

Southeast Asia's Resilience Must Match Rising Climate Risks

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Abstract. Southeast Asia is seeing record-breaking temperatures and unprecedented floods and storms, inflicting a severe blow to lives and livelihoods. As these disasters are the result of carbon accumulation in the air, which stays in place for decades, the priority for climate adaptation is patently clear. Adaptation needs to be multifaceted, ranging from spending on drainage systems to health. Higher funding allocations are needed for adaptation, and they ought to be approved ahead of disasters. Climate adaptation on its own will not keep up without climate mitigation. Southeast Asia has grown at some 5% a year over the past decade with most of its energy needs met unfortunately by fossil fuels. To contribute to global mitigation, the region needs to reverse its heavy reliance on coal, oil, and gas, and become a leading advocate and user of wind, solar and other renewables. Essential for decarbonization is carbon financing, which falls short of what is needed. Experiences with other events like COVID-19 suggest that financing is driven by public opinion and political pressure. Public opinion in Southeast Asia needs to support disaster relief and prevention, and political decisions will follow accordingly.

Keywords: adaptation, climate risk, energy transition, mitigation, Southeast Asia

As once-in-a-thousand-year floods and heatwaves turn into regular occurrences, the question is if humanity can avert game-ending catastrophes. With sea levels continuing to rise above global averages, coupled with land subsidence in coastal cities like Bangkok, Manila, and Jakarta, climate change is wreaking havoc in low-lying Southeast Asia. A new book* argues that having blatantly ignored the warning signs for decades, time is fast running out to arrest, if not reverse, climate change. There can still be a glimmer of hope, if adaptation efforts to help people cope with the inevitable are coupled urgently with mitigation measures to reduce the emission of greenhouse gases from burning fossil fuels.

Southeast Asia is at a knife's edge when it comes to climate disasters. Recent years have seen record-breaking temperatures already inflicting a severe blow to lives and livelihoods, and unprecedented floods and storms spurring climate migration. Placed at the top of lists on climate vulnerability, the Philippines, Indonesia, Vietnam, and Myanmar have had the highest numbers of people displaced due to natural

calamities. This has led to large numbers of people moving in and out of poverty, something poverty data do not usually capture. A 1% increase in temperature could spike food production costs by 0.5-0.8% in Southeast Asian economies, as evidenced by food price hikes in the Philippines, Thailand, and Vietnam. All this translates into sizable losses in the gross domestic product (GDP) and people's well-being.

The Imperative of Adaptation

As the climate disasters being witnessed today are the result of carbon accumulation in the air, which will stay in place for decades, the priority for climate adaptation is patently clear. High-income countries are mostly responsible for the past build-up of effluents, while emerging economies are now contributing the lion's share of incremental emissions. In these circumstances, climate adaptation to cope with mounting disasters is a must.

Adaptation efforts need to be multifaceted, ranging from expenditure on infrastructure like drainage systems and coastal embankments to spending on social sectors like health and safety nets. There is also a real need to call on stakeholders to work across their traditional sectoral boundaries, because climate problems and solutions are highly interlinked across various sectors. Businesses and the civil society need to mobilize resources and implement responses.

Climate adaptation has more appeal to countries (than climate mitigation), as the benefits of doing so—for example, building better drainage or erecting seawalls—mainly, stay within the country. Still, it can be seen as a less obvious step in growth and poverty reduction than, say, tackling water pollution, or reducing indoor pollution, as these latter efforts can more clearly be seen as responses to human-made problems and have a clear story of direct attribution or cause and effect.

The same manner of attribution should apply to human-caused climate change. Here is where a sharp change in mindsets is needed. If people think the Pakistan floods or the California fires were caused by the wrath of God, then spending on flood defenses, let alone on decarbonization, might be seen as ill-advised investments. But scientists clearly explain that extreme climate disasters are human-caused, and they are catastrophic for growth and poverty reduction. A higher and clearer priority for adaptation is a fitting response to human actions.

Higher funding allocation is needed for dealing with disaster adaptation. These funds ought to be approved ahead of disasters in order not to lose time with financing the projects during the crisis. Equally important is the efficient and timely deployment of the funding. Monitoring and evaluation of the projects' effectiveness and results on the ground help to learn from experience and improve performance.

Southeast Asia is conscious of the large and growing adaptation needs. Indeed, adaptation requirements cut across the economy. The Philippines has innovated quite a bit in disaster management, especially against floods and storms. The country's long experience with disasters is one reason for greater preparedness. The series of floods and storms of the past decade has led the Philippines to build greater capacity on disaster preparedness both at the national and local levels. It has many attributes, but one stand-out feature is fortified early warning systems.

Singapore has among the strongest plans in the world for helping people prepare for and cope with climate-driven storms. Its Green Plan 2030 dedicates resources with a whole-of-government approach and contains steps to expand the coverage of

trees and green spaces, reduce waste, expand public transportation, and switch from fossil fuels to renewable, clean energy.

The most proximate threat from climate change lies in its impact on water and food security. Water needs to be stored, distributed, and conserved in lean times. This would mean rainwater harvesting and collection, water treatment, and seawater desalination. New agricultural practices that are not water-intensive, like drip irrigation, must be promoted, while farmers need to be supported in switching to climate-resistant crop varieties. Laws against slash-and-burn agriculture must be effectively enforced, to reduce air pollution and carbon emissions.

The experience of the past five years makes clear the human cost of heat waves. With more frequent heatwaves, more outdoor workers across South and Southeast Asia, will have to toil under daily temperatures past 40°C. Government support to protect workers' health is vital. Meanwhile, subsidies can be targeted to help farmers plant trees and buy equipment better suited for the extreme weather. Workers in cities and villages can also benefit from early warning systems, better preparedness, and community outreach programs. Insurance schemes can help transfer some of the risks of severe heat faced by industrial, construction, and agricultural workers to insurers. Insurance against natural hazards is minimal in Asia, with just 17% of losses covered.

Food insecurity is another fallout of climate change. This issue too has multiple solutions. For one, food wastage can be controlled. One third of all food produced worldwide—or 1.3 billion tons—is lost or wasted every year, contributing up to one-tenth of global GHG emissions. Up to 50% of cassava losses in Thailand occur during the harvest and post-harvest. Only 10% of perishable food in India have cold storage, causing a 30% loss of fruits and vegetables.

Asia has been at the forefront of extreme weather disasters in the past decade, with estimated damages of some US\$750 billion. These events are also becoming increasingly abnormal in timing and intensity, as the Philippines knows all too well from the uncharacteristically severe storms in Mindanao in recent years. Climate scientists predict that storm surges will move further inland because of rising sea levels.

A common challenge across ASEAN is a lack of trained people and financial resources. ASEAN can help establish “resource pools” to be deployed across the region when disasters hit. Japan's experience highlights how, in the face of severe manpower shortages, disaster-prone municipalities can create reciprocity in sharing experts and other resources with one another. Such sharing can be both within countries and across ASEAN.

Adaptation without Mitigation will be Futile

It is in mitigation that Southeast Asia falls short. The region's extreme vulnerability is part of the reason why its contribution to the problem stands out. Southeast Asia has grown at some 5% a year over the past decade with a 6% annual increase in electricity demand, most of it met unfortunately by fossil fuels. These fuels provide some 75% of Southeast Asia's electricity, and coal around. This picture is changing far too slowly. The region would want to be a leading advocate of wind, solar and other renewables.

Since the late 1990s, ASEAN has said that renewables are a key to regional trade and integration based on regional power grids. Some regional power grids are in place—11 shared power lines between six pairs of ASEAN countries—but they need to handle better the intermittency of renewable energy. Making progress on cross-border integration is essential, especially since Singapore, the Philippines, Thailand, and Cambodia are energy importers.

But climate mitigation remains a low priority in Southeast Asia. The reason is that a transition to low carbon energy has short-term costs which can present an apparent trade-off between saving lives today and saving lives tomorrow. That trade-off is more glaring for low-income countries, because the costs of transition for them are proportionately higher. The irony is that the lower-income countries are most hit by climate change.

Indeed, to stabilize climate change, all countries—including low- and middle-income countries—will need to contribute to a global net zero. If low- and middle-income countries continue the current path, global temperatures will rise to 3°C, and poverty reduction becomes a moot point. The case for poorer nations investing in mitigation too becomes stronger as technologies for renewable energy become even more competitive with fossil fuels, and if rich nations step up low-cost financing of climate investments.

Effectiveness of climate measures would be helped by pricing carbon emissions, as economists have recommended for decades, thereby valuing clean air. If adopted by all, carbon pricing per se would not change countries' competitive positions. One approach is to use emissions trading that sets a limit on total effluents but allows companies to market emission allowances. A tax on pollution is another way to price carbon.

The highest tax rate has been set by the Danish government for 2025 increasing to €150/tCO₂ (S\$218) in 2030. In 2019, Singapore set the carbon tax at S\$5 per ton and has announced S\$25 for 2024, and S\$45 by 2026. A solid case can be made for S\$80 by 2030. High carbon taxation across China, the US, India, Russia, Japan, the European Union, and ASEAN countries—together accounting for some 70% of global discharges—will make a big difference to global pollution.

The point is that these enabling policies will unlock financing for clean growth. That vast sums can be quickly mobilized to fix global problems was demonstrated in the trillions of dollars—US\$15 trillion, by one estimate in 2020 by G-10 plus China—raised to fight COVID-19. Global investment in energy transition reached an estimated US\$1.3 trillion in 2022, but it needs to exceed US\$5 trillion a year for any hope of staying on a 2°C global warming pathway.

The stakes are high for all, especially for ASEAN. Not only is the region one of the world's most at-risk to climate damage, but its energy-related emissions are set to rise sharply, reflecting expectations of brisk economic growth, with ASEAN projected to be the world's fourth largest economic bloc by 2030.

Greater pressure for clean growth will also drive technological responses. Recall that, under public pressure, COVID-19 vaccines were produced in record time. The same sense of urgency, borne out of fear of the collapse of lives and livelihoods, needs to take hold for climate change. Among the transformational changes, adoption of solar energy would top the list. Spurred by technical improvements, including for batteries, solar capacity is rising, especially in China, India, and Southeast Asia, although from a very small base.

The most promising shift would be to accelerate the sharp reduction in the price of renewable sources of energy to assure its resounding competitive advantage over fossil fuels. Green hydrogen, carbon capture, and geoengineering options hold promise, but they need massive investments to go to scale commercially.

A Change in the Economic Calculus

The two vital ingredients in decarbonization are financing and technology, both of which were driven by public opinion and political pressure in the case of the 2008 global financial crisis and the COVID-19 pandemic that broke out in 2019. True, the vast majority in international polls says that climate change is real, with most respondents saying it is at least partially human-caused, and even that it should be a government priority. But the response is far more ambiguous on whether one's own country should act regardless of what others do. Even more striking is the finding that the promise of climate action seldom wins elections. Before the 2022 congressional elections in the US in November 2022, out of 18 leading issues, climate change was 14th in a poll.

This vast gulf between scientific alerts and pressure for action needs to be bridged. In the big scheme of hard investments, one essential step is a soft measure to confront the obsession of governments with the gross domestic product (GDP) which continues to call for any type of growth at any cost. GDP ignores the massive spillover damages from environmental destruction, such as, increased carbon emissions resulting from hefty fossil fuels subsidies.

Obsession with the GDP also associates pollution-inducing energy sources with strong growth. Multilateral development banks, such as the International Monetary Fund and the World Bank, can dissociate financial support from GDP growth rates, and use measures, such as the United Nations Development Programme's climate-adjusted human development index.

Related to these possible strategies is the need to view decarbonization as a way to sustain growth. There may need to be the assurance of a level-playing field mechanism among the major emitters. Attempts to get delegates from over 190 countries at UN climate meetings to agree on strong measures have so far failed over their multiple goals and widely differing sense of fairness.

But a process driven by financial decisionmakers of the major emitters, like the G-7 or the G-20, might work. The Paris climate summit that opened on 22 June 2023 is a step in seeing climate as integral to growth policy, with the leadership and accountability for climate policy with finance ministers who control financing.

The climate-growth connection would become more tangible and intuitive with a more convincing attribution of climate disasters to carbon emissions from human activity. Most of the Swiss associate the melting of Alpine glaciers, caused by global warming, with economic losses from more disasters and less tourism revenue. The new "attribution" reports that causally connect fossil fuel-based energy and extreme weather events need to be disseminated everywhere. Communicating the linkages effectively entails going from descriptions of climate disasters, which are plentiful from weather reports and news coverage, to making the link between fossil fuels, emissions, global warming, and disasters.

The economics of spillover harm should signal the merits of decarbonizing economies. GDP as a measure of progress does not deduct losses caused by economic

activities, and can wrongly signal a better business environment even when ecological destruction rises, as in the World Bank Doing Business Indicators for China, India and the US. Measured GDP growth can be propped up by destruction, as with Russia's GDP following its invasion of Ukraine. It celebrates even carbon-intensive growth, as in the East Asian growth miracle since the 1960s.

When economies are ranked by GDP growth, policy emphasis is on the volume of physical capital, like roads and bridges, and, rightly, its productivity. The World Bank and other multilateral development banks have been instrumental in recognizing the essential part of human capital (education and health) in growth. But natural capital, like clean air and forests, continues to be ignored: its disinvestment must be reversed.

A measure capturing the contribution of physical, human, and natural capital is the UNDP's planetary pressure-adjusted Human Development Index (HDI). It adds a per-person ecological impact to HDI, resulting in eye-catching changes in country rankings. Norway, for instance, falls 34 positions from second place among 191 countries, and Australia 87 positions from 5th in the same grouping.

All development projects should undergo a social cost-benefit test, which includes climate impacts. They should be covered by legal covenants on climate mitigation and adaptation. Development programs must avoid the use of fossil fuels, in addition to removing their subsidies. Economic analysis also motivates carbon pricing via either a carbon tax at the source of the pollution, as in South Korea and Singapore, or carbon trading, as in the European Union and China. The World Bank and the International Monetary Fund should call on countries to adopt carbon pricing.

Climate Financing

Higher funding allocation is needed for both adaptation and mitigation in dealing with disasters. These funds ought to be approved ahead of disasters in order to facilitate fund release during the crisis. Equally important is the efficient and timely deployment of the funding. Monitoring and evaluation of its effectiveness help to learn from experience on the ground and improve performance.

While such a shift in the prioritizing defensive and proactive resilience building is necessary, it is also politically difficult, because the rewards of such futuristic investments are not visible immediately but accrue over time. Therefore, politicians find these investments less attractive than the ones that have immediate payoffs. In this situation, the book argues that a groundswell of public opinion is needed to press politicians to act.

Finally, high-income countries ought to provide vast climate financing to low-income countries, following the minimal progress achieved on this at the Conference of Parties (COP) 27. The multilateral development banks need to double the financing resilience building, while strengthening the evaluation of results. It pays to strike an unprecedented climate alliance among the multilateral development banks, UNDP, as well as bilateral agencies.

Countries are more receptive to making investments in climate adaptation, as they can directly reap its benefits, but less so for mitigation, whose gains also accrue to others. The MDBs can help launch fit-for-purpose financial products and leverage cost effective financing from the private sector.

Conclusion

The scale of financing and technology for energy transition can only be driven by a groundswell of public opinion and political pressure for timely action. Even if not entirely replicable, Switzerland gives a glimpse of what is possible. For a net zero campaign to gather momentum across all the major emitters, the economic case needs to be felt more clearly, and the finance ministers, together with climate advocates, must lead the charge.

Southeast Asia compares well with other developing regions in disaster management because of its experience and investments in prevention and mitigation. But climate change has pushed the bar much higher, leaving vast gaps in disaster prevention and climate mitigation. ASEAN can help address the deficits by brokering the expertise of countries at the forefront of technological innovation, energy efficiency, and disaster management, especially within the ASEAN plus Three—China, Japan, and South Korea.

As Southeast Asia and other regions deal with the immediate fallout from soaring temperatures and deadly floods, it is imperative that they also prepare for worst-case scenarios down the road. For such preparedness to mark the future direction, public opinion needs to support disaster prevention and preparedness, and not just disaster relief and rehabilitation. Politicians need to take this public opinion to heart and craft transformational change in how disasters are viewed and acted upon.

This essay draws on a recently published book, *Risk and Resilience in the Era of Climate Change* (Palgrave Macmillan, 2023), written by the same author.

Endnotes

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