Indonesia's Legal Measures in Combating Illegal Mercury Trade: Post-Minamata Convention Efforts

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Abstract. The Minamata Convention on Mercury, held on October 10, 2013, is a global response to the threat of pollution resulting from mercury waste. The Indonesian government ratified the Convention through Law No. 17 of 2017 concerning the Ratification of the Minamata Convention. Even so, the existence of the Minamata Convention itself does not necessarily change the practice of illegal mercury trading, which is still common, including in the territories of countries that are participants in the Convention. The purpose of this article is to delve into the persisting problem of illegal mercury trade, highlighting the inadequacies in current criminal law enforcement at both international and national levels, especially in the aftermath of the Minamata Convention. Further, it seeks to identify an effective strategy for Indonesia to combat this issue, emphasizing the need for robust measures in the face of continued illegal activities.The research method itself uses a normative juridical method with a statutory and case-based approach related to illegal mercury trades. The research results indicate that, at the international level, there are still several challenges that need to be addressed in the post-Minamata Convention era. These challenges include the complexity of transnational crimes related to illegal mercury trading, particularly those concerning the coordination of investigations, prosecutions, and extraditions between countries. At the national level, Indonesia should focus on enhancing law enforcement, raising awareness of the dangers of mercury, and maintaining international cooperation

Keywords: Illegal Mercury Trade, Minamata Convention, and Transnational Crime

1. Introduction

Hg, commonly referred to as mercury, is a type of metal that exists in liquid form, which makes it different from other metals. The release of mercury itself can occur due to volcanic explosions and evaporation of mercury sources from seawater into the atmosphere, which takes place over millions of years. Mercury can also be created through various human activities in the form of forest fires, burning coal, burning garbage, and metal processing in the form of iron, silver, gold, and others.[1]

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The history of mercury use has been recorded since the Egyptian and Ancient Chinese Civilizations. Apart from the long history of mercury use by humans, the negative impact of mercury cannot be denied as it has caused considerable damage to the environment and human health. This condition later became one of the reasons for holding the Minamata Convention in 2013, which stated that mercury can cause nerve damage and various other diseases, especially in toddlers and fetuse.[2]

The Indonesian government ratified the Minamata Convention through the issuance of Law No. 11 of 2017 concerning the Ratification of the Minamata Convention on Mercury. The Government of Indonesia considers the issuance of this regulation as a form of protection for the health and safety of both humans and the environment from hazards that can arise from emissions and release of mercury and mercury compounds due to human activities. The Minamata Convention is a manifestation of global awareness in the form of an international legal instrument that then provides various legal mechanisms for countries participating in the convention that aim to overcome the adverse effects of mercury use. [3]

Even so, the existence of the Minamata Convention itself does not directly change the practice of illegal trading of mercury, which still occurs frequently, including in the territories of countries that are participants of the convention. The inability of the Minamata Convention participants was pointed out by Yingchao Cheng and several other researchers, who found a method to see the inconsistency of the participating countries in the Minamata Convention in preventing the use of mercury, especially related to its function in small-scale traditional gold mining. It is known that the countries currently occupying the top positions in mercury use are China and India. Although both are participants in the Minamata Convention, this places the Asian region as the continent where illegal mercury transactions occur [4]

Indonesia itself is the third country in the world after China and India, which use mercury the most. This condition occurs because of the large number of small-scale traditional gold mines in various regions in Indonesia, which is a form of livelihood for more than one million families spread across 27 provinces. The commitment made by Indonesia in 2017 by issuing laws and regulations in reducing the use of mercury originating from international trade could not take place optimally, one of the causes of this situation was due to the increasing global gold prices and the abundance of raw materials for forming mercury in the form of mercury or cinnabar ore (that could be processed into mercury) in the local market [5]

The lack of commitment from the participating countries of the Minamata Convention in addressing the high rate of mercury use could lead to a repeat of the Minamata tragedy in Japan, which occurred due to the neglect of the process of treating mercury waste from various industrial and mining activities. In the research conducted by Lars. D. Hylander and Michael E. Goodsite, another location that is currently experiencing a sizeable problem of mercury pollution is the Arctic Region located at the North Pole, where local ecosystems and communities experience fragility due to high exposure to mercury pollution which contaminates the main food source. in the form of sea fishing. The Arctic region itself is not a region that has a large num-

ber of natural sources of mercury, but from the territory of Russia each year there are 5.5 metric tons of mercury waste from gold mining in the northeastern region of Siberia, which is mixed with other pollutants in the form of burning garbage and coal waste. and other municipal wastes. Apart from Russia, the United States is also the most dominant contributor from various countries around the Arctic region, which is increasingly causing damage to marine biota. [5]

The increasing human population is undeniably one of the causes of various environmental problems, including those related to mercury trade. Lars and Michael stated that one of the important keys to tackling cases of environmental problems caused by mercury is prevention efforts, bearing in mind that avoiding pollution is much easier and more effective than remedying polluted areas. Prevention and limitation through various regulations are considered as the only strategy that can prevent the further damage caused by mercury waste. [6]

One of the series of activities that contribute to mercury pollution is the illegal international trade in mercury. A comparison of law enforcement efforts is needed as a strategic study to reduce the damage that can be caused by these illegal activities. Thus, this study intends to address (1). Knowing how criminal law enforced illegal trade in mercury at the international and national levels after the Minamata Convention (2).

The manuscript provided delves into the history, implications, and current challenges surrounding mercury usage, with a focus on the Minamata Convention's impact and Indonesia's role. Compared with Xing et al.'s article, this manuscript emphasis on localized issues contrasts with the global perspective on how international trade affects mercury emissions and global health impacts. Xing et al. present a broader view of how global systems interplay with mercury challenges [7], whereas this article focus on specific national challenges, especially in Indonesia. In comparison to Syarif's work, the article aligns more closely, given both touch upon regional implications of mining regulations and their enforcement; however, Syarif leans heavily into the politics of mining law and its broader environmental enforcement[8]. Finally, against Yudhiarti and Danyanthi's piece, both texts underscore the importance of the Minamata Convention, but the introduction uniquely introduces the nuances of illegal mercury trade, signaling its distinct novelty in this realm [3]. In this case, finding an effective strategy for Indonesia to strengthen its fight against illegal mercury trade is the general objective of this article. The discussion on the strategy for dealing with the illegal mercury trade by the Government of Indonesia is a form of novelty that will be raised.

2. Problems

As a form of effort in dissecting problems related to illegal mercury transactions, this article focuses on answering two main questions:

a. What is the comparison of criminal law enforcement against illegal mercury trade at the international and national levels after the enactment of the Minamata Convention?

b. What are the effective strategies that Indonesia can implement to strengthen countermeasures against illegal mercury trade?

3. Method

To achieve the goal of writing this article, we use normative legal approach with the technique of comparation on the implementation of criminal law against illegal mercury trade at the international and national levels after the adoption of the Minamata Convention, as well as to find an efficient strategy for Indonesia to increase efforts to deal with mercury trade, which is a form of transnational crime [9]. The research method uses a juridical normative method with a literary approach sourced from various literature, regulations, and cases as data whose scope and objectives [10] are adapted to the theme of illegal mercury trade.

4. Discussion

4.1. Comparative Analysis of Criminal Law Enforcement Against Illegal Mercury Trade at International and National Levels

In the ongoing process of the environmental regulatory cycle, environmental law enforcement (enforcement) is the final step after various other processes, such as forming legislation, determining standards (norm setting), setting permits (licensing), and implementing environmental regulations (implementation) is done first. Quoting the views of Andi Hamzah adapted by Maskun, environmental law enforcement can only be implemented if various violations occur at various stages related to violations of regulations, quality standards, permits, and implementation of the entire environmental regulatory cycle[11].

The United Nations Environment Program (UNEP), in collaboration with China ASEAN Environmental Cooperation, stipulates that the scope of law enforcement itself can be categorized into three stages: administrative, civil, and criminal stages of enforcing environmental law. The discussion in this paper focuses on the process of enforcing environmental law in the criminal aspect, which can be said to be the most common form of practice for enforcing various criminal sanctions contained in various environmental regulations. It is undeniable that in the process of enforcing environmental law, there are various interrelated life factors, such as aspects of disaster management, energy management, public health, international relations, industrial management, public services, and natural resource management. Circumstances are factors that result in the complexity of the process of enforcing environmental criminal law [12][12]

One of the efforts in the process of enforcing environmental criminal law against various acts of illegal mercury trade is to organize coordination at the global level. The Minamata Convention, as a forum for mutual agreement between various countries, has provided guidelines for important steps that need to be taken to prevent illegal actions, including prohibition (prohibition) for the use of mercury, especially in small- and medium-scale gold mining/Artisanal Small and Medium Scale Gold Mining (ASMG) [13]

This provision lies in Article 7.2 of the Minamata Convention, which stipulates that each convention participant in whose territory there are small-scale gold miners will take steps to reduce to eliminate the use of mercury, the various components contained therein, and emissions from mining activities., which is in the form of Hg. The provisions in Article 7 are then regulated further through Annex C, which regulates National Action Plans in sufficient detail as a guideline for the countries participating in the Convention to form a process for determining standard procedures for organizing small-scale gold mining in their respective territories [2].

The Minamata Convention 2019 also regulates mercury directly related to supply sources and trade, specifically in Article 3. The process of mercury transactions is not prohibited between countries, but these activities require special requirements in the form of procedures for shipping and managing mercury by adjusting the guidelines provided. by Minamata Convention. In the export-import procedure contained in Article 3 Paragraph 6, each Party State is expected to follow the provisions in Article 10 regarding interim storage in creating procedures that are environmentally friendly and avoid various side effects of mercury, furthermore this provision regulates trade between Parties States and Non-Party States [2]. Until now, it cannot be denied that there are still many products that require mercury in their processing, which can be found in various countries with high levels of Artisanal and Small-scale Gold Mining (ASMG), such as Burkina Faso. Mercury is used as a "commitment and controlling device" by the country's gold exporters. Gold exporters in Burkina Faso use mercury as a guarantee of return on investment; thus, gold exporters are key players in financing mercury processing (commitment devices), and monitoring and managing the production process (controlling device). [14]

Basically there are no criminal sanctions that can be directly enforced in various international agreements including in the Minamata Convention, bearing in mind that in the principles of international law there is the principle of state sovereignty, which can be found in the United Nations Charter to be precise in Article 2 (7) as the basis for carrying out various relations international [14]. However, this principle is also limited by the principle of state responsibility, particularly in terms of accountability for environmental damage. Provisions regarding state responsibility can be found in the Articles on Responsibility of States for Internationally Wrongful Acts (ARSIWA) adopted by an organ of the United Nations, the International Law Commission (ILC), in 2001. The existence of these provisions is accompanied by guidelines in the form of Guiding Principles on Business and Human Rights can be used for member countries of the United Nations to provide regulations including those with elements of criminal sanctions in dealing with various environmental violations [15].

As a form of implementing the principle of state responsibility, the Minamata Convention has also provided provisions relating to the mercury trade in Article 3 Paragraph 13 regarding the obligation of Party States to carry out evaluations of certain mercury trades by referring to Article 27, which further regulates the adaptation of Conventions and Annexes (related to mercury-based products, mercury management, mercury waste, and contaminated areas) [2]. The adoption in the form of ratification of the Convention was later carried out by the Government of Indonesia through the issuance of Law No. 11 of 2017 concerning Ratification of the Minamata Convention related to Mercury, as a manifestation of the Indonesian Government's active role in fulfilling the Preamble mandate of the 1945 Constitution regarding the protection of the entire nation and all of Indonesia's bloodshed, and the implementation of world order [16].

National regulations in Indonesia that regulate mercury-related issues were issued even before the Minamata Convention took place. Hg is included in the category of Hazardous and Toxic Materials (B3). This can be explained by several regulations. Government Regulation No. 74 of 2001, concerning the Management of Hazardous and Toxic Materials, in Article 1, defines and limits the use of hazardous substances. Articles 7 and 8 impose restrictions on the use, import, and production of hazardous substances, including mercury [17].

These various regulations have shown the initiative of the Indonesian government to limit mercury circulation. Regulations that explicitly regulate criminal sanctions from the distribution or transaction of mercury can be found in Law No. 32 of 2009 concerning the Protection and Management of the Environment (UUPPLH), which in Article 69 paragraph (1) b, prohibits B3 in the territory of Indonesia, with a minimum imprisonment of five (5) years and a maximum of 15 (15) years and a minimum fine of Rp. 5,000,000,000.00 (five billion rupiah) and a maximum of Rp. 15,000,000,000.00 (fifteen billion rupiah) in accordance with the provisions in Article 107 [18].

Provisions regarding criminal sanctions in the UUPPLH underwent significant changes after the issuance of the Job Creation Law. The regulation issued by the legislature through Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation and amended into law through Law No. 6 of 2023 changed several crucial articles related to criminal sanctions, including the elimination of criminal sanctions in the Law Number 32 Of 2009 On Environmental Protection And Management regarding the disposal of hazardous waste without a permit. The regulation also changes several other criminal sanctions into administrative sanctions and finally eliminates the application of the principle of strict liability in losses arising from hazardous waste treatment of hazardous waste disposal without a permit. The regulation also changes several other criminal sanctions into administrative sanctions and finally eliminates the application of the principle of strict liability in losses arising from hazardous waste treatment. Changes in criminal sanctions themselves occur quite frequently in the business licensing section, but the provisions related to the distribution of mercury in UUPPLH Article 69 paragraph (1) b and the sanctions in Article 107 have not undergone any changes.

Even though there are some criticisms of the Job Creation Law, if explored more thoroughly, this regulation still provides provisions in the form of criminal sanctions, especially in the distribution of dangerous goods, such as mercury. As a regulation that applies the omnibus law technique, the benefits found in the Job Creation Law are related to the harmonization of various regulations in Indonesia that overlap with each other, as well as the efficiency of the legislation process. Nonetheless, this legislation product is less democratic and places limitations on public participation in its formation [19]. These criminal sanctions can be found, among others, in regulations regarding the transportation of dangerous goods, especially at sea.

These provisions can be found in the amendments based on Article 57 of the Job Creation Law, which amends several provisions in Law No. 17 of 2008 concerning Shipping, where changes occur, including in Article 294, there is a threat to people carrying dangerous goods that result in human casualties or damage to health, safety, and/or the environment. Changes have also occurred in Article 295 of the Shipping Law regarding threats to acts of not submitting announcements that they will carry dangerous goods [20]. Criminal sanctions against the illegal trading of mercury can also be found in other regulations, such as Article 161 of Law No. 3 of 2020 concerning Mineral and Coal Mining, which was used to ensnare mercury distributors in Maluku by the Maluku Police after two years of circulating up to 19 tons of mercury.

Various regulations in Indonesia show that the government desires to form comprehensive and strong regulations through the UUPPLH and other regulations, especially the Job Creation Law, which regulates the circulation of hazardous materials. However, the challenge lies in the consistent and effective implementation and enforcement of these regulations. Considering that environmental law enforcement has characteristics that come into contact with a wide variety of disciplines, coordination is needed from various institutions to establish law enforcement under one roof, such as the establishment of the Job Creation Law, to further create effective environmental law enforcement in a region that has more than 17,000 islands. [11].

This condition also applies in the international context; law enforcement related to illegal trade in mercury is highly dependent on cooperation between countries and harmonization of regulations. This is important because the mercury trade often involves several different jurisdictions and jurisdictions. On the one hand, international trade in general (non-mercury products) can still contribute to various types of mercury waste, for example, through food processing, transportation, and product storage. As an international legal instrument, the Minamata Convention on Mercury provides a framework for cooperation between member countries in the handling and control of mercury, including illegal trade [6]. However, its effective enforcement depends on the commitment and ability of member states to implement and comply with its provisions. Thus, enforcement of criminal law on the illegal mercury trade, both at the national and international levels, requires strong cooperation and coordination between various parties, as well as a strong commitment to protecting human health and the environment from the dangers of mercury.

4.2. Indonesia's Strategy in Strengthening Counter Measures against Illegal Mercury Trade

Based on the existence of various regulations issued by Indonesia regarding the prohibition of mercury circulation, the government has shown the seriousness of fulfilling the constitutional mandate in protecting the nation's health and is active in carrying out world order, especially related to the commitment to tackling mercury in the Minamata Convention. Various forms of action taken by Indonesia against the mercury trade can be seen in the National Report of the Conference of the Parties to the Fourth Meeting of the Minamata Convention of Mercury (COP-4) in 2021.

Annex II discusses the responses of the parties regarding the supply and trade of mercury. Progress from August 16, 2017, to December 31, 2019, reported by using a question that was raised from the panelists regarding whether the governments of each country had identified the presence of mercury stocks, either individually or in groups, which weighs more than 50 metric tons, as well as a supply of mercury capable of producing 10 tons of mercury annually. In response, Indonesia stated that the country already carried out an identification process [21]. In the National Report, it is known that Indonesia does not export mercury to the parties or non-parties to the Minamata Convention, still the Government of Indonesia reports that there are many mineral mines in its territory that use mercury in the mining process, even though the mine is not a pure mercury mine (In the COP-4 report, only China and Mexico have mercury mines that are still operating from all parties) [22].

The report provided by Indonesia at COP-4 still does not provide complete information on the conditions of the crisis related to the mercury problem in that country. Based on the documentation released by the CNA Insider regarding ASMG issues in Indonesia, it is known that in Southeast Asia there are 850 ASMG spreads, involving 300,000 traditional miners [23]. A report from the Integrated Team for Troubleshooting Unlicensed Mining (PETI) attached to Ukar W. Soelistijo's research results show that in 2009, 713 ASMG were spread across 16 provinces (52 regencies) throughout Indonesia [24]. This shows that 83.88% of ASMG in Southeast Asia are located in Indonesia, meaning that the intensity of mercury use in Indonesia is very high.

The prohibition against the use of mercury, as well as regulations related to the ban on mineral mining without a permit in Indonesia, do not seem to affect the practice of these illegal actions. In a report by the BaliFokus Foundation, it is known that in 2012, following the ban on the export of mercury by the United States and later by the European Union, Indonesian miners began exploiting cinnabar ore in West Seram Island, Maluku Province. Mining peaked between late 2014 and 2015, when local people switched from predominantly traditional agriculture to mining. Although the Indonesian government shut down unlicensed mining operations in Seram Island within 2016, there was high demand from various ASMGs across Indonesia, coupled

with an international export ban, create a rush in fueled mercury poaching, and processing. Cinnabar ore is sold not only to buyers from Indonesia but also to China, the UAE, and Singapore [25].

Several initiatives from the Government of Indonesia as part of the process of combating illegal mercury trade include hosting COP-4 (which later resulted in the Bali Declaration on Combating Global Illegal Trade of Mercury) [12], issuing Presidential Regulation (PERPRES) Number 21 of 2019 regarding the National Action Plan for Reduction and Elimination of Mercury [26](planned (including the Regional Action Plan), along with various other initiatives, still require implementation in an effective and efficient manner to achieve the goals of the Government of Indonesia to eliminate the circulation of mercury.

There is a need for coordination regarding the process of forming and enforcing environmental law from both the central and regional governments in Indonesia, meaning that public awareness, along with various other stakeholders of legal politics, has an important role in the process of mining management at the regional level, which is mostly dominated by ASMG [7]. The importance of increasing legal and environmental awareness from various elements of society is the basic foundation for forming environmental preservation in the long term, which certainly cannot occur in a short time but requires a paradigm shift in legal education that so far has only focused on positive law. Legal alignment studies need to be sticking to societal values related to the environment, and the formation of awareness have to started from every individual since they are young from the family [27]. The foundation through the formation of legal awareness is a form of long-term strategy that is not easy but needs to be implemented by Indonesia immediately.

Another strategic effort that can be carried out is the development of methods that can detect the spread of illegal mercury, for example, through the use of the Interclass Correlation Coefficient (ICC), which is a tool used to find differences in trade data (exports and imports) that are allegedly an illegal mercury trade between countries. ICC assigns score between -1 and 1, if the score is close to one, trade between countries is suitable and likely legal. However, if the score is close to 0 (especially between 0.00 and 0.20), it indicates the possibility of illegal trading [28]. The application of this method can certainly be carried out if there is an understanding of the importance of mercury management between countries, in the sense that there is a need for awareness of environmental preservation in the process of agreements between countries, especially in the form of bilateral agreements (which in practice are most often used at the international level), so that environmentally conscious international agreements do not only continue to rely solely on multilateral agreements [29].

At the Artisanal and Small-scale Gold Mining (ASGM) level, which represents the primary consumer demographic for mercury in Indonesia, there is a pressing need for a shift in mineral processing technology. This is especially true for gold, which necessitates the extensive use of mercury. A 2013 study reported that up to 195 tons of mercury were used in Indonesia [30]. The transfer of technology could be facilitated through the adoption of non-mercury technologies such as cyanidation, thiourea, thiosulfate, iGoli, and flotation, all of which have more environmentally-friendly impacts. Cyanidation technology, a process that employs cyanide to extract gold, can be

potentially hazardous if improperly managed but still safer than the use of Hg. Conversely, thiourea technology, which is less toxic than cyanide and mercury, can be used for gold extraction. Thiosulfate technology is employed in a more acidic environment, rendering it safer than cyanide. Technology processing using iGoli is a relatively novel and eco-friendly method, replaces mercury with a mixture of pool acid, bleach, and sodium metabisulfate. Flotation is a technique that separates minerals based on the differences in their physical properties, and it is primarily used with sulfides and gold [31].

The strategy to combat the mercury trade in Indonesia requires multi-sectoral and interdisciplinary cooperation. This involves effective law enforcement, raising public and stakeholder awareness about the perils of mercury, and the adoption of more environmentally-friendly, non-mercury technologies in mining processes. The application of advanced methods in detecting illegal mercury trade between nations, as well as establishing environmentally-oriented international agreements, are also paramount. It is believed that these collective efforts can establish a strategic foundation for achieving the goal of eradicating mercury use in Indonesia.

5. Conclusion

Efforts to combat the mercury trade, both within Indonesia and on the international stage following the Minamata Convention, still call for a strategy that amalgamates effective law enforcement, augmented public and stakeholder awareness about the hazards of mercury, and the adoption of non-mercury alternative technologies that are more environmentally friendly. Post the Minamata Convention, international and national enforcement against illegal mercury trade has strengthened, relying on cooperation and regulation harmonization. However, gaps still persist, particularly in Indonesia, due to challenges in comprehensive implementation and effective coordination across its diverse regions. International legal instruments, such as the Minamata Convention, provide a crucial framework for such cooperation, but the effectiveness of enforcement and compliance with their provisions heavily relies on the commitment and capabilities of each member country.

In the long term, an amplified commitment to environmental preservation and human health, at both national and international levels, is the key to achieving the goal of eliminating mercury. Consequently, a multi-sectoral and interdisciplinary approach, involving various parties across multiple levels, becomes increasingly significant in tackling the mercury trade.

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