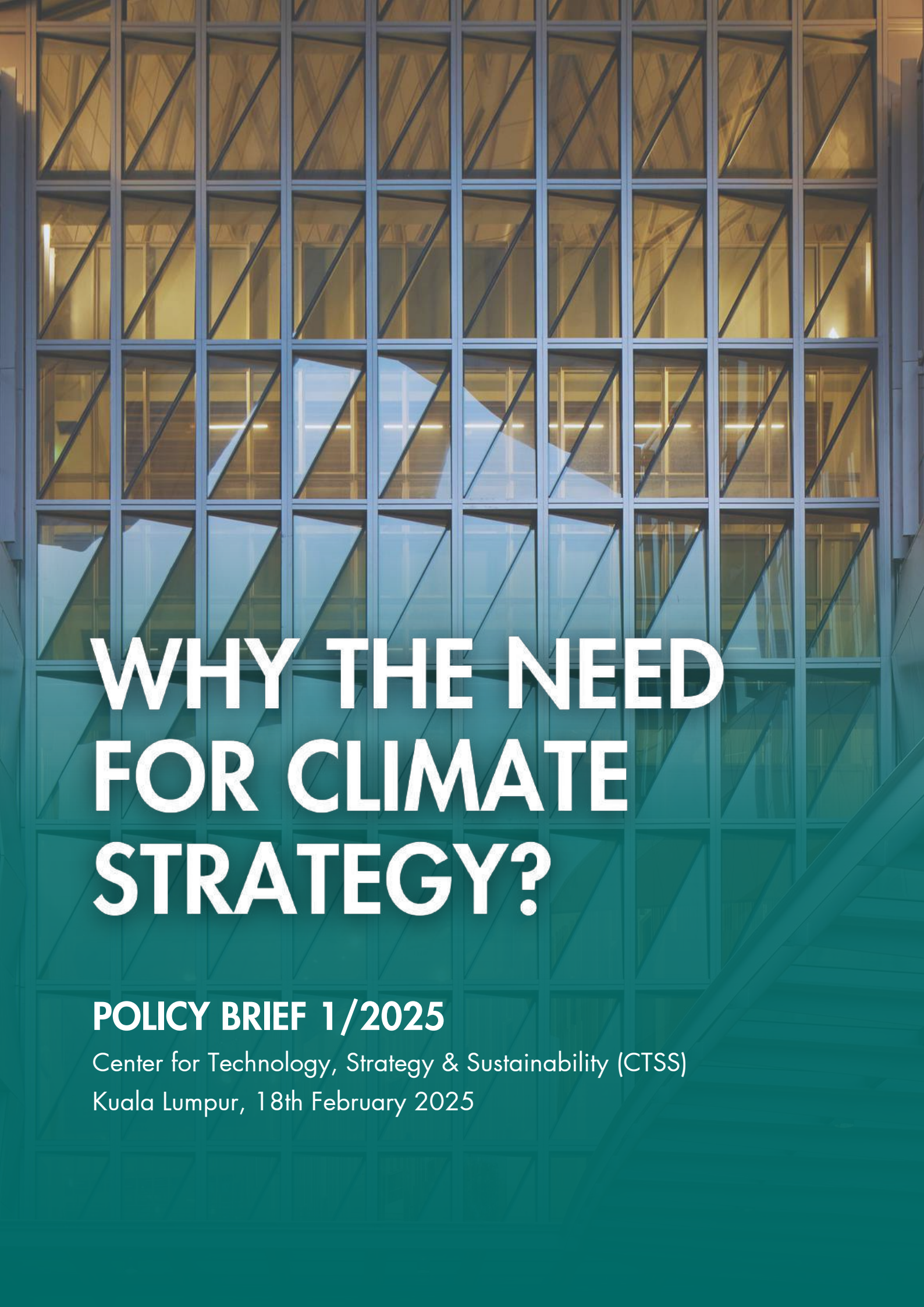

WHY THE NEED FOR CLIMATE STRATEGY?

POLICY BRIEF 1/2025

Center for Technology, Strategy & Sustainability (CTSS)

Kuala Lumpur, 18th February 2025

ABOUT THE SERIES

This policy brief is a series of research documents summarizing the knowledge of area contextualized to Southeast Asia and Malaysia, in particular from ongoing research work by the Center for Technology, Strategy & Sustainability (CTSS) at the Asia School of Business. The author of this issue is **Emir Izat bin Abdul Rashid, ASB CTSS Senior Research Associate**.

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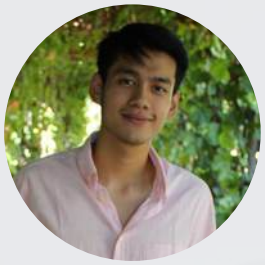

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Executive Summary

Malaysia is investing in climate policies both in mitigation and adaptation. Mitigation focuses on reducing greenhouse gas emissions through taxes and subsidies, while adaptation aims to protect communities from climate-related disasters. A balanced strategy integrating both approaches is crucial to ensuring long-term wellbeing and growth. Policy recommendations include international cooperation, effective revenue recycling, and dual-purpose policies like forest conservation.

Background

Last year, the Malaysian government allocated approximately RM5.77 billion to climate policies in the form of petrol subsidy cuts, flood protection, and energy transition for the 2025 budget. Accompanying the federal budget is a RM16 billion fundraising effort by UEM Lestra and TNB for grid upgrading – a major climate mitigation policy. Combined, there will be at least RM21 billion (about half of the funds allocated to the Ministry of Health) that will flow towards accomplishing greenhouse gas emissions abatement and adaptation to climate change (Ibrahim 2024).

The two main prongs of climate policy are mitigation and adaptation. As the country approaches a climate vulnerable world, which policy should receive more attention from the government?

Climate Mitigation

Climate mitigation policies are designed to reduce greenhouse gases such as carbon dioxide that cause climate change. Examples of climate mitigation policy include taxation and subsidies to disincentivize the use of carbon-intensive inputs for the production of goods. Firms produce goods without necessarily accounting for carbon emissions as part of their production costs although these emissions are costly for the environment: the underestimation of these costs lead to overproduction. Governments implement climate mitigation as a way to correct these underestimations – what is called negative externalities.

REASONS FOR CLIMATE MITIGATION

In terms of evidence, general policies of climate mitigation has reduced greenhouse gas emissions while carbon pricing – the most common form of climate mitigation – have mostly found reductions in greenhouse gas emissions across different national contexts; mitigation has also shown to redirect investments, capacities, and development to low-carbon technologies (Hoppe et al. 2023). This reveals the potential for mitigation policies as not only a tool to correct market externalities, but also an instrument to break away the fossil fuel trap: a phenomena where innovation in one area – fossil fuels – prevents innovation in other areas – renewables – due to the directed nature of innovation (Acemoglu et al. 2023). The most compelling area where mitigation can provide the most return is reducing the chances of greenhouse gases causing irreversible damage to the environment (Solomon et al. 2009). As there exists uncertainties regarding the potential costs to climate change irreversibility, implementing climate mitigation today will remove the need for expensive adaptation plans in the future.

BARRIERS TO CLIMATE MITIGATION

The main barrier for climate mitigation policy is the short-run costs associated with the implementation of government taxation or subsidies to reduce carbon emissions especially for carbon-intensive countries. Carbon taxes are shown to affect short-run GDP growth negatively, but the magnitude of effect depends on how the revenues of taxation are used (Timilsina 2022).

Another issue with climate mitigation policies in the short-run concerns the distributional effects of high energy costs on households. In the European carbon market, tighter carbon pricing regimes increase energy prices which affects the consumption of the poorest

households significantly despite decreasing emissions and increased green innovation; for richer households, consumption is not affected (Känzig 2023).

The short-run negative economic experience of other countries implementing climate mitigation teach us that these policies can be designed to limit economic damage by effective management of public funds in carbon tax collection and disbursement of these funds for poorer households or for public expenditure in energy infrastructure and transition.

CLIMATE ADAPTATION

Climate adaptation policies are designed to limit the damages caused by climate change on an individual's welfare. They not only include natural disaster preparedness such as flood walls, but also the development of climate-resilient crops that can withstand extreme temperatures. Governments introduce climate adaptation policy as part of their role to provide social insurance for its citizens in times of adverse life situations.

JUSTIFICATION FOR ADAPTATION

Unlike climate mitigation where every individual in a country receives a benefit equally, the direct beneficiary of climate adaptation tends to be on a community-level. Climate adaptation projects such as flood mitigation for a town reduces the potential damage of climate-inducing natural disasters which in turn reduces the economic cost of natural disasters and loss in productivity. They also reduce the volatility of individual well-being in a town which encourage long-term investments and savings; after all, if one expects that their house is protected from natural disasters, they have a strong incentive to improve their immediate surroundings: an important element for the accumulation of social and physical capital, components to stable and robust community institutions.

Another benefit of adaptation's implementation is the lack of international coordination requirements for its effectiveness. Unlike mitigation where GHG emissions reduction are more impactful the more participants are in them, adaptation's effectiveness is not strongly dependent on other country's participation. As a result, adaptation is less prone to the free-riding problem i.e., where certain countries can choose to stay out of the climate commitment and enjoy the benefits of other countries' efforts without paying for it.

COST OF ADAPTATION

Climate adaptation's benefits of stability come at the cost of discouraging mobility and its potential negative spillover effects to other unprotected communities. Since adaptation offers stability to the community it protects, they discourage the mobility of individuals i.e., individuals place a premium in living in areas with natural disaster protection as opposed to areas without one which give rise to social inequality. In Jakarta, we have observed that when governments build flood mitigation projects, individuals are more motivated to stay in these flood-protected areas which increases their house prices which in turn encourages them to expect more flood protection from the government, worsening inequalities between areas with flood protection and areas without (Hsiao 2024).

In certain cases, building adaptation in one community may result in damages in others.

A classic example is that of the river levee. When a levee is constructed to prevent flood from rivers in one area, the levee displaces the water to an area without a levee (Ansari, Mejia, and Cibin 2024). Although natural disaster-based adaptation policy is community-centred, its implementation must account for the effect on other communities to ensure equitable distribution of benefit for climate disaster protection.

As observed in the table below, these are the major cities in Malaysia under exposure of sea level rise. The percentage represents the percentage of education infrastructure such as schools and health infrastructure such as hospital inundated from sea level rise of varying levels from 2 meter sea level increase to 4 meters.

Sea Level Rise of 2 m		Sea Level Rise of 3 m	
City	Percentage	City	Percentage
Parit Buntar	39.3	Parit Buntar	100
Batu Pahat	8.9	Teluk Intan	79.5
Bukit Mertajam	8.4	Alor Setar	62.9
Muar	5.8	Simpang Ampat	57.7
Simpang Ampat	3.8	Bukit Mertajam	48.9

The table above is produced from the Sea Level Rise and Urban Infrastructure Data Set (Hsiao 2025). As observed, urban infrastructure in certain cities such as Parit Buntar in Perak would be fully inundated by sea level rise of above 3 m.

Why the Need for Climate Strategy?

To illustrate the need for a strategic consideration for the mitigation-adaptation tradeoff in Malaysia, consider a world where each country undertakes climate action but all of them choose whether their main climate action consists of mitigation or adaptation. On the one hand, if enough countries decide to implement effective climate mitigation, then mitigation policies would have better returns than adaptation policies. On the other hand, if enough countries decide to not implement effective climate mitigation, then returns to mitigation policies would have worse returns than adaptation policies. Of course, all countries can choose not to embark on any type of climate action but in this scenario, Malaysia would be better off investing in adaptation infrastructure to cope with rising sea levels and flooding which would reduce the economic well-being of Malaysians.

The tradeoff becomes a salient factor in climate policy strategy when the goal of pursuing one undermines the other – the opportunity cost of policy. For example, if Malaysia decided tomorrow to invest heavily on climate adaptation, then the country would be robust enough to survive the worst-case scenario of climate change. As a result, Malaysia would not have any incentive to reduce their carbon emissions because they can expect the survival of the country in the worst conditions. In contrast, if Malaysia decided tomorrow to invest heavily on climate mitigation, then the country is unprepared to survive climate disaster. As a result, Malaysia has an incentive to reduce their carbon emissions as well as encourage other countries to follow suit because they know they have an existential crisis.

Policy Recommendations

- Strengthen bilateral and multilateral ties with other nations to coordinate on climate policy to minimize free-riding concerns of climate mitigation.
- Building effective and transparent revenue recycling mechanisms from carbon taxation and subsidy removal to minimize short-term GDP loss from climate mitigation policies.
- Choose to implement policies that can accomplish both policy goals at the same time e.g., forest conservation or earmarking revenue from subsidy removal (mitigation) for flood mitigation funding (adaptation) to insure potential losses from choosing one over the other.

Conclusion

Due to the risky choice between the two policies because of the dependence on other country's policy response, Malaysia can minimize the opportunity cost of choosing one over the other by mixing both mitigation and adaptation and setting the level of both goals based on the expectation of future climate damages. The question should now concern the right level of mitigation and the right level of adaptation in the current climate.

As such, government agencies and ministries that are given the responsibility of implementing climate mitigation and adaptation policies should be coordinated to perform a coherent climate strategy. It is undeniable that climate change is a fact that will adversely affect the future of the country's economic and social fortunes. A strategic plan is needed to balance the goal of minimizing our damage to the environment or the goal of minimizing the environment's damage to us.

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