Domain area: Environmental sustainability

Topic: Supporting the Climate Vulnerable

Guiding questions:

(a) How can we defend Singapore against the potential threats of extreme weather and climate?

OR

(b) What can Asian countries do to support climate vulnerable states/populations in this region?

General information

Singapore is one of the most at-risk regions to climate change in Southeast Asia.[1] Climate change could affect Singapore in many ways: rising sea levels, droughts, and intense rainfall.[2] Furthermore, with higher temperatures and prolonged warm periods, there is higher likelihood of increased cases of vector-borne diseases like dengue.[3] Therefore, it is critical to defend Singapore against potential threats to public health caused by climate change and extreme weather too. Meanwhile, across Asia, there are states and populations that are climate vulnerable. For example, aggravating drought conditions are projected to hit states in Central Asia, affecting the water supply, livestock, and crop yield.[4] Coastal populations in China, India, Indonesia, and Vietnam are exposed to storm surges and high waves caused by tropical cyclones, leaving them vulnerable to disaster-related mortality. Despite the substantial number of climate vulnerable citizens in their countries, regimes in these countries are still not paying enough attention to climate change.[5]

[1] Rengui Jiang et al., "Assessment of temperature extremes and climate change impacts in Singapore, 1982–2018," Singapore Journal of Tropical Geography 42, no. 3 (2021): 381, https://doi.org/10.1111/sjtg.12384.
[2] "Impact of Climate Change in Singapore."
[3] "Impact of Climate Change in Singapore."
[4] Intergovernmental Panel on Climate Change (IPCC), "Chapter 10, Asia," in: Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge: Cambridge University Press, 2023: 1457.
[5] Sharon Seah, "Climate Change: Southeast Asia's Existential Threat", Southeast Asian Affairs 2022 (2022): 75. https://doi.org/10.1355/9789815011036-006.

A population's climate vulnerability is a function of: (1) the nature and extent of adverse effects (of climate change) the population is exposed to, (2) the sensitivity of the population to the adverse effects and (3) the population's adaptive capacity to moderate potential damages, cope with consequence and take advantage of opportunities.[6] Asian regional partnerships can help climate-vulnerable populations via pooling resources for adaptation projects and knowledge sharing on climate-resilient practices.

Scope of Policy Proposal

You should consider the following points and address these in your policy proposal. If you intend to take on a specific perspective (e.g., a certain Ministry, organisation), do state it clearly in your proposal.

(1) **Feasibility**: Consider the scale of implementation for your proposed policy and state clearly whether it presents challenges for technical feasibility. Social feasibility should be covered in your policy if you are addressing support for vulnerable communities in Asia.

(2) **Incremental:** Your policy should acknowledge and build on existing government or non-government efforts where possible. If you do not agree with existing efforts in a particular area, state the reasons for disagreeing clearly and suggest improvements.

(3) **Implementation sustainability**: Your policy should aim to garner strong stakeholder support to ensure sustainable ground level implementation and a sustained positive impact.

Points of interest

- Propose holistic climate resilience solutions which address multiple areas such as infrastructure, urban planning, public health, and community engagement.

[6] Kay, P, "Climate Vulnerability," in: Oliver, J.E. Encyclopedia of World Climatology, Encyclopedia of Earth Sciences Series, Springer, Dordrecht: 267.

- Identify possible opportunities for technology transfer and expertise sharing to speed up climate resilience and adaptive capacity in the more vulnerable regions.
- Identify state- or population-specific challenges regarding equitable access to support for the climate-vulnerable.

Bibliography

"Impact of Climate Change in Singapore." *National Climate Change Secretariat*. Accessed March 9, 2024. https://www.nccs.gov.sg/singapores-climate-action/impact-of-climate-change-in-singapore/.

Intergovernmental Panel on Climate Change (IPCC). "Chapter 10, Asia." In *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, 2023: 1457–1580.

Kay, P, "Climate Vulnerability." In: *Oliver, J.E. Encyclopaedia of World Climatology, Encyclopedia of Earth Sciences Series*, Springer, Dordrecht, 2005: 266-270.

Rengui Jiang, Wen Li, Xi Xi Lu, Jiancang Xie, Yong Zhao, Fawen Li. "Assessment of temperature extremes and climate change impacts in Singapore, 1982–2018." *Singapore Journal of Tropical Geography* 42, no. 3 (2021): 378-396. https://doi.org/10.1111/sjtg.12384.

Sharon Seah. Climate Change: "Southeast Asia's Existential Threat." *Southeast Asian Affairs 2022* (2022): 73-88. https://doi.org/10.1355/9789815011036-006.

Yohei Okada, Joel Aik, Andrew Fu Wah Ho, Yilin Ning, and Marcus Eng Hock Ong. "Heat-related illness in Singapore: Descriptive analysis of a tertiary care center from 2008 to 2020". *Proceedings of Singapore Healthcare* 33, (2024). https://doi.org/10.1177/20101058241232182.