

ARTICLE FOR THE EDGE

ACTION ON CLIMATE CHANGE IS MORE URGENT THAN YOU THINK

If you thought trade wars and the epic struggle for power between the US and China were bad, here's something that could be even worse.

Damaging forms of climate change are unfolding faster than expected and Southeast Asia is likely to be a bigger loser from it than other regions. Worse still, even with all the increasing efforts to contain climate change, the political will is lacking at the global level for sufficient action to limit climate change to easily manageable levels. So, countries such as Singapore must assume the worst and pro-actively prepare for it: the policy agenda is intimidating and its implications such as how to finance it equally concerning. But, if we do it right, we might even be able to convert a potential catastrophe into an opportunity.

Climate change is hurting faster than expected, which means that SE Asia is in trouble

Climate change is often spoken about in terms of how temperatures might rise by so many degrees or the sea level by so many metres by the end of the century, which seems reassuringly far away and beyond most of our lifetimes. But, even a cursory look at recent news should alert us to how much damage is already occurring. Almost half the population of India is right now, sweltering under the highest temperatures they have suffered in a long time, while enduring the most severe drought in decades. In Greenland, temperatures last week spiked to 40 degrees above normal. Greenland's ice sheet is melting at a pace that is six times faster than in the 1980s, well beyond what scientists had predicted. That should worry us as the melting of Greenland's ice reportedly accounted for perhaps half an inch of the rise in global sea levels since 1972. Another report, just a few days ago, observed that the permafrost in Canada's Arctic region is thawing 70 years earlier than predicted. As a result of a series of unusually warm summers, ice blocks that had remained frozen underground for more than 5,000 years are now melting.

In other words, climate change is a real threat to humanity. Far from exaggerating the likely effects over time, the experts in agencies such as the Intergovernmental Panel on Climate Change may have actually under-estimated the speed with which climate change is moving. The implications for the global economy are therefore considerable and require more immediate attention than expected.

How will climate change hurt the economy?

Let's take Singapore as an example. There are three main channels of impact – higher temperatures, rising sea levels and more frequent extreme weather that could cause floods or droughts:

- Higher temperatures will diminish the quality of life in Singapore, sapping labour productivity and making it more difficult for us to attract the talent and global corporations we need to maintain our status as a global heart of commerce. Tourists may also be deterred if the climate became unbearably hot. The Singapore government's Second National Climate Change Study Report notes that, while global temperatures have risen by 0.12°C per decade in the past six decades, Singapore had to endure temperature increases of 0.25°C per decade – or double the global average. The number of extremely hot and humid days would rise sharply by the end of the century. The scientific journal Nature projected that Singapore would reach its "climate departure" (the point when the average temperature of its coolest year is projected to be warmer than the average temperature of its hottest year between 1960 and 2005) in 2028 – well ahead of competing global hubs such as London, New York, Hong Kong or Tokyo. We would become Abu Dhabi but without the oil!
- Depending on the scenarios for global sea level rise, we could see mean sea level increases of anything between 0.25 metres to 0.76 metres. Most of Singapore is 15 metres above sea level so it is not as if Singapore will be flooded to destruction. Still, unless action is taken, low-lying areas of Singapore near the coast will be inundated.
- The accuracy of projections for changes in rainfall levels and patterns is less than those for sea level or temperature increases. But most models suggest an increasing trend in the intensity and frequency of heavy rainfall events as global temperatures rise. That means more episodes of flash floods and related damage.

Looking beyond Singapore, there is a reason why Southeast Asia will be a big loser from climate change. Countries in this region have long coast lines and have heavily populated low-lying regions which will be most impacted by rising sea levels. In 2009, the Asian Development Bank had predicted that the damage from climate change would diminish the region's economic output by 6.7% by the end of this century - this estimate was raised to 11% in its 2015 update.

The damage to our neighbours could be considerable given the vulnerability of agriculture to rising temperatures as well as higher sea levels (which, for example, could mean that the rich and densely populated agricultural lands of the Mekong Delta would become unviable from salinity intrusions). If the damage from climate change is as extensive as expected, we could see a wave of climate change migrants leaving the

poorer regions (which have less capacity to mitigate climate change), heading to the more developed bits of Southeast Asia.

What needs to be done?

First, countries need to step up their efforts to limit the degree of climate change by reducing greenhouse gas emissions. The broad parameters of what needs to be done are now well known – impose a price for carbon, ensure more realistic pricing of energy, increase energy efficiency, cut deforestation, increase the use of renewable energy, promote the use of mass transit, develop green building standards and so on.

Second, as argued above, the likelihood is that not enough will be done collectively to limit climate change to benign levels. The United States has decided to withdraw from the Paris climate change treaty – this American could be used as an excuse by other countries to similarly pull out or to be lackadaisical in delivering on their commitments to reduce greenhouse gas emissions.

Therefore, much needs to be done to contain the likely damage from climate change. Here are just a few, to give a flavour of the scale of the tasks ahead:

- First, we need to raise the level of roads near the coast and critical infrastructure such as entrances to mass transit railway stations and airports. Singapore, with characteristic efficiency, has already started doing this.
- Second, we need protection against floods that could result from higher sea levels and more frequent bouts of heavy rains. Existing drainage systems will have to be expanded.
- Third, we would need to re-think approaches to urban planning. Given the likelihood of extremely uncomfortable average temperatures, we might need to re-jig our urban settings to have more enclosed areas or underground spaces that are airconditioned. We may need to think of creating a “sponge city” or a city that is designed with innovative water management systems linking buildings, parks and waterways and which will absorb rain water, allow it to be naturally filtered by the soil before reaching urban aquifers underground. Such urban sponges can help reduce flash floods.
- Fourth, electricity power generation systems will also need an overhaul, involving a shift away from carbon-intensive generation.

- Fifth, governments will have to step in to tackle the market failures and other challenges exposed by climate change. One issue which will arise if electricity generation has to shift away from coal and other fossil fuels, is that it would leave existing carbon-intensive power generation assets redundant, creating “stranded assets” or assets which suffer unanticipated or premature write-downs or devaluations, resulting in wealth destruction for the companies that own them. Another issue is that it will become difficult for private companies to insure individuals and companies against certain types of damage induced by climate change – governments will have to step in to resolve this market failure.
- Sixth, given the higher risks resulting from stranded assets and other damage to balance sheets from climate change, other changes are needed. Financial accounting standards will have to be adjusted to get companies to assess the potential damage to their asset values from climate change and include that in their financial statements. Financial regulators will need to monitor the impacts of climate change on financial stability as well.

Identifying the tasks that are needed to be done is the first step. The next step is to find the financing for this – after all, it will take a huge amount of money to fund the infrastructure upgrades needed including new approaches to urbanisation, incentives to companies to shift away from carbon-intensive activities and government-funded insurance for stuff that cannot be commercially insured. In some cases, taxes will have to be raised, in other cases, the new infrastructure might be funded via debt. Some of the extra money could come from carbon pricing and other changes needed to mitigate climate change – but these are unlikely to be enough. Either way, there are huge implications for the fiscal position.

The bottom line - look at climate change as an opportunity

Efforts to contain climate change are unavoidable. The responses to climate change will become a progressively larger part of the policy agenda.

But rather than looking at climate change mitigation and adaptation as a cost, it should be seen as an opportunity. Governments that are pro-active and take the lead could end up positioning their economies to take better advantage of the new global economy shaped by climate change. For example, China has started 16 pilot projects to test out the concept of sponge cities. In time, it could emerge as a world leader in devising urban solutions that accommodate climate change.

The more developed countries in Southeast Asia with stronger bureaucratic capacity should take a leaf out of China’s book. Economic development strategies should be pro-

actively re-calibrated to take account of the pervasive impacts of climate change and a hard-headed approach needs to be taken to fund these efforts. If that is done, the region will be ahead of the game. If not, Southeast Asia stands to be a huge loser from climate change.

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