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EXPLORING THE LEGAL FRAMEWORK AND POLICIES OF CLIMATE CHANGE ACROSS BORDERS: LOCAL GOVERNMENT RESPONSE TO CLIMATE CHANGE IN SELECTED ASEAN COUNTRIES

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ABSTRACT

Climate change is an urgent and pressing issue with far-reaching implications for all nations worldwide. Indonesia, in particular, has emerged as a significant contributor of carbon dioxide (CO₂) emissions in Southeast Asia, with a staggering 619 metric tons in 2021, placing it among the top five CO₂ emitters in the Asia-Pacific region. Japan, too, is a notable contributor to carbon emissions, ranking fifth globally. Given these alarming statistics, various local governments have taken proactive steps and measures to reduce emissions and foster low-carbon growth within their respective jurisdictions. This paper focuses on the top CO₂ emitters in ASEAN: Malaysia, Indonesia, and Japan. Through a doctrinal legal research analysis, the paper examines the international legal framework, national laws, and climate change policies these countries implemented. Additionally, the study highlights several noteworthy projects initiated to combat climate change. Policymakers, governments, and local governments can leverage the research findings and insights to formulate and implement effective strategies to address the issue of climate change in their respective regions.

1. Introduction

Malaysia is one of the top carbon dioxide (CO₂) emitters in the ASEAN region, with 225 million tons of CO₂ released in 2019 (Muhammad, 2021). In this sense, Malaysia has committed to global environmental goals by signing the Kyoto and Paris Agreements in 1997 and 2015, respectively. As part of its Nationally Determined Contribution (NDC) to the Paris Agreement, Malaysia has committed to reducing its economy-wide carbon intensity (related to GDP) by 45% in 2030 compared to the 2005 level. In 2009, the National Policy on Climate Change was implemented to integrate climate change into mainstream policies, enhancing institutional capacity and mitigating the adverse effects of climate change. Most recently, the government announced that efforts were in place to introduce a Climate Change Act. The development of the national climate change Bill is expected to take two to three years (Soo, 2023). This demonstrates Malaysia's dedication to sustainable development and mitigating the effects of climate change.

Regarding the nation of Indonesia, it is noteworthy that in the year 2021, the energy sector's carbon dioxide emissions amounted to approximately 600 million metric tons (Mt CO₂), positioning Indonesia as the world's ninth-largest emitter of such emissions. (International Energy Agency (IEA), 2022). According to the International Energy Agency (IEA) 2022 data, per capita energy-related CO₂ emissions are just 2 tonnes, representing half the global average. Indonesia has ratified the United Nations Framework Convention on Climate Change and its associated international agreements, such as the Kyoto Protocol and the Paris Agreement. As a party to the UNFCCC, the Kyoto Protocol and the Paris Agreement to the UNFCCC, Indonesia has shaped its national regulatory policies based on its international pledge in its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions by 29 per cent to 41 per cent of the business-as-usual scenario by 20. Indonesia has implemented national policies for various sectors, including energy, industrial processes, product use, agriculture, forestry, and waste, to regulate climate-related issues. However, no specific law in Indonesia solely focuses on climate change (Detterman & Auslander, 2022). Instead, the country utilises its current environmental regulations as the primary framework to address and combat the issue of climate change while also supporting international conventions.

With the global climate change issue, Japan, the fifth-largest emitter in the world, has taken significant steps to address the problem (Betty et al., 2022). Furthermore, Japan was crucial in forming the Kyoto Protocol, an international climate treaty in 1997. Japan's commitment to climate change is an excellent example for other countries. During the initial Kyoto Protocol, Japan reduced their emissions by 6 per cent below the 1990 levels between 2008 and 2012 (Betty et al., 2022). Additionally, Japan chose not to participate in the second phase of the Kyoto Protocol, as they believed it needed to address more of the world's emissions to be effective (Betty et al., 2022). In Japan, the primary law explicitly regulating climate matters is the Climate Change Adaptation Act of 2018, which legally establishes adaptation initiatives (Fujita et al., 2023). According to the Act, the local government is expected to establish a regional climate change adaptation centre (LCCACs), collecting, evaluating, and providing information and advice on the impact and adaptation of climate change (Fujita, et al., 2023).

Local government plays a crucial role in implementing climate change adaptation measures at the community level (Fujita et al., 2023). To effectively promote adaptation actions, local governments must gather all necessary information regarding climate change and its potential impact on communities (Fujita et al., 2023). Local officials can make informed decisions and take appropriate measures to protect and support their constituents by staying knowledgeable and current. This proactive approach can help mitigate the adverse effects of climate change and ensure the community's well-being. Therefore, local governments are expected to establish a

system that may serve as a foundation for gathering, evaluating, and disseminating information and recommendations in the relevant field (Fujita et al., 2023). Conversely, no specific measures are highlighted to address the problem of climate change, and each local government is expected to perform countermeasures to combat climate change. In this regard, many local authorities encountered challenges when attempting to comply with the central government's directives in this matter.

Hence, this paper examines the international legal framework for climate change and the national laws and policies of these countries have implemented. The paper also highlights several noteworthy projects that combat climate change. Policymakers, governments, and local governments can leverage the research findings and insights to formulate and implement effective strategies to address the issue of climate change in their respective regions.

2. Literature Review

2.1 Definition of Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as the change that can be attributed *"directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable periods"* (Article 1 of the UNFCCC, 1992). In particular, the Intergovernmental Panel on Climate Change (IPCC) defines climate change as *"a change in the state of the climate that can be identified ... by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer"* (IPCC,2022).

2.2 Definition of Adaptation and Mitigation

According to the Intergovernmental Panel on Climate Change (IPCC), adaptation is the *"process of adjustment to actual or expected climate and its effects"*. *"In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to the expected climate and its effects"* (IPCC,2022). The Intergovernmental Panel on Climate Change (IPCC) also defines mitigation of climate change as *"a human intervention to reduce the sources or enhance the sinks of greenhouse gases"* (GHGs) (IPCC,2022).

2.2 The International Legal Framework on Climate Change

The United Nations has played a vital role in developing many bindings of international treaties on climate change. Several significant pieces of global climate change legislation are highlighted below.

Table 1
An Overview of International Climate Change Negotiations

International Climate Change Negotiations	Year	Key Points	Sources
1. First UN Environment Conference in Stockholm	1972	United Nations Environment (UNEP) was formed as a result.	https://www.un.org/en/conferences/environment/stockholm1972

2. First World Climate Conference	1979	Establishment of the World Climate Program. Sponsored by UNEP, the World Meteorological Organization (WMO).	https://unfccc.int/cop3/fccc/climate/fact17.htm
3. Establishment of the International Panel on Climate Change (IPCC)	1988	This body, consisting of the world's leading climate scientists, plays a unique role in climate science: providing policymakers with regular, comprehensive, and authoritative scientific assessments on climate science knowledge, building on the work of thousands of scientists worldwide.	https://www.ipcc.ch/
5. Rio Earth Summit	1992	The primary objective of the Rio 'Earth Summit' was to produce a broad agenda and a new blueprint for international action on environmental and development issues that would help guide international cooperation and development policy in the twenty-first century.	https://www.un.org/en/conferences/environment/rio1992
6. The United Nations Framework Convention on Climate Change (UNFCCC)	1994	The UNFCCC aims to stabilise green-stabilise concentrations in the atmosphere at a level that allows ecosystems to adapt naturally to climate change so that food production is not threatened while enabling economic development to proceed sustainably. Almost all nations in the globe have ratified the UNFCCC.	https://unfccc.int/process-and-meetings/
7. Kyoto Protocol	1997	The 1997 Kyoto Protocol to the UNFCCC was adopted in response to the lack of legally binding emission reduction targets and timelines in the UNFCCC. It shares the UNFCCC's objective and is likewise based on the principle of common but differentiated responsibilities.	https://unfccc.int/kyoto_protocol

8. Doha Amendment	2012	Doha Amendment 2012 resulted in an amendment to the Kyoto Protocol establishing a second commitment period 2013-2020.	https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment
9. Paris Agreement	2016	The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.	https://unfccc.int/process-and-meetings/the-paris-agreement?gclid

Therefore, there are numerous legally binding multilateral environmental agreements and international legal frameworks addressing climate change. These multilateral mechanisms target specific environmental concerns that are impacted by, or have an impact on, climate change.

2.3 The Malaysian Legal Framework and Policy on Climate Change

Malaysia has various environmental laws and regulations that indirectly contribute to addressing climate change. These laws focus on pollution control, natural resource management, and environmental impact assessments. While they do not explicitly target climate change, they provide a legal framework to address environmental concerns contributing to it.

Table 2
An Overview of Malaysian Legislation

Acts	Key Points
1. Environmental Quality Act 1974	This act provides the legal basis for pollution control and environmental quality management in Malaysia. However, the Environmental Quality Act 1974 does not define or address climate change.
2. Renewable Energy Act 2011	This Act encourages developing and utilising renewable energy sources in Malaysia.

(Source: Environmental Quality Act 1974 and Renewable Energy Act 2022)

The Environmental Quality Act (EQA)1974 and the Renewable Energy Act 2011 indirectly contribute to reducing carbon emissions; however, they have no direct relationship to climate change (Maizatun Mustafa, 2020). Recently, the development of the national climate change Bill is expected to take two to three years (Soo, 2023). The development of the Bill will adopt a whole-nation approach that includes the engagement process with relevant stakeholders (Basyir, 2023). The forthcoming legislation is anticipated to possess greater comprehensiveness and yield a more substantial effect (Basyir, 2023).

Table 3
An Overview of National Policies that Address the Climate Change in Malaysia

Year	Policy	Description
2002	National Policy on the Environment	This policy aims to achieve a clean, safe, healthy, and productive environment for the present and future generations. It also seeks to conserve the country's unique and diverse cultural and natural heritage through the active participation of all society.
2009	National Green Technology Policy	This policy involves several sectors that have a direct impact on the environment, namely energy, building, transport, water, and waste management.
2009	National Policy on Climate Change	This policy aims to achieve the following: i. Mainstream climate change through wise management of resources and enhanced environmental conservation, resulting in strengthened economic competitiveness and improved quality of life. ii. Integrate responses into national policies, plans and programmes to strengthen the resilience of development from arising and potential impacts of climate change; and iii. Strengthen institutional and implementation capacity to better harness opportunities to reduce the negative impacts of climate change.
2010	National Renewable Energy Policy and Action Plan	This policy aims to reduce GHG emissions and environmental pollution effectively. It facilitates the growth and development of renewable energy while maintaining the environment. It also seeks to enhance the utilisation of indigenous energy resources to contribute towards national electricity supply security and sustainable socio-economic development.
2016	National Solid Waste Management Policy	This policy aims to minimise municipal solid waste through 3R, promote waste-to-energy projects and improve waste management in general. It has targeted that 18% of waste generated is to be treated by high-technology applications such as thermal heat plants and that the recycling rate by 2020 is at 22%
2016	National Policy on Biological Diversity 2016–2025	This policy aims to improve carbon stocks and promote green/carbon tax and carbon offset schemes. It has targeted that at least 20% of terrestrial and 10% of coastal and marine areas are to be conserved.

(Source: Reorganize from National Low Carbon Cities Masterplan (2021))

Malaysia has demonstrated a solid commitment to the development and execution of policies aimed at mitigating the effects of climate change. Consequently, the government has developed several policies to ensure climate-resilient development is compatible with the national sustainability agenda. The first attempt occurred in 2002 when the government implemented the national environmental policy that laid out principles and strategies for Malaysia to exploit its natural resources more sustainably while developing its economy (National Policy on Climate Change, 2010). The Malaysian government implemented the National Policy on Climate Change in 2009, which aimed to integrate climate change considerations into various sectors, establish policies, and enhance institutional capacity to mitigate the adverse effects of climate change. Subsequently, more policies emerged as the government realised that climate change does not involve environmental issues alone but also affects economic growth and social aspects.

2.4 An Overview of the Legal Framework and Policies of Climate Change in Indonesia and Japan

In Indonesia, no specific law solely focuses on climate change (Detterman & Auslander, 2022). Indirectly, the Law on Meteorology, Climatology, and Geophysics (Law No. 31 of 2009) is the relevant legislation related to climate change. This law, comprising 105 articles, covers meteorological, climatological, and geophysical measures to ensure public safety, protect national interests and security, advance national self-sufficiency in science and technology, support national development, promote environmental conservation, and foster international cooperation. Regarding policy implementation, Indonesia's approach to managing climate change involves a combination of policy initiatives, decrees, and regulations (Meteorology, Climatology, and Geophysics (Law No. 31 of 2009), 2009). Indonesia continues to rely on its environmental laws as the primary framework for reducing the impact of climate change. These include Law No. 32 of 2009 regarding Environmental Protection and Management, as amended by Law No. 11 of 2020 on Job Creation, and Law No. 41 of 1999 regarding Forestry, as amended by Law No. 11 of 2020 on Job Creation, including their implementing Government Regulations (Government Regulation No. 23 of 2021 regarding Organization of Forestry and Government Regulation No. 22 of 2021 regarding Organization of Environmental Protection and Management, respectively) (Detterman & Auslander, 2022).

Indonesia is a signatory to the United Nations Framework Convention on Climate Change and its Kyoto Protocol and Paris Agreement. Indonesia has established national regulatory policies based on its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions in line with its international commitments. The NDC pledges to decrease emissions by 29 to 41 per cent of the business-as-usual scenario by 2030. On the domestic front, Indonesia's laws and regulations about climate matters, such as the recently enacted Presidential Regulation No. 98 of 2021 on Carbon Economic Value (the Carbon Regulation), draw on the UNFCCC, its Conferences of the Parties' outcomes, and the NDC as guiding principles. The Indonesian government has taken steps to reduce greenhouse gas emissions and meet its NDC target. This includes implementing a carbon tax and economic value, which the Harmonized Tax Law and the Carbon Regulation regulate. Additionally, they have established climate change information systems, such as the National Greenhouse Gases Inventory System and the National Registry System on Climate Change Control, to monitor and report GHG emissions (Detterman & Auslander, 2022).

Before passing the Climate Change Adaptation Act of 2018, Japan relied on the Promotion of Warming Countermeasures (Act No. 117 of 1990) to implement measures to reduce greenhouse

gases. Nevertheless, there was a need for more targeted legislation to address climate change. The Climate Change Adaptation Act of 2018 was passed in Japan to position the adaptation initiatives legally (Fujita, et.al., 2023). The Climate Change Adaptation Act obligates the national government to formulate a global warming countermeasure plan and take measures to promote the suppression of greenhouse gas emissions (Umeda, S.,2018). Local governments must promote measures to control emissions of greenhouse gases through the natural and social conditions of the area (Umeda, S.,2018). According to the Act, the local government is expected to establish a local climate change adaptation centre (LCCACs), collecting, evaluating, and providing information and advice on the impact and adaptation of climate change (Umeda, S.,2018).

3. Methodology

This paper employs qualitative doctrinal legal research to provide a comprehensive discussion. For this purpose, the discussion adopts the doctrinal content analysis method by examining the primary sources such as the Environmental Quality Act 1974, Renewable Energy Act 2011, and Local Government Act 1976. Moreover, the national policies that will be referred to are the National Policy on the Environment 2002, National Green Technology Policy 2009, National Policy on Climate Change 2009, National Renewable Energy Policy and Action Plan 2010, National Solid Waste Management Policy 2016, and National Policy on Biological Diversity 2016–2025. The relevant primary sources from Indonesia and Japan will be examined, such as the Law on Meteorology, Climatology, and Geophysics (Law No. 31 of 2009) and the Climate Change Adaptation Act 2018. The secondary data are collected from academic journal articles, newspaper articles, textbooks, and government reports. In addition, online databases such as Lexis Nexis, Emerald Insight and Hein Online are used for this purpose.

4. Findings

4.1 Adaptation and Mitigation Programmes by Local Authorities in Malaysia, Indonesia and Japan

Table 4
Government Motivation and Government Programmes

Theme	Malaysia	Indonesia	Japan
Government Motivation	- Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE) -Low Carbon Catalyst Grant (GeRAK) -Green Technology Financing Scheme (GTFS)	-Tax Relief -Reduced Fossil Energy Subsidies -Green Financing	-Collaboration with academia and research institutes (Fukuoka city) -Funding to local enterprises (Tochigi prefecture) -Seminars (Osaka prefecture) -Green Growth Strategy
Government Programmes	-National Low Carbon Cities Masterplan (NLCCM)	-Solar household -Biogas program -Greenhouse Gas	-Limit greenhouse gas emission -Construction of

-Low Carbon Cities (LCC)	Profile (GHG)	seawalls to counter tsunami disaster
-ILHam City	-Creating Kampung Iklim	-AI technology – snake robots
-Penang Nature-Based Adaptation Programme (PNBCAP)	-Construction of Coastal Inundation Dike	-Smart city project
	-Preparing Environmental Information Program	-Carbon tax pricing
	Energy Sector	
	Climate Change	
	Hotspot (CHC)	

(Source: Reorganize from National Low Carbon Cities Masterplan (2021, National Medium Term Development Plan 2020-2024, Mabon et. al, 2019)

The three countries targeted for this paper have made several efforts to address climate change scenarios. Based on Table 4 above, the adaptation and mitigation process for climate change has been grouped into government motivation and government programs. Malaysia, Indonesia and Japan are committed to meeting their target of achieving net zero greenhouse gas emissions by 2050. As such, they are increasing existing funding programmes and extending tax incentives to encourage the adoption of green technology in the country. Moreover, the Malaysian government, through budget 2023, proposes to extend the period to apply for the Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE) to Dec 31, 2025 (Malaysian Green Technology and Climate Change Corporation, 2023). It also proposes extending the tax allowance and exemptions from three to five years (Malaysian Green Technology and Climate Change Corporation, 2023). Moreover, the government of Malaysia also allocated RM35 million under the Low Carbon Catalyst Grant (GeRAK) to local authorities to drive climate change actions at the grassroots level (Suhaidi, 2021). In 2022, 150 local governments received an RM250,000 Low Carbon Cities Catalyst Grant (GeRAK) to support high-impact, low-carbon city initiatives (Bernama, 2023). The local government's response to (GeRAK) has been highly positive, and the government will continue to provide this grant (Bernama, 2023). Besides that, the government is also improving the Green Technology Financing Scheme (GTFS) by increasing the guaranteed value to RM3 billion up to 2025, expanding the scope of the guarantee to the electric vehicle (EV) sector with a guaranteed limit of up to 60% (Malaysian Green Technology and Climate Change Corporation, 2023).

The Jakarta province has made a dedicated effort to promote the Low Carbon Development Initiative (LCDI) by offering tax and land exemptions for structures that comply with green building standards. This commitment demonstrates the province's commitment to sustainable development and environmental conservation. The government has also continuously cut back on subsidies for fossil fuels and redistributed the funds for energy infrastructure improvements like intelligent grids and feed-in tariffs for renewable energy. The Indonesian government also uses various green financing tools, including green sukus, carbon trading, and carbon tax laws, to produce financial streams. Through the Clean Development Mechanism (CDM), the Joint Credit Mechanism (JCM), and the Nusantara Carbon Scheme, carbon trading is carried out (Sambodo et. al., 2022).

Meanwhile, in Japan, to encourage the activation of businesses related to climate adaptation in 2012 (2023), the Tochigi LCCACs distributed grant cash to local businesses. The Osaka Prefecture

LCCACs also offer a seminar series for businesses to aid in their understanding of climate change (Fujita, et. al., 2023). The Japanese government unveiled a green growth strategy in December 2020 to encourage private investment through public funding, tax incentives, modifications to rules and standards, and public-private partnerships. Fukuoka City's initiative to collaborate with academic institutions and research centres aims to gather expert input, leading to plans to incorporate mitigation and adaptation with the city's overall environmental plan and recognise the significance of ecosystem services in climate change response (Mabon, et. al., 2019).

These three countries have created initiatives and plans for Low Carbon Development (LCD) to encourage low-carbon development initiatives. Malaysia launched the National Low Carbon Cities Masterplan (NLCCM) in August 2021 as a strategic initiative to mitigate the impacts of climate change and promote sustainable urbanisation. The master plan provides complete guidance to state governments and local authorities in developing low-carbon cities in their respective administrative areas. Climate adaptation initiatives were similarly essential to improve the quality of life, lower temperatures, and protect people from the drastic effects of climate change. This is where the city's goal is to create an intelligent, liveable, and happy (ILHam) city. The ILHam City focuses on five domains: smart e-governance, smart mobility, innovative economy, innovative environment and innovative social. Another key initiative is developing a Low Carbon City, which aims to reduce greenhouse gas emissions in Penang Island by promoting sustainable transport, energy-efficient buildings, and waste reduction. The Malaysian Green Technology and Climate Change Corp (MGTC) has honoured Penang for its design as part of its drive to promote Low Carbon Cities (LCCs) in Malaysia, with the state given the "Diamond" award for PSI's design at the Low Carbon City 2022 event (Choong, 2023). In addition to these initiatives, the Penang Island City Council and Think City will jointly apply for US\$10 million (RM41.4 million) from the World Bank Adaptation Fund when they submit a final proposal on their nature-based climate adaptation programme in November 2020 (Buletin Mutiara, 2020). Moreover, the effort by the Penang Nature-Based Climate Adaptation Programme (PNBCAP) for the urban areas of Penang addresses the issues of heat stress and flooding while strengthening social resilience and institutional capacity. Thus, the MBPP has engaged with the community through education and outreach programs to raise awareness about climate change and the need for action.

In addition, the regional government of Indonesia, such as West Nusantara, is employing the Biogas programme, while Jakarta province has been adopting solar-powered homes (Sambodo et al., 2022). In Central Java, there are numerous intensive climate change strategies. The greenhouse gas (GHG) profile is currently being put together. Data on GHG inventories had been submitted using a programme called SIGNSMART. Involved are around 60% of the regencies and cities in central Java. Desa Pekalongan, Central Java's local government has developed a kampung iklim, or climate village. It was developed by Pekalongan community organisations, who also built dwellings, fishponds, prawn farms, rainwater catchment systems, bio pores, and sustainable food systems. Nine climate communities have been constructed in Pekalongan. The Department of Transportation is responsible for the transportation services associated with the energy sector. Among the initiatives to cut carbon emissions were boosting student public transport usage and routinely measuring the exhaust gas emissions of motorised cars using petrol and diesel fuel (Handayani, 2021). A "Climate Change Hotspot" (CHC) concept has also been established. However, it only applies to a small number of high-potential places that have already seen temperature increases of 2 degrees Celsius over the baseline circumstances. (UN, 2022).

Numerous local governments in Japan have started implementing their emission reduction action plans. The Kyoto City Global Warming Countermeasure Ordinance was passed by Kyoto City to

reduce GHG emissions, making it the first municipal government in Japan to do so. Kyoto and Osaka followed in 2005, Nagano in 2006, Wakayama and Shizuoka in 2007, and so on (Mabon, et. al., 2019). After the tsunami and nuclear calamity struck Japan, the Japanese government built several seawalls in Taro and Tohoku. These seawalls defend against the region's periodic tsunami attacks (Matanle, Littler & Slay, 2019). The snake robot supported a search effort in Okayama Prefecture during the 2018 heavy rains. Construction of the Kashinawa-no-ha (Oak Leaves) intelligent city project represents a public-private-academic initiative (Mavrodieva & Shaw, 2020).

5. Discussion

Malaysia is among the ASEAN region's top carbon dioxide (CO₂) emit. According to Muhammad (2021), in 2019, the country released 225 million tons of CO₂. Indonesia, on the other hand, is a significant contributor to CO₂ emissions in Southeast Asia. In 2021 alone, the country released a staggering 619 metric tons, placing it among the top five CO₂ emitters in the Asia-Pacific region. Japan is also a significant contributor to carbon emissions, ranking fifth globally. Governments in Asian countries are increasingly implementing legal and policy frameworks to support low-emission and resilient growth, in line with the Paris Agreement's climate response efforts. The adoption of domestic laws and policies leading up to the Paris Agreement (2009-2015) highlights the crucial role that national legal and policy frameworks play in driving global climate action. This underscores the interdependence between strengthening national climate action and advancing the international agenda.

According to a project encompassing 32 countries in the Asia-Pacific region, a noteworthy 75% have established either national or sectoral policies and legal frameworks to effectively regulate climate action (Asian Development Bank, 2020). While not implementing a Climate Change Act, Malaysia has yet to take steps to regulate its national climate responses through a combination of national policies, plans, and updates to existing legislation. Recently, the development of the national climate change Bill is expected to take two to three years (Soo, 2023). The development of the Bill will adopt a whole-nation approach that includes the engagement process with relevant stakeholders (Basyir, 2023). The forthcoming legislation is anticipated to possess greater comprehensiveness and yield a more substantial effect (Basyir, 2023). Meanwhile, Indonesia has no specific law that solely focuses on climate change (Detterman & Auslander, 2022). Indonesia's approach to managing climate change has involved policy initiatives, decrees and regulations. On the other hand, no specific legislation was in place in Japan to address climate change. The Climate Change Adaptation Act of 2018 was passed in Japan to position the adaptation initiatives legally (Fujita, et.al., 2023). Therefore, due to their geographic susceptibility to earthquakes and tsunamis, Malaysia, Indonesia and Japan must have progressive legislation and take steps to combat climate change.

As a developed country, Japan has made significant progress in addressing climate change through national policies and actions. As can be seen, since the 1990s, research on this topic has been conducted in association with several stakeholders (Mabon, et al., 2019). As an illustration, Fukuoka created its local climate change strategy in 1994. Kyoto, Kobe, and Osaka then did the same. According to Takao (2012), most Japanese municipalities already have "long-term comprehensive plans" at the most advanced stage of local government planning. On the other side, Malaysia and Indonesia need to find the fortitude to address the issue of climate change. Some provinces in Indonesia cannot perform equally due to disparities in regional financial capabilities. In light of that, research has revealed that Indonesia needs help allocating its

budget and obtaining the necessary funds to cover the tipping charge for a waste-to-energy project in Suwung, Bali. Reactor upgrade and repair issues also plagued the West Nusantara Biogas programme (Sambodo, et. al., 2022). As for Malaysia, the local governments continue to advance various measures to mitigate and adapt to climate change. For instance, the Malaysian Green Technology and Climate Change Corp (MGTC) has honoured Penang for its design as part of its drive to promote Low Carbon Cities (LCCs) in Malaysia, with the state given the "Diamond" award for PSI's design at the Low Carbon City 2022 event (Choong, 2023). On the other hand, Shah Alam City Council (MBSA) received 16 diamond recognition and provisional certification awards at the Low Carbon City 2030 Challenge for its efforts in reducing carbon emissions (The Star, 2021). Through the projects, it strives to create a future where cities and their inhabitants are more resilient and sustainable.

6. Conclusion

In conclusion, Malaysia, Indonesia, and Japan must continue strengthening their international commitments to address climate change. These countries have taken steps to regulate climate action through a combination of policies, plans, and existing environmental laws. It is recommended that governments enact comprehensive laws addressing climate change. For instance, the Climate Change Act 2008 introduced the United Kingdom's first legally binding target for 2050 to reduce greenhouse gas emissions by at least 80% compared to 1990. UK emissions have continued to fall since the Climate Change Act was passed in 2008. Hence, the Act has been used as a model for creating climate law in several countries, including Denmark, France, Germany, Ireland, Mexico, New Zealand, and Sweden. The governments and local authorities in Malaysia, Indonesia, and Japan have taken proactive steps to address national policies. Among these initiatives, the Low Carbon City Development Initiative (LCDI) is a notable effort to combat climate change by the Paris Agreement. The LCDI is a comprehensive program that promotes sustainable urban development, reduces carbon emissions, and enhances energy efficiency. Through this initiative, these countries are working diligently to create a greener and more environmentally friendly future for themselves and the rest of the world. However, the success of these projects depends on how fully committed each partner is. Although climate change is a global phenomenon, its effects are felt locally, necessitating a response from local governments. Since local governments are in charge of putting policies and programmes in place that can help alleviate the effects of climate change and prepare for its implications, their participation in combating it is vital.

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Authors Contributions

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Conflict of Interest

There is no conflict of interest associated with this publication.

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