2025 FULL REPORTS OF THE MINAMATA CONVENTION ON MERCURY

Report submitted on 31 December 2025
*Question 4.5 amended by Ecuador on 17 April 2026

MINAMATA CONVENTION ON MERCURY

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REPORTING PERIOD:
1 January 2021 to 31 December 2024

UNOFFICIAL ENGLISH TRANSLATION
Attachments can be found on the website

▼ INFORMATION ON THE PARTY

1. Information on the party

Name of party
Ecuador

Date on which its instrument of ratification, accession, approval or acceptance was deposited
July 29, 2016

Date of entry into force of the Convention for the party
August 16, 2017

2. Information on the national focal point

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Focal Point is submitting the national report

- ○ Information is submitted by the national focal point
- ◉ Information is submitted through the national focal point by the contact officer

a3_subsection

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▼ ART. 3: MERCURY SUPPLY SOURCES AND TRADE

3.1: Does the party have any primary mercury mines that were operating within its territory at the date of entry into force of the Convention for the party?

- ○ Yes - primary mercury mining with available data
- ○ Yes - primary mercury mining with no available data
- ◉ No

3.2: Does the party have any primary mercury mines that are now in operation that were not in operation at the time of entry into force of the Convention for the party?

- ○ Yes - primary mercury mining with available data
- ○ Yes - primary mercury mining with no available data
- ◉ No

3.3: (A) Has the party endeavoured to identify individual stocks of mercury or mercury compounds exceeding 50 metric tons that are located within its territory?

3.3: (A) Has the party endeavoured to identify individual stocks of mercury or mercury compounds exceeding 50 metric tons that are located within its territory?

- ○ Yes - with new data* (also to be selected by parties reporting for the first time)
- ◉ Yes - endeavoured and indicates same stocks as reported in the previous report
- ○ No

3.3: (B) Has the party endeavoured to identify individual sources of mercury-supply-generating stocks exceeding 10 metric tons per year that are located within its territory?

3.3:(B) Has the party endeavoured to identify individual sources of mercury-supply-generating stocks exceeding 10 metric tons per year that are located within its territory?

- ○ Yes – with new data* (also to be selected by parties reporting for the first time)
- ◉ Yes – endeavoured and indicates same stocks as reported in the previous report
- ○ No

3.4: Has the party determined that it has excess mercury available from the decommissioning of chlor-alkali facilities?

- ○ Yes
- ◉ No – has determined it has no excess mercury
- ○ No – has not made a determination

3.5: *Has the party received consent, or relied on a general notification of consent, in accordance with article 3, including any required certification from importing non-parties, for all exports of mercury from the party's territory in the reporting period?

- ☐ Yes – exports to parties
- ☐ Yes – exports to non-parties
- ☑ No – no export took place
- ☐ No – consent was not given

3.6: Has the party allowed the import of mercury from a non-party?

- ◉ No
- ○ Yes
- ○ The importing party has relied on paragraph 7 of article 3

Part E – Additional comments on this article

Ecuador, through the project "Development of Plans for Mercury Risk Management in Ecuador (2017-2018)," conducted an initial assessment of the "Types of Sources of Mercury Emissions and Releases," which concluded that:

a) There is no primary extraction or processing of mercury.
b) No individual stockpiles of mercury or mercury compounds exceeding 50 metric tons have been identified.
c) No individual sources of mercury supply generating stockpiles exceeding 10 metric tons annually have been identified.
d) There are no operating chlor-alkali production plants.
e) No sources of mercury supply have been identified as mercury catalyst recyclers.

Additionally, through the project "Strengthening National Capacity for the Implementation of the Minamata Convention on Mercury (2022-2024)," developed within the framework of the Minamata Convention's Specific International Programme, an update of the sources of mercury emissions and releases was carried out, and the aforementioned results remain unchanged.

It should be noted that since the prohibition of mercury use in mining activities in Ecuador (July 16, 2015), in accordance with the Mining Law published in Official Gazette Supplement 37 of July 16, 2013, the Ministry of Environment and Energy, as the entity responsible for controlling the import, export, manufacture, transfer, storage, transport, industrial or artisanal use, and use for academic research of mercury, has not received any requests from any national or foreign company to carry out the aforementioned activities from July 16, 2015, to December 31, 2024.

Finally, in Ecuador, the sub-production of residual mercury from the Lunding Gold company (Large-Scale Mining) has been identified, with the following quantities generated:

- Year 2021: 23.32 kg of residual mercury
- Year 2022: 8.50 kg of residual mercury
- Year 2023: 0.05 kg of residual mercury

• Year 2024: 29.40 Kg of residual mercury

The aforementioned quantities are stored within the company's facilities, which comply with the requirements established in the current Environmental regulations for the development of its activities, as well as the storage of mercury.

▼ ART. 4: MERCURY-ADDED PRODUCTS

4.1. Has the party taken any appropriate measures to not allow the manufacture, import or export of mercury-added products listed in Part I of Annex A of the Convention after the phase-out date specified for those products?

- (●) Yes
- ( ) No
- ( ) Yes (implementing paragraph 2 of article 4)

If yes, please provide information on the measures.
MEASURE 1: COST-BENEFIT ANALYSIS AND COST OF INACTION ASSESSMENT FOR THE POSSIBLE RESTRICTION AND/OR SUBSTITUTION OF MERCURY-CONTAINING PRODUCTS, INCLUDING A LIST OF COST-EFFECTIVE AND AVAILABLE ALTERNATIVES, AS WELL AS THE CONTENT OF MPA/MTD GUIDELINES.

Ecuador conducted an assessment of economic and technical scenarios for the progressive substitution of products containing added mercury (Hg). This initiative sought to generate strategic information to serve as a basis for the formulation of public policies, regulatory decision-making, and the planning of a transition to safer and more sustainable alternatives for human health and the environment.

An inventory was compiled in 2021 that included categories such as fluorescent lamps, medical devices, batteries, cosmetics, dental amalgams, pesticides, and electrical equipment, revealing that the country imported approximately 2,557,033 kg of mercury-containing products.

Based on this information, products with the greatest environmental, health, or commercial volume impact were prioritized. Comparative economic scenarios were then developed to evaluate the costs and benefits of their replacement: Batteries, Measuring Devices, and Dental Amalgams.

Available technologies for mercury replacement were identified and classified, considering parameters such as technical feasibility, transition costs, local market capacity, technological accessibility, environmental and social impacts, and their compatibility with international commitments. In addition, the best available techniques (BAT) and best environmental practices (BEP) were reviewed, in accordance with the guidelines of the United Nations Environment Programme (UNEP) and the decisions of the Conferences of the Parties to both conventions.

In summary, Ecuador developed a “National Plan for the Replacement” of these selected products, which is divided into the following strategic pillars:

- Strategic Pillar 1: Strengthening the institutional framework for management and replacement.
- Strategic Axis 2: Implementation of regulatory and normative changes for prohibition and substitution
- Strategic Axis 3: Establishment of Environmentally Sound Management up to and including waste disposal
- Strategic Axis 4: Promotion of participation, information, and communication with key stakeholders.

MEASURE 2: ISSUANCE OF REGULATORY FRAMEWORK

On November 21, 2022, Ecuador issued Ministerial Agreement No. 097, “Guidelines for the Application of Extended Producer Responsibility in the Comprehensive Management of Disused

Discharge Lamps and/or LED Lamps," which aims to establish the environmental requirements and guidelines for implementing the Extended Producer Responsibility principle applied to discharge lamps and/or LED lamps.

These guidelines cover the environmentally sound management of these lamps once they have become waste, encompassing the following phases: generation, primary collection, storage, transportation, disposal prioritizing reuse, and final disposition. The objective is to prevent risks to human health, preserve the environment, and avoid practices that could lead to the improper handling of these materials.

It should be emphasized that this instruction specifies the mercury concentration limits for placing products on the market by Producers/Importers, as detailed in Table A.2, "Permissible limits of mercury (Hg) in discharge lamps according to the Minamata Convention."

MEASURE 3: DEVELOPMENT OF SHORT-TERM MEASURES TO SUPPORT THE IMPLEMENTATION OF NATIONAL PLANS FOR THE REPLACEMENT OF PRODUCTS WITH ADDED MERCURY.

This initiative aimed to strengthen the country's technical, regulatory, and institutional capacities for the environmentally sound management of products and waste containing mercury (Hg).

The following stages were developed:

a) As a starting point, an evaluation of national capacities for the management of waste and products containing Hg was carried out through a detailed assessment of environmental managers, laboratories, and other involved entities.

- Six (6) waste management companies handling mercury waste were identified, although many are in the process of regularization or lack adequate infrastructure for storage and final disposal.
- Forty-four laboratories for the physicochemical analysis of mercury concentrations were identified; eleven of these responded, demonstrating greater capacity for mercury analysis, although limitations persist in accreditation with the Ecuadorian Accreditation Service (SAE) and there is a lack of personnel specialized in advanced analytical techniques.

b) As a second stage, work focused on formulating guidelines for the environmental labeling of mercury-free products, identifying the absence of a national system. The adoption and progressive implementation of the Globally Harmonized System (GHS) for the classification and labelling of chemicals was proposed, which allows for the clear identification of the risks associated with substances and promotes responsible trade.

c) As a third stage, the necessary regulatory and technical instruments were developed to support the substitution of mercury-containing products, including a methodological guide detailing the process for requesting the prohibition, restriction, or substitution of tariff subheadings. This document defines the roles of institutions such as the Foreign Trade Committee (COMEX), the National Customs Service of Ecuador (SENAE), the Internal Revenue Service (SRI), and the Ministry of Production, Foreign Trade, Investments, and Fisheries (MPCEIP), establishing an inter-institutional roadmap for the control and substitution of hazardous substances.

Additionally, the "Guide for the Management of Mercury-Containing Meteorological Instruments" was developed in conjunction with the National Institute of Meteorology and Hydrology (INAMHI). This guide establishes procedures for the identification, temporary storage, transport, and final disposal of barometers, psychrometers, and thermometers containing mercury, as well as the transition to digital equipment free of this substance.

d) As a final product, a case study with an institutional and gender focus was prepared. This study analyzed the structural limitations within the Ministry of the Environment (MAE) and implementing entities in fulfilling their chemical management functions. The study identified a shortage of technical personnel in the Directorate of Chemical Substances, Hazardous and Non-Hazardous Waste (DSRD), as well as the need to strengthen cooperation among public institutions, the private sector, and regulatory bodies.

MEASURE 4: DEVELOPMENT OF THREE PLANS FOR THE IMPROVEMENT OF MANAGEMENT AND REPLACEMENT OF PRODUCTS WITH ADDED MERCURY IN HEALTH FACILITIES OF THE ECUADORIAN

SOCIAL SECURITY INSTITUTE (IESS)

This initiative will develop strategic plans and technical and economic evaluations that will allow the improvement of the management of products with added mercury (Hg) and promote their replacement by mercury-free alternatives in three health facilities of the Ecuadorian Social Security Institute (IESS): Carlos Andrade Marín Hospital (Quito), José Carrasco Arteaga Hospital (Cuenca) and Ambato General Hospital (Ambato).

The initial assessment determined that the three hospitals still use medical devices containing added mercury, specifically sphygmomanometers or blood pressure monitors: six at the Carlos Andrade Marín Hospital, two at the José Carrasco Arteaga Hospital, and two at the Ambato General Hospital, totaling ten units in use. The identified equipment is old and lacks usage records. Furthermore, it was found that the facilities do not have specific protocols for accidental breakage or technical training for cleaning staff in handling mercury spills. While procedures exist for the management of hazardous waste and temporary storage, the absence of formal policies prohibiting the purchase of mercury-containing devices represents an institutional limitation. Despite this, the hospitals maintain internal guidelines to prevent new acquisitions of mercury-containing products.

In the second phase of this initiative, a technical analysis was conducted of the alternatives available on the national and international markets to replace the mercury-containing thermometers and blood pressure monitors. Among the alternatives identified, digital, phase-change, and infrared tympanic and temporal artery thermometers stand out, as well as aneroid and digital sphygmomanometers. It was concluded that the Ecuadorian Social Security Institute (IESS) already has technical specifications for several of these mercury-free devices, such as infrared thermometers, digital ear thermometers, and manual or digital mobile sphygmomanometers. At the suggestion of medical personnel, the use of multiparameter monitors, which allow for the simultaneous measurement of blood pressure and body temperature, was also considered.

The economic evaluation established two estimates of the unit cost of replacing the sphygmomanometers: USD 778 according to IESS accounting values and USD 593 considering the depreciated value. The cost-benefit analysis showed that replacing this equipment is economically advantageous, with a Benefit Coefficient of 0.99 at the Carlos Andrade Marín Hospital and 2.10 at the hospitals in Cuenca and Ambato, demonstrating that the environmental, health, and safety benefits outweigh the investment costs.

Furthermore, the total cost of replacing and managing the new devices was estimated at USD 3,558 for the Carlos Andrade Marín Hospital and USD 1,186 for the hospitals in Cuenca and Ambato.

Based on these results, three strategic plans were developed, one for each hospital, with four common pillars: comprehensive management of products with added mercury, communication and training, progressive device replacement, and monitoring and evaluation.

Each plan proposes short-, medium-, and long-term actions, such as the creation of internal biosafety committees, the strengthening of procedures for the disposal and acquisition of goods, the implementation of spill protocols, and educational campaigns to raise awareness about the risks of mercury.

A comprehensive policy on the management of mercury throughout its life cycle was also proposed, coordinated by hospital biosafety committees. Additionally, communication and training materials (two posters and two videos) were developed with a gender focus and accessibility for people with disabilities, incorporating Information and Communication Technologies and social media to broaden their reach.

MEASURE 5: FINAL DISPOSAL OF 569.15 KG OF WASTE FROM PRODUCTS WITH ADDED MERCURY IN ECUADOR, PREVENTING THE RELEASE OF 18.75 KG OF MERCURY.

This initiative complements MEASURE 4, as it identified waste with added mercury in health facilities of the Ecuadorian Social Security Institute (IESS). The National Institute of Meteorology and Hydrology (INAMHI) was also included in this initiative, resulting in the following:

Collection, transport, and final disposal of 569.15 kg of waste from products with added mercury, distributed as follows: 518.48 kg generated by IESS health facilities, 40.62 kg from the IESS Rural

Insurance program, and 10.05 kg from INAMHI.

The following waste was managed: thermometers (11.47 kg), blood pressure monitors/sphygmomanometers (64.44 kg), dental amalgam waste (9.66 kg), waste containing mercury such as liquid mercury and mercury-contaminated materials (16.91 kg), and mercury-containing energy-saving lamps and light bulbs (466.67 kg), which were sent for final disposal.

This initiative was complemented by the delivery of mercury-free medical equipment and devices to the three selected facilities under MEASURE 4: multiparameter meters, infrared ear thermometers, and personal protective equipment.

MEASURE 6: SUPPORT FOR THE IMPLEMENTATION OF THE GOVERNANCE PILOT PLAN FOR THE APPLICATION OF EXTENDED PRODUCER RESPONSIBILITY FOR DISCHARGE AND LED LAMPS IN THE GALAPAGOS ISLANDS.

This initiative, developed in the Galápagos Islands, focused on implementing a Pilot Governance Plan for Extended Producer Responsibility (EPR), with the goal of establishing comprehensive management of used discharge lamps and LED lamps on the islands of San Cristóbal and Santa Cruz.

The work was carried out in three main stages:

a) The first step involved identifying and validating local stakeholders through field visits and meetings with distributors, environmental managers, municipal authorities, the Governing Council of the Special Regime of Galapagos (CGREG), the Galapagos National Park (PNG), and the Biosafety Agency (ABG). It was found that the main distributors of lamps in Galapagos are intermediaries who acquire the products from mainland Ecuador, as there are no direct importers on the islands. Six distributors were validated in San Cristóbal and eleven in Santa Cruz, showing an increase compared to previous years due more to urban growth than to increased demand. This phase allowed for mapping distribution chains, identifying links between producers, distributors, and managers, and defining the main critical points for establishing reverse logistics.

b) In the second stage, intersectoral roundtables were held on both islands, with the participation of representatives from the Ministry of Environment and Energy, the Decentralized Autonomous Municipal Governments, CGREG, PNG, and the environmental management company REDESCOMBAL SA. These roundtables resulted in key agreements for the implementation of Extended Producer Responsibility (EPR), including a proposal to review provincial regulations to restrict the entry of lamps that do not have an approved Comprehensive Management Plan; the incorporation of environmental fees into municipal ordinances to finance waste management; and logistical coordination for the free transport of lamps to the mainland to ensure their environmentally sound final disposal. Furthermore, the first annual collection and removal campaign in Santa Cruz was agreed upon, as well as the creation of a detailed inventory of disused lamps in public institutions, which served as the basis for the Comprehensive Management Program (PGI).

c) The third phase consisted of developing the Proposed Comprehensive Management Program for Used Discharge and LED Lamps in the Galápagos Islands. This technical document defines the processes for collection, storage, transport, and final disposal, with specific safety measures adapted to the island context. The Comprehensive Management Program includes the installation of municipal and local business collection points, temporary storage by authorized managers, reverse maritime and air logistics to the mainland, and environmental education campaigns to encourage users to return lamps. It also establishes control, monitoring, and contingency procedures to prevent incidents during the handling of this waste.

MEASURE 7: DEVELOPMENT OF A MONITORING AND CONTROL MECHANISM TO SUPPORT THE IMPLEMENTATION OF MINISTERIAL AGREEMENT No. 097 "INSTRUCTIONS FOR THE APPLICATION OF EXTENDED PRODUCER RESPONSIBILITY IN THE INTEGRATED MANAGEMENT OF DISCHARGE LAMPS AND DISUSED LED LAMPS"

The initiative aimed to strengthen the environmental management of mercury-containing lamps and disused LED lamps in Ecuador, through the application of the Extended Producer Responsibility (EPR) principle and in compliance with the Minamata Convention, which has prohibited the manufacture and import of certain lamps with added mercury since 2020.

a) The first component of this initiative analyzes the nationalization process (import and customs control) of lamps and shows that Ecuador still allows the entry of products containing mercury, despite the restrictions of the Convention. Tariff classifications were reviewed, identifying the need to modify them or include observations to differentiate between products with and without mercury. This would facilitate control by the Foreign Trade Committee (COMEX) and the National Customs Service of Ecuador (SENAE). The progress of electric companies in technological replacement was also evaluated: between 2022 and 2023, a notable increase in installed LED lights was recorded, although economic limitations persist for replacing 100% of old lamps in the short term.

b) The second component developed guidelines for the Single Environmental Information System (SUIA) to manage and automate reports from producers who import lamps. SENAE import data was analyzed, confirming a progressive decrease in discharge lamps and a sustained increase in LEDs. This data validates the need to adjust the import thresholds that determine who must submit Comprehensive Management Programs (PGI) and who only needs to submit an annual declaration. The report also recommends automatically connecting the SENAE database with the MAE to obtain real-time information.

c) The third component examines the application of Extended Producer Responsibility (EPR) to other regulated waste in Ecuador (agricultural plastics, batteries, tires, WEEE) and draws useful lessons. It concludes that EPR regulations work best when they include clear tariff subheadings, digital traceability, and a direct link between import permits and environmental compliance, as is the case with the successful tire program. International experiences are also reviewed, especially from Colombia, Spain, and Canada, where compliance is ensured through collective collection systems, producer financing, and online monitoring platforms.

If yes, has the party registered for an exemption pursuant to article 6?

- ○ Yes
- ◉ No

4.3: (A) Has the party taken two or more measures listed in subparagraphs (i) to (ix) of part II of annex A for the mercury-added products listed in part II of annex A in accordance with the provisions set out therein?

4.3:(A) Has the party taken two or more measures listed in subparagraphs (i) to (ix) of part II of annex A for the mercury-added products listed in part II of annex A in accordance with the provisions set out therein?

- ◉ Yes
- ○ No

If yes, please provide information on the measures.
Ecuador can confirm that, through the Ministry of Public Health, it has issued internal guidelines regarding the prevention of the purchase or acquisition of mercury-containing products in public health facilities, including dental amalgams.

Additionally, it is worth highlighting the work carried out on MEASURE 4 and MEASURE 5, as outlined in question 4.1, concerning dental amalgams.

Furthermore, it should be emphasized that the Ecuadorian Dental Federation (FOE) has stated that mercury amalgams are no longer used in the country, as a matter of policy for its members.

Finally, it is important to mention that Ecuador, through the Ministry of Public Health, is in the process of formulating the National Oral Health Policy, a regulatory instrument that will establish obligations and responsibilities for stakeholders in the health system, as well as formalize the prohibition of mercury use in dental restoration and treatment procedures.

4.3: (B) If the amendment to annex A adopted in decision MC-4/3 has entered into force for the party, has the party (please check the appropriate box below) taken relevant measures:

4.3:(B) If the amendment to annex A adopted in decision MC-4/3 has entered into force for the party, has the party (please check the appropriate box below) taken relevant measures:

- (●) Yes
- ( ) No
- ( ) Not applicable

If the party answered yes please select from the bellow checkboxes

- [x] Excluded or not allowed, by taking measures as appropriate, the use of mercury in bulk form by dental practitioners
- [x] Excluded or not allowed, by taking measures as appropriate, or recommended against, the use of dental amalgam for the dental treatment of deciduous teeth of patients under 15 years of age and of pregnant and breastfeeding women, except when such use is considered necessary by the dental practitioner based on the needs of the patient

If the party answered yes to either option above, please provide information on the measures.
Ecuador can confirm that, through the Ministry of Public Health, it has issued internal guidelines regarding the prohibition of purchasing or acquiring mercury-containing products in public health facilities, including dental amalgams.

Furthermore, it is worth noting that the Ecuadorian Dental Federation (FOE) has stated that mercury amalgams are no longer used in the country, as a matter of policy for its members.

Finally, it is important to mention that Ecuador, through the Ministry of Public Health, is currently developing a National Oral Health Policy, a regulatory instrument that will establish obligations and responsibilities for stakeholders in the health system, as well as formally prohibit the use of mercury in dental restoration and treatment procedures.

4.4: Has the party taken measures to prevent the incorporation into assembled products of mercury-added products whose manufacture, import and export are not allowed for it under article 4?

- ( ) Yes
- ( ) No
- (●) No - not applicable (do not have facilities assembling products using mercury-added products)

4.5: Has the party discouraged the manufacture and the distribution in commerce of mercury-added products not covered by any known use in accordance with article 4, paragraph 6?

- ( ) Yes
- (●) No – no action taken
- ( ) No – an assessment of the risks and benefits of the product demonstrates benefits to human health or the environment

If the party answered no – no action taken, please explain.
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Part E - Additional comments on this article

Despite all the efforts made by Ecuador, the following points must be noted:

- A specific regulatory framework for restricting or prohibiting the import of products with added mercury has not been established, with the exception of lamps with added mercury.

- It is necessary to strengthen institutional cooperation and ensure sustainable financial resources to implement the plans developed.

- There are no structured collection or transportation systems for used lamps in the Galapagos Islands. The high costs of transporting them to the mainland and the restrictions of the special regime prevent the proper management of this waste. While the pilot governance plan in Galapagos is a step forward, its sustainability depends on the allocation of permanent economic and human resources.

- In the specific case of Galapagos, the logistical and regulatory challenges arising from its status as a Biosphere Reserve are highlighted. This imposes stricter controls on the entry and exit of materials, making it difficult to implement conventional waste management models.

- There is a lack of public awareness regarding the risks of mercury and the improper disposal of products with added mercury.

▼ ART. 5: MANUFACTURING PROCESSES IN WHICH MERCURY OR MERCURY COMPOUNDS ARE USED

5.1: Are there facilities within the territory of the party that use mercury or mercury compounds for the processes listed in Annex B of the Minamata Convention in accordance with paragraph 5 of article 5 of the Convention?

- ○ Yes
- ◉ No
- ○ Do not know

5.2: Are measures in place to not allow the use of mercury or mercury compounds in manufacturing processes listed in Part I of Annex B after the phase-out date specified in that Annex for the individual process?

CHLOR-ALKALI PRODUCTION

- ○ Yes
- ○ No
- ◉ Not applicable (do not have these facilities)

ACETALDEHYDE PRODUCTION IN WHICH MERCURY OR MERCURY COMPOUNDS ARE USED AS A CATALYST

- ○ Yes
- ○ No
- ◉ Not applicable (do not have these facilities)

5.3: Are measures in place to restrict the use of mercury or mercury compounds in the processes listed in Part II of Annex B in accordance with the provisions set out therein?

VINYL CHLORIDE MONOMER PRODUCTION

- ○ Yes
- ○ No

◉ Not applicable (do not have these facilities)

SODIUM OR POTASSIUM METHYLATE OR ETHYLATE

○ Yes

○ No

◉ Not applicable (do not have these facilities)

PRODUCTION OF POLYURETHANE USING MERCURY-CONTAINING CATALYSTS

○ Yes

○ No

◉ Not applicable (do not have these facilities)

5.4: Is there any use of mercury or mercury compounds in a facility using the manufacturing processes listed in Annex B that did not exist prior to the date of entry into force of the Convention for the party?

○ Yes

◉ No

5.5: Has the party discouraged the development of any facility using any other manufacturing process in which mercury or mercury compounds are intentionally used that did not exist prior to the date of entry into force of the Convention?

○ Yes

◉ No – no action taken

○ No – the party demonstrated to the Conference of the Parties the significant environmental and health benefits of the manufacturing process and that there are no technically and economically feasible mercury-free alternatives available providing such benefits.

Part E – Additional comments on this article

There are no identified manufacturing processes that use mercury or mercury compounds related to Annex B.

▼ ART. 7: ARTISANAL AND SMALL-SCALE GOLD MINING

7.1: Have steps been taken to reduce, and where feasible eliminate, the use of mercury and mercury compounds in, and the emissions and releases to the environment of mercury from, artisanal and small-scale gold mining and processing subject to article 7 within your territory?

◉ Yes

○ No

○ There is no artisanal and small-scale gold mining and processing subject to article 7 in which mercury amalgamation is used in the territory

If yes, please provide information on the steps.

MEASURE 1: RECOGNITION OF THE JANCHEO ACTIVITY

The initiative was implemented in the Camilo Ponce Enríquez Mining District (DMPE), Azuay province, where women and men carry out the activity of "Jancheo," which consists of the manual collection and sorting of mining waste (tailings, slag, or waste rock) from gold processing plants. These tasks, although representing an important source of income for low-income families, are carried out without legal recognition, under precarious working conditions, without protective equipment, and without access to basic services or social security.

This initiative arises from the need to make this activity visible, formalize it, and improve it from a technical, environmental, economic, and gender perspective, contributing to the national commitments derived from the Minamata Conventions, as well as the Organic Law of Inclusive Circular Economy (LOECI).

Methodology: The process was developed between June and November 2021 and comprised six deliverables that followed a participatory, technical, and regulatory approach, articulated in four phases:

1. Situational Diagnosis (June 2021):
Surveys, semi-structured interviews, and participatory workshops were conducted with women miners, community leaders, and technicians from local institutions. Five active associations were identified: Fuerza Dorada, Las Águilas, 4 de Junio, Unión y Progreso, and Rumi Kuri. Working conditions, the socioeconomic environment, occupational risks, and regulatory gaps were characterized.

2. Strategy and Action Plan Design (July 2021):
A comprehensive strategy was developed based on three pillars: association and leadership, technical and environmental strengthening, and legal and commercial regularization. A training plan was designed with modules on mine safety, environmental management, mineral identification, and applicable regulations.

3. Implementation of workshops and training (June–September 2021):
In-person workshops were conducted at the "Unión y Progreso" and "4 de Junio" associations. The initial and final learning levels were evaluated, resulting in an average improvement from 62% to 86%. Collaborative work, self-management, and the circular economy were promoted.

4. Regulatory proposals and systematization (September–November 2021): Two regulatory instruments were developed:
- A draft amendment to the Regulations of the Organic Law on Science, Technology and Innovation (LOECI) to incorporate the management of mining waste.
- An Instruction Manual for the Management of Mining and Metallurgical Waste, applicable to small-scale mining.

Results:
a) Capacity building: More than 60 women were trained in mining safety, environmental management, regulations, and the circular economy. Technical learning improved from 62% to 86% according to the assessments. Support materials and certificates endorsed by the Ministry of the Environment (MAE) were provided.

b) Empowerment and association: The associations improved their internal organization, defined roles, drafted bylaws, and consolidated women's leadership. Cooperation among associations, mining plants, and local authorities was fostered.

c) Formalization of regulations and institutions: Interministerial Agreement No. MAATE-MEM-2022-001, "Guidelines for the comprehensive management of mining waste from sterile material by grassroots recyclers in the special regime for small-scale metallic mining," was formalized. This instrument recognizes mining waste management as an economic activity within the inclusive circular economy, setting a national precedent.

d) Social and Gender Impact: The vulnerable situation of women miners was brought to light, highlighting their contribution to the local economy and their role as agents of environmental change. A gender perspective was promoted in national mining and environmental policy, fostering

equity in the artisanal gold value chain.

MEASURE 2: IMPLEMENTATION OF THE STRATEGY FOR IMPROVING THE GOLD SUPPLY AND MARKETING CHAIN IN THE SCIENTIFIC AND SMALL-SCALE MINING (ASM) SECTOR IN TWO SELECTED PILOT LABORATORIES IN THE CAMILO PONCE ENRIQUEZ AND PORTOVELO SECTORS.

The initiative aimed to strengthen the technical, analytical, and management capacity of two laboratories in the artisanal and small-scale mining (ASM) sector:

1. GoldenLab, in the Camilo Ponce Enríquez canton (Azuay province).

2. JV Metals, in the Zaruma canton (El Oro province).

The overall objective was to strengthen the technical and quality management conditions of both laboratories to guarantee reliable results in the determination of gold and silver using non-polluting methods, thereby supporting the implementation of the national strategy for selling ore without the use of mercury.

The initiative was developed between August 2021 and March 2022, encompassing four main deliverables:

a) Technical diagnosis and strengthening plan: Initial assessment of the technical, human, and infrastructure conditions of both laboratories. Identification of gaps with respect to the requirements of the ISO/IEC 17025:2017 standard. Development of a training plan and acquisition of priority equipment.

b) Implementation of technical strengthening and equipment acquisition: Management of the purchase, customs clearance, installation, and commissioning of atomic absorption spectrophotometers (Agilent 240FS and Perkin Elmer PinAcle 500), essential for gold and silver quantification. Technical support in adapting spaces and implementing environmental controls in the analytical areas.

c) Implementation of quality management systems (QMS): Personalized consulting for the implementation of the ISO/IEC 17025:2017 standard in both laboratories. Development of Quality Manuals, Risk Matrices, Management Procedures (GoldenLab: 16; JV Metals: 21), Technical Procedures, and Master Document Lists. Validation of analytical methods for gold and silver assays, based on criteria of accuracy, precision, linearity, robustness, and uncertainty.

The initiative consolidated a replicable technical model for strengthening mining laboratories, aligned with the national strategy to eliminate mercury in artisanal and small-scale mining (ASM).

The results achieved strengthen technical confidence, promote commercial transparency, and contribute to a more sustainable mining model.

The GoldenLab and JV Metals laboratories are now technical benchmarks for mercury-free gold certification, opening opportunities for fair trade and environmental compliance.

MEASURE 3: DEVELOPMENT OF A FINANCIAL PRODUCT FOR ASSM

This initiative arises in response to the need to reduce the environmental and human health impacts caused by the use of mercury (Hg) in artisanal and small-scale mining, a problem that persists in the country despite its prohibition since 2015.

The project is based on the structural problems of the artisanal mining sector, characterized by its informality, lack of technology, limited investment capacity, and difficulties accessing credit. These limitations prevent miners from transitioning to mercury-free processes, despite a willingness to change.

In this context, a financial product, the "Mining Development Credit," was designed specifically for artisanal and small-scale mining (ASM), in coordination with the Central Bank of Ecuador (BCE), BanEcuador, and the Ministry of Environment and Energy. Its purpose is to offer loans for the acquisition of equipment for productive reconversion, working capital, transportation, or mining

infrastructure, always adhering to the principle of clean production and including women in the production process.

MEASURE 4: FEASIBILITY ANALYSIS FOR THE IMPLEMENTATION IN ECUADOR'S ARTISANAL AND SMALL-SCALE GOLD MINING (ASM) SECTOR OF AN INTEGRATION SYSTEM WITH RESPONSIBLE SUPPLY CHAIN INITIATIVES, COMPLYING WITH INTERNATIONAL MINING STANDARDS, IN PRIORITIZED MINING SECTORS

In its first phase, this initiative conducted a regulatory analysis of mining, environmental, and commercial aspects to understand the obligations faced by miners in their formalization processes.

This analysis identified a significant overlap between Ecuadorian legal requirements and the criteria established by the Fairmined standard. In other words, many of the requirements miners must meet in their legalization process (such as environmental management, workplace safety, administrative formalities, and emissions control) are also part of the principles of the international standard. Therefore, it was concluded that the Ecuadorian regulatory framework facilitates compliance with Fairmined and that the country is in an advantageous position to move toward responsible certification of artisanal gold.

Subsequently, an analysis of the value and supply chain of gold produced by artisanal and small-scale mining (ASM) was undertaken. This work provided insight into current marketing mechanisms from the local to the national level, highlighting the role of the Central Bank of Ecuador (BCE) as the official purchaser. However, weaknesses were identified in traceability and the formalization of gold sales, as many producers continue to market their product through informal channels. The study recommended creating separate channels for responsibly sourced gold, as well as strengthening transparency in the supply chain. It also proposed establishing a system of incentives and preferential prices for Fairmined-certified gold to encourage participation from the artisanal mining sector.

In parallel, field assessments were conducted at six representative mining organizations located in the districts of Camilo Ponce Enríquez (Azuay), Zaruma-Portovelo (El Oro), and Chinapintza (Zamora Chinchipe). These visits included three mines and three processing plants and served to diagnose their level of compliance with the Fairmined standard.

The results showed that the mining organizations are duly registered and have operating permits, but need to strengthen aspects related to environmental management, occupational safety, and internal governance. The study also highlighted the potential for these organizations to formalize and their willingness to implement best practices, provided they receive adequate technical and financial support.

As part of the capacity-building efforts, an online course on Fairmined certification was developed for public officials, mining stakeholders, technicians, and institutional representatives.

The course lasted a month and a half, with 39 students and 18 graduates participating. Topics covered included the benefits of the standard, its environmental and labor requirements, the supply chain, and the certification process. This educational component contributed to disseminating technical and regulatory knowledge about responsible mining, as well as creating a network of professionals with a greater understanding of certification mechanisms and ethical gold trading.

The overall results showed that Ecuadorian artisanal and small-scale mining (ASM) has high potential for achieving Fairmined certification, due to its robust legal framework, the existence of technical institutions with experience in the sector, and the miners' interest in improving their practices. However, the study identified several structural challenges, including the persistence of informality, the limited capacity of laboratories to perform traceability and metal content analyses, the low participation of women in mining operations, and the lack of financial incentives to sustain the certification processes.

MEASURE 5: TECHNICAL ASSISTANCE TO THE ORFEORO ARTISANAL PRODUCTION ASSOCIATION FOR THE IMPLEMENTATION OF THE GROWING WITH THEIR BUSINESS METHODOLOGY.

This measure aimed to strengthen the environmental, social, and economic sustainability of artisanal and small-scale mining (ASM) in the province of El Oro by promoting responsible practices, reducing

mercury use, and aligning with the Sustainable Development Goals (SDGs).

The province of El Oro has a long tradition of artisanal and semi-industrial mining and is one of the country's main gold extraction centers. However, the use of mercury to amalgamate the ore has generated serious environmental and health impacts, affecting rivers, soils, and local populations.

In response, the Orfeoro Artisanal Production Association (ASORF), with the support of the Ministry of the Environment (MAE), spearheaded a comprehensive process aimed at transitioning to mercury-free mining, strengthening local governance, social inclusion, the formalization of mining operations, and responsible production.

The project also sought to highlight the role of women miners and promote gender equality within the sector.

The project was structured around three strategic pillars:

a) Promoting compliance with the Sustainable Development Goals (SDGs) in mining operations, with an emphasis on SDGs 6 (clean water and sanitation), 8 (decent work), 12 (responsible consumption and production), 13 (climate action), and 15 (life on land).

b) Strengthening the technical and organizational capacities of ASORF members in environmental management, good mining practices, and governance.

c) Reduce dependence on mercury through the implementation of cleaner processes, technical training, and awareness of its risks.

MEASURE 6: BASELINE ASSESSMENT OF MERCURY (MH) USE IN ARTISANAL AND SMALL-SCALE MINING (ASM) IN THE CAMILO PONCE ENRÍQUEZ CANTON FOR THE START-UP OF THE OPERATIONAL STRATEGY FOR MINERALS.

This initiative stems from the recognition that ASM is a fundamental economic activity for thousands of families in Ecuador, but at the same time, it is one of the main sources of mercury pollution in the country.

Although the use of mercury was banned in July 2015, it continues to be used in much of artisanal mining, especially in the activities carried out by women sorters or “jancheras,” who recycle waste rock material (“caja”) to obtain gold. These women, who represent a significant portion of family income in rural areas, operate in informal conditions, with limited access to clean technology and direct exposure to pollutants.

The Ministry of the Environment (MAE), with support from the United Nations Development Programme (UNDP), designed a mineral sales strategy to offer mercury-free processing alternatives that increase income, reduce pollution, and promote social equity.

The research, conducted in 2022, aimed to characterize the current processing methods used by the ore sorters (Jancheras), establish a baseline on mercury use, estimate the size of the population involved in the activity, define their organizational structure, and analyze their attitudes toward potential interventions that promote the sale of ore to mercury-free processing plants.

To achieve this, a survey was administered to 236 ore sorters, and a discrete choice experiment was conducted, a technique used to understand individual preferences regarding different hypothetical ore sales scenarios. The survey and experiment results revealed that over 80% of the ore sorters would accept at least one hypothetical offer to sell their ore, 72% would be willing to sell their ore to a processing plant, and 71% would consider pooling their material with other sorters to meet tonnage requirements. Furthermore, 92% indicated they would accept an offer if it guaranteed greater economic benefits than those obtained using mercury.

These results suggest a high willingness to change among the fish processors, provided the terms of the new offers are clear, profitable, and secure. However, significant obstacles were also identified, such as a lack of capacity to meet minimum tonnage requirements at the processing plants (more than 90% could only process less than 4 tons, and more than half less than 1 ton), difficulty issuing electronic invoices due to the lack of a Taxpayer Identification Number (RUC), and mistrust among

the processors stemming from previous negative experiences with intermediaries or processing plants.

The study also incorporated a gender perspective, highlighting that the processors are women who depend on this activity to support their families and who, in many cases, work without legal or social protection, facing unsafe working conditions. Despite this, the project revealed a strong desire for change and a growing willingness to adopt more sustainable technologies and practices if a competitive economic return and access to adequate infrastructure are guaranteed. It was also observed that some associations, such as Unión y Progreso and Rumi Kuri, have managed to maintain organizational cohesion and explore mercury-free processing alternatives through loans, trust networks, and community leadership.

MEASURE 7: IMPLEMENT A PILOT APPLICATION OF INTERMINISTERIAL AGREEMENT NO. MAATE-MEM-2022-001, ENTITLED “INSTRUCTIONS FOR THE INTEGRATED MANAGEMENT OF MINING WASTE OF STERILE MATERIAL BY GRADESTRATE RECYCLERS IN THE SPECIAL REGIME FOR SMALL-SCALE METALLIC MINING.”

The initiative aimed to strengthen the formalization of the jancheras (women grassroots recyclers of mining waste material) by obtaining the Environmental Certificate and providing technical support for their inclusion in the integrated management of mining waste, in accordance with the provisions of the 2022 Interministerial Agreement.

This work was carried out in several stages:

a) Development of the "Step-by-Step" Manual for implementing the guidelines, training workshops on environmental and tax management, and inter-institutional coordination between the Ministry of the Environment (MAE) and the Inter-Ministerial Institute of Geography (IIGE) to establish non-economic incentives for grassroots recyclers and small-scale miners. During implementation, in-person training was provided to associations such as Rumi Kuri, 4 de Junio, Unión y Progreso, Cisne Queen, and Voluntad de Dios, with a total of 79 people trained (69 women and 10 men). Subsequently, 24 participants attended tax reinforcement and environmental certification workshops. These activities included simulating procedures in the SUIA (Unified System of Environmental Information), obtaining the RUC (Taxpayer Identification Number), and applying good environmental practices before, during, and after the harvesting process.

b) The capacity of the ministries and affiliated entities to implement the incentives of Chapter IV of the Inter-Ministerial Agreement was evaluated. The Ministry of the Environment (MAE), through its departments and programs such as PRAS and GRECI, showed potential for awarding honorary recognitions (Green Initiative Distinction, Green Point) and strengthening capacities in good environmental practices, although it was identified that there are still no specific labor certifications or technology transfer programs aimed at female miners. For its part, the IIGE (Institute of Mining Engineering) has a training schedule on mining, environmental, and safety issues, but faces budgetary limitations in expanding its coverage to new beneficiaries.

The pilot results show progress in training, environmental awareness, and visibility of the role of women in mining, but also significant social and economic resistance. No association expressed immediate willingness to regularize its operations, mainly due to fear of losing the human development bonus or the rural social security program, which led to replacing the goal of signing two Environmental Alliances with conducting refresher workshops.

MEASURE 8: IDENTIFICATION, EVALUATION AND IMPLEMENTATION OF THE MINERAL SALES STRATEGY IN A SELECTED PILOT MINERAL PROCESSING PLANT (ZARUMA-PORTOVELO)

This initiative was structured in three phases:

a) Identification and selection of processing plants, acquisition and installation of technological equipment, and systematization of results and lessons learned. In the first phase, a comparative analysis of two processing plants (Prosaresa and Aguilar) was conducted, based on legal, environmental, technical, and tax criteria. The Prosaresa plant (code 390407) obtained the highest score, with 90/110 points, demonstrating compliance with documentation regarding licenses, audits, production reports, water permits, and tax obligations. For this reason, it was selected as the pilot plant for the strengthening project.

b) During the second phase, a technical diagnosis of Prosaresa's internal processes was carried out, identifying bottlenecks in the mineral concentration and drying stages. These bottlenecks resulted in operating times of up to 72 hours to obtain concentrate with 15% moisture. In response, an ICON gravimetric concentrator was acquired and installed, and the process was supported by training for plant personnel, electrical upgrades, and operational verification. The improvement will accelerate processing, optimize gold recovery without mercury, and reduce operating costs by an estimated 3% to 5%.

c) The final phase included systematizing the case, identifying best practices, and conducting a sustainability analysis. Key lessons learned include the need to anticipate administrative timelines when purchasing equipment, the importance of constant communication among stakeholders (the Ministry of the Environment, the plant, and the supplier), and the relevance of understanding the social and operational dynamics of the plants to avoid delays.

It was determined that the sustainability of the process depends on four pillars established in the Mineral Sales Strategy: profitability, trust among stakeholders, reduction of health risks, and environmental improvement through the elimination of mercury.

MEASURE 9: DESIGN AND IMPLEMENTATION OF A COMMUNICATION CAMPAIGN TO PROMOTE THE STRATEGY FOR SELLING ORE IN SMALL-SCALE MINING (MAPE).

MAE launched the “I Value Your Work” campaign as a communication strategy aimed at transforming social perceptions and behaviors surrounding mercury use, recognizing the value of mining work, and promoting more sustainable alternatives.

The central objective of this campaign was to design, produce, and implement a comprehensive communication campaign that promotes the sale of raw ore to certified processing plants, eliminating mercury use and strengthening profitability, workplace safety, and environmental awareness in mining communities. The campaign was developed using a Communication for Social and Behavioral Change (C4D) approach, combining informative, educational, and participatory components.

The creative concept “I Value Your Work” conveys a message of recognition and dignity for mining work. Through a positive and empathetic tone, the campaign highlighted that gold, a symbol of wealth, can also represent human value, effort, and sustainability. Its communication design was both rational (providing technical and economic information about selling mercury-free ore) and emotional, highlighting real stories of miners, women miners, and communities seeking to make a living from gold without polluting.

The campaign had two main components:

a) An awareness strategy, focused on mining families, children, and young people, with educational materials and interactive activities that promoted water conservation and health.

b) A community strategy, aimed at artisanal miners, processing plants, and metallurgical laboratories, to inform them about the economic and environmental benefits of selling their ore in the formal market.

MEASURE 10: IMPLEMENTATION IN ECUADOR'S ARTISANAL AND SMALL-SCALE GOLD MINING (ASM) SECTOR OF AN INTEGRATION SYSTEM WITH RESPONSIBLE SUPPLY CHAIN INITIATIVES, IN COMPLIANCE WITH INTERNATIONAL MINING STANDARDS.

The initiative aimed to implement an integration system with responsible supply chains in Ecuador's artisanal and small-scale gold mining (ASM) sector, complying with international standards such as CRAFT and Fairmined.

To this end, the mining organization PRODUMINSA, with the greatest potential for certification, was identified and selected after a pre-selection and classification process of several mining operations in the country. Subsequently, a Comprehensive Mining Assessment (CMA) was conducted to measure its performance in ten sustainability categories: legitimacy, environmental, mercury, occupational health and safety, working conditions, gender, social, traceability, organizational, and marketing.

Based on this assessment, a sustainability plan was developed to close gaps and meet the Fairmined standard requirements, applying the Sustainable Mining Program (SMP) methodology. The process included technical support, training, document review, implementation of operational improvements, procedure updates, strengthening of workplace safety, gold traceability, environmental management, and social aspects, including a gender perspective.

The prioritized actions of the sustainability plan were then implemented through remote and in-person work between ARM, CIMA-UTPL, and PRODUMINSA's technical teams. This allowed for increased compliance with the standards and prepared the company for the external audit conducted by the certification company NaturaCert.

Following the audit, the non-conformities were addressed, and the project entered its final phase before the issuance of the Fairmined certificate, scheduled for April 2024. Simultaneously, the results were shared publicly with stakeholders in the mining sector, government institutions, trade associations, and UNDP representatives to foster transparency, promote the replicability of the model, and strengthen the responsible supply chain approach.

MEASURE 11: CONTROL AND MONITORING OF MINING ACTIVITIES

During the established period, an increase in illegal mining has been observed in Ecuador, which constitutes a significant threat to national security and regional stability due to its close links with transnational illicit economies, organized crime networks, institutional weakening, and accelerated environmental degradation, particularly in Amazonian and Andean regions.

In accordance with the powers of this State Ministry, the actions carried out by this Department against the illegal extraction of mineral resources are submitted for your consideration:

a) Operations against illegal mining: Execution of 27 operations at the national level with competent institutions such as the Armed Forces, Vice Ministry of Mines, Vice Ministry of Environment, Mining Regulation and Control Agency, National Police.

b) Control and monitoring inspections: 653 control inspections of regulated mining activities

c) In addition, through Executive Agreement No. 435 of October 23, 2024, the Constitutional President of the Republic decrees: "(...) Art. 2.- Create the National Committee for Integrity of the Mining Sector - CONIM, with a permanent character, as an entity in charge of inter-institutional coordination for the national assessment of risks and opportunities of the mining sector; as well as any action necessary to counteract illicit activities of mineral resources and their effects. (...)", it is emphasized that the Ministry of Environment and Energy is part of the Committee.

7.2: Has the party determined, and notified the secretariat, that artisanal and small-scale gold mining and processing within its territory is more than insignificant?

- ○ Yes
- ◉ No

7.5: Supplemental: Has the party cooperated with other countries or relevant intergovernmental organizations or other entities to achieve the objective of this article?

- ◉ Yes
- ○ No

Please provide information

Some relevant experiences and mechanisms within the framework of the Andean Community (CAN) are detailed below:

a) Substantive Application of CAN Decision 774.
Decision 774 constitutes a valid and current regulatory instrument for addressing crimes related to illegal mining, as it promotes:

- Cooperation and shared responsibility among member states.
- The timely exchange of information on mineral flows, critical inputs (mercury, cyanide), and types of smuggling.
- Coordination among environmental, mining, customs, police, judicial, and financial authorities.

b) Andean Mercury Observatory.
The Andean Mercury Observatory represents a non-intrusive regional best practice for:
- Systematizing information on the import, trade, and diversion of mercury.
- Analyzing routes, actors, and cross-border risk patterns.
- Generating regional indicators and early warnings.

Please provide information
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Part E - Additional comments on this article

- Artisanal and small-scale mining (ASM), which is typically informal, is the main source of income for rural communities. This informality, coupled with a lack of access to formal financing, is the cause of the poor social, economic, and environmental performance of much of the sector to date.

- A worrying aspect of ASM in Ecuador is the use of mercury (Hg), which remains widespread despite its prohibition in 2015 and the efforts made by the State.

- Financial institutions perceive ASM as a high-risk sector; miners lack credit history, formal guarantees, and training in financial management, which limits loan approvals and discourages investment in clean technologies.

- The informal market in Ecuador is very accessible and offers gold prices almost equal to those of the Central Bank of Ecuador, especially in the South-Central Districts, due to their proximity to neighboring Peru.

- The incentives to sell gold informally stem largely from the fact that miners lack the legal mining rights that would allow them to formalize their operations and sell their gold in legal markets. Other contributing factors include the bureaucratic hurdles of obtaining a marketing license, pending allocation procedures, and a lack of information regarding tax formalization processes.

- Although mining organizations do not employ minors, it is essential that they incorporate this policy into their internal regulations.

- There is a lack of knowledge regarding tax and environmental issues, as well as the absence of consistent technical support from the relevant institutions, which hinders the effective implementation of Interministerial Agreement No. MAATE-MEM-2022-001, "Guidelines for the comprehensive management of mining waste from sterile material by grassroots recyclers in the special regime for small-scale metallic mining."

- At the institutional level, MAATE, MEM and IIGE do not have permanent mechanisms for inter-institutional coordination or an allocated budget to strengthen local capacities, which represents a challenge to the sustainability of the incentives of Interministerial Agreement No. MAATE-MEM-2022-001.

The Ecuadorian government has taken steps to regain control of the mining sector. For example, in October 2024, the president issued an executive decree establishing the National Committee for Mining Sector Integrity. However, the state's capacity to address this threat remains limited. Regulatory weaknesses and gaps persist in the Ecuadorian Penal Code, which does not adequately address illegal mining, hindering its prosecution. Furthermore, law enforcement efforts have tended to focus on isolated illegal mining operations without addressing the underlying structural factors that fuel them.

▼ ART. 8: EMISSIONS

8.1: Identify any Annex D source categories for which there are new sources of emissions of mercury or mercury compounds as defined in paragraph 2 (c) of article 8.

For each of those source categories describe the measures in place, including the effectiveness of such measures, to implement the requirements of paragraph 4 of article 8.

- [ ] Coal-fired power plants
- [ ] Coal-fired industrial boilers
- [x] Smelting and roasting processes used in the production of non-ferrous metals

Smelting and roasting processes used in the production of non-ferrous metals

During 2022 and 2023, the process of identifying and updating point sources of mercury emissions and releases was carried out, in compliance with Article 8 of the Minamata Convention, through the development of a national baseline. This process included the collection, analysis, and systematization of information from environmental reports, water, air, and soil monitoring, as well as the identification of processes, infrastructure, and technologies in use.

Additionally, technical visits were conducted to Zonal Environmental Directorates, Provincial Decentralized Autonomous Governments, and representative industries nationwide to strengthen the database of point sources. These actions made it possible to map the presence of mercury in specific economic activities, evaluate operators' compliance with environmental obligations, and establish a solid technical baseline that will serve as input for formulating recommendations aimed at implementing best practices and technologies to reduce mercury emissions and releases.

Among the results of this work, the following stand out:

- An analysis and synthesis report of national and international regulatory frameworks (minimum of 5 countries) related to mercury emissions and their maximum permissible limits, with the purpose of identifying current regulations, evaluating their applicability in the local context, and providing a solid basis for the development of mercury emissions management strategies.

- A diagnostic report of the cement clinker manufacturing and non-ferrous metal smelting industries in the country, through the collection of qualitative and/or quantitative information to understand their current status, processes, and products.

- A report estimating the maximum permissible limits for total mercury in emissions from stationary sources, including the determination of the best methodology selected for analysis, determination ranges, and monitoring; in order to provide input for updating Annex 3 of Ministerial Agreement No. 097A, including the intervention of the Ad Hoc group.

Among the results of this work, the following measures were developed and applied at the national level:

- A proposal for technical support in developing a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.
- A technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.
- An Action Plan establishing measures to control emissions from identified sources.

- [x] Waste incineration facilities

Waste incineration facilities

During 2022 and 2023, the process of identifying and updating point sources of mercury emissions and releases was carried out, in compliance with Article 8 of the Minamata Convention, through the development of a national baseline. This process included the collection, analysis, and systematization of information from environmental reports, water, air, and soil monitoring, as well as the identification of processes, infrastructure, and technologies in use.

Additionally, technical visits were conducted to Zonal Environmental Directorates, Provincial Decentralized Autonomous Governments, and representative industries nationwide to strengthen the database of point sources. These actions made it possible to map the presence of mercury in

specific economic activities, evaluate operators' compliance with environmental obligations, and establish a solid technical baseline that will serve as input for formulating recommendations aimed at implementing best practices and technologies to reduce mercury emissions and releases.

Among the results of this work, the following stand out:

- Twenty-four waste management companies were visited nationwide, where it was verified that mercury monitoring was being carried out in water and soil resources. Regarding atmospheric emissions, the analyzed monitoring corresponds to test protocols, quarterly, semi-annual, and annual monitoring; in which it was identified that the measurement of the mercury parameter (in water, soil, and air) is within the standard established by the national regulatory framework.

- The waste management companies that carry out incineration processes visited (Incinerox, Gadere - Veolia, Hazwat, Pecs, and G&M) have environmental management processes that comply with the technical parameters established in current environmental regulations, as well as the parameters established in the Best Available Techniques Manual published by the Minamata Convention (BAT).

Given the lack of a regulatory framework mandating mercury measurements in atmospheric emissions, environmental management activities at the national level are not subject to monitoring under this regulation.

Based on the findings, the following measures were proposed:

- A technical proposal to support the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.

- A technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.

- An Action Plan establishing measures to control emissions from the identified sources.

☑ Cement clinker production facilities

Cement clinker production facilities

During 2022 and 2023, the process of identifying and updating point sources of mercury emissions and releases was carried out, in compliance with Article 8 of the Minamata Convention, through the development of a national baseline. This process included the collection, analysis, and systematization of information from environmental reports, water, air, and soil monitoring, as well as the identification of processes, infrastructure, and technologies in use.

Additionally, technical visits were conducted to Zonal Environmental Directorates, Provincial Decentralized Autonomous Governments, and representative industries nationwide to strengthen the database of point sources. These actions made it possible to map the presence of mercury in specific economic activities, evaluate operators' compliance with environmental obligations, and establish a solid technical baseline that will serve as input for formulating recommendations aimed at implementing best practices and technologies to reduce mercury emissions and releases.

Among the results of this work, the following stand out:

- The analyses of the monitoring data from UNACEM SA confirmed that the mercury measurements complied with the maximum permissible limit established in AM 048.

Based on these findings, the following measures were proposed:

- A technical proposal to support the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.

- A technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.

- An Action Plan establishing measures to control emissions from the identified sources.

Has the party required the use of best available techniques or best environmental practices (BAT/BEP) to control and where feasible reduce emissions for new sources no later than 5 years after the date of entry into force of the Convention for the party?

- ○ Yes
- ◉ No (please explain)

No (please explain)
During 2022 and 2023, the country conducted a diagnostic study to implement guidelines on the best available techniques and best environmental practices (processes, infrastructure, technologies) within the categories of mercury emissions and releases. This study consisted of the following activities:

- Analysis of national environmental regulations and/or regulatory instruments to enable the implementation of the best available techniques and best environmental practices identified in the feasibility analysis.
- Development of short-, medium-, and long-term actions and/or strategies to address the identified regulatory gaps and/or regulatory gaps for the application of the best available techniques and best environmental practices.
- Development of discussion forums to disseminate short-, medium-, and long-term actions and/or strategies to address the identified regulatory gaps and/or regulatory gaps for the application of the best available techniques and best environmental practices.

Based on the findings, the following measures were proposed:

- A technical guide on the best processes, infrastructure, best environmental practices, and/or technologies for the reduction and/or elimination of emissions and releases into the environment.

- Action Plan that establishes measures to control emissions from identified sources.

8.2: Identify any Annex D source categories for which there are existing sources of emissions of mercury or mercury compounds as defined in paragraph 2 (e) of article 8.

For each of those source categories, select and provide details on the measures implemented under paragraph 5 of article 8 and explain the progress that these applied measures have achieved in reducing emissions over time in your territory:

▼ COAL-FIRED POWER PLANTS

- ☐ A quantified goal for controlling and, where feasible, reducing emissions from relevant sources
- ☐ Emission limit values for controlling and, where feasible, reducing emissions from relevant sources
- ☐ Use of BAT/BEP to control emissions from relevant sources
- ☐ Multi-pollutant control strategy that would deliver co-benefits for control of mercury emissions
- ☐ Alternative measures to reduce emissions from relevant sources

Measures
{Empty}

Progress
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▼ COAL-FIRED INDUSTRIAL BOILERS

☐ A quantified goal for controlling and, where feasible, reducing emissions from relevant sources

☐ Emission limit values for controlling and, where feasible, reducing emissions from relevant sources

☐ Use of BAT/BEP to control emissions from relevant sources

☐ Multi-pollutant control strategy that would deliver co-benefits for control of mercury emissions

☐ Alternative measures to reduce emissions from relevant sources

Measures
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Progress
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▼ SMELTING AND ROASTING PROCESSES USED IN THE PRODUCTION OF NON-FERROUS METALS

☐ A quantified goal for controlling and, where feasible, reducing emissions from relevant sources

☐ Emission limit values for controlling and, where feasible, reducing emissions from relevant sources

☐ Use of BAT/BEP to control emissions from relevant sources

☐ Multi-pollutant control strategy that would deliver co-benefits for control of mercury emissions

☑ Alternative measures to reduce emissions from relevant sources

Measures
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.
- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.
- Action Plan establishing measures to control emissions from identified sources.

Progress
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources: Regulatory framework not yet developed.

- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment: Document prepared; however, a regulatory framework establishing its mandatory application has not yet been developed.

- Action Plan establishing measures to control emissions from identified sources: Document prepared; however, currently being submitted to the relevant authority for approval and implementation.

▼ WASTE INCINERATION FACILITIES

☐ A quantified goal for controlling and, where feasible, reducing emissions from relevant sources

☐ Emission limit values for controlling and, where feasible, reducing emissions from relevant sources

☐ Use of BAT/BEP to control emissions from relevant sources

☐ Multi-pollutant control strategy that would deliver co-benefits for control of mercury emissions

☑ Alternative measures to reduce emissions from relevant sources

Measures
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.
- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.
- Action Plan establishing measures to control emissions from identified sources.

Progress
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources: Regulatory framework not yet developed.

- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment: Document prepared; however, a regulatory framework establishing its mandatory application has not yet been developed.

- Action Plan establishing measures to control emissions from identified sources: Document prepared; however, currently being submitted to the relevant authority for approval and implementation.

▼ CEMENT CLINKER PRODUCTION FACILITIES

☐ A quantified goal for controlling and, where feasible, reducing emissions from relevant sources

☐ Emission limit values for controlling and, where feasible, reducing emissions from relevant sources

☐ Use of BAT/BEP to control emissions from relevant sources

☐ Multi-pollutant control strategy that would deliver co-benefits for control of mercury emissions

☑ Alternative measures to reduce emissions from relevant sources

Measures
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources.
- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment.
- Action Plan establishing measures to control emissions from identified sources.

Progress
- Technical support proposal for the development of a regulatory framework for establishing maximum permissible limits for total mercury in emissions from stationary sources: Regulatory framework not yet developed.

- Technical guide on best practices, infrastructure, environmental best practices, and/or technologies for reducing and/or eliminating emissions and releases into the environment: Document prepared; however, a regulatory framework establishing its mandatory application has not yet been developed.

- Action Plan establishing measures to control emissions from identified sources: Document

prepared; however, currently being submitted to the relevant authority for approval and implementation.

Have the measures for existing sources under paragraph 5 of article 8 been implemented no later than 10 years after the date of entry into force of the Convention for the party?

- (●) Yes
- ( ) No

8.3: Has the party prepared an inventory of emissions from relevant sources within 5 years of entry into force of the Convention for it?

- (●) Yes
- ( ) No
- ( ) Have not been a party for 5 years

If yes, when was the inventory last updated?
14 August 2024

Please indicate where this inventory is available
The latest update is not published, however it is attached in this field.

Attach

- ECU_8.3_1.xls
- ECU_8.3_2.xls

8.4: Has the party chosen to establish criteria to identify relevant sources covered within a source category?

- ( ) Yes
- (●) No

8.5: Has the party chosen to prepare a national plan setting out the measures to be taken to control emissions from relevant sources and its expected targets, goals and outcomes?

- (●) Yes
- ( ) No

If yes, has the party submitted its national plan to the Conference of the Parties under this article no later than 4 years after the date of entry into force of the Convention for the party?

- ( ) Yes
- (●) No

Please explain
The plan was developed as a result of the project "Strengthening national capacity for the implementation of the Minamata Convention on Mercury" developed from 2022 to 2024, and as a result of the findings identified, an Action Plan was developed which is for approval by the Environmental Authority and its subsequent application and implementation.

Part E - Additional comments on this article

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▼ ART. 9: RELEASES

9.1: Are there, within the party's territory, relevant sources of releases

as defined in paragraph 2 (b) of article 9?

- ○ Yes
- ◉ No
- ○ Do not know (please explain)

9.2: Has the party established an inventory of releases from relevant sources within 5 years of entry into force of the convention for it?

- ◉ Yes
- ○ Relevant sources do not exist in the territory
- ○ Have not been a party for 5 years
- ○ No (please explain)

When was the inventory last updated?
14 August 2024

Please indicate where this inventory is available.
ECU_9.2.xls

Please explain
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Part E - Additional comments on this article

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▼ ART. 10: ENVIRONMENTALLY SOUND INTERIM STORAGE OF MERCURY, OTHER THAN WASTE MERCURY

10.1: Has the party taken measures to ensure that the interim storage of non-waste mercury and mercury compounds intended for a use allowed to a party under the Convention is undertaken in an environmentally sound manner?

- ◉ Yes
- ○ No (please explain)
- ○ Do not know (please explain)

If yes, please indicate the measures taken to ensure that such interim storage is undertaken in an environmentally sound manner, and the effectiveness of those measures.
Since 2015, Ecuador has had Ministerial Agreement No. 099, entitled “Instructions for the Registration of Hazardous Chemical Substances,” which forms part of the national regulatory framework for the management of hazardous chemicals, including mercury. This instrument regulates the registration, import, storage, use, and final disposal of these substances in sectors such as industry, mining, and others, establishing the requirement for certificates, traceability reports, and comprehensive management programs. It also sets specific obligations for mining processing plants and their owners, as well as a system of sanctions for non-compliance.

In this context, any company that stores mercury must have the corresponding environmental permit and comply with the requirements established in current environmental regulations, as well as with the INEN 2266 technical standard, “Requirements for the Storage, Transport, and Handling of Hazardous Materials.” Additionally, prior to the storage of mercury, the national environmental authority conducts an annual technical inspection to verify compliance with these requirements.

However, since this regulatory framework came into effect in 2015, no imports of mercury by companies in the country have been recorded.

Part E - Additional comments on this article

To date, there is insufficient technical information and a comprehensive assessment to accurately determine the current situation regarding mercury compounds. In particular, a thorough evaluation encompassing the identification, characterization, and quantification of these compounds in the various production, environmental, and consumer sectors has not been conducted, which limits the capacity for analysis and evidence-based decision-making.

▼ ART. 11: MERCURY WASTES

11.1: Have measures outlined in article 11, paragraph 3, been implemented for the party's mercury waste?

◉ Yes

○ No

☑ Yes - the party has taken measures so that mercury waste is managed in an environmentally sound manner

Please describe measure and effectiveness of measures
Yes, the Party has adopted measures to ensure that mercury-containing waste is managed in an environmentally sound manner. In Ecuador, the Organic Environmental Code and its Regulations establish the legal framework for the comprehensive management of hazardous and special waste, including mercury-containing waste, regulating its generation, storage, transport, treatment, and final disposal.

These provisions require generators and managers to implement measures for the prevention, control, and mitigation of environmental impacts, as well as to obtain administrative authorizations, management plans, and traceability mechanisms.

Additionally, the competent environmental authority exercises control and monitoring functions to verify compliance with current regulations, ensuring that mercury waste management is carried out in accordance with criteria for the protection of human health and the environment, in accordance with the commitments assumed under the Minamata Convention.

☐ Yes - the party has taken measures so that mercury waste is recovered, recycled, reclaimed or directly re-used for a use allowed to a party under the Convention or for environmentally sound disposal pursuant to paragraph 3 (a)

☐ Yes - the party has taken measures so that mercury waste is not transported across international boundaries except for the purpose of environmentally sound disposal

If the party answered yes to any measures above, please describe the measures implemented pursuant to paragraph 3, and please also describe the effectiveness of those measures.
- Obligation to obtain a Hazardous and/or Special Waste Generator Registration.
- Obligation to submit the Annual Declaration of Hazardous and/or Special Waste Management.
- Updating of the database of environmental managers who handle waste containing mercury or mercury compounds.

11.2: *Are there facilities for final disposal of waste consisting of mercury or mercury compounds in the party's territory?

◉ Yes

○ No

○ Do not know (please explain)

If the party answered yes to any measures above, please select from the following

☑ Yes - there are facilities in the party's territory

☐ Yes - there are facilities outside the party's territory accessible to the party (in accordance with paragraph 5 of article 11)

If there are facilities in the party's territory and if the information is available, how much waste consisting of mercury or mercury compounds has been subject to final disposal under the reporting period? Please specify the method of the final disposal operation/operations. If the party does not have specific data on waste consisting of mercury or mercury compounds, the party may report on the data including other mercury waste, with an explanatory note.

Ecuador has a legal mechanism for collecting information related to the management of hazardous waste, including waste containing mercury or mercury compounds, through the Annual Hazardous Waste Management Declaration, established within the current environmental regulatory framework. However, the information generated through this instrument is currently distributed across physical and digital repositories of the Zonal Environmental Directorates nationwide, without a centralized systematization process to consolidate and analyze the data comprehensively. Consequently, during the period under review, it is not possible to determine with certainty the total quantity of waste consisting of mercury or mercury compounds that has been disposed of permanently.

To overcome this limitation, the country is working on the development and implementation of a specific tool within the Single Environmental Information System (SUIA), aimed at systematizing this information. This will allow for the generation of consolidated data, indicators, and early warnings to strengthen decision-making and monitoring of the environmentally sound management of mercury-containing waste.

Finally, within the information gathered for the officialization of Ministerial Agreement No. 097 "Instruction for the application of extended producer responsibility applied to discharge lamps and LED lamps", the waste management data related to lamps with added mercury in the year 2021: 81.6 tons.

Kindly attach any additional relevant information

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Part E - Additional comments on this article

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▼ ART. 12: CONTAMINATED SITES

12.1: Has the party endeavoured to develop strategies for identifying and assessing sites contaminated by mercury or mercury compounds in its territory?

◉ Yes

○ No

Please elaborate

During the years 2022-2024, Ecuador carried out the following activities:

* Analysis of the database of sites contaminated or suspected to be contaminated with mercury identified by the MAATE (Ministry of Environment, Energy and Territorial Planning), according to the mercury emission and release categories established by the Minamata Convention.
- Prioritization report of sites contaminated or suspected to be contaminated with mercury regarding response measures, in accordance with current legal frameworks, where applicable.
- Characterization of two prioritized sites, through the formulation of a basic methodology in accordance with the "Guidance on the Management of Contaminated Sites" published by the Secretariat of the Minamata Convention on Mercury.
- Development of a document that establishes strategies to prioritize, manage, and, where appropriate, rehabilitate the previously identified sites contaminated or suspected to be contaminated with mercury.

Part E - Additional comments on this article

All the work carried out led to the development of a guide adapted to the national context, entitled “Strategies to prioritize, characterize and, according to the process, rehabilitate sites contaminated with mercury.” This guide incorporates the guidelines and principles established in the Minamata

Convention on Mercury, adjusting them to the country's technical, institutional, and operational capacities, in order to facilitate their effective implementation at the national level.

▼ ART. 13: FINANCIAL RESOURCES AND MECHANISM

13.1: Has the party undertaken to provide, within its capabilities, resources in respect of those national activities that are intended to implement the Convention in accordance with its national policies, priorities, plans and programmes?

○ Yes

◉ No

Please specify
While Ecuador recognizes the importance of allocating resources for the effective implementation of the Minamata Convention, to date, no specific and differentiated resources have been assigned for the development of national activities exclusively focused on its application.

This situation stems from structural limitations, including national security challenges and budgetary constraints that affect the entities responsible for complying with the Convention, which must prioritize resources to address other urgent institutional obligations.

Nevertheless, the country remains committed to the progressive implementation of the Convention, integrating its provisions, to the extent possible, into the regular plans, programs, and actions of the relevant institutions, and strengthening international cooperation as a complementary mechanism to advance its implementation.

13.2: Supplemental: Has the party, within its capabilities, contributed to the mechanism referred to in paragraph 5 of article 13?

○ Yes

◉ No

Please provide comments, if any.
Ecuador complies with the financial contributions established by the Secretariat of the Minamata Convention, in its capacity as a State Party, as an expression of its commitment to the effective implementation of the provisions of the Convention and the strengthening of international cooperation in the environmentally sound management of mercury.

13.3: Supplemental: Has the party provided financial resources to assist developing-country parties and/or parties with economies in transition in the implementation of the Convention through other bilateral, regional and multilateral sources or channels?

○ Yes

◉ No

Please specify
Ecuador is classified as a developing country because it has middle income levels, structural gaps in social and economic development, significant dependence on primary exports, and limitations in technical, financial and institutional capacities for the implementation of complex public policies.

Please provide comments, if any.
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Part E - Additional comments on this article

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▼ ART. 14: CAPACITY-BUILDING, TECHNICAL ASSISTANCE AND TECHNOLOGY TRANSFER

14.1: Has the party cooperated to provide capacity-building or technical assistance, pursuant to article 14, to another party to the Convention?

◉ Yes

○ No

Please specify
Ecuador has adopted measures to support capacity building and the exchange of technical assistance with other Parties to the Minamata Convention, within the framework of Article 14. In particular, the country actively participates in the Andean Mercury Observatory, a regional initiative aimed at strengthening technical capacities, generating and exchanging information, and fostering cooperation among Andean countries in mercury management.

Additionally, in compliance with bilateral commitments, Ecuador maintains mechanisms for exchanging experiences, information, and best practices with Colombia and Peru, especially on issues related to environmental monitoring, the environmentally sound management of mercury, and the implementation of public policies, in accordance with their national capacities and priorities.

14.2: Supplemental: Has the party received capacity-building or technical assistance pursuant to article 14?

◉ Yes

○ No

Please specify
Yes. Ecuador has received technical assistance and capacity-building support in accordance with Article 14 of the Minamata Convention on Mercury, through international financing and cooperation mechanisms.

This assistance has been channeled through international funds that contribute to the implementation of the Convention and has been complemented by actions stemming from bilateral commitments undertaken by the country.

Together, these mechanisms have strengthened Ecuador's technical, institutional, and operational capacities in areas such as the environmentally sound management of mercury, environmental monitoring, baseline development, information exchange, and the formulation of public policies, based on national priorities and capacities.

Please provide comments, if any.
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14.3: Has the party promoted and facilitated the development, transfer and diffusion of and access to, up-to-date environmentally sound alternative technologies?

◉ Yes

○ No

○ Other

Please specify
Ecuador has promoted and facilitated the development, transfer, and dissemination of environmentally sound alternative technologies, as well as access to these technologies, within the framework of its national capacities.

In this context, the Institute of Geological and Energy Research (IIGE) has developed and delivered training courses focused on incorporating alternative processes and technologies that reduce and eliminate the use of mercury, especially in activities related to artisanal and small-scale mining.

Complementarily, the country has promoted the "Mineral Sales Strategy" initiative, which is part of

the actions aimed at reducing and eliminating mercury use in artisanal and small-scale mining in Ecuador. This strategy promotes the direct sale of ore to authorized processing plants, avoiding primary field processing through mercury amalgamation.

Additionally, the "I Value Your Work" communication campaign was implemented to raise awareness among miners about the environmental, health, and economic benefits of adopting mercury-free production processes. The application of this strategy has made it possible to improve mineral recovery, strengthen the formalization of mining activity and reduce mercury emissions and releases into the environment, contributing directly to compliance with the commitments assumed by the country under the Minamata Convention on Mercury.

Part E - Additional comments on this article

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▼ ART. 16: HEALTH ASPECTS

16.1: Have measures been taken to provide information to the public on exposure to mercury in accordance with paragraph 1 of article 16?

◉ Yes

○ No

Supplemental: If yes, describe the measures that have been taken.
In coordination with the relevant national institutions, the communication and awareness campaign “Decontaminants: Mission POPs and Mercury” was implemented. This initiative aimed to strengthen public knowledge and awareness of the risks of mercury (due to its presence in products) to human health and the environment, as well as to promote responsible management practices and the adoption of environmentally sound alternatives.

The campaign targeted strategic audiences, including communities involved in productive activities, institutional stakeholders, and the general public, and was disseminated through various communication channels.

As a result, “Decontaminants: Mission POPs and Mercury” helped to raise awareness of the problems associated with the use and improper management of these substances, reinforced messages related to the progressive elimination of mercury, and was integrated with other actions, such as training programs, institutional capacity building, and support for the implementation of the commitments undertaken by Ecuador under the Minamata Convention.

Additionally, in May 2023, the First Small-Scale and Artisanal Miner Fair was held in the canton of Portovelo, El Oro province, in southern Ecuador, as an initiative aimed at promoting sustainable and responsible mining practices that respect the environment and human health.

This event took place within the framework of the “I Value Your Work” campaign and included awareness-raising activities for diverse audiences, including children, who participated in puppet shows, storytelling, and games focused on informing them about the risks associated with mercury use in mining activities, as well as the impacts of its release into the environment and the contamination of water resources.

Furthermore, information booths from participating institutions—the Ministry of the Environment, the Vice-Ministry of Mines, the Ministry of Public Health, the Geological and Energy Research Institute, and the National Police—provided technical and preventative information on the risks of mercury, existing alternatives, and institutional actions aimed at protecting health and the environment.

16.2: Have any measures been taken to protect human health in accordance with article 16 beyond the provision of information to the public on exposure to mercury (referred to in question 16.1)?

◉ Yes

○ No

Supplemental: If yes, describe the measures that have been taken.
Yes. Ecuador has adopted concrete measures to protect human health in accordance with Article 16 of the Minamata Convention, which go beyond simply providing public information on mercury exposure. Within this framework, specific actions were implemented in health facilities of the Ecuadorian Social Security Institute (IESS) and the National Institute of Meteorology and Hydrology of Ecuador, aimed at reducing occupational and environmental risks associated with the use of products containing added mercury.

As part of these actions, three strategic plans were developed to improve management and promote the gradual replacement of mercury-containing medical devices at the Carlos Andrade Marín Hospital (Quito), the José Carrasco Arteaga Hospital (Cuenca), and the Ambato General Hospital (Ambato). These plans were based on technical and economic assessments that identified the presence of mercury-containing devices, gaps in spill response protocols, and staff training needs. They proposed structural measures such as the creation of biosafety committees, the strengthening of internal procedures, the replacement of equipment with mercury-free alternatives, and the implementation of monitoring and evaluation activities.

Additionally, an initiative was carried out for the collection, transport, and environmentally sound final disposal of 569.15 kg of waste products containing added mercury, originating from health facilities of the Ecuadorian Social Security Institute (IESS), the Rural Social Security Institute (Social Security for Farmers), and the National Institute of Meteorology and Hydrology (INAMHI), preventing the estimated release of 18.75 kg of mercury into the environment. This action included the management of thermometers, blood pressure monitors, dental amalgams, liquid mercury and contaminated materials, as well as lamps containing mercury.

Additionally, mercury-free medical equipment—such as multiparameter monitors, infrared thermometers, and personal protective equipment—was delivered to the affected facilities, strengthening safety conditions for healthcare personnel and patients.

Taken together, these measures demonstrate the adoption of preventive, corrective, and comprehensive mercury management actions aimed at the effective protection of human health, in compliance with the commitments assumed by Ecuador under the Minamata Convention.

Part E - Additional comments on this article

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▼ ART. 17: INFORMATION EXCHANGE

17.1: Has the party facilitated the exchange of information referred to in article 17, paragraph 1?

◉ Yes

○ No

If yes, the Party may wish to indicate in the space provided below the exchange of information it has facilitated, such as:

☐ Scientific, technical, economic and legal information concerning mercury and mercury compounds, including toxicological, ecotoxicological and safety information

☑ Information on the reduction or elimination of the production, use, trade, emissions and releases of mercury and mercury compounds

Information on the reduction or elimination of the production, use, trade, emissions and releases of mercury and mercury compounds
1) “Decontaminants: POPs and Mercury Mission” Campaign:

A communication campaign aimed at informing and raising awareness among the population about Persistent Organic Pollutants (POPs) and mercury (Hg), explaining what they are, where they are

found, and the risks associated with their presence.

The initiative sought to strengthen public knowledge about the adverse effects these toxic substances have on human health and the environment, as well as promote responsible practices for their management and progressive reduction.

In this context, the campaign developed two awareness workshops targeting strategic audiences. The first was aimed at children between 8 and 10 years old at the Lev Vygotsky Educational Unit in Sangolquí, using playful and artistic activities as pedagogical tools to strengthen environmental education from an early age.

The second workshop was aimed at students of Chemical Sciences at the Central University of Ecuador, with the objective of exploring the impacts of POPs and mercury from a technical and preventative perspective.

2) First Small-Scale and Artisanal Miners' Fair Campaign:

This activity was carried out within the framework of the "I Value Your Work" campaign and included awareness-raising sessions aimed at diverse audiences, including children, who participated in puppet shows, storytelling, and recreational activities focused on informing them about the risks associated with the use of mercury in mining activities, as well as the impacts of its release into the environment and the contamination of water resources.

Likewise, the information booths of the participating institutions—Ministry of the Environment, Vice-Ministry of Mines, Ministry of Public Health, Geological and Energy Research Institute, and National Police—provided technical and preventative information on the risks of mercury, existing alternatives, and institutional actions aimed at protecting health and the environment.

As part of the campaign, the Ministry of Environment and Energy actively participated in the First Small-Scale and Artisanal Miner Fair, held as a platform for raising awareness and disseminating technical information focused on responsible mining and the protection of human health and the environment. The Ministry also provided information on activities and processes that generate emissions or releases of mercury and mercury compounds, as well as on prevention and control measures and available technological alternatives for their gradual replacement in mining activities. This information was shared through informational materials and educational activities aimed at diverse audiences.

☑ Information on technically and economically viable alternatives to:

Mercury-added products

1) “Decontaminants: POPs and Mercury Mission” Campaign:

A communication campaign aimed at informing and raising awareness among the population about Persistent Organic Pollutants (POPs) and mercury (Hg), explaining what they are, where they are found, and the risks associated with their presence.

The initiative sought to strengthen public knowledge about the adverse effects these toxic substances have on human health and the environment, as well as promote responsible practices for their management and progressive reduction.

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This activity was carried out within the framework of the "I Value Your Work" campaign and included awareness-raising sessions aimed at diverse audiences, including children, who participated in puppet shows, storytelling, and recreational activities focused on informing them about the risks associated with the use of mercury in mining activities, as well as the impacts of its release into the environment and the contamination of water resources.

Likewise, the information booths of the participating institutions—Ministry of the Environment, Vice-Ministry of Mines, Ministry of Public Health, Geological and Energy Research Institute, and National Police—provided technical and preventative information on the risks of mercury, existing alternatives, and institutional actions aimed at protecting health and the environment.

As part of the campaign, the Ministry of Environment and Energy actively participated in the First Small-Scale and Artisanal Miner Fair, held as a platform for raising awareness and disseminating technical information focused on responsible mining and the protection of human health and the environment. The Ministry also provided information on activities and processes that generate emissions or releases of mercury and mercury compounds, as well as on prevention and control measures and available technological alternatives for their gradual replacement in mining activities. This information was shared through informational materials and educational activities aimed at diverse audiences.

Manufacturing processes in which mercury or mercury compounds are used
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Activities and processes that emit or release mercury or mercury compounds
As part of the “I Value Your Work” campaign, the Ministry of Environment and Energy actively participated in the First Small-Scale and Artisanal Miner Fair, held as a platform for raising awareness and disseminating technical information focused on responsible mining and the protection of human health and the environment.

During the fair, the Ministry of Environment and Energy provided information on activities and processes that generate emissions or releases of mercury and mercury compounds, as well as on prevention and control measures and available technological alternatives for their gradual replacement in mining activities. This information was shared through informational materials and educational activities aimed at diverse audiences.

☐ Epidemiological information concerning health impacts associated with exposure to mercury and mercury compounds, in close cooperation with the World Health Organization and other relevant organizations, as appropriate. (Art. 17.1 (a)-(d))

Part E - Additional comments on this article

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▼ ART. 18: PUBLIC INFORMATION, AWARENESS AND EDUCATION

18.1: Have measures been taken to promote and facilitate the provision to the public of the kinds of information listed in article 18, paragraph 1?

◉ Yes

○ No

If yes, the party may wish to indicate in the space provided below, the measures it has taken to promote and facilitate information to the public, such as:
(a) Provision to the public of available information on:

☑ The effects of mercury and mercury compounds on human health and the environment

The effects of mercury and mercury compounds on human health and the environment
We can highlight the following communication and awareness campaigns carried out and detailed in article 17:

1) Campaign “The decontaminants: mission COP and mercury”
2) Campaign First Small Miner and Artisanal Miner Fair
3) The work carried out with the Ecuadorian Institute of Social Security (IESS), as well as in the National Institute of Meteorology and Hydrology (INAMHI) aimed at reducing occupational and environmental risks derived from the use of products with added mercury.

- [ ] Alternatives to mercury and mercury compounds
- [ ] The topics identified in paragraph 1 of article 17
- [ ] The results of its research, development and monitoring activities under article 19
- [ ] Activities to meet its obligations under the Convention

(b) Education, training and public awareness related to the effects of exposure to mercury and mercury compounds on human health and the environment in collaboration with relevant intergovernmental and non-governmental organizations and vulnerable populations, as appropriate.

Activities to meet its obligations under the Convention
Yes. Ecuador has developed training, capacity-building, and public awareness initiatives regarding the effects of exposure to mercury and mercury compounds on human health and the environment, in coordination with intergovernmental organizations and national entities, and with an emphasis on vulnerable populations.

In this context, the following communication and awareness campaigns, detailed in Article 17, stand out:

The “Decontaminants: POP and Mercury Mission” campaign, aimed at informing and raising awareness among different population groups—including children and university students—about the risks associated with Persistent Organic Pollutants (POPs) and mercury, their effects on health and the environment, and the adoption of safer practices to reduce their use and release.

The First Small-Scale and Artisanal Miner Fair, held as part of the "I Value Your Work" campaign, included educational and awareness-raising activities for small-scale and artisanal miners and the community at large. These activities promoted alternatives to mercury use, the protection of human health, and the prevention of environmental pollution.

Training and capacity-building initiatives, implemented in coordination with the Ecuadorian Social Security Institute (IESS) and the National Institute of Meteorology and Hydrology (INAMHI), aimed to reduce occupational and environmental risks associated with the use of products containing added mercury by promoting mercury-free alternatives, proper waste management, and the protection of exposed personnel.

(Art. 18 (1) (a) and (b))

Part E - Additional comments on this article

▼ ART. 19: RESEARCH, DEVELOPMENT AND MONITORING

19.1: Has the party undertaken any research, development and monitoring in accordance with paragraph 1 of article 19?

- (●) Yes
- ( ) No

If yes, the party may wish to indicate in the space provided below, the research, development and monitoring it has undertaken, such as:

- [ ] Inventories of use, consumption, anthropogenic emissions to air and releases to water and land of mercury and mercury compounds

☐ Modelling and geographically representative monitoring of levels of mercury and mercury compounds in vulnerable populations and in environmental media, including biotic media such as fish, marine mammals, sea turtles and birds, as well as collaboration in the collection and exchange of relevant and appropriate samples

☐ Assessments of the impact of mercury and mercury compounds on human health and the environment, in addition to social, economic and cultural impacts, particularly in respect of vulnerable populations

☐ Harmonized methodologies for the activities undertaken under subparagraphs (a), (b) and (c) of paragraph 1 of article 19

☐ Information on the environmental cycle, transport (including long-range transport and deposition), transformation and fate of mercury and mercury compounds in a range of ecosystems, taking appropriate account of the distinction between anthropogenic and natural emissions and releases of mercury and of remobilization of mercury from historic deposition

☐ Information on commerce and trade in mercury and mercury compounds and mercury-added products

☐ Information and research on the technical and economic availability of mercury-free products and processes and on best available techniques and best environmental practices to reduce and monitor emissions and releases of mercury and mercury compounds

(Art. 19 (1) (a)-(g))

Part E - Additional comments on this article

Within the framework of regional exchange spaces, such as the Andean Community (CAN), as well as cooperation mechanisms and binational commitments signed by Ecuador, technical information and experiences related to national initiatives aimed at the environmentally sound management of the impacts of artisanal mining have been shared.

Among these, the following initiatives stand out:

a) “Alternatives for the treatment of water pollution from artisanal mining: the case of Río Siete, Ponce Enríquez Canton, Azuay Province.” This

project evaluated the use of local plants with phytoremediation capacity to reduce water and soil pollution caused by artisanal mining in the Ponce Enríquez Canton (Azuay Province).

The study was conducted in areas affected by mining liabilities, artificial wetlands, and mining runoff, and included the selection, propagation, and monitoring of native plant species. More than 170 samples of water, soil, and plant tissue were analyzed using specialized laboratory techniques, and toxicity tests were conducted with zebrafish larvae (Danio rerio) to evaluate the impact of chemical compounds used in mining.

The results showed that papyrus (Cyperus spp.) was the most efficient species in absorbing various heavy metals, including mercury, lead, and arsenic, while horehound (Marrubium spp.) showed a high capacity for cadmium removal. Rush (Juncus spp.) exhibited favorable initial absorption, although limited by plant stress conditions. Toxicity tests confirmed adverse effects of xanthates on aquatic organisms.

The project concluded that phytoremediation with local species is a viable, sustainable, and replicable alternative for remediating ecosystems impacted by artisanal mining, highlighting the importance of collaboration between academia, mining cooperatives, and local communities for its larger-scale implementation.

b) Methodology for mercury recovery through gravimetric concentration, in compliance with Ecuador's commitments under the Minamata Convention.

The study was conducted as a pilot project in the mining district of Camilo Ponce Enríquez (Azuay), where sediments and tailings were sampled from several rivers affected by artisanal mining. The CONCENTRI equipment, an Ecuadorian-designed gravimetric concentrator capable of separating heavy metals without the use of chemical reagents, was used.

The results demonstrated high recovery efficiency, reaching up to 96.87% of metallic mercury, and a significant increase in its concentration in natural sediments, confirming the method's technical and environmental viability. Furthermore, the lack of local analytical infrastructure for mercury monitoring was evident, leading to recommendations to strengthen regional laboratories, train personnel, standardize analytical protocols, and ensure the safe final disposal of recovered mercury.

The project resulted in a scientific article supporting gravimetric concentration as an economical, sustainable, and effective alternative for the remediation of mining-related environmental liabilities. Finally, it was concluded that the methodology is replicable and scalable to other mining districts in the country, highlighting the need for greater institutional coordination and technical strengthening for long-term sustainable mercury management.

▼ COMMENTS REGARDING POSSIBLE CHALLENGES IN MEETING THE OBJECTIVES OF THE CONVENTION

Part C: Comments regarding possible challenges in meeting the objectives of the Convention

Despite the regulatory, technical, and institutional progress achieved by Ecuador within the framework of the Minamata Convention, several structural and operational difficulties persist that may limit the full achievement of its objectives.

a) High levels of informality and the increase in illegal mining in artisanal and small-scale mining (ASM): The expansion of unauthorized mining activities, many of them linked to illicit economies, hinders the effective eradication of mercury use, limits the application of clean technologies, and obstructs environmental monitoring and control in hard-to-reach areas with unsafe conditions.

b) Insufficient technical and analytical capacity at the territorial level, especially in mining districts: The lack of equipped laboratories or the availability of portable equipment by control institutions, validated methods, and specialized or qualified personnel (environmental experts) for determining mercury levels in water, soil, or sediments restricts the generation of reliable information for decision-making, the assessment of risks to human health, and the monitoring of associated environmental impacts.

c) Limited availability of sustainable financial resources for the implementation of environmental remediation measures, technological conversion, and comprehensive management of seized or confiscated mercury. The high dependence on international cooperation, coupled with the absence of permanent financial mechanisms at the national level, affects the continuity, coverage, and scalability of the actions implemented.

d) Persistent gaps in training, awareness-raising, and practice change processes aimed at key actors in the mining sector: In certain communities and links in the gold marketing chain, there is resistance to abandoning traditional technologies that use mercury, as well as limited access to information, technical assistance, and incentives for adopting sustainable practices.

e) Inter-institutional coordination among the competent entities in environmental, mining, health, labor, and control matters: The lack of effective coordination, along with weaknesses in the traceability, oversight, and control systems for mercury and products containing it, facilitates its illegal use and release into the environment.

f) Regarding the restriction and prohibition of mercury-containing compounds, the Ministry of the Environment (MAE) has undertaken various inter-institutional initiatives and submitted well-supported technical reports outlining the environmental and human health risks associated with the import, marketing, and use of these substances, as well as the need to harmonize national regulations with Ecuador's commitments under the Minamata Convention. However, despite these technical and coordination efforts, no consensus or substantial progress has yet been achieved with the competent entities responsible for regulating foreign trade and customs control, particularly the National Customs Service of Ecuador (SENAE) and the Foreign Trade Committee (COMEX). This has limited the adoption of effective measures for the definitive restriction of these compounds.

(g) Managing the impacts of mercury on human health faces significant structural limitations, particularly in areas with artisanal and small-scale mining. One of the main problems is the weak capacity of the health system for the timely diagnosis and appropriate treatment of mercury poisoning, due to the limited availability of trained personnel, specific clinical protocols, and access to specialized diagnostic tests. This situation hinders the early detection of cases and increases the risk of chronic complications in the exposed population.

(h) The implementation of the National Action Plan (NAP) on mercury submitted by Ecuador in 2020 pursuant to Article 7 of the Minamata Convention has faced institutional, technical, and governance limitations that have hindered the achievement of its objectives.

A key structural factor has been that the NAP was not formalized as a public policy or incorporated into high-level planning instruments, which has limited its binding nature, budgetary prioritization, and long-term sustainability.

Additionally, insufficient and inconsistent inter-institutional coordination among key stakeholders has been observed, hindering the effective monitoring of planned actions, despite the existence of coordination mechanisms. The lack of regular updates to information on Artisanal and Small-Scale Mining (ASM), particularly mercury inventories, has restricted the evaluation of the effectiveness of implemented strategies. This is compounded by the limited capacity for systematic monitoring of major ASM sites, especially given the persistence of illegal mercury supply networks.

Furthermore, intermittent communication with community leaders and local actors, the discontinuity of follow-up meetings and workshops, frequent staff turnover in the institutions involved, and the lack of institutional commitment to addressing the PAN strategies have affected the continuity and coherence of its implementation.

▼ COMMENTS REGARDING THE REPORTING FORMAT AND POSSIBLE IMPROVEMENTS, IF ANY

Comments regarding the reporting format and possible improvements, if any

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