the Peruvian State is in flagrant violation of Decision 774 by distorting the formalization process, facilitating the expansion of illegal mining, and structurally blocking the seizure and forfeiture procedures required by the CAN, further ordering the urgent correction of the legal framework within 20 business days and warning of the possibility of referring the case to the Andean Community Court of Justice for the imposition of sanctions (General Secretariat of the Andean Community, 2025). This supranational milestone clearly demonstrates that, in the face of this problem in the legislative process caused by internal extractive interests, it was necessary to activate the dispute resolution mechanisms of the Andean Integration System, to defend the effective enforcement of the community norm and the environmental rights of Amazonian peoples.

In Bolivia, the implementation of Decision 774 can be described, at best, as very limited. Institutional weakness and a concession system heavily dominated by mining cooperatives act as barriers that consistently prevent the destruction of machinery in protected areas, such as Madidi National Park, where recent reports from the United Nations Office on Drugs and Crime document the unregulated expansion of mechanized alluvial mining (United Nations, 2025; Poveda Bonilla, 2022). Although the CAN recently declared a complaint of formal non-compliance against the Bolivian State inadmissible on technical grounds, available evidence clearly indicates that there is no legal framework that expressly incorporates the CAN's

mandates (General Secretariat of the Andean Community, 2024). From this perspective, Bolivia demonstrates that merely being formally part of the Andean system does not, in and of itself, guarantee that its most stringent instruments will be implemented in practice.

Given the above, Decision 774 exposes a deeply unequal pattern of implementation across the Andean region. While Colombia and Ecuador have translated CAN regulations into concrete enforcement tools, with clear regulatory frameworks, effective destruction of machinery, and coordinated operations, the cases of Peru and Bolivia reveal significant weaknesses likely caused by internal political pressures, legal loopholes, and a lack of structural funding that hinder the actual implementation of the Andean policy against illegal mining. The result is that criminal networks relocate and exploit regulatory and budgetary asymmetries, so that the instrument intended to strengthen the joint response to environmental degradation ends up functioning, in practice, as a roadmap of opportunities for the expansion of illicit extractive economies.

d.- Decision 864: Development of the Andean Environmental Charter

Adopted in 2020, Decision 864 mandates the drafting of the Andean Environmental Charter and marks a very significant shift in the bloc's regional policy. This instrument provides for the creation of a central document that articulates the regional response to climate change and environmental degradation, reinforces the commitment to the 2030 Agenda, and prioritizes the fight against environmental crimes and illegal mining (Andean Council of Ministers of Foreign Affairs, 2020a, 2020b)

The logic behind the implementation of this instrument differs significantly from that of previous decisions, as its legal nature makes it a mandate directed at foreign ministries and environmental ministries to establish technical working groups tasked with drafting the Andean(Andean Council of Foreign Ministers, 2020b) Environmental Charter . In this regard, compliance was essentially diplomatic and immediate. Decision 864 was implemented within a few months with the official adoption of the text of the Andean Environmental Charter during Colombia's presidency, consolidating the framework that today guides the environmental agendas of the four member countries (Andean Council of Foreign Ministers, 2020b). Rather than a declaratory instrument, the Charter has exerted its greatest influence on long-term structural plans, integrating with state planning without the need to enact specific legislative

reforms. Rather than driving rapid legislative changes, it has enabled the gradual integration of the climate agenda and biodiversity protection into national policies, functioning as a common standard for the Andean subregion.

In Colombia, the principles of the Charter have been actively incorporated into recent territorial planning exercises. The 2025–2036 Urban Environmental Management Policy, for example, adopts a just socio-ecological transition and reinforces the binding participation of social actors under criteria of regional resilience, in line with the Charter’s approach (Andean Council of Foreign Ministers, 2020b; Colombian Ministry of Environment and Sustainable Development, 2025). At the same time, the Charter serves as a central technical input for the new cycle of Nationally Determined Contributions (NDCs 2025–2030), through which Colombia seeks to align its emission reduction targets with the control of extractive deforestation.

In the case of Ecuador, the mandates of the Andean Environmental Charter are reflected in the way the National Climate Change Strategy has been structured, where the State has prioritized the participation of citizen and sectoral roundtables for risk management in river basins, closely aligned with the Andean principle of involving communities in the protection of shared resources even before the creation of the Charter (Ministry of the Environment, 2018).

In Bolivia, meanwhile, the Charter’s approach is incorporated into state policy through the Economic and Social Development Plan linked to the Patriotic Agenda 2025, in which the Plurinational Authority of Mother Earth integrates objectives for climate resilience and the conservation of water sources (Ministry of Environment and Water, 2022). However, despite this proper incorporation, in practice the Charter’s impact in Bolivia is severely limited by the lack of public funding to bring these goals to fruition.

In the Peruvian case, the incorporation of the Environmental Charter’s principles has occurred more indirectly through internal environmental planning instruments. The recent National Biodiversity Strategy for 2050, which was approved by Supreme Decree 008-2024-MINAM, aligns with the National Environmental Policy and the Strategic National Development Plan for 2050, setting various objectives and targets regarding biodiversity conservation, sustainable land management, and the reduction of pressures such as illegal mining, in line with the provisions on water resources, biodiversity, and the fight against illegal

mining established by the Andean Environmental Charter (Andean Council of Foreign Ministers, 2020a; Peruvian Ministry of the Environment (MINAM)). However, recent reports on this environmental framework and illegal mining warn that, despite these advances, the state's response to the expansion of illegal gold mining in the Peruvian Amazon remains fragmented. This fragmentation is explained by at least three structural factors: weaknesses in intersectoral coordination among the competent agencies, institutional capture, “understood as the influence exerted by economic interests linked to extractive activities on the decisions of regulatory and oversight bodies”, and the lack of sufficient resources to effectively implement the commitments made at the regional level (Peruvian Society for Environmental Law (SPDA), 2025).

Taken together, these Andean instruments are well understood and utilized at the conceptual level. For government technical teams, they serve as tools that provide international support and coherence to domestic environmental agendas, and demonstrate their ability to guide long-term public policy in the region.

2.2 Bodies and Institutions

The institutional structure of the CAN entrusts the technical implementation, oversight, and monitoring of its regulations to specialized committees, which play a key role in assessing whether policies are actually being implemented on the ground. On a large scale, the Andean Committee of Environmental Authorities (CAAAM) and the Andean Committee on Illegal Mining (CAMI) are the main drivers of regional and sectoral coordination (Andean Committee on Illegal Mining (CAMI), 2025; General Secretariat of the Andean Community, 2006). *(For a detailed overview of the structure of these committees, the design of the Andean Mercury Observatory, and the scope of the PRAA, see Chapter 1, sections 1.8 and 1.8.2).*

Formally, the states strictly adhere to diplomatic protocols: they appoint delegates, attend meetings, and sign joint declarations; however, in practice, these bodies exhibit serious structural weaknesses that limit their actual impact (Altomonte & Sánchez, 2016).

Ultimately, their total dependence on national budgets and political will makes them spaces for dialogue rather than concrete action. Without its own budget or permanent technical teams, CAMI cannot conduct independent investigations or coordinate cross-border operations

in real time (Andean Council of Foreign Ministers, 2012a). Thus, faced with the problem of criminal groups deforestation the Amazon with illicit funds, the CAN's main body remains tied-handed, limited simply to issuing recommendations while the damage continues to occur.

A clear example of this problem is the situation with the Andean Mercury Observatory (General Secretariat of the Andean Community, 2021). The toxicological monitoring and input flow reports for 2022 and 2023, which were critical years, were processed and formally approved in November 2025 (General Secretariat of the Andean Community, 2025). This significant delay renders the Observatory useless as an early warning system or intelligence tool for police operations, reducing it to a historical archive of ecosystems already destroyed and populations already contaminated.

Given the ineffectiveness of these bodies, countries have sought to advance the environmental agenda through more agile meetings and concrete bilateral agreements. In October 2025, the Second High-Level Strategic Meeting (RANE) was held within the framework of the CAN, seeking to reactivate the 2025–2030 Action Plan (Ministry of Foreign Affairs, 2025). At that meeting, they agreed to accelerate controls and traceability of chemical inputs such as cyanide and mercury used in illegal mining, in order to overcome difficulties in the exchange of customs data (Ministry of Foreign Affairs, 2025).

However, we can highlight the launch of the “Peru-Ecuador Binational Work Plan 2025–2026 against Illegal Mining on the Border” (Peruvian Public Prosecutor's Office, 2025). The significance of this Plan lies in its role as direct Andean environmental assistance, achieved through the direct action of security forces and the judicial system (Peruvian Public Prosecutor's Office, 2025). By translating CAMI's general agreements into simultaneous tactical operations with financial intelligence exchanges between prosecutors' offices, it demonstrates that, when there is bilateral will to protect the assigned territory, CAN instruments can become a very useful tool that reflects a clear line of cooperation in pursuit of objectives.

In summary, the Andean regulatory framework offers a very important legal and institutional structure for addressing illegal mining and its environmental impacts, through decisions, environmental charters, and coordination mechanisms such as CAMI. However, persistent gaps in implementation, limitations in state capacity, and tensions between economic

development and nature conservation reveal a structural gap between regulatory design and reality.

CHAPTER 3

SCOPE OF THE CAN'S INSTRUMENTS AND REGULATORY FRAMEWORK ON MINING ACTIVITIES IN ECUADOR.

3.1 Ecuador within the CAN Framework: Mining Context and Andean Regulatory Reception

To gauge the real impact of Andean regulations in Ecuador, it is essential to start with a clear understanding of the weight mining has gained in the country's macroeconomy in recent years. Traditionally sustained by oil exports, the Ecuadorian government has directed much of its recent planning toward large-scale metal mining. Public policy figures confirm this: starting from a baseline of mining exports of \$921.94 million in 2020, the National Development Plan set an aggressive export target that exceeded \$3.074 billion in actual performance for the year 2024, reaching 90.13% of the projected figure Ministry of Environment, Water and Ecological Transition (2025c). With the aim of exceeding \$3.515 billion by 2025, foreign exchange earnings from gold and copper have become an indispensable fiscal necessity for sustaining Ecuador's trade balance.

However, this government commitment to large-scale projects clashes on the ground with a highly conflict-ridden scenario. Alongside artisanal and small-scale mining (ASM), which often operates informally due to bureaucratic barriers (General Secretariat of the Andean Community, 2012), illegal mining controlled by transnational criminal networks has surged. In provinces such as Napo and Zamora Chinchipe, criminal organizations have diversified their sources of income, shifting from drug trafficking to alluvial gold mining, controlling local economies, and drastically increasing levels of armed violence (Rivera-Rhon & Bravo-Grijalva, 2023).

Faced with the complexity of this situation, the state apparatus has attempted to reorganize itself. In May 2024, Executive Decree No. 256 ordered the division of the Agency for the Regulation and Control of Energy and Non-Renewable Natural Resources (ARCERNNR), giving rise to a specialized entity: the Agency for Mining Regulation and Control (ARCOM) (Ministry of Environment and Energy, 2025c). Months later, Executive Decree No. 435 established the National Committee for Integrity in the Mining Sector (CONIM) to address the

lack of transparency in the granting of concessions and oversight. Despite these efforts, on-the-ground management continues to be hampered by structural and cyclical factors, including severe energy crises caused by droughts that have paralyzed the very legal operations the State seeks to promote, such as the Mirador mine.

Under Ecuadorian constitutional law, the reception of Andean Community law has a clear legal basis. Article 425 of the Constitution establishes a hierarchical order in which the Constitution stands at the top, followed by international treaties and agreements ratified by the State, organic laws, and the norms of the Andean Community legal order, among others. Furthermore, Article 424 provides that the Constitution and the most favorable human rights treaties prevail over any other legal norm (Constituent National Assembly of Ecuador, 2008). This hierarchical framework grants Andean Decisions a higher legal standing than that of ordinary domestic legislation, which in theory guarantees their preferential application in the event of a conflict. At the level of Community law, both the Cartagena Agreement and the Treaty Establishing the Court of Justice of the Andean Community establish that the Decisions of the Andean Council of Ministers of Foreign Affairs and of the Commission, as well as the Resolutions of the General Secretariat, are directly applicable and take precedence over incompatible national laws from the moment of their publication in the Official Gazette (Case 3-AI-96, 1997; Judgment 964-17-EP/22, 2022). The Constitutional Court of Ecuador has expressly recognized this applicability: in Case 005-12-SAN-CC and in Judgment 964-17-EP/22, it stated that CAN Decision 778 directly binds the administration without the need for new legislative incorporation (Constituent National Assembly of Ecuador, 2008). Theoretically, this regulatory and jurisprudential framework prevents the Ecuadorian State from using its domestic legislation as an excuse to evade the environmental obligations assumed within the framework of the CAN; however, in practice, the urgency of sustaining a primary-export model and the tensions inherent in natural resource governance mean that the reception of Andean norms ends up being fragmented, as conservation principles are accepted on paper but are systematically subordinated when they interfere with mining export goals (Altomonte & Sánchez, 2016).

3.2 Impact of Decision 523 in Ecuador

Looking at the CAN's regulatory expansion phase, the adoption of Decision 523 in 2002 marked the first major supranational effort to outline a Regional Biodiversity Strategy (*as reviewed in Chapter 1, [section 1.8.1](#), and Chapter 2, [section 2.1b](#)*). In the Ecuadorian context, the effect of this instrument did not result in immediate regulations or sanctions against the extractive industry. Rather, it served as a conceptual foundation that compelled national institutions to incorporate the vision of transboundary ecosystems into their long-term development plans (Andean Council of Ministers of Foreign Affairs, 2002).

The clearest contemporary reflection of this Andean influence is Ecuador's National Biodiversity Strategy (NBS) 2025–2030. Officialized by the Ministry of Environment and Energy through Ministerial Agreement MAE-MAE-2025-0063-AM, the ENB clearly reflects the concerns outlined by the CAN decades ago, updating them under the umbrella of the Kunming-Montreal Global Biodiversity Framework (Ministry of Environment, Water and Ecological Transition 2025a). Ecuador makes strong commitments here, such as restoring 30% of its degraded ecosystems, and places special emphasis on protecting Andean ecosystems and controlling damage caused by productive activities. Furthermore, the national strategy addresses the need to transition toward a bioeconomy that recognizes the real value of environmental services in the Gross Domestic Product, something indispensable in the face of a narrative that values the territory solely for its mining potential (Ministry of Environment and Energy, 2025a).

The problem lies in the fact that the impact of this Andean instrument loses momentum when it comes to the general state budget. Recent assessments conducted in conjunction with the United Nations Development Programme (UNDP) and the BIOFIN initiative show that Ecuador's actual spending on biodiversity suffers from a chronic deficit. There is a huge gap between what the country plans to conserve on paper and the funds it actually allocates so that environmental authorities can monitor and sanction crimes on the ground (UNDP, 2024).

This highlights one of the greatest contradictions in Ecuador's public policy regarding the CAN. On the one hand, the country excels in formulating high-quality technical strategic plans aligned with regional goals. On the other hand, ministries in strategic sectors grant large-scale concessions within the very biological corridors that the environmental strategy mandates to be preserved (Becerra Guamán & Maldonado Ruiz, 2025). Ultimately, the essence of Decision 523

manages to permeate planning documents, but it lacks the political clout needed to halt the physical advance of the extractive frontier in the Amazon and the Andes.

3.3 Impact of Decision 774 (Andean Policy to Combat Illegal Mining) in Ecuador

In the face of the uncontrolled advance of environmental degradation, the Andean Community's response to the crisis was consolidated with Decision 774 in 2012, which elevated the treatment of illegal mining to a regional security perspective (Andean Council of Ministers of Foreign Affairs, 2012a). In Ecuador, the introduction of this instrument had a direct impact on the tightening of the legal framework, reflecting a much stricter punitive stance than that of neighboring countries.

Seeking to align with the Andean requirement for prohibition and punishment, the Ecuadorian government criminalized illegal mining in Article 260 of its 2014 Comprehensive Organic Criminal Code (COIP), punishing it as a serious crime that can carry up to fifteen years in prison when there are links to organized crime (National Assembly of Ecuador, 2014). Additionally, based on Decision 774, Ecuador issued recent regulations (such as Resolution No. ARCOM-009/25) to grant the Armed Forces and the Mining Regulation and Control Agency full powers to carry out the immediate deactivation, destruction, and confiscation of backhoes and heavy machinery used in illicit mining (Mining Regulation and Control Agency, 2025).

This severity of criminal penalties contrasts sharply with the situation in neighboring countries. *(As analyzed in detail in Chapter 1, sections 1.2.1 and 1.8.1, and Chapter 2, section 2.1c)*, administrative mechanisms in neighboring countries have functioned in practice as legal barriers that paralyze destruction operations, a fact that prompted the General Secretariat of the Andean Community (SGCAN) to issue a ruling determining non-compliance with regional regulations (General Secretariat of the Andean Community, 2025). For Ecuador, these regulatory asymmetries are not a distant problem; they are the direct cause of the displacement of criminal groups across its borders. Facing permissive laws on the other side, transnational mafias simply relocate their operations when they perceive military controls on Ecuadorian soil (Tinoco et al., 2024).

This vulnerability is clearly evident along the northern border, along the river corridor formed by the Putumayo and San Miguel rivers. Along this natural boundary separating the Ecuadorian provinces of Sucumbíos and Napo from the Colombian departments, criminal structures allied with armed dissident groups operate illicit value chains that extract gold, launder assets, and destroy shared ecosystems with impunity (Organization of American States; Department for Combating Transnational Organized Crime, 2021). Taking advantage of deficiencies in border controls and Ecuador’s dollarized economy, the mined gold enters formal markets for money laundering.

Faced with this crisis, the Ecuadorian government has been forced to take extreme measures. In early 2026, the Ministry of the Environment issued Resolution No. MAE-MAE-2026-0005-RM, ordering the suspension of all mining activity in the provinces of Napo, El Oro, and Loja (National Assembly of the Republic of Ecuador, 2026). This forced shutdown was intended to facilitate the entry of large-scale military operations to clear areas and dismantle illegal mining operations. Interventions of this type, which in 2025 resulted in the destruction of hundreds of machines and clandestine camps (Ministry of Environment, Water and Ecological Transition, 2025b), demonstrate that, while Decision 774 provided Ecuador with supranational legitimacy to act forcefully, the tools of the CAN alone prove insufficient in the face of illicit economies that outmatch state institutions financially and logistically.

3.4 Impact of CAMI in Ecuador

Regarding the Andean Committee on Illegal Mining (CAMI) and its technical efforts (*its structure and challenges are analyzed in Chapter 1, sections 1.8 and 1.8.2*), the impact on Ecuadorian territory remains a promise with limited results. Although Ecuador participated in the design of the recent CAN Action Plan 2025–2030, prioritizing customs cooperation and joint tracking of chemical inputs at the borders (General Secretariat of the Andean Community, 2025), the Committee’s practical response to the country’s ecological emergencies remains very slow.

This is particularly evident in the functioning of the Andean Mercury Observatory. For Ecuador, the need for this body to provide real-time monitoring information is not a bureaucratic matter, but one of human survival. Over the past two years, scientifically rigorous research has confirmed what Amazonian communities had been reporting: fish essential to the local diet of

residents in areas near the Napo, Aguarico, and Curaray rivers contain levels of methylmercury that exceed all toxicity limits permitted by the WHO (Antonio José Paz Cardona, 2024; Echevarría et al., 2024). Mercury discharged unchecked by illegal operations has bioaccumulated in the food chain, poisoning large catfish and, consequently, entire indigenous communities that depend on them for their daily food supply (Echevarría et al., 2024).

This crisis represents a direct blow to the food security and public health of these communities, pushing them into a subsistence crisis by depriving them of their primary source of clean protein. However, in the face of this situation, CAMI's reporting mechanisms have operated with considerable delays, publishing their data and regional analyses months or years after the information was collected (Judgment No. 58-16-IN/21). For Ecuadorian authorities and affected populations, a delayed report loses its usefulness in preventing the entry of contraband chemicals or in planning timely health responses, thus reflecting the lack of operational agility of Andean institutions on the ground.

3.5 Socio-environmental Impacts in Ecuador: The Gap Between Andean Regulations and Territorial Reality

When comparing the rhetoric of Andean regulations with the reality in Ecuador, a significant gap becomes evident. The CAN's policies on prevention and comprehensive protection fail to curb the rate of deforestation and social conflict documented by scientific research in the country's most biodiverse areas.

Table1
Findings regarding territorial impacts in Ecuador

Indicator	Quantitative data and affected areas	Source
Loss of Amazon rainforest	1,660 hectares directly destroyed by illegal mining activities.	(Becerra Guamán & Maldonado Ruiz, 2025)
Total mining area	7,495 hectares occupied formally and clandestinely by mining operations in the Amazon (as of 2021).	(Becerra Guamán & Maldonado Ruiz, 2025)
Geographic concentration	67% of the country’s total mining area is concentrated in the Amazonian province of Zamora Chinchipe.	(Becerra Guamán & Maldonado Ruiz, 2025)
Impact on Indigenous Territories	46.7% of the mining area in the Ecuadorian Amazon is located within titled indigenous territories.	(Becerra Guamán & Maldonado Ruiz, 2025)
Growth in Indigenous Areas	325% increase in the extent of mining within ancestral territories (from 270 ha in 2015 to 855 ha in 2021).	(Becerra Guamán & Maldonado Ruiz, 2025)
Targeted expansion (Yutzupino)	A 78.6% increase in the affected area in Yutzupino (Napo) over the course of a year, reaching 125 hectares.	(Becerra Guamán & Maldonado Ruiz, 2025)
Intrusion into protected areas	562 hectares affected within the Cofán Bermejo Reserve, Sumaco National Park, El Zarza, and Podocarpus National Park.	(Ortiz P, 2025)
Buffer zones	337 hectares affected by mining operations adjacent to indigenous reserves.	(Ortiz P, 2025)

The data reveal how mining expansion systematically exceeds conservation regulations. This encroachment not only destroys habitats but also violates the right to Free, Prior, and Informed Consultation (FPIC), a central principle upheld by the international instruments adopted within the Andean regulatory framework (Altomonte & Sánchez, 2016).

In Ecuador, the practice of reducing consultation to a mere administrative formality suffered a historic setback in the courts. The Constitutional Court’s ruling of January 27, 2022, in Case No. 273-19-JP/22 regarding the Sinangoe community (A’i Cofán people) set a regional precedent. The Court ruled that the Ecuadorian State violated the right to prior consultation, the right to a healthy environment, and the rights of nature by granting concessions in areas within their territory without the community’s consent (Constitutional Court of Ecuador, 2022).

This ruling raised protection standards and determined that the State must consult not only if the mining project is within the demarcated territory, but also if it falls within the “sphere of influence” and may directly affect the water sources or interests of indigenous peoples

(Constitutional Court of Ecuador, 2022). Even more importantly, it established that a project cannot be carried out if it imposes “excessive sacrifices” on the collective rights of communities or on nature, justifying such actions on the grounds of state revenue needs.

Despite this jurisprudential advance, conflicts persist. In the highlands, the case of the Loma Larga mining project (in the Azuay páramos) illustrates how certain companies and institutions attempt to move forward with exploitation while disregarding the results of local public consultations and the resistance of water boards defending water recharge zones (Alvarado, 2024). This constant disconnect between the rights protected by the courts and the physical pressure exerted by the mining industry reinforces the arguments of those who propose using the concept of ecocide to seek justice in the face of irreversible damage.

By subjecting the implementation of the Andean framework in Ecuador to an evaluation based on the structural limitations previously identified in this research, the reasons for the operational problems in the territory become clear.

First, the implementation deficit is evident in the gap between the country’s criminal severity (under the influence of Decision 774) and the reality of enforcement (Altomonte & Sánchez, 2016). Although the law prescribes harsh penalties, the complex geography of the Amazonian borders makes it difficult to maintain a permanent, deterrent state presence, allowing illicit extraction to persist despite sporadic enforcement operations.

Second, institutional weakness and asymmetry of capabilities affect state agencies. The Ministry of the Environment and mining control agencies operate on insufficient budgets compared to the immense financial resources of the extractive industry, both formal and criminal (UNDP, 2024). This lack of resources is reflected in problems such as the prolonged closure of the mining registry in previous years, which prevented the regularization of small-scale mining and facilitated the growth of informality (Tinoco et al., 2024)

Furthermore, political capture poses a serious challenge. Criminal networks manage to exert influence over local sectors to protect their illicit camps and use the formal economy to launder gold proceeds (Rivera-Rhon & Bravo-Grijalva, 2023). Finally, the limited participation of indigenous communities demonstrates that, in governmental practice, prior consultation processes continue to be treated as administrative obstacles rather than as genuine rights to self-determination (Altomonte & Sánchez, 2016).

To further complicate the picture, recent policy decisions have come into conflict with the CAN's sustainability pledges. In February 2026, Ecuador's National Assembly passed the Organic Law for the Strengthening of the Strategic Mining and Energy Sectors (National Assembly of the Republic of Ecuador, 2026). Driven by a desire to accelerate foreign investment in response to commitments to multilateral organizations, the law modifies the requirements for Environmental Licenses for extractive projects, introducing more streamlined approval mechanisms that favor the industry (Amazon Frontlines, 2026).

Organizations such as CONAIE and groups defending the territory immediately denounced that this reform weakens ecological controls and concentrates environmental responsibilities within the same ministry tasked with promoting mining, creating an institutional conflict of interest (Amazon Frontlines, 2026; Servendi, 2026). This legislative direction demonstrates that, when weighing fiscal needs against the Andean Community's conservation commitments, the Ecuadorian state tends to prioritize deregulation to facilitate capital inflows.

As a general conclusion regarding this third research objective, it is determined that the Andean Community's impact on Ecuador is strongly conditioned by the national economic model. While CAN instruments have been of great help in guiding national environmental planning (such as the Biodiversity Strategy) and in providing legitimacy to border controls, regional governance alone is insufficient to curb extractive pressures. The good intentions of Andean policies are diluted in the face of a state that prioritizes fiscal revenue, leaving high-mountain ecosystems and Amazonian populations in a state of high vulnerability to the impacts of mining at all scales.

CONCLUSIONS

Based on the historical-evolutionary and documentary analysis developed in this research, the study's central question has been answered, allowing for an evaluation of the effectiveness of the Andean Community's (CAN) institutional response to the socio-environmental impacts of mining. The most relevant conclusions are presented below, demonstrating the fulfillment of the stated objectives:

First, regarding the review of the CAN's legal framework and environmental policies (first specific objective), it is concluded that the regional bloc has achieved a remarkable supranational regulatory evolution. It has transitioned from a purely commercial approach toward the construction of a robust environmental structure. Historic Decisions such as Decisions 391, 523, 763, 774, and 864 demonstrate an advanced institutional capacity to identify illegal mining and ecological degradation not as isolated problems, but as cross-border threats requiring joint responses, providing member countries with binding tools for the protection of biodiversity and shared ecosystems.

Second, by examining the implementation of these instruments in member countries (the second specific objective), the study concludes that there is a profound structural gap between the Andean regulatory framework and its operational effectiveness on the ground. While the CAN's response is legally advanced, it is hampered by marked institutional, budgetary, and criminal justice disparities among Bolivia, Colombia, Ecuador, and Peru. These differences have created a scenario of regulatory divergence across jurisdictions, in which transnational criminal networks exploit bureaucratic loopholes, such as repeated extensions of the mining formalization process in Peru or the weakness of border controls, to shift their illicit operations, thereby neutralizing regional efforts. Furthermore, regional bodies such as the Andean Committee on Illegal Mining (CAMI) are severely limited in their effectiveness due to their dependence on political will and a lack of budget and operational autonomy.

Third, in assessing the impact of the Andean regulatory framework in Ecuador (third specific objective), an institutional paradox becomes evident. On the one hand, the Ecuadorian state has adequately incorporated Andean regulations into its planning instruments (such as the National Biodiversity Strategy) and has strengthened its criminal framework against illegal

mining, authorizing the destruction of machinery in accordance with Decision 774. However, in territorial practice, the effectiveness of the supranational regulation is weakened. This disconnect stems from the fact that the State prioritizes a macroeconomic model that is heavily dependent on extractive expansion for revenue generation. Consequently, regional environmental commitments are systematically subordinated to mining export targets, leaving fragile ecosystems and the territories of Indigenous peoples in a state of high vulnerability and at constant risk of violations of fundamental rights, such as free, prior, and informed consultation (FPIC).

REFERENCES

- Altomonte, Hugo., & Sánchez, R. J. . (2016). Toward a New Governance of Natural Resources in Latin America and the Caribbean. United Nations, Economic Commission for Latin America and the Caribbean (ECLAC). <https://repositorio.cepal.org/server/api/core/bitstreams/dbe135bc-dc1a-4bfb-897c-012984e1b6fe/content>
- Alvarado, A. K. (2024). Impact of illegal mining on indigenous communities and the environment in the Ecuadorian Amazon. *ASCE Journal*. <https://magazineasce.com/index.php/1/article/download/369/246>
- Amazon Frontlines. (2026). New Mining Law Prioritizes Ecuador’s Economic Agenda, Favors Extractive Companies, and Violates the Rights of Nature and Indigenous Nations. <https://amazonfrontlines.org/es/chronicles/nueva-ley-para-mineria-prioriza-la-agenda-economica-de-ecuador-favorece-a-empresas-extractivas-y-vulnera-derechos-de-la-naturaleza-y-de-nacionalidades-indigenas/>
- Andean Committee on Illegal Mining (CAMI). (2025). Action Plan 2025–2030 to Implement the Andean Policy to Combat Illegal Mining.
- Andean Community. (1996). ANDEAN SUBREGIONAL INTEGRATION AGREEMENT (CARTAGENA AGREEMENT). <https://www.comunidadandina.org/quienes-somos/>
- Andean Council of Foreign Ministers. (1996). Trujillo Protocol. https://www.comunidadandina.org/DocOficialesFiles/Presidencial/CP_08.doc
- Andean Council of Foreign Ministers. (2012a). DECISION 744. <https://www.comunidadandina.org/DocOficialesFiles/Gacetas/Gace1911.pdf>
- Andean Council of Ministers of Foreign Affairs. (2002). DECISION 523. <https://www.comunidadandina.org/StaticFiles/DocOf/DEC523.pdf>
- Andean Council of Ministers of Foreign Affairs. (2011). DECISION 763.
- Andean Council of Ministers of Foreign Affairs. (2012b). DECISION 774. <https://www.comunidadandina.org/StaticFiles/DocOf/DEC774.pdf>
- Andean Council of Ministers of Foreign Affairs. (2020a). DECISION 864.
- Andean Council of Ministers of Foreign Affairs. (2020b, December 1). Andean Environmental Charter – Andean Community. <https://www.comunidadandina.org/notas-de-prensa/carta-ambiental-andina/>
- Antonio José Paz Cardona. (2024). Fish in the Ecuadorian Amazon contain heavy metals above permitted limits. *MONGABAY*. <https://es.mongabay.com/2024/05/peces-de-la-amazonia-ecuatoriana-contienen-metales-pesados-por-encima-de-los-limites-permitidos-estudio/>
- Bacca Benavides, P. Ilich. (2022). Handbook on Intercultural Prior Consultation: Free, Prior, and Informed Consent in the Context of Interlegality. Dejusticia Publishing House.
- Becerra Guamán, P. R., & Maldonado Ruiz, L. M. (2025). Legal and Environmental Impact of Illegal Mining in the Ecuadorian Amazon: A Regulatory and Jurisprudential Analysis. *ASCE*, 4(3), 1669–1690. <https://doi.org/10.70577/asce/1669.1690/2025>

Casas, A., & Elvira Correa, M. (2007). What's Happening with the Andean Community of Nations (CAN)? (Vol. 12, No. 2). <http://www.scielo.org.co/pdf/papel/v12n2/v12n2a11.pdf>

Case 3-AI-96 (Direct Application and Primacy of Community Law) (1997).

CASE No. 58-16-IN (2021).
https://esacc.corteconstitucional.gob.ec/storage/api/v1/10_DWL_FL/e2NhcNBLdGE6J3RyYW1pdGUnLCB1dWlkOicyOTc5Yjk1Ny0xZmFmLTQwNjEtOGMzYi05MmQ5NTA5ODViYTQucGRmJ30=

Chaparro, E. (2000). So-called Small-Scale Mining: A Renewed Business Approach. ECLAC. <https://repositorio.cepal.org/items/7ffa30a8-63bc-4c38-b94a-502d5fa8df2b>

Colombian Ministry of Foreign Affairs. (2023). Andean Community (CAN). <https://www.cancilleria.gov.co/international/regional/can>

Colombian Ministry of Foreign Affairs. (2024b). Colombia's Pro Tempore Presidency of the CAN held the 28th Ordinary Meeting of the CAMI and the OAM. <https://www.cancilleria.gov.co/newsroom/news/presidencia-pro-tempore-colombia-comunidad-andina-can-llevo-cabo-xxviii-reunion>

CONDESAN. (2012). Andean Overview of Climate Change. www.comunidadandina.org

Consolidated Text of Administrative Procedures (TUPA) of the Ministry of Energy and Mines, Pub. L. No. 003-2016-EM (2016).

Constituent National Assembly of Ecuador. (2008). Constitution of the Republic of Ecuador. Official Register. https://www.defensa.gob.ec/wp-content/uploads/downloads/2021/02/Constitucion-de-la-Republica-del-Ecuador_act_ene-2021.pdf

Constitutional Court of Ecuador. (2024). (2024). Judgment No. 60-19-AN/23 (Sarayaku Case – Non-compliance). <https://amazonwatch.org/es/news/2024/0118-historic-legal-victory-achieved-by-the-kichwa-indigenous-people-of-sarayaku>

Decision 391: Common Regime on Access to Genetic Resources, Pub. L. 391, Official Gazette of the Cartagena Agreement No. 213 (1996). <https://www.comunidadandina.org/DocOficialesFiles/decisiones/DEC391.doc>

Decision 699 (2008). <https://www.comunidadandina.org/StaticFiles/DocOf/DEC699.pdf>

Decree 1035 of 2024: Partially Amending Chapter 2, Title 7, Part 5, Book 2 of Decree 1070 of 2015, Regarding the Use of Heavy Machinery and Its Parts in Mining Activities Without the Authorizations and Requirements Provided for by Law, Pub. L. Decree 1035 of 2024, Regulatory Manager, Civil Service (2024). <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=249296>

Decree 2235 of 2012: Regulating Article 6 of Law 1450 of 2011, Regarding the Destruction of Heavy Machinery and Infrastructure in Illegal Mining Activities, Official Gazette of Colombia (2012).

Early Detection and Environmental Monitoring System (SIDETEVA) in the Department of Madre de Dios (2017). https://sinia.minam.gob.pe/sites/default/files/sinia/archivos/public/docs/areas_afectadas_por_mineria_julio1_reportes.pdf

- Echevarría, G., Lujan, N. K., Montoya, J., Granda-Albuja, M. G., Valdiviezo-Rivera, J., Sánchez, F., Cuesta, F., & Ríos-Touma, B. (2024). Abiotic and biotic factors influencing heavy metal pollution in fisheries of the Western Amazon. *Science of The Total Environment*, 908, 168506. <https://doi.org/10.1016/j.scitotenv.2023.168506>
- ECLAC. (2000). *Natural Resources and Infrastructure: Characteristics of Small-Scale and Artisanal Mining and Their Impact on Development*. ECLAC. https://repositorio.cepal.org/bitstream/handle/11362/6458/1/S006437_es.pdf
- Executive Decree No. 94: Merger by Absorption of the Ministry of Environment, Water, and Ecological Transition into the Ministry of Energy and Mines (2025). https://www.primicias.ec/uploads/files/2025/08/15/Decreto_Ejecutivo_94_20250714224344_20250714224349_20250714224351.pdf
- Fang, W., Chen, J., & Ou, L. (2008). Factor analysis on CSFs of enterprise new product development projects: Based on NPD process. 2008 International Conference on Wireless Communications, Networking and Mobile Computing, WiCOM 2008. <https://doi.org/10.1109/WiCom.2008.1849>
- Gabriela Quiroz. (2025). Pollution of the Napo River due to illegal mining in Ecuador. *El Comercio*. <https://www.elcomercio.com/actualidad/contaminacion-rio-napo-minera-ilegal-ecuador/>
- GAFILAT, & Fundación Gajate. (2021). Strengthening the effective approach to illegal mining as a threat to regional security.
- General Secretariat of the Andean Community. (1979). *Treaty Establishing the Court of Justice of the Cartagena Agreement*. https://www.tribunalandino.org.ec/transparencia/normatividad/Tratado_Creaci%C3%B3n_TJCA.pdf
- General Secretariat of the Andean Community. (2006). *ANDEAN ENVIRONMENTAL AGENDA 2006-2010*. <https://www.comunidadandina.org/DocOficialesFiles/DInformativos/SGdi799.pdf>
- General Secretariat of the Andean Community. (2012). *ENVIRONMENTAL AGENDA BOLIVIA • COLOMBIA • ECUADOR • PERU*. https://ibce.org.bo/images/publicaciones/agenda_ambiental2012-2016.pdf
- General Secretariat of the Andean Community. (2012). *Environmental Management in the Countries of the Andean Community*. *Revista de La Integración*, 9. www.comunidadandina.org
- General Secretariat of the Andean Community. (2021). *FIRST SEMESTER REPORT OF THE ANDEAN MERCURY OBSERVATORY*. <https://www.comunidadandina.org/wp-content/uploads/2022/08/I-Informe-Observatorio-Andino-del-Mercurio.pdf>
- General Secretariat of the Andean Community. (2024). *Inadmissibility of the complaint against the Bolivian State for non-compliance with Decision 774 of the Andean Community*.
- General Secretariat of the Andean Community. (2025). *OPINION No. 007-2025*. https://www.comunidadandina.org/normativa-files//uploads/Gaceta_5697_62555807cd.pdf
- General Secretariat of the Andean Community. (n.d.). *Institutional Structure of the Andean Community*. Retrieved April 14, 2026, from <https://www.comunidadandina.org/>

- Global Forest Watch. (2018). Early Warning Systems for Deforestation: An Explainer. <https://www.globalforestwatch.org/blog/data-and-tools/early-warning-systems-for-deforestation-an-explainer/>
- Gómez Apac, H. Ramiro. (2019). Notes on Andean Community Law. https://www.tribunalandino.org.ec/libros/LIBRO_DERECHO.pdf
- Hentschel, T. (2002). Global Report on Artisanal and Small-Scale Mining. <https://www.iied.org/sites/default/files/pdfs/migrate/G00723.pdf>
- IGF (Intergovernmental Forum on Mining, M. M. and D. S. (2026). Artisanal and Small-Scale Mining. <https://www.igfmining.org/es/artisanal-and-small-scale-mining/>
- Inter-American Court of Human Rights (IACHR). (2007). Case of the Saramaka People v. Suriname. Judgment of November 28, 2007. Series C No. 172. https://www.corteidh.or.cr/docs/casos/articulos/seriec_172_esp.pdf
- Inter-American Court of Human Rights (IACHR). (2012). Case of the Kichwa Indigenous People of Sarayaku v. Ecuador. Judgment of June 27, 2012. Series C No. 245. https://www.corteidh.or.cr/docs/casos/articulos/seriec_245_esp.pdf
- International Labour Organization (ILO). (1989). Indigenous and Tribal Peoples Convention, 1989 (No. 169). <https://www.ohchr.org/en/instruments-mechanisms/instruments/indigenous-and-tribal-peoples-convention-1989-no-169>
- International Union for Conservation of Nature (IUCN). (2020). BRIDGE Andes: Building dialogues for transboundary water management.
- Judgment 273-19-JP/22 (2022). https://esacc.corteconstitucional.gob.ec/storage/api/v1/10_DWL_FL/e2NhcNBlDGE6J3RyYW1pdGUnLCB1dWlkOidjOWE4ODAyZC03Y2E1LTQ4NDItOWIzNS01ZDZjMzZiM2I3ZGMucGRmJ30=
- Judgment 964-17-EP/22 (2022). https://esacc.corteconstitucional.gob.ec/storage/api/v1/10_DWL_FL/e2NhcNBlDGE6J3RyYW1pdGUnLCB1dWlkOic0YTU4ZWVjMC00NzUwLTRjMTEtYWVRkZi01YjM4YTQ0MjQ4NjMucGRmJ30=
- La Fuente. (2024). Rivers Contaminated with Mercury Due to Devastating Mining. La Fuente. <https://periodismodeinvestigacion.com/2024/12/12/sos-napo-rios-con-mercurio-por-una-mineria-que-devasta/>
- Lea. (2024). Bolivia will allocate just 0.04% of its 2025 budget to environmental investment following the worst ecological crisis in its history. Lea Newspaper. <https://www.periodicolea.com.ar/2024/12/23/bolivia-destinara-apenas-el-004-del-presupuesto-de-2025-para-inversion-en-medio-ambiente-tras-la-mayor-crisis-ecologica-de-su-historia/>
- Legislative Decree No. 1105: Distinction Between Informal and Illegal Mining, Pub. L. 1105, Official Gazette El Peruano (2012). <https://www.leyes.congreso.gob.pe/Documentos/DecretosLegislativos/01105.pdf>
- Melo-Urresta, J. V., Infante-Miranda, M. E., Montece-Giler, S. A., Melo-Urresta, J. V., Infante-Miranda, M. E., & Montece-Giler, S. A. (2025). The right to prior consultation in case 273-19-jp/22,

- Sucumbíos, Ecuador. Noesis. Electronic Research Journal, 7(1), 1614–1631.
<https://doi.org/10.35381/noesisin.v7i1.522>
- Ministry of Energy and Mines of Ecuador. (2024). Ministerial Agreement No. MEM-MEM-2024-0002-AM.
https://www.viaminera.com/uploads/1/2/5/9/125973241/informe_final_de_consulta_previa.pdf
- Ministry of Environment and Energy. (2025a). NATIONAL BIODIVERSITY STRATEGY 2025–2030.
<https://www.ambienteyenergia.gob.ec/wp-content/uploads/downloads/2026/03/Estrategia-Nacional.pdf>
- Ministry of Environment and Energy. (2025b). Crackdown on illegal mining: more than 260 enforcement operations in 2025 result in seizures of materials and confiscations of diesel.
<https://www.ambienteyenergia.gob.ec/golpe-a-la-mineria-ilegal-mas-de-260-operativos-de-control-en-2025-resultan-en-incautaciones-de-material-y-decomisos-de-diesel/>
- Ministry of Environment and Energy. (2025c, December 31). 386 operations in 2025 inflict millions in economic losses on illegal mining and deal a blow to criminal groups. Government of the Republic of Ecuador. <https://www.ambienteyenergia.gob.ec/386-operativos-en-2025-dejan-mas-de-usd-11-millones-en-afectacion-a-la-mineria-ilegal-y-golpean-a-economias-criminales/>
- Ministry of Environment and Sustainable Development of Colombia. (2025). Urban Environmental Management Policy 2025–2036 / NDC 2025–2030. <https://www.minambiente.gov.co/asuntos-ambientales-sectorial-y-urbana/politica-de-gestion-ambiental-urbana/>
- Ministry of Environment and Sustainable Development. (2025a). Resolution No. 0218.
<https://www.minambiente.gov.co/wp-content/uploads/2025/10/RES.-0218-DE-03-MAR-2025-ACCESO-A-RECURSOS-GENETICOS.pdf>
- Ministry of Environment and Sustainable Development. (2025b). Resolution No. 1053.
<https://www.minambiente.gov.co/wp-content/uploads/2025/10/RES.-1053-DE-28-JUL-2025-RG-485.pdf>
- Ministry of Environment and Water. (2022). INSTITUTIONAL STRATEGIC PLAN OF THE PLURINATIONAL AUTHORITY OF MOTHER EARTH 2021-2025.
<https://madretierra.gob.bo/wp-content/uploads/2025/09/1Plan-Estrategico-2021-2025.pdf>
- Ministry of Foreign Affairs of Colombia. (2024a). Bolivia transfers the Pro Tempore Presidency of the Andean Community (CAN) to Colombia, highlighting subregional integration and sustainable development. <https://cancilleria.gob.bo/mre/2024/09/10/17336/>
- Ministry of Foreign Affairs of Colombia. (2025). Andean Community Management Report 2024–2025.
<https://www.cancilleria.gov.co/sites/default/files/FOTOS2025/Informe%20de%20Gestio%CC%81n%20PPT%20Colombia%20CAN%202024-2025.pdf>
- Ministry of Foreign Affairs. (2025). Peru Promotes Regional Cooperation in the Fight Against Illegal Mining. <https://www.gob.pe/institucion/rree/noticias/1269102-peru-impulsa-la-cooperacion-regional-en-la-lucha-contra-la-mineria-ilegal>
- Ministry of the Environment of Ecuador. (2014). PRAA Project.
<https://www.ambienteyenergia.gob.ec/ambiente/proyecto-praa/>

- Ministry of the Environment. (2018). STATE POLICY: THE NATIONAL CLIMATE CHANGE STRATEGY. https://www.gob.ec/sites/default/files/regulations/2018-10/Documento_Politica-Estado-Estrategia-Nacional-Cambio-Climatico.pdf
- Ministry of the Interior. (January 2026). Government Tightens Criminal Penalties and Classifies All Activities Related to Illegal Mining as Crimes. Peruvian State Platform. <https://www.gob.pe/institucion/mininter/noticias/1337930-gobierno-endurece-sanciones-penales-e-incorpora-como-delitos-toda-actividad-vinculada-a-la-mineria-ilegal>
- Mongabay Latam. (2025). Ecuador: Following the Announced Merger of the Ministries of Environment and Energy and Mines, Experts Warn of a Crisis in Environmental Controls. <https://es.mongabay.com/2025/08/ecuador-fusion-ministerios-ambiente-energia-minas-crisis-controles-ambientales/>
- National Assembly of Ecuador. (2014). COMPREHENSIVE ORGANIC CRIMINAL CODE SUPPLEMENT No. 180. www.registroficial.gob.ec
- National Society of Mining, Petroleum, and Energy. (2025). Communities along the Nanay River in Loreto file a complaint against the Peruvian government with the Andean Community for failing to prevent the spread of illegal mining. <https://www.desdeadentro.pe/2025/06/comunidades-del-rerio-nanay-en-loreto-denuncian-al-estado-peruano-ante-la-comunidad-andina-por-no-impedir-el-avance-de-la-mineria-ilegal/>
- ORGANIC LAW FOR THE STRENGTHENING OF THE STRATEGIC MINING AND ENERGY SECTORS, Official Gazette (2026). https://www.fielweb.com/App_Themes/InformacionInteres/4bde6ed3-0923-4dd6-8945-49dab6fad4d9.pdf
- Organization for Economic Cooperation and Development (OECD). (2013). Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (3rd ed.). <https://www.duediligenceguidance.org/?lang=es>
- Organization for Economic Cooperation and Development (OECD). (2014). Latin American Economic Outlook 2015. OECD. <https://doi.org/10.1787/leo-2015-es>
- Organization of American States; Department for Combating Transnational Organized Crime. (2021). Tracking the Money from Illicit Gold: Strengthening the Fight Against the Financing of Illegal Mining. The Case of Ecuador.
- Pablo Ortiz. (February 1, 2025). Extractivism in the Shadows: Illegal Mining, Conflicts, and Indigenous Rights in Ecuador. <https://debatesindigenas.org/2025/02/01/extractivismo-en-la-sombra-mineria-ilegal-conflictos-y-derechos-indigenas-en-ecuador/>
- Peruvian Ministry of Foreign Affairs. (2025). Peru and Ecuador hold the Second Meeting of the Joint Commission to Combat Illegal Mining and approve its 2025–2026 Work Plan. <https://www.gob.pe/institucion/rree/noticias/1227533-peru-and-ecuador-hold-the-second-meeting-of-the-joint-commission-to-combat-illegal-mining-and-approve-its-2025-2026-work-plan>
- Peruvian Ministry of the Environment (MINAM). (2024). National Biodiversity Strategy to 2050. <https://www.gob.pe/institucion/minam/normas-legales/6124002-008-2024-minam>

- Peruvian Ministry of the Environment. (2017). Title XIII of the Penal Code — Environmental Crimes. https://www.minam.gob.pe/wp-content/uploads/2017/09/T%C3%ADtulo-XIII-del-C%C3%B3digo-Penal_-Delitos-Ambientales.pdf
- Peruvian Public Prosecutor’s Office. (August 2025). Peru and Ecuador sign the 2025–2026 Work Plan against illegal mining on the border. Peruvian State Platform. <https://www.gob.pe/institucion/mpfn/noticias/1230400-peru-y-ecuador-suscriben-plan-de-trabajo-2025-2026-contrala-mineria-ilegal-en-la-frontera>
- Peruvian Society for Environmental Law (SPDA). (2025). Illegal mining accelerates the climate crisis and threatens human rights in the Amazon, warns new regional report. Peruvian Society for Environmental Law (SPDA). <https://www.actualidadambiental.pe/mineria-ilegal-acelera-crisis-climatica-y-amenaza-derechos-humanos-en-la-amazonia/>
- Pico Mantilla, Galo. (1992). Andean Law. Court of Justice of the Cartagena Agreement. <https://centroandinodeintegracion.wordpress.com/derecho-andino-1989-1992/>
- Plurinational Legislative Assembly of Bolivia. (2018). Law No. 1093 of August 29, 2018: Law on the Fight Against Corruption, Illicit Enrichment, and Asset Accumulation by Current and Former State Officials. [https://natlex.ilo.org/dyn/natlex2/natlex2/files/download/107679/LEY%201093%20BOLIVIA%20\(NT\).pdf](https://natlex.ilo.org/dyn/natlex2/natlex2/files/download/107679/LEY%201093%20BOLIVIA%20(NT).pdf)
- Poveda Bonilla. (2022). Institutional Framework and Mining Regulation in Andean Countries: Bolivia, Chile, Colombia, Ecuador, and Peru. <https://repositorio.cepal.org/server/api/core/bitstreams/57ee9a01-b6a3-4d37-bb2a-c4a351a8c4c8/content>
- Quindimil López, J. A. (2009). Legal nature of Andean Community regulations and their application in Colombia. *Vniversitas*. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-86972009000100008
- Regional Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement) (2018). <https://dialogoderechoshumanos.org/wp-content/uploads/2024/07/ARTICULO-5.-ACCESO-A-LA-INFORMACION-AMBIENTAL.pdf>
- Rivera-Rhon, R. A., & Bravo-Grijalva, C. E. (2023). Criminal governance and productive enclaves of illegal mining in Ecuador. *Logos Science & Technology Journal*, 15(2), 49–69. <https://doi.org/10.22335/rict.v15i2.1734>
- Romero Zambrano, H. R. (n.d.). Community Testimony: Doctrine – Legislation – Jurisprudence (Vol. 2008). Retrieved April 14, 2026, from https://www.tribunalandino.org.ec/libros/testimonio_comunitario.pdf
- Ruling on Decree 2235 of 2012 (Destruction of Machinery Used in Illegal Mining) (2014).
- Servendi. (2026). CONAIE denounces extractive expansion with weakened regulations and reduced community participation. They call for the rejection of the bill. <https://www.servindi.org/seccion-pueblos-indigenas-actualidad-noticias/03/02/2026/ecuador-conaie-reforma-extractiva-noboa>

- Supreme Decree No. 008-2024-MINAM, Single Digital Platform of the Peruvian State (2024). <https://cdn.www.gob.pe/uploads/document/file/7132015/6124002-decreto-supremo-008-2024-minam.pdf?v=1729864294>
- Supreme Decree No. 019-2021-MINAM: Regulations on Access to Genetic Resources and Their Derivatives, Official Gazette El Peruano (2021). <https://www.gob.pe/institucion/minam/normas-legales/2035447-019-2021-minam>
- Supreme Decree No. 24676: Regulations of Decision 391 of the Cartagena Agreement Commission on Access to Genetic Resources, Official Gazette of Bolivia (1997). <https://cdn.www.gob.pe/uploads/document/file/2035623/DS.%20019-2021-MINAM%20con%20anexos.pdf.pdf?v=1627150552>
- Tinoco, G., Gaspar, H., Torres, G., & Campos, F. (2024). COMPARATIVE ANALYSIS OF THE GOVERNMENTAL RESPONSE TO ILLEGAL AND INFORMAL MINING IN SOUTH AMERICA. Document prepared by the IPE-Peruvian Institute of Economics. www.snmpe.org.pe
- UNDP. (2024). Analysis of Biodiversity Expenditures (BER) in Ecuador. https://www.biofin.org/sites/default/files/content/knowledge_products/02%20BER%20Ecuador%202024.pdf
- UNHCR. (n.d.). The right of indigenous peoples to free, prior, and informed consultation. Retrieved April 14, 2026, from <https://www.acnur.org/fileadmin/Documentos/Publicaciones/2011/7602.pdf>
- United Nations Declaration on the Rights of Indigenous Peoples. General Assembly Resolution A/RES/61/295 (2007). <https://social.desa.un.org/issues/indigenous-peoples/united-nations-declaration-on-the-rights-of-indigenous-peoples>
- United Nations Environment Programme (UNEP), & General Secretariat of the Andean Community. (2003). GEO Andino: Perspectives on the Andean Environment (Chapter on institutional framework and water resource management). https://www.comunidadandina.org/StaticFiles/OtrosTemas/MedioAmbiente/libro_GEO_Andino_1.pdf
- United Nations Office on Drugs and Crime (UNODC). (2023). Responding to Illegal Mining and Trafficking in Metals and Minerals: Guide to Good Legislative Practices. https://www.unodc.org/cld/uploads/pdf/Illegal_Mining_and_Trafficking_in_Metals_S.pdf
- United Nations Office on Drugs and Crime (UNODC). (2025). Protection of Strategic Resources in Latin America and the Caribbean: Combating Organized Crime, Money Laundering, and Corruption in the Mining Sector.
- UNODC. (2025). Global report on illicit mining: Criminal networks and environmental crime. www.unodc.org/unodc/en/
- Villabella Armengol, C. M. (2015). Methods in Legal Research. <https://archivos.juridicas.unam.mx/www/bjv/libros/8/3983/46.pdf>