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Article

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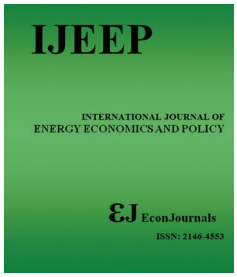

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Comparison and Implementation of Environmental Law Policies in Handling Climate Change in ASEAN Countries: A Comparative Study of Indonesia, Malaysia, and Thailand

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ABSTRACT

Addressing climate change is a global issue that requires collaborative efforts and effective policies. In the ASEAN region, countries such as Indonesia, Malaysia and Thailand have similar challenges in dealing with the impacts of climate change and promoting environmental sustainability. In this context, this study aims to compare the environmental law policies implemented by the three countries. This study uses a comparative method to analyze the differences and similarities of environmental law policies in addressing climate change in Indonesia, Malaysia, and Thailand. First, the national legal framework governing environmental protection and climate change will be analyzed. Next, specific policies that have been implemented to reduce greenhouse gas emissions, encourage renewable energy, and promote adaptation to climate change will be explored. Through this approach, this study is expected to provide a better understanding of the effectiveness of environmental law policies in addressing climate change in ASEAN countries. The results of this comparative analysis will provide insights into the successes and challenges faced by each country, as well as recommendations for future policy improvements. The findings of this research are expected to provide valuable inputs for policy makers, legal practitioners, and other relevant stakeholders in developing more effective strategies in addressing climate change at the national and regional levels. With a better understanding of comparative environmental law policies, ASEAN countries can learn from each other and work together to achieve common goals in facing the challenges of climate change.

Keywords: Environmental Law Policy, Climate Change Management, Environmental Law Comparisons
JEL Classifications: Q54, Q58

1. INTRODUCTION

Climate change has become one of the biggest global challenges faced by humanity today. Its far-reaching and serious impacts on the environment and human life have made environmental protection and sustainable development top of the agenda in many countries (Shaffril et al., 2018), including in ASEAN countries such as Indonesia, Malaysia, and Thailand. As countries located in tropical regions with abundant natural resources, they face special challenges in addressing climate change and protecting the environment. Environmental legal policies play an important role in addressing climate change (Putra, 2024), (Putra et al., 2023). They include rules and regulations set by governments to control environmental impacts and promote sustainable practices (Haris et al., 2020). Although ASEAN countries share similar challenges related to climate change, they may adopt different approaches in their environmental law policies (Biesbroek, 2021; Setzer and Vanhala, 2019) (Setzer and Vanhala, 2019).

In Indonesia, climate change has become a pressing issue on the government's agenda. The world's fourth most populous country is experiencing significant impacts from climate change, such as rising sea levels and ecosystem damage. Therefore, the Indonesian government has taken concrete steps to reduce greenhouse gas emissions and encourage sustainable practices. One of the important environmental legal policies is the Law on the

Implementation of Environmental Resilience e.g. Law No. 32 of 2009 on Environmental Protection and Management, Government Regulation No. 61 of 2011 on the Management and Implementation of Environmental Services. Government Regulation No. 68 of 2016 concerning the Management of Household Waste and Waste Similar to Household Waste; and supplementary regulations, namely the Minister of Environment and Forestry Regulation No. P.33/MENLHK/SETJEN/KUM.1/8/2018 concerning Guidelines for the Implementation of Environmental Impact Assessment. These laws and regulations aim to protect environmental sustainability and regulate sustainable environmental governance. With these laws in place, Indonesia seeks to ensure that the country's development goes hand in hand with environmental protection. In addition, Indonesia is also involved in international efforts to address climate change. Indonesia is an active member of the United Nations Framework Convention on Climate Change (UNFCCC) and has participated in various global climate conferences which were later legalized in Law No. 4 of 1982 concerning the Ratification of the United Nations Framework Convention on Climate Change (UNFCCC). Through this participation, Indonesia seeks to strengthen regional and global cooperation in facing the challenges of climate change.

In the context of environmental law, Indonesia has cooperated with other ASEAN countries to strengthen a sustainable and effective legal framework in addressing climate change. Indonesia has been active in regional cooperation with ASEAN countries to strengthen a sustainable and effective legal framework in addressing climate change. This cooperation aims to exchange knowledge, experiences, and best practices in the development of environmental law policies. One important form of cooperation is through the ASEAN Agreement on Transboundary Haze Pollution. This agreement, ratified by ASEAN countries including Indonesia, aims to reduce and prevent haze pollution caused by forest and peatland fires. Through this agreement, ASEAN countries are committed to strengthening cooperation in controlling forest fires and monitoring and reducing the adverse impacts of haze on human health and the environment. In addition, Indonesia also plays an active role in ASEAN cooperation in implementing global commitments to address climate change, such as the Paris Agreement. The Paris Agreement is an international agreement that aims to reduce greenhouse gas emissions and strengthen resilience to the impacts of climate change. Indonesia contributes to the negotiation and implementation of this agreement and engages in regional and international cooperation to ensure its implementation.

In addition to regional cooperation, Indonesia also has national initiatives to strengthen the environmental legal framework related to climate change. An example is through the establishment of Presidential Regulation No. 16 Year 2015 on the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK). This RAN-GRK serves as the basis for Indonesia to reduce greenhouse gas emissions and adapt to climate change through various measures and policies (Wibowo, 2013). To strengthen a sustainable legal framework, Indonesia also holds dialogues and meetings with other ASEAN countries to share experiences and knowledge on effective environmental legal policies. These exchanges help ASEAN countries to learn from each other, identify common challenges, and develop better solutions in the face of climate change (Sapiri and Putra, 2023).

In Malaysia, climate change is also a major concern. The country is vulnerable to increased temperatures, droughts and floods caused by climate change. To address these challenges, Malaysia has implemented strong environmental law policies. One example is the Environmental Pollution Act, which regulates environmental pollution and provides a legal framework to control and monitor the impact of industry on the environment as contained in the Environmental Quality Act 1974 (Mustafa, 2011); Climate Change Act 2020; Renewable Energy Act 2011; Environmental Quality Regulations 1979; and Renewable Energy Regulations 2011. Environmental Pollution (Registration and Licensing of Polluters) Regulations 1977, Wildlife Conservation (Prevention of Trade and Smuggling) Regulations 2008. The laws and regulations in Malaysia provide the foundation for monitoring and enforcement against environmental pollution that may result in damage to ecosystems and human health (Lee et al., 2016). In addition, Malaysia has also taken important steps in reducing greenhouse gas emissions and addressing climate change through various programs and policies. One of the key initiatives is the Renewable Energy Act which was enacted to encourage the use of renewable energy sources (Hashim and Ho, 2011). The Act provides incentives and favorable policies for the development and use of renewable energy in Malaysia, such as solar panels, wind power and bioenergy (Chong and Lam, 2013). By promoting the use of clean energy, Malaysia seeks to reduce dependence on fossil fuels and reduce the resulting greenhouse gas emissions.

The Malaysian government is also taking steps to raise public awareness on environmental issues through education and campaigns that aim to encourage environmentally friendly behavior. Through these programs, people are educated on the importance of protecting the environment, saving energy, and reducing their carbon footprint (Hassan et al., 2022). The government also collaborates with non-governmental organizations and the private sector to raise public awareness on the importance of environmental sustainability and climate change mitigation measures (Juniansyah et al., 2023). In addition, Malaysia also participates in regional and international cooperation in efforts to address climate change. Malaysia is an active member in ASEAN and contributes to the negotiation of international agreements such as the Paris Agreement. Through participation in these international forums, Malaysia seeks to advocate the interests of ASEAN countries and champion effective measures in addressing climate change (Giessen and Sahide, 2017).

In the context of environmental law, Malaysia has passed laws and regulations related to climate change mitigation efforts and environmental protection. Besides the Renewable Energy Act mentioned earlier, Malaysia also has other regulations such as the Environmental Quality Act 1974 and the Climate Change Act 2020. These regulations provide the necessary legal framework to control environmental impacts and encourage sustainable practices. Through effective environmental legal policies, participation in regional and international cooperation, and the

promotion of renewable energy, Malaysia continues to meet the challenges of climate change and protect the environment for future generations.

Thailand is also not standing still in the face of climate change. The country has faced natural disasters such as floods and droughts caused by climate change (Muttarak and Lutz, 2014). To combat these challenges, Thailand has adopted environmental law policies that focus on natural resource management and environmental protection. One such example is the Environmental Act, which provides a legal framework to protect the environment and promote sustainable management under the Thai legal system as set out in the Environmental Act B.E. 2535 (1992), Climate Change Act B.E. 2559 (2016), Energy Conservation Promotion Act B.E. 2535 (1992), Industrial Estate Authority of Thailand Act B.E. 2522 (1979), Hazardous Substance Act B.E. 2535 (1992). As well as additional supplementary regulations regarding preventive environmental impact analysis contained in the Thailand Ministerial Regulation on Environmental Impact Assessment (EIA) for Development Projects B.E. 2549 (2006), Notification of the National Environment Board on Criteria and Procedure for Granting Licenses to Business Operators or Factories B.E. 2543 (2000) (Manowong, 2012). What Thailand has done to date is remain committed to improving energy efficiency and reducing emissions through programs such as the National Energy Conservation Plan (Selvakkumaran and Limmeechokchai, 2013).

1.1. Research Phenomena and State of The Art

Although ASEAN countries have adopted progressive environmental legal policies, the challenges of addressing climate change remain complex. Climate change is a global problem that involves multiple factors, including greenhouse gas emissions, deforestation, environmental degradation, pollution, and socio-economic vulnerability (Riahi et al., 2017) (Lahsen and Ribot, 2022). One of the challenges faced is effective implementation and enforcement. While policies and laws are in place, implementation often faces challenges such as resource shortages, limited institutional capacity and lack of coordination between relevant agencies. In addition, weak monitoring and enforcement can also be an obstacle in effectively implementing environmental policies (Wunder, 2007). Greater efforts are needed to ensure compliance with regulations and enforce sanctions against environmental violations. In addition, climate change also involves economic and policy challenges (Edenhofer, 2015). ASEAN countries often face a dilemma between sustainable economic growth and environmental protection. Some economic sectors, such as industry, agriculture, and energy, can be sources of greenhouse gas emissions and other environmental impacts (Sharma et al., 2021). Aligning economic policies with environmental protection objectives is important in achieving harmony between sustainable development and climate change mitigation efforts (Monteiro et al., 2019).

It is important for ASEAN countries to remain committed to the implementation of environmental law policies and to strengthen regional and international cooperation to meet these challenges. To this end, ASEAN countries should also strengthen monitoring and enforcement of environmental laws (Dasgupta et al., 2000). On a global scale, ASEAN countries should also continue to play an active role in international negotiations and cooperation in addressing climate change. Regional and global collaboration is essential in strengthening mitigation and adaptation efforts, as well as in championing climate justice and financial support for developing countries. Thus, the research questions in this study are as follows: (1) What are the main factors that become obstacles in the implementation and enforcement of environmental law in ASEAN countries in handling climate change; (2) What is the level of awareness of the ASEAN country community (Indonesia, Malaysia, and Thailand about the effects of climate change; (3) How is the coordination between relevant institutions in the implementation of environmental law policies in ASEAN countries and to what extent does this affect the effectiveness of these policies (4) How is the comparative regulatory system of the three countries in preventing environmental impacts.

2. RESEARCH METHOD

In this study, the research method that can be used in the field of law to answer these research questions involves collecting and analyzing relevant documents such as environmental law policies, laws, regulations, and reports related to the implementation and enforcement of environmental law in ASEAN countries. These documents will be analyzed to identify the main factors that become obstacles in the implementation and enforcement of environmental law in addressing climate change in ASEAN countries. As well as a Comparative study analysis where this method involves comparing the environmental regulatory systems of the three selected ASEAN countries, namely Indonesia, Malaysia, and Thailand. Data on environmental law policies, laws, regulations, and environmental law enforcement practices will be collected from each country and then compared. Analysis of the differences and similarities in the regulatory systems will provide insights into how each country prevents environmental impacts and contributes to addressing climate change.

3. RESULT AND DISCUSSION

3.1. Key Factors that Hinder the Implementation and Enforcement of Environmental Laws in ASEAN Countries (Indonesia, Malaysia, and Thailand) in Addressing Climate Change

The main factors that hinder the implementation and enforcement of environmental laws in ASEAN countries (Indonesia, Malaysia, and Thailand) in addressing climate change may vary. The following are some of the factors commonly identified as barriers to the implementation and enforcement of environmental laws in these countries:

1. Lack of human, financial, and technological resources as well as environmental awareness are often barriers to the implementation and enforcement of environmental laws in ASEAN countries due to economic necessity. These limitations may affect the capacity of relevant agencies to effectively monitor and enforce environmental regulations.

   "…. In the case of forest burning in Indonesia, there are variations in villagers' compliance with burning bans.

While law enforcement contributes to fire prevention, there is also a risk that ineffective law enforcement can increase fire risk. Challenges such as physical barriers, limited resources, and governance issues affect the effectiveness of law enforcement. A key factor in law enforcement is the legitimacy of the rules being enforced, which needs to be accepted by both the enforcement agents and the intended actors. Investments are needed to support viable no-burn alternative methods as livelihood alternatives. Public awareness raising and long-term education are also important to prevent accidental fires and reduce overall law enforcement costs (Resosudarmo et al., 2023).

"...that poverty is a factor inhibiting compliance with forest laws due to high compliance costs. However, if compliance costs can be reduced through access to alternative sources or through the existence of buffer zones, compliance rates may increase. This points to the importance of finding solutions that can reduce the financial burden on those living in poverty to comply with forest laws. This interpretation also emphasizes the need for policies that take into account the economic well-being of communities in order to achieve compliance with forest laws (Tacconi et al., 2019).

*"....that in Indonesia the budg*et al*located to forest law enforcement in the period was relatively small, with a very low amount per hectare of forest. In addition, the shortage of forestry personnel is also a problem, with the ratio of police to forest area being very low in many regions. To overcome resource limitations, forestry law enforcement also involves cooperation with other bureaucratic structures and agencies. Despite coordinated operations to reduce illegal timber smuggling, timber and equipment seizures rarely result in the recovery of financial losses. This interpretation suggests that despite efforts to combat illegal logging, there are serious challenges in terms of resource allocation and adequate coordination to achieve the desired results. This emphasizes the importance of increased budgets, personnel and cross-sectoral cooperation in protecting forests and combating illegal activities in the forestry sector* (Tacconi et al., 2019).

2. The capacity of government institutions and the judicial system to implement and enforce environmental laws is often limited in ASEAN countries. Lack of knowledge, skills and experience among environmental law enforcement officers can affect the effectiveness of law enforcement.

"….In the case of environmental impact conflict management in Thailand, despite environmental impact assessments, conflicts between communities and development projects still occur. This is due to the lack of adequate communication and information between development projects and affected communities. Such conflicts can be addressed by increasing community involvement in the EIA post-audit process and providing transparent information about the impacts of development projects. The recommendation from the study is that relevant parties, including project developers, government agencies, and environmental experts, increase efforts to engage communities in the EIA post-audit process. Policies and practices are needed that ensure the active participation of communities in decision-making regarding development projects that impact their livelihoods (Kilajian and Chareonsudjai, 2021).

3. Lack of coordination and collaboration between government agencies involved in the implementation and enforcement of environmental laws can lead to gaps and overlapping policies as well as unclear roles in efforts to address climate change.

"....Law enforcement plays an important role in driving compliance, but can also have negative consequences such as increased fire risk in Indonesia. Challenges such as physical barriers, limited resources, and ineffective governance reduce the effectiveness of law enforcement. To improve the effectiveness of law enforcement, it is important to ensure the legitimacy of the rules being enforced and address existing challenges. In addition, investment is needed in the development of alternative sustainable methods to replace burning as a livelihood. Public awareness and long-term education are also important in the prevention of accidental fires and the overall reduction of law enforcement costs (Resosudarmo et al., 2023).

4. Weak supervision and enforcement can be an obstacle to effectively implementing environmental policies. Inadequate implementation of penalties and sanctions against environmental violations and low levels of public compliance can also reduce the effectiveness of environmental law enforcement.

"..... reported abuse of migrant workers in Thailand's fishing industry in 2014. Burmese and Cambodian fishermen are subjected to excessive working hours and often beaten, some even thrown overboard (Associated Press, 2015; Environmental Justice Foundation in 2015. Many fishermen are tricked into modern slavery by "an elaborate chain of brokers in Cambodia and Thailand who deceive victims with the promise of a monthly income once in Thailand" (Associated Press, 2015; Environmental Justice Foundation in 2015) (Stringer et al., 2022).

"..... in Indonesia, that in the context of decentralized environmental governance, structural factors, such as traditional customs and authority, have a significant impact on how environmental policies and practices are prioritized. The power imbalances that exist within them can hinder the achievement of justice in environmental contexts. In addition, limitations in mobilizing justice issues from the sub-national to higher levels also indicate constraints in striving for justice in the broader context of environmental governance. Achieving greater environmental justice requires a deeper understanding of these structural factors and efforts to address the restrictions and imbalances that exist within the environmental governance system (Lai et al., 2021).

"...that in Malaysia there are significant challenges in addressing illegal and unregistered operations in the

mining and mineral processing industry. A concrete example mentioned was the case of illegal bauxite mining in 2016 which caused negative environmental impacts and angered local communities. This indicates that there is a need to improve supervision and enforcement in this industry. It is important to note that the establishment of new rare earth metal mining or processing industries also has the potential to trigger public opposition. This relates to community concerns over the environmental and sustainability impacts that may result from such industrial activities. Inadequate legal constraints and inconsistent policies are also factors affecting the rare earth metal processing industry in Malaysia. This hinders the economic operations of such processing plants, which could have negative consequences on the growth of the industry and its potential contribution to the country's economy (Wirastri et al., 2023).

5. In some cases, strong economic interests can be an obstacle to the implementation and enforcement of environmental laws. Some economic sectors, such as industry, agriculture, and energy, may have conflicting interests with environmental policies, and this can lead to resistance or slowdown in the implementation of such policies.

"…. About the Thai government's efforts to protect their forests and develop tourism, forestry, and agriculture sectors sustainably. Initially, the government committed to protecting 50% of Thailand's forests. However, the forest cover target was later reduced to 40% to make room for economic growth and agricultural production. The National Forest Policy (1985) in Thailand states that of the existing 40% forest cover, 15% will be fully retained as protected forests, while 25% will be used for production activities. This indicates an attempt to strike a balance between protecting natural resources and utilizing them in a sustainable manner (Singh et al., 2021).

"…. most of the arable land in Southeast Asia is located in coastal areas. Without significant technological improvements to reduce vulnerability to climate change, rice yields in Indonesia, the Philippines, Thailand and Vietnam by 2100 could fall by up to 50% from 1990 levels. While there is a trend towards regional technical cooperation to improve the climate resilience of ASEAN agriculture, the loss of important low-lying agricultural areas in densely populated and partly hilly countries could have serious impacts on food production. Similarly, the fisheries sector is likely to experience serious negative changes involving risks to food security in the region. Together with hotter dry seasons in inland areas of countries such as Cambodia and Myanmar, where more than 60 million people still face food insecurity, this could threaten regional progress in achieving the Sustainable Development Goals (SDGs) related to hunger. It could also make it more difficult to reduce unemployment (SDG 8), as most ASEAN residents work in agriculture, forestry, and fisheries, all of which are vulnerable to climate change (Overland et al., 2021).

"…that in Indonesia the palm oil sector contributes positively to economic growth in rural areas, as has been shown by several previous studies (Clough et al.*, 2016; Edwards, 2019; Euler* et al.*, 2017; Purnomo* et al.*, 2020). However, despite this, oil palm plantations are often criticized for causing environmental damage. Some of the issues often associated with oil palm plantations include the replacement of tropical rainforests, changes in land cover and land use, induced CO_2 emissions, threats to biodiversity, and damage to other ecosystem services. What this means is that while the oil palm sector provides economic benefits, there are significant negative consequences for the environment and biodiversity. This suggests that careful consideration needs to be taken in the development of the palm oil industry to minimize negative impacts and promote environmentally sustainable practices. This interpretation also demonstrates the importance of achieving a balance between economic benefits and environmental protection in the management of the palm oil industry* (Xin et al., 2022).

"…… that Thailand's rapid economic growth is driven by the export sector, but also has negative impacts related to industrial waste management and high consumption of mineral resources. While this economic growth has benefited the middle class, urban development, and domestic consumption, the challenges that need to be addressed are more effective industrial waste management and reduced reliance on mineral resource imports (Akkalatham and Taghipour, 2021). *The statement illustrates that the Thai government recognizes the importance of preserving their forests, but also considers the need for economic growth and agricultural production. This shows an awareness of the importance of protecting the natural environment while also considering the economic and development interests of the country.*

"…In the case of Indonesia and Malaysia, although palm oil-based bioenergy has potential as a renewable energy source, concerns from the international community about the negative impacts of the palm oil industry require evidence that the production and use of palm oil-based bioenergy meets sustainability standards (Padfield et al., 2023).

3.2. Awareness Level of the ASEAN Community (Indonesia, Malaysia, and Thailand) on the Effects of Climate Change

The data illustrated in Figure 1 depicts Indonesia's level of vulnerability and preparedness to climate change based on the ND-GAIN index from 1995 to 2019. The ND-GAIN index is used to measure the extent to which a country or region can deal with the impacts of climate change. During this period, there were fluctuations in the ND-GAIN index value for Indonesia. In 1995, Indonesia had an ND-GAIN index value of 44.47. This value indicates a low level of vulnerability and preparedness to climate change. Over the next few years, the index value tended to fluctuate with a relatively stable range between 43 and 45. In 2006, there was a significant increase in the ND-GAIN index value, reaching 49.34. This indicated an increase in Indonesia's vulnerability and

preparedness to climate change. This increase then continued and peaked in 2012 with an index value of 53.09.

However, after 2012, there was a decline in the ND-GAIN index value. In 2019, the index value dropped to 46.73, indicating a decline in Indonesia's level of vulnerability and preparedness to climate change. The data provides an overview of changes in Indonesia's vulnerability and preparedness to climate change over the period 1995 to 2019. Fluctuations in ND-GAIN index values indicate changes in Indonesia's climate change mitigation efforts. This data can be used to understand trends and changes in Indonesia's vulnerability and preparedness to climate change and to design more effective policies to meet the challenges of climate change in the future.

From the results of a global survey by Statista Reports in 2023 based on a survey conducted between July and August 2022 to gauge global perceptions of the severity of climate change effects at the local level by country. The survey involved 23,507 respondents from various countries with an age range of 16 to 74 years. The interview method used was an online survey. Specifically, the percentage of respondents who believe climate change is having a very or somewhat severe impact at the local level is as follows: Indonesia: 48%; Thailand: 46% and Malaysia: 39%.

This data suggests that perceptions of the severity of climate change effects at the local level vary among the countries surveyed. This can be influenced by factors such as the level of environmental awareness, exposure to climate change, direct experience with the effects of climate change, as well as the social, cultural, and political context in each country. In Figure 2 we present data on territorial carbon dioxide (CO_2) emissions in Southeast Asia from 1960 to 2021 reported by Asia; Global Carbon Project Year 2023.

In the data presented in Figure 2, there is an increasing trend of CO_2 emissions in the ASEAN region over time. Indonesia has the highest CO_2 emissions among these countries throughout the observed period. In 2021, Indonesia's CO_2 emissions reached 619.28 million metric tons, followed by Vietnam with 326.01 million metric tons. In recent decades, there has been a significant increase in CO_2 emissions in ASEAN countries. This increase is in line with rapid economic growth and increased energy consumption in the region. Countries such as Indonesia, Thailand, and Malaysia have high levels of CO_2 emissions due to their large industrial and transportation sectors. The data illustrates the contribution of ASEAN countries to global CO_2 emissions. While ASEAN's overall CO_2 emissions are still lower compared to some developed countries, the rapid growth in CO_2 emissions in the region points to the need for greater mitigation efforts to reduce the impacts of climate change.

In addition, differences in CO_2 emissions between ASEAN countries also reflect differences in the level of economic development, industrial structure, and environmental policies. Countries with more developed economies and more developed industrial sectors tend to have higher CO_2 emissions. So, this data also underscores the importance of cooperation and collaboration between countries in addressing climate change in the ASEAN

Figure 1: Vulnerability and readiness to climate change in Indonesia from 1995-2019

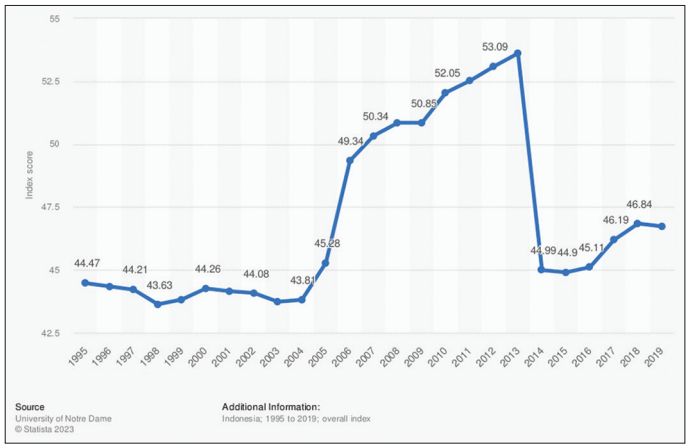
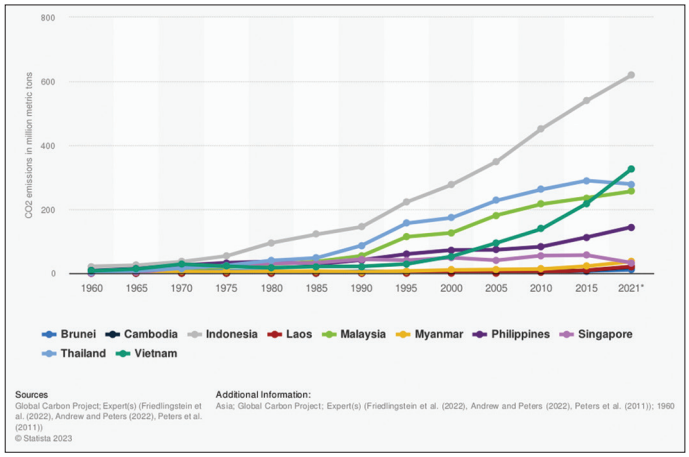


Figure 2: Territorial carbon dioxide (CO_2) emissions in Southeast Asia from 1960 to 2021, by country (in million metric tons of CO_2)



region. In facing the challenges of climate change, ASEAN countries need to work together to reduce CO_2 emissions, improve energy efficiency, and accelerate the transition to clean energy. This cooperation can involve the exchange of knowledge, technology, and resources between countries.

In a survey (Figure 3) conducted among Southeast Asians in November and December 2021, nearly 91 percent of respondents considered climate change an immediate threat or an important issue to monitor.

The data illustrated in Figure 3 depicts people's perception of climate change as a threat in the ASEAN region in 2021. The following percentages reflect people's views on climate change as a direct threat to their country's well-being in Southeast Asia:

- 50.30% of respondents believe that climate change is a serious and direct threat to their country's well-being.
- 40.50% of respondents consider climate change to be an important issue that deserves to be continuously monitored.
- 4.90% of respondents are of the opinion that climate change is a long-term challenge and will not impact their lives throughout their lifetimes.
- 4.30% of respondents believe that there is no scientific basis for climate change.

Figure 3: Share of people viewing climate change as an immediate threat to the well-being of their country in Southeast Asia in 2021

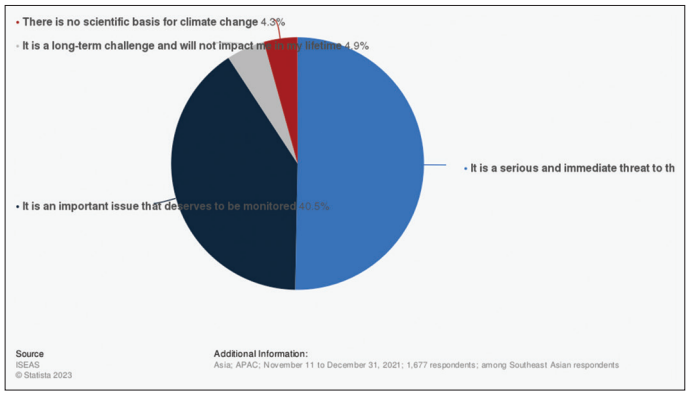
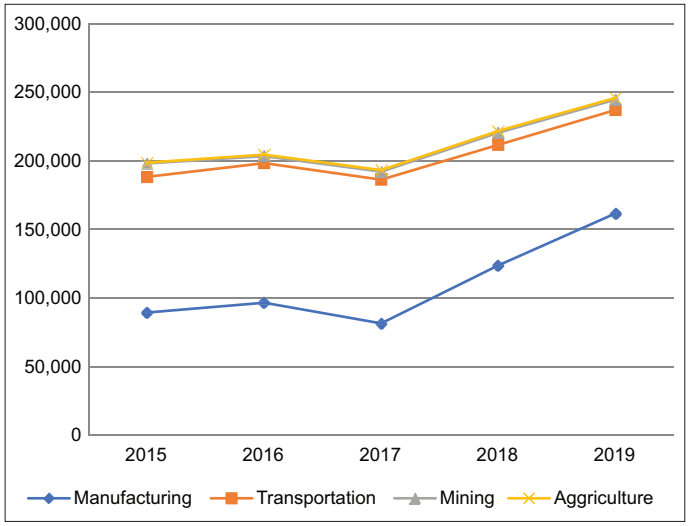
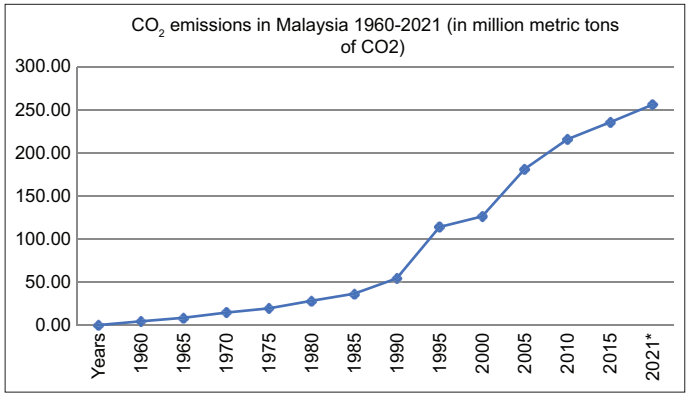


Figure 4: CO_2 Emissions by Sector in Indonesia in 2015-2019



Source: www.statista.com, 2023

Figure 5: CO_2 Emissions by Sector in Indonesia in 2015-2019



Source: www.statista.com, 2023

The data also presents the percentage of respondents based on their country of origin in the ASEAN region. Here are the percentages of respondents by country: Brunei: 3.2%; Cambodia: 4.8%; Indonesia: 7.8%; Laos: 2.6%; Malaysia: 8.1%; Myanmar: 20.9%; Philippines: 23.9%; Singapore: 13.2%; Thailand: 7%; Vietnam: 8.6%.

Interpretation of this data shows variations in how people in the ASEAN region perceive climate change. About half of the respondents view climate change as a serious and immediate threat to their country's well-being, while others consider it an important issue that requires monitoring. However, there is still a minority of respondents who consider climate change as a long-term challenge or not impacting their lives personally. There is also a minority who do not believe there is a scientific basis for climate change. The percentage of respondents based on their country of origin also indicates differences in the perception of climate change in the ASEAN region. Countries such as the Philippines, Myanmar and Singapore have a higher percentage of respondents who see climate change as an immediate threat. This may be influenced by these countries' experience with the impacts of climate change already occurring or higher awareness of the issue. The data in Figure 3 highlights the importance of increasing awareness, education, and communication on climate change in the ASEAN region. Recognizing climate change as a serious threat and understanding the need to act is an important first step in meeting this challenge. This data can also serve as a basis for designing more effective policies and mitigation strategies to reduce the impact of climate change in the ASEAN region.

Amid growing global awareness of the urgency of climate change, the ASEAN community of nations, including Indonesia, Malaysia, and Thailand, are increasingly aware of the impacts that climate change is having on their region. These three countries have an increasing level of awareness of the issue, given their geographical position and vulnerability to more extreme climate change.

Indonesia, as the country with the largest area in ASEAN, has significant awareness of the effects of climate change. In recent years, Indonesia has experienced serious natural disasters such as floods, landslides, forest fires, and rising sea levels that threaten small islands. These effects of climate change have affected the agricultural sector, clean water availability, and natural ecosystems. Indonesian people's awareness of climate change is increasing, and efforts to adopt sustainable practices, reduce greenhouse gas emissions, and protect the environment are being strengthened.

In Malaysia, a country known for its natural wealth, awareness of the effects of climate change is also growing. Malaysia is facing issues of deforestation, air pollution, and rising temperatures that are impacting the agriculture sector, biodiversity, and water resources (Khatun et al., 2017). The Malaysian government and society are increasingly recognizing the need to adopt sustainable environmental policies, protect their tropical forests, and reduce greenhouse gas emissions (Yusoff, 2006). In addition, educational initiatives and awareness campaigns have increased the public's understanding of climate change and the importance of collective action to fight the issue.

Thailand is also experiencing significant impacts from climate change. The country faces challenges such as deadly floods, droughts, and decreased agricultural productivity (Chhogyel et al., 2020). Rising temperatures and air pollution have also affected public health and ecosystem sustainability. Thai society is increasingly recognizing the importance of dealing with climate change through policies that focus on renewable energy, water conservation, sustainable waste management, and emissions

reduction. Educational campaigns and active participation from community groups have also contributed to increased awareness and action in addressing climate change issues in the country.

Overall, the community of ASEAN (e.g., Indonesia, Malaysia, and Thailand), is increasingly aware of the effects of climate change. This awareness is driven by direct experience with natural disasters, vulnerability to more extreme climate change, and efforts to improve understanding through education and awareness campaigns (Kelkar and Bhadwal, 2007). Governments and communities in these three countries have taken steps to reduce greenhouse gas emissions, protect natural ecosystems, and adopt sustainable practices in the agriculture and energy sectors. Meetings between ASEAN countries on climate change and mitigation efforts have become an important platform for sharing knowledge, experiences, and resources in the fight against climate change. However, despite the growing awareness of the effects of climate change, there are still challenges that need to be addressed. One of them is scaling up concrete actions to reduce greenhouse gas emissions and implement more sustainable policies. In addition, public understanding of climate change still needs to be improved as a whole, especially among the less affordable and vulnerable communities.

To address these challenges, it is important to continue to strengthen public education and awareness on climate change, encourage active participation from all sectors of society, and build strong cooperation among countries in the ASEAN region. Increased investment in clean technology, renewable energy, and natural resource management will also be an important step in reducing the impacts of climate change. In the global context, ASEAN countries also play an important role in climate change mitigation efforts (Lian and Robinson, 2002). As developing countries with large populations, collective action, and shared responsibility in reducing emissions and protecting the environment will contribute significantly to global efforts in combating climate change.

3.3. How is the Coordination Among Relevant Institutions in the Implementation of Environmental Law Policies in ASEAN Countries and to What Extent Does this Affect the Effectiveness of the Policies?

Sustainable development is defined by the World Commission on Environment and Development as development that meets the needs of the present generation without compromising the ability of future generations to meet the needs of any one group (Verma, 2019). The concept of sustainable development can be interpreted in many ways, but at its core, this approach to development aims to balance competing needs considering the environmental, social, and economic constraints faced by society (Sauvé et al., 2016).

The United Nations 2030 Agenda for Sustainable Development clearly states that sustainable and inclusive economic growth is essential for prosperity (Tsalis et al., 2020). This is only possible if wealth is shared equitably, and income disparities are optimally addressed. Sustainable development is not only about the environment, but also about ensuring strong, healthy, and just societies that meet the diverse needs of all people in existing and future communities.

For ASEAN itself, it is increasingly recognizing that sustainable development should be a central tenet of ASEAN community integration efforts. The ASEAN Community Vision for 2025 recognizes the relevance of the United Nations 2030 Agenda for Sustainable Development to the ASEAN community's development efforts to improve the living standards of its people (ESCAP, 2017) (Li and Zhu, 2019).

Cooperation on environmental issues in ASEAN dates to 1977. Today, ASEAN aims to strive to achieve sustainable development and promote a clean and green environment by protecting the natural resource base for economic and social development, including sustainable management and conservation of land, water, minerals, energy, biodiversity, forests, coastal and marine resources, and improvement of water and air quality. This broad agenda is not only for the ASEAN region but also as part of what they consider a global effort in addressing global environmental challenges, including climate change and ozone layer protection, as well as developing and adapting environmentally friendly technologies for development needs and environmental sustainability. The new ASEAN Socio-Cultural Community Blueprint 2025 also has a strong emphasis on promoting and ensuring environmental protection, as well as developing and adapting environmentally friendly technologies over time. The term "sustainability" is a recurring theme in the 2025 Blueprint, ranging from environmental protection, social development, consumption, and production to response to natural disasters (Community, 2016). In ASEAN environmental cooperation, there are ten priority areas that range from promoting green technologies and harmonizing policies and databases, to improving the level of sustainability of cities and urban areas and protecting the sustainability of water resources. This creates a very broad and ambitious agenda that in many cases will exceed the exclusive remit of the environment ministers.

Coordination among relevant agencies in the implementation of environmental law policies is crucial in the Association of Southeast Asian Nations (ASEAN) Member States. ASEAN countries, including Indonesia, Malaysia, Singapore, Thailand, and others, face similar challenges in protecting their environment and promoting sustainability. To achieve the effectiveness of environmental legal policies, cooperation among relevant agencies such as environment ministries, legal departments, and law enforcement agencies, as well as environmental bodies, is necessary. Good coordination between these agencies is important to ensure harmony between legal policies, implementation, and enforcement at the national and regional levels.

One of the mechanisms used in inter-agency coordination in ASEAN is the ASEAN Senior Officials on the Environment (ASOEN). ASOEN is a forum for senior officials from ASEAN countries who are responsible for coordinating environmental policies and programs. Through regular meetings, ASOEN enables ASEAN countries to share experiences, agree on common approaches, and develop action plans on regional environmental issues.

In addition, ASEAN has also created regional institutions such as the ASEAN Center for Biodiversity (ACB) and the ASEAN

Working Group on Climate Change (AWGCC) (Pereira and Shaw, 2022). The ACB aims to coordinate biodiversity conservation efforts in the ASEAN region, while the AWGCC focuses on coordinating climate change mitigation and adaptation efforts at the regional level. Both institutions play a role in facilitating information exchange, policy coordination, and collaboration in the implementation of environmental law policies.

Coordination between relevant institutions in the implementation of environmental law policies in ASEAN countries has a direct impact on the effectiveness of these policies. With close cooperation, ASEAN countries can avoid overlapping or conflicting policies, optimize limited resources, and strengthen environmental law enforcement. This coordination also enables the adoption and implementation of uniform policies across the ASEAN region, thus creating a consistent and sustainable framework for protecting the environment. The effectiveness of environmental law policies is also improved among the ASEAN community of countries such as Indonesia, Malaysia, and Thailand through coordination among relevant agencies as this allows for the exchange of knowledge and best practices among ASEAN countries (Lian and Robinson, 2002). By sharing practices and lessons learned, ASEAN countries can learn from each other's successes and failures in environmental law policy implementation. This opens opportunities to improve policy effectiveness by adopting approaches that have proven successful in other countries and avoiding the same mistakes.

Inter-agency coordination also strengthens environmental law enforcement mechanisms in ASEAN countries. With close cooperation between environment ministries, legal departments, and law enforcement agencies, information on environmental violations can be quickly exchanged and enforcement measures can be taken effectively. This helps prevent violations of environmental policies and ensures better compliance with the law. In addition, inter-agency coordination is also important in dealing with transboundary environmental challenges. Many environmental issues, such as air and river pollution that cross national borders, require close cooperation between ASEAN countries. With good coordination, ASEAN countries can adopt a uniform approach in addressing these issues, share resources, and work together to collectively maintain environmental sustainability. While coordination among relevant agencies in the implementation of environmental law policies in ASEAN countries has significant benefits, there are still some challenges that need to be overcome. Differences in administrative capacity, legal culture, and national priorities can affect the level of coordination that can be achieved. Therefore, it is important for ASEAN countries to continue to improve coordination mechanisms and strengthen cooperation on environmental law.

Institutionally, among the three pillars of the ASEAN community, environmental issues are assigned under the socio-cultural community pillar, not the economic or political-security pillars (Siricharoen and Siricharoen, 2014). Take the example of transboundary haze pollution. Despite its obvious link to the economy, it remains an issue under the authority of the Minister of Environment and is only discussed under the socio-cultural pillar. Some have questioned the success of this approach. In many people's minds today, sustainability and environmental issues are fundamentally economic issues. The Paris Agreement on climate change is not "just" an environmental issue; there are many implications for a wide range of policies, from energy and economic planning to urban planning and infrastructure. Similarly, environmental issues in ASEAN will go beyond the direct authority of environment ministers (Delbeke et al., 2019). While the environment ministers and relevant agencies should still be involved, there is a need for participation from other ministries and actors from other sectors if these challenges are to be addressed in a comprehensive and more fundamental way. One notable example is ASEAN's efforts to address transboundary haze pollution arising from land and forest fires in the past two decades, and these efforts will be analyzed in detail in the next section (Heilmann, 2015).

Institutionally, among the three pillars of the ASEAN community, environmental issues are addressed under the socio-cultural community pillar, not under the economic or political-security pillars (Tanyag, 2018). Take transboundary haze pollution for example. Despite the obvious link to the economy, this remains an issue managed by the Indonesian and Malaysian Environment Ministers and is only discussed within the framework of the socio-cultural pillar even though it is a fundamental economic issue.

> *".....The Center for International Foresty Research states that the fires were the worst in the world. Calculations by the Asian Development Bank (ADB) and the National Development Planning Agency (Bappenas) in 1999 stated that the economic impact of forest and land fires from 1997 to 1998 consisted of monetary costs including losses from timber fires worth US$ 1.5 billion, losses from tree mortality worth US$ 287 million, losses from industrial plantation fires worth US$ 91 million, and losses from plantation fires worth US$ 319 million. In addition, there were other costs associated with fire control worth US$ 12 million, and losses to buildings and other property worth US$ 1 million. In this case, there are also immaterial losses, such as losses due to loss of non-timber forest products (HHNK) worth US$ 631 million, losses due to flood prevention worth US$ 413 million, and losses due to erosion worth US$ 1.4 billion. Furthermore, losses in the tourism sector were valued at US$ 111 million and losses in the transportation sector were valued at US$ 33 million. In addition, there are losses that cannot be measured in money, such as losses to public health worth US$ 148 million* (Dwi Hadya Jayani, 2019).

The Paris Agreement on climate change has brought far-reaching and profound implications not only in the environmental context, but also in various policy areas. To achieve the goals of the agreement, many countries and regional organizations, such as ASEAN, have taken concrete steps to address the challenges of climate change.

One important aspect that is directly affected is the energy sector. The Paris Agreement encourages countries to shift from fossil-based energy sources that create high carbon emissions to renewable energy that is more environmentally friendly. In

this regard, ASEAN has encouraged the development of green technologies, such as solar and wind energy, as well as the promotion of energy efficiency in infrastructure and the industrial sector. In addition, the agreement also has a significant economic impact. Climate change is changing the business landscape and creating new opportunities for sustainable economic growth (Owusu and Asumadu-Sarkodie, 2016). ASEAN has committed to promoting sustainable economic growth through harmonization of climate change-related policies and databases. This includes the development of policy frameworks that lead to reduced emissions, improved resource efficiency, and sustainable utilization of natural resources, for example on:

Indonesian government policies and their implementation:

1. The National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK) as stipulated in PERPRES No. 61 of 2011 on the National Action Plan for Reducing Greenhouse Gas Emissions where the Government of Indonesia has developed the RAN-GRK as a guide in reducing greenhouse gas emissions. The plan includes measures such as increasing renewable energy, controlling emissions from the industrial and transportation sectors, sustainable land management, and more efficient utilization of natural resource-based energy.
2. The National Energy Policy (KEN) contained in the Indonesian Government Regulation No. 79 of 2014 concerning the National Energy Policy aims to optimize the utilization of energy resources in a sustainable manner. This policy includes increasing renewable energy, saving energy, and developing infrastructure that supports clean energy.

However, the implementation of the Indonesian government's policy can be claimed to be ineffective, as evidenced by the data below (Table 1) where after the Indonesian government's laws and regulations were passed, it increased the amount of greenhouse gas emissions in Indonesia.

Based on the data provided in Table 1, the amount of greenhouse gas emissions in Indonesia has increased from year to year in several sectors, such as manufacturing, transportation, mining, and agriculture. This can be used as a basis to claim that the implementation of the Indonesian government's policy to reduce greenhouse gas emissions is ineffective. It can be assumed that the policy aims to reduce greenhouse gas emissions. However, the increase in emissions shows that the policies implemented are not successful in achieving their goals.

One of the factors that can affect policy effectiveness is weak implementation and law enforcement. Policies that are not strictly implemented and there are no adequate sanctions for violators can reduce the positive impact of the policy. In addition, the lack of awareness and participation of the public and industry players can also be a contributing factor to the increase in emissions. To evaluate the relationship more comprehensively between government policy implementation and greenhouse gas emissions data, additional information is needed such as policies that have been implemented, steps taken in their implementation, and other factors that affect greenhouse gas emissions in Indonesia.

Malaysian government policy and its implementation

1. Malaysia's Climate Change Baseline Framework: The Malaysian government has developed a policy framework that includes strategies for reducing emissions and adapting to climate change. The framework focuses on measures such as improving energy efficiency, promoting the use of renewable energy, and developing policies and regulations for a sustainable industrial sector (Malaysia, 2010).
2. Rancangan Malaysia Ke-12: Pemerintah Malaysia dalam Rancangan Malaysia Ke-12 telah menetapkan target penurunan emisi karbon sebesar 45% pada tahun 2030. Kebijakan ini mencakup peningkatan penggunaan energi terbarukan, pengurangan deforestasi, dan peningkatan efisiensi energi dalam berbagai sektor (Menteri, 2021).

However, the implementation of the Malaysian government policy can also be claimed to be ineffective, this can be proven in the data below (Table 2) where after the Malaysian government regulation was passed, it increased the amount of greenhouse gas emissions in Malaysia.

Based on the data provided in Table 2, the amount of greenhouse gas emissions in Malaysia has increased significantly from year to year. The increase in emissions indicates that the Malaysian government's policy implementation in reducing greenhouse gas emissions can also be claimed to be ineffective.

Some of the factors that may affect the effectiveness of Malaysia's emission control policies include rapid economic growth, rapid industrialization, and dependence on fossil energy sources. Government policies that have not been able to address these challenges and perhaps the lack of concrete measures in reducing emissions are factors that contribute to the increase in greenhouse gas emissions.

Table 1: Indonesia CO_2 emissions carbon 2015–2019

Co_2 emissions by sector	In 10.000 metric tons				
	2015	2016	2017	2018	2019
Manufacturing	89,441	96,602	81,488	123,791	161,652
Transportation	98,927	101,814	104,895	87,917	75,469
Mining	9,779	5,093	5,738	8,909	7,461
Aggriculture	497	1,066	1,121	1,229	1,272

Table 2: Malaysia CO_2 emissions carbon 1960–2021 (million metric tons of CO_2)

Years	Malaysia CO_2 emissions carbon
1960	4.20
1965	8.38
1970	14.59
1975	19.45
1980	28.03
1985	36.33
1990	54.27
1995	113.93
2000	126.20
2005	181.33
2010	215.94
2015	235.70
2021*	256.05

Palm oil is a significant factor in explaining the increase in greenhouse gas emissions in Malaysia, the palm oil industry in Malaysia is often associated with extensive deforestation and land use change (Wicke et al., 2011). To clear new land for oil palm plantations, tropical forests or peatlands are often cut down or burned. This process causes a massive release of greenhouse gases into the atmosphere, mainly carbon dioxide (CO_2) (Agus et al., 2013). Deforestation also removes natural carbon sinks, such as trees, which reduces nature's ability to absorb emissions. Peatlands used for oil palm plantations are often drained and burned to remove natural vegetation before planting. This burning of peatlands results in massive releases of greenhouse gases, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Oil palm production in Malaysia often involves the use of fertilizers and pesticides that contribute to greenhouse gas emissions. The process of making and using fertilizers, especially nitrogen fertilizers, can produce nitrous oxide (N2O), a very potent greenhouse gas. In addition, the use of pesticides can also lead to the release of greenhouse gases, especially if their use is not well managed.

Increasing palm oil production in Malaysia to meet global demand also plays a role in increasing emissions (Lim et al., 2015). High international demand for palm oil products, such as palm oil, can drive plantation expansion and intensification of production, which in turn increases pressure on the environment and greenhouse gas emissions. The Malaysian government is working to implement policies to address palm oil's negative environmental impacts, including reduced deforestation and better peatland management. However, challenges in addressing unsustainable practices and the need to maintain economic growth are still factors that affect the effectiveness of policies in reducing greenhouse gas emissions in the palm oil sector (Mohd Hanafiah et al., 2021).

Thai government policies and their implementation

1. Thailand's National Action Plan for Emission Reduction (NDC): The Thai government has adopted an NDC that includes a long-term emissions reduction strategy. The plan includes increasing the use of renewable energy, improving energy efficiency, developing environmentally friendly public transportation, and reducing emissions from the industrial and agricultural sectors.
2. Thailand's Clean Energy Policy: The Thai government has introduced a clean energy policy aimed at increasing the utilization of renewable energy, reducing dependence on fossil fuels.

> *"....Thailand is not projected to achieve its new target under current policies, but could achieve the target unconditionally under planned policies. Prior to COP26 in 2021, Thailand proposed "carbon neutrality" with a target of 2065. Thailand's Second NDC and revised LT-LEDS now refer to a revised and accelerated target of "carbon neutrality" by 2050 and net zero GHG by 2065. Thailand's current policy projections cannot achieve its climate commitments and signal the need to accelerate mitigation efforts, which can start with the rollout of planned policies. Thailand's latest shift in power sector planning, from reliance on coal to fossil gas over the next two decades, lowers the overall emissions pathway in its planned policy, but still exacerbates fossil fuel (gas) lock-in and delays meaningful decarbonization efforts* (www.climateactiontracker.org, 2022).
>
> *"The CAT rates Thailand's overall rating as "Highly inadequate", indicating that Thailand's current climate policies and commitments reflect minimal action and are completely inconsistent with the Paris Agreement* (www.climateactiontracker.org, 2022).

3.4. How do the Regulatory Systems of the Three Countries Compare in Preventing Environmental Impacts

Our discussion on the comparison of regulatory systems related to climate policy between Indonesia, Malaysia, and Thailand, as well as the evaluation of Indonesia's climate policy, has revealed some important findings. In this regard, it can be concluded that all three countries face major challenges in achieving the international targets and agreements set out in the Paris Agreement.

Indonesia, as one of the countries with huge renewable energy potential, has still not managed to optimally utilize this resource in their development path. Indonesia's climate policies are rated inadequate by the Climate Action Tracker (CAT) with a rating of "Very inadequate". This shows that Indonesia's climate policies and commitments are not consistent with the 1.5°C maximum temperature increase limit set in the Paris Agreement. Worse, these policies have led to an increase in emissions, not a decrease.

A similar CAT rating also applies to Thailand, whose current policy projections are not believed to be able to achieve its climate commitments. Therefore, the country needs to accelerate its mitigation efforts. Thailand needs to roll out planned policies, including in their power sector planning. However, shifting from coal to fossil gas within the next two decades, while reducing overall emission levels, also has the potential to exacerbate dependence on fossil fuels and delay critical long-term decarbonization efforts.

In the context of a comparison between the three countries, it can be concluded that they still have a lot of work to do to achieve their climate targets and commitments. Coal phase-out is one of the most important steps that Indonesia needs to take before 2045. This will provide significant environmental, social, and economic benefits. Meanwhile, Thailand needs to take more decisive and swift action to accelerate the transition to a sustainable and low-emission energy system.

In addition, it is important to highlight the role of emissions from land use, land use change and forestry sectors in contributing to the countries' total emissions. In Indonesia, emissions from these sectors have accounted for nearly 50% of the country's total emissions over the past 20 years. This shows the importance of addressing deforestation, land use change and forestry-related issues in climate mitigation efforts.

In addition, the discussion also pointed out the need for uniformity and consistency in climate policies between these countries. The

Paris Agreement aims to limit the global temperature increase to below 1.5°C, and achieving this requires strong commitments and concrete actions from all countries. When countries do not fulfill their commitments or have inadequate climate policies, this can hinder global agreement and result in increased emissions that are potentially detrimental to the environment and climate balance.

In this regard, it is also important to recognize that climate change is a global issue that requires solid international cooperation. Countries must work together, sharing knowledge, technology, and resources in an effort to achieve set climate goals. In this context, Southeast Asian countries can strengthen regional cooperation in facing climate change challenges, share experiences and best practices, and promote joint initiatives in developing renewable energy and reducing emissions. In addition, it is also necessary to pay attention to the social and economic aspects of climate policy. The transition to a low-carbon economy can create new opportunities for sustainable and inclusive economic growth. In this context, it is important to ensure that climate policies not only reduce emissions, but also pay attention to the impacts on communities and other stakeholders. This involves community empowerment, sustainable job development and equitable arrangements in the face of structural changes due to the energy transition.

CONCLUSION

In looking at the overall outcome of the discussion, it is important to develop this narrative wisely. Climate change is indeed a complex global problem, but it is not insurmountable. Therefore, it is important to emphasize that every country has a responsibility in addressing climate change, not just Southeast Asian countries such as Indonesia, Malaysia, and Thailand. Strong international cooperation is necessary, but individual awareness and national measures are also an important part of meeting the challenges of climate change. Countries in Southeast Asia, along with the rest of the world, should see climate change as an opportunity to innovate and take effective action. In the regional context, cooperation can be key in strengthening mitigation and adaptation efforts. Countries in Southeast Asia can share knowledge and technology and develop joint initiatives in renewable energy development and emissions reduction. They can also learn from each other's experiences in dealing with specific challenges faced in the region, such as deforestation, rapid urbanization, and vulnerability to natural disasters.

However, it is important to recognize that the Paris agreement is just one of the first steps in addressing climate change. To achieve tangible results, all countries, including Indonesia, Malaysia, and Thailand, must have a strong commitment and act in earnest. They need to identify specific challenges, formulate appropriate strategies, and implement effective policies to achieve their climate targets and commitments. Moreover, these countries (Indonesia, Malaysia, and Thailand) should also encourage the participation of civil society, the private sector, and international institutions to contribute to efforts to address climate change. Cross-sector and cross-border collaboration is key in building awareness, enhancing capacity, and mobilizing the necessary resources. As such, awareness of the challenges faced by Indonesia, Malaysia, and Thailand in achieving climate targets and commitments should be the impetus for these countries to take stronger and coordinated action. In developing this narrative, we need to underscore the importance of shared responsibility, strong commitment, and cross-sectoral and cross-border cooperation as keys to success in addressing climate change.

Managerial Implications: All parties need to recognize that climate change is a serious issue that affects the sustainability of business and society. This implies the need to integrate climate change-related actions into long-term business strategies. Indonesia, Malaysia, and Thailand should identify the impacts of climate change on their operations and take the necessary steps to mitigate risks and capitalize on opportunities associated with climate change. On the other hand, the importance of cross-sector and cross-border cooperation in addressing climate change. This means establishing partnerships with external stakeholders, including governments, non-governmental organizations, and international agencies. This collaboration can take the form of knowledge and technology exchange, resource sharing, and working together on emission reduction initiatives and renewable energy development. Therefore, it is necessary to encourage research and innovation in addressing climate change. This can involve developing new solutions, environmentally friendly technologies, and sustainable business practices. ASEAN countries Indonesia, Malaysia and Thailand need to strengthen their internal research and development capacity and collaborate with research institutes and universities to generate new knowledge related to climate change. To deal with climate change, these three countries need to take a holistic approach and see it as an opportunity to develop sustainable businesses and strengthen long-term sustainability.

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