

Challenges in Implementing Climate Adaptation Law: the Singapore Approach

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Singapore is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. Despite being a non-Annex I Party, much of Singapore's national climate law and policy framework is heavily influenced by the supranational legal order.¹ As a small, low-lying island city state with an area of just 716km² in the equatorial tropics, Singapore is naturally vulnerable to the impacts of climate change.

In order to address the projected effects of climate change over the next 50 to 100 years, Singapore introduced a resilience framework to guide Government agencies' efforts in safeguarding Singapore over the long term. Institutionally, the Ministry of National Development (MND) established an Adaptation Task Force to look into adaptation measures.² A Resilience Working Group (RWG) under the purview of the Inter-Ministerial Committee on Climate Change (IMCCC) recently took over the study of measures to address possible physical vulnerabilities to climate change effects.

Singapore's adaptation policies relies on existing management practices and technologies, which are the result of part environmental and development planning, and includes a commitment to the development of new adaptation measures. Some of the country's existing adaptation policies include measures to address sea level rise, inland flooding and tree failure. The government has announced plans to build adaptive capacity in key areas such as energy and telecommunication infrastructure, building classification for impact and risk assessments, and addressing potential loss of maritime jurisdiction. Note that water policy is excluded as it has been studied before, but it remains one of Singapore's key adaptation policies.

Although Singapore's adaptation strategy includes several initiatives, actual aims are missing. In the context of coastal erosion and land loss, for example, the National Climate Change Strategy 2009 noted that the government will 'look at' adapting to sea level rise through the protection of the foreshore and coastal areas, 'as the need arises'.³ Second, the lack of information in the public sphere about the findings of the various vulnerability and impact studies has shaped the lack of public opinion on climate change adaptation.

The studies on vulnerability and impacts of climate change to Singapore have also been conducted in a piecemeal fashion, usually in response to IPCC assessment reports. Notably, all three studies focusing on vulnerability and impacts have been conducted by different researchers

¹ National Environment Agency, *Singapore's Third National Communication and First Biennial Update Report under the United Nations Framework Convention on Climate Change*, December 2014.

² Ministry of Environment and Water Resources, Factsheet on the Study on Long Term Impact of Climate Change on Singapore, 19 April 2011, Available online at: <http://app.mewr.gov.sg/data/ImgCont/1386/6.%20Factsheet%20-%20Climate%20Change%20Study%20%5Bweb%5D.pdf> (Accessed on 1 March 2015).

³ L. Bhullar, Climate Change Adaptation and Water Policy: Lessons from Singapore, *Sustainable Development* 21 (3) (2013) pp. 152-159.

from TMSI, IHPC and CCRS, and at times in parallel. The lack of flow of information between the studies and continuity could pose a barrier to effective regulations and in enabling legislation.

For Singapore, flexibility is important in order to incorporate new climate data and science as and when they arise.⁴ As former Minister for Environment and Water Resources Dr. Vivian Balakrishnan noted in an IPCC event held in Singapore, “deciding what is adequate and effective is neither a straight forward nor a trivial matter”.⁵ Singapore will likely proceed without adaptation laws or significant changes to codes of practice (building, drainage canals, etc.) as these will constantly need updating. Long-term adaptation plans and a resilience strategy are likely to be in place rather than legislation and regulations.⁶

While Singapore’s attempts to bridge uncertainties as a consequence of a lack of knowledge through commissioning of national studies are commendable, uncertainties caused by randomness inherent to the climate change phenomenon will require more thinking and preparation. Though it appears that Singapore has in place strong inter-governmental policy and planning coordination across various ministries, the lack of laws and regulations (apart from coastal erosion and inundation regulations) could mean that the implementation of adaptation measures will be done in a piecemeal fashion.

Drafting and adopting adaptation laws and regulations are for now deemed unnecessary since Singapore has a stable political landscape with a capable government, with agencies being able to carry out measures in a timely and efficient manner. In some countries, a major challenge for climate adaptation is how to ensure a long-term commitment that goes beyond the election term of politicians with shorter term goals.⁷ The Singapore government has managed to realize legitimacy of existing adaptation plans because the effects of climate change are not regularly felt by the public.

The Government of Singapore tends to frame climate change adaptation needs as strategies rather than enshrine them in laws.⁸ One possible reason is to avoid causing public panic. Second, some adaptation needs are difficult to distinguish from development, upgrading or maintenance needs such as the widening of drainage canals. However, Singapore’s adaptive management approach does seem to be working thus far.

Notwithstanding any major climatic events, the Government of Singapore has managed to embed adaptation strategies in broader programs rather than through legislation. However, with increasing evidence that climate change is occurring in uncertain ways, Singapore needs to continually be on its guard to protect against its adverse effects. Lessons can be drawn from

⁴ National Environment Agency, *supra note 1*, at pp. 29.

⁵ C. C. Neo, ‘Singapore gears up for climate change’, *TODAY Newspaper*, 8 July 2014.

⁶ <https://www.nccs.gov.sg/climate-change-and-singapore/domestic-actions/adapting-climate-change>

⁷ *Ibid.*

⁸ See Ministry of Environment and Water Resources and Ministry of National Development, *Singapore’s Climate Action Plan: A Climate-Resilient Singapore, For a Sustainable Future*, July 2016.

countries like the Netherlands and cities like New York, who have in place coastal management laws and adaptation plans respectively.

In conclusion, there are significant challenges and gaps that Singapore faces towards drafting new laws or regulatory mechanisms directly focused on building the resilience and adaptive capacity of communities and ecosystems to climate change impacts. Moving forward, Singapore will benefit from more studies and test-bedding of adaptation ideas, as well as greater transparency and public awareness on the need for climate change adaptation, in order for legislative measures to take root.