

Transboundary Smoke-Haze Disaster Mitigation Efforts: Indonesian Case

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Abstract—The smoke-haze disaster is one of Indonesia's annual disasters with the most hotspots on Sumatra Island and Kalimantan Island. However, the smoke-haze problem cannot be solved by Indonesia alone. Research shows that the haze disaster is a cross-border responsibility. The activities of several companies originating from Singapore and Malaysia in the Indonesian region are indicated to be part of the triggers for the smoke-haze disaster in Indonesia. One of the efforts to mitigate smoke-haze disasters in ASEAN is the ASEAN Agreement on Transboundary Haze Pollution (AATHP) which has been in force since 2003. AATHP ratification efforts have been completed by ASEAN countries in 2014, including Indonesia. Through literature study, this paper examines the efforts to mitigate smoke-haze pollution across countries, especially Indonesia. The analysis shows that the ratification of AATHP has not been effective in overcoming the haze disaster. The reason behind is that AATHP lacks powerful and pragmatic international enforcement mechanisms. Strategic action with a collaborative approach is needed to overcome this annual disaster.

Keywords—transboundary disaster mitigation, disaster mitigation, smoke-haze disaster

I. INTRODUCTION

Transboundary haze pollution is one of the disasters that occurs every dry season in Southeast Asia, especially Indonesia [1]. Indonesia is one of the countries that considered to have significantly contributed to the haze problem, which has a global impact. According to data from the Ministry of Environment and Forestry, in 2019, forest and land fires in Indonesia reached 1,649,258 hectares. In South Sumatra, an area of 336,798 hectares recorded, Central Kalimantan 317,749 hectares, West Kalimantan 151,919 hectares, South Kalimantan 137,848 hectares, East Nusa Tenggara 136,920 hectares, Papua 108,110 and Riau 90,550 [2]. The haze

generated from land burning activity has resulted in air pollution, stagnated economic activity, education and threatens public health. For example, smog has caused air quality in Riau to deteriorate from an unhealthy, very unhealthy, and even dangerous level in many residential areas. Not only has an impact on conditions in Indonesia, but it also affects other countries.

Indonesia has made efforts to prevent, mitigate, and restore the impact of smoke pollution due to land or forest fires at the national level. However, to handle the transboundary haze pollution, Indonesia and other ASEAN countries realize that prevention and countermeasures must be resolved together. The cooperation between ASEAN countries based on the implementation of commitment, the spirit of partnership, and the ASEAN countries' solidarity in facing various obstacles in handling cross-border haze. Following the principles of international law, every country has a sovereign right to exploit or utilize natural resources according to environmental and development policies in their respective territories. However, each country is obliged to be responsible for ensuring that each exploitation or utilization within its jurisdiction, does not cause pollution, environmental damage, endanger human health and safety outside its jurisdiction. To formalize the 1995 ASEAN Cooperation Plan on Transboundary Haze Pollution and to streamline the 1997 Hanoi Plan of Action, ASEAN Members agreed to establish the AATHP or ASEAN Agreement on Transboundary Haze Pollution as a joint commitment. This research is a literature study on the Indonesian government's efforts in mitigating the transboundary haze disaster through the ratification of the AATHP and the development of the handling process.

II. RESEARCH METHODS

This research apply a systematic literature review. A systematic literature review or SLR is a secondary data analysis that used a literature review to identify, evaluate or assess, and interpret all findings on research focus, to answer pre-determined research questions [3]. The SLR is carried out by following the steps and protocols systematically to avoid bias and researchers' subjective. Literature review stages include the planning, conduction, and reporting stages.

III. SMOKE-HAZE DISASTER IN ASEAN COUNTRIES AND THE ASEAN AGREEMENT ON TRANSBOUNDARY HAZE POLLUTION (AATHP)

The problem of haze has received special attention from international actors because it can cross national borders. The transboundary haze' issue has been a topic of international discussion since 1960. It was one of the agendas raised at the 1972 Stockholm conference. The first transboundary haze incident in ASEAN occurred in 1982 - 1983 due to forest fires in East Kalimantan, which scorched about 3.5 million hectares of forest [4]. The World Bank, in its official release, stated that smog pollution in Southeast Asia is the most significant environmental crime in the 21st century. Uncontrolled land degradation affects the health, education, and livelihoods of millions of people. Total losses faced by affected countries amounted to \$16 billion [5]. Forest and peatland fires in Indonesia occur during the dry season resulting in the problem of transboundary haze pollution to neighbouring countries such as Malaysia, Singapore, Brunei Darussalam, Thailand, and the Philippines. The transboundary haze pollution not only causes environmental damage but also impacts on health and the economy. The increase of haze cases coincides with the development of the paper, pulp, and palm oil industries in Malaysia and Indonesia. To meet these needs, landowners tend to burn forests as the fastest and cheapest way for land clearing. Malaysia and Indonesia are already the two top producers of palm oil in the world. For example, the toxic haze that swept through Malaysia and Singapore for most of September 2019 was triggered by forest and land fires that had raged in Indonesia for weeks. Many schools have been forced to close, while N95 masks have been distributed to filter out particular dangerous air. Doctors report a spike in patients suffering from respiratory diseases and eye infections [6].

The ASEAN Member States have committed to work together in addressing the problem of transboundary haze pollution arising from forest and land fires since the early 1990s. As a follow-up effort, in 1995, the Ministers of the Environment in ASEAN countries agreed to intensify cooperation through concrete programs. The agreement set out in the Regional Haze Action Plan (RHAP), which contains joint efforts to prevent, monitor, and mitigate land and forest fires. The spirit of ASEAN cooperation continued into the new millennium with the ASEAN Environment Ministers agreeing to move forward with the formulation of the ASEAN Agreement on Transboundary Haze Pollution in October 2000. Furthermore, the Intergovernmental Negotiation Committee

(INC) consists of government officials from state environmental and legal institutions - ASEAN Member States, formed to draft the Agreement. This agreement aims to prevent and monitor transboundary haze pollution as a result of land and or forest fires. The land and forest fire must be reduced through joint national efforts and regional and international intensification. Ten ASEAN Member States signed the ASEAN Haze Agreement on June 10, 2002, during the World Conference and Exhibition on the Dangers of Forest and Land Fires in Kuala Lumpur. This agreement came into force on November 25, 2003, after the deposit of the sixth instrument of ratification by Thailand on September 26, 2003. This convention aims to formulate the institutional implications of the ASEAN Agreement on Transboundary Haze Pollution (AATHP). Knowing the forms of institutional implications of the implementation of AATHP, in particular, can encourage the improvement of institutional problems for forest fire disaster management. The AATHP consists of 32 articles and an attachment. The agreement contains measures on monitoring and assessment, prevention, preparedness, national and joint emergency response, procedures for deployment of people, materials and equipment across borders.

IV. INDONESIA AND AATHP: PROGRESS AND CHALLENGES

The land and forest fires that caused a haze to spread in the skies of Southeast Asia had clouded Indonesia's relations with countries in the ASEAN region. Singapore, Malaysia, and Thailand have repeatedly called for Indonesia to immediately tackle the land fires as the smoke starts to disrupt their citizens' lives. The haze disaster in 2013 has caused nearly 50,000 Indonesians to suffer from acute respiratory infections, coughs, and eye diseases [7]. Meanwhile, the haze disaster in 2015 due to forest fires in Sumatra and Kalimantan caused 19 people to die and 400 thousand people suffering from respiratory diseases [8]. The cause of the forest fire problem is due to systemic errors in national forest management. Inland conservation practices, companies' preparation or clearing or clearing of land is carried out by burning. The land clearing method by burning is preferred over other methods because it is considered the cheapest and most efficient. Economic factors and the unavailability of adequate technology are the reasons this method is commonly used, even though the impact of this method on the environment is not proportional to the results [9].

Indonesia has come a long way to ratify the AATHP. Since it was completed in 2002, Malaysia has become the first country to ratify the AATHP. Meanwhile, Indonesia was the last country to ratify it, to be precise in January 2015. In ratifying an international treaty, the Indonesian government experienced many obstacles, such as equating international standards with domestic laws and regulations and preparing personnel to make laws as a result of ratification. In ratifying the AATHP agreement, Indonesia was influenced by the strength of domestic groups; this made the alliances and factions in the parliament very influential in deciding policies regarding this transboundary haze pollution agreement. The

configuration of domestic political power affects Indonesia's attitudes and policies towards the AATHP agreement. Since the AATHP agreement signed in 2002 to 2014, the ratification process took a long time. The Indonesian representative, namely the Ministry of Environment, did not have sufficient authority to withdraw support, so the AATHP agreement's ratification was rejected by the DPR-RI [10]. As for the benefits of ratifying the ASEAN Agreement for Indonesia, among others (AATHP Law):

- Promote Indonesia' active role in decision-making to carry out monitoring, assessment and emergency response to forest and land fires that cause transboundary haze pollution;
- Protecting the Indonesian from the negative impacts of transboundary haze pollution due to forest and land fires;
- Strengthening national regulations and policies related to prevention, mitigation, preparedness, monitoring, mitigation and control of forest and land fires;
- Utilizing existing human resources and equipment in ASEAN countries and outside ASEAN countries, to carry out prevention, mitigation, preparedness, monitoring, mitigation and control of land and forest fires that cause cross-smog pollution;
- Increase public knowledge and awareness through ASEAN cooperation and international assistance in terms of prevention, mitigation, preparedness, monitoring, mitigation and control of forest and land fires;
- Strengthen management and capacity in prevention, mitigation, preparedness, monitoring, mitigation, and control of forest and land fires at the local, national, and regional levels through ASEAN cooperation and international assistance.

The crucial point after AATHP ratification is that Indonesia must be more serious in monitoring, assessment, prevention, preparedness, emergency response, and technical cooperation in overcoming forest and land fires, the spread of haze, and developing a policy for land clearing without burning. The ratification of the AATHP agreement gives the Indonesian state the authority to make public policies regarding this agreement in Indonesia. After the ratification of the AATHP, Indonesia has obligations as a legal consequence, namely [1]: (1) Indonesia must guarantee that all activities in its territory will not cause environmental damage and do not endanger human health for other countries and countries. Outside the boundaries of its national jurisdiction; (2) Indonesia should build cooperation in efforts to develop and implement a process of prevention and monitoring of transboundary haze pollution caused by forest and land fires.; (3) Indonesia is obliged to provide a prompt response to any requests for clear information or consultations required by countries affected by smoke haze pollution from Indonesia, to minimize the impact of pollution;

and (4) Indonesia is obliged to take legislative, administrative and other measures to prevent and control forest and land fires that have the potential to cause transboundary haze pollution.

Indonesia's efforts in dealing with the problem of forest fires in Indonesia after AATHP ratification are as follows [11]:

- Conduct extensive and sustainable AATHP socialization and capacity building activities to relevant ministries or agencies, business circles, communities, NGOs, and local governments in areas prone to land and forest fires.
- Coordinating between ministries or agencies, local governments and with the community based on the Indonesia Comprehensive Plan of Action on Transboundary Haze Pollution
- Carry out law enforcement (criminal and civil) against perpetrators (individuals and corporations) of burning land and or forest and cross-border smoke pollution that causes environmental damage. Criminal law enforcement is carried out in an integrated and coordinated manner by the Ministry of Environment investigators and the POLRI investigators through a multi doors mechanism. Meanwhile, civil law enforcement is carried out through compensation claims to restore environmental quality against perpetrators of land and forest burning.
- Strengthen institutions and laws and regulations that support the zero burning policy and prevent land and forest fires and cross-border smoke pollution.

The Indonesian government introduced the Sustainable Palm Oil Scheme, which emphasized the ban on slash and burned in plantations in late 2014 following the ratification of the AATHP by Indonesia. This scheme is mandatory for all palm oil companies in Indonesia [12]. Even though it has gone through a long process until finally ratifying the AATHP, Indonesia still does not use these regulations to deal with the haze disaster. The reason the government does not use AATHP as the basis is the complexity of the mechanism. The ASEAN mechanism must be the consensus. There is a request, a notification to all the other member countries, to sit down together, then decide. Within the framework of ASEAN, a country never only asks from one country to another. The others must also be notified. Considering the complexity of the AATHP and ASEAN mechanisms, the Indonesian government prefers bilateral cooperation [13]. By not using AATHP, it will make it easier for foreign countries to assist. Bilateral will be more comfortable. There are no sanctions either. Besides, there is a dilemma that causes the inefficiency of AATHP is weak mechanisms for the settlement of disputes and punishing non-compliance; and lacks measurable obligations and implementations.

V. CONCLUSION

The mere use of the ASEAN Agreement on Transboundary Haze Pollution mechanism cannot prevent or resolve the transboundary haze problem. The agreement does not have the power to force member states to take constructive steps to tackle the transboundary haze. There is an urgent call for mechanisms through tighter regulation, such as that imposed by Singapore on multinational Singapore palm oil companies investing in Indonesia. If not, then the goal of being free from the haze disaster will not be possible. Some of the recommendations are: (1) The government should focus more on efforts to change local farmers' mindset and their preferences about slash-and-burn methods to more environmentally friendly and sustainable ways. In this case, local and central governments can encourage by providing and or lending sophisticated machines such as excavators or bulldozers for companies or farmers who wish to clear land. (2) The government must continuously involve and coordinate with the public and private parties to prevent fires or fires, especially in peat areas. (3) The government must improve the quality and accountability of law enforcement against illegal land clearing. The efforts could make by increasing the quality and quantity of institutional and human resources that have the authority and responsibility for forest and land fires.

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