## Too hot to grow

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Typhoon Haiyan devastated large areas of the Philippines last year. Asia's coastal regions are particularly vulnerable to the effects of climate change which has a direct impact on economic growth. [Photo/AFP]

## Global warming is putting a damper on economic development in Asia

As the wild card in the future of the Asia Pacific's economic development, climate change is emerging as one of the most significant priorities for policymakers.

Weather-related insurance losses have increased around the world, but most visibly in North America and Asia. In eastern Asia, average losses every year have doubled over the last decade to more than \$20 billion, according to Munich Re, a reinsurance company.

Since 1970, climate-related natural disasters have cost \$259 billion to China, \$64 billion to Japan and \$15 billion in South Korea, according to the Economics of Climate Change in East Asia report released last year by the Asian Development Bank.

That's less than 0.2 percent of GDP, but the incidence of natural disasters and their cost is rising.

According to the World Bank, climate change can: Decrease the amount of water available and its quality; lead to more floods or droughts; cut water regulation in mountains; make hydropower less reliable and limit biomass production; lead to more waterborne diseases like malaria, dengue and cholera; increase the number of deaths from extreme weather events and the destruction they cause; hurt fisheries and damage ecosystems.

Earlier this year, climate change was a major discussion point at the World Economic Forum in Davos, and is likely to be part of the agenda during another meeting in Tianjin in September, says Lin Boqiang, director of the China Center for Energy Economics Research at Xiamen University. Lin was part of a panel at the WEF to consider the challenges and possible solutions to deal with climate and resource risks.

The context is significant. A new report by the Intergovernmental Panel on Climate Change released this year by the United Nations said that it may be difficult to stop mean temperatures from rising by 2 C.

"When you talk about Asia, it is mainly talking about China. No countries can compete with China in terms of scale. Though India has a large population, its energy consumption is low, so its contribution to emissions is limited," says Lin.



"Those dynamic increases (of carbon emissions) are mainly from China, so China's problem is also the world's problem."

Lin says China can be more confident on this issue now, since it has taken action to tackle smog and its environment is getting better.

"The policies against the smog problem basically target the energy industry—more specifically, coal. The contribution from coal to the economy must decline annually. This is in line with the reduction of CO2 emissions.

"We have been talking about rejecting economic structure and reducing CO2 emissions for a long time, but the real economy would always choose the most cost-effective way—that is coal. It has no motive to make the change as any alternation is more expensive than coal," Lin says.

But the problem goes beyond China. Other economies are growing and their emissions are increasingly significant. Indonesia and Vietnam, for example, are increasingly industrialized.

Annie Koh, associate professor of finance at Singapore Management University, believes Asia has recognized the need to implement climate-smart growth. "Government, the private sector and civil society in Asia agree that Asia can no longer ignore the evidence pointing to how rapid growth can deplete natural capital and resources," she says.

"Governments across the region have recognized the need to have shared vision and shared responsibilities for driving change in the area of climactic catastrophes."

For Asian countries, the reality is that a coordinated approach is needed to deal with the causes of climate change, such as emissions of greenhouse gases, and the devastating natural disasters that are its effects.

"These days, the conversation is no longer about growth at all expense, but to have sustainable inclusive growth," says Koh. "ASEAN and East Asia need to ensure that we all grow as a region," she says, referring to the Association of Southeast Asian Nations.

But, says Renat Heuberger, CEO of South Pole Carbon, a social enterprise focused on environmental sustainability, Asia is also the biggest investor in the world in clean technology, which is seen as the best hope of reducing emissions.

"So in both problem and solution of climate change, Asia plays a very important role today," Heuberger says. "On one side, we see Asia exposed to climate change, especially the coastal areas. On the other side, the solution to climate change is in Asia, simply because this area is developing fast, a lot of cash is available, and it is possible to generate profit by solving climate change."

A new report by ratings agency Standard & Poor's said climate change—and global warming in particular—is the second most significant major trend likely to impact sovereign credit risk this century. And the impact is not likely to be positive. For example, Typhoon Haiyan, which hit the Philippines last year, was hugely destructive and had a direct impact on economic growth.

"We have taken a view that the size of devastation, while large in absolute terms, has not been sufficient to impact a rating overall," said S&P in the report. "However, assuming that extreme weather events are on the rise in terms of frequency and destruction, how this trend could feed through to our ratings on sovereign states bears consideration."

S&P considers three variables to determine the risk to individual economies posed by climate change: The population living in low-lying coastal areas, the share of agriculture in national GDP, and a vulnerability index.

And Asia is right in the crosshairs of this trend. The 20 most vulnerable nations to climate change are emerging markets and half of them are in Asia Pacific.

Countries like Vietnam, Bangladesh, Fiji, the Philippines, Papua New Guinea and Indonesia that rely heavily on agriculture and employment for growth have "weaker capacity to absorb the financial cost" of shifting or extreme weather events.

In East Asia, the climate has been getting warmer for five decades with mean temperatures expected to rise by almost 2 C or more by 2050 and almost 4 C by 2090. Countries in the region are adapting, says the ADB, and the question is how they are adapting and how much it costs to adapt.

East Asia can afford to adapt to the new climate reality but the bill is likely to be high, at about \$23 billion per year for new infrastructure between 2010 and 2050, another \$4.2 billion for coastal protection and \$9.5 billion for changes in agricultural patterns such as more and newer irrigation systems or consumer subsidies to ensure food remains affordable.

All told, adaptation could cut 5.3 percent from annual GDP growth by 2100, says the ADB.

"Public authorities and civil organizations can contribute to such adaptation by collecting and disseminating information on the impacts of, and potential responses to, climate change," says the ADB. "The essence of planned adaptation is thinking ahead."

Policymakers need to push for a model of economic growth that limits carbon emissions and a more efficient use of resources. Carbon trading schemes are one approach in which countries like China, Japan and South Korea have made some progress.

Gordon Hughes, a professor of economics at the University of Edinburgh and one of the authors of last year's ADB report on climate change in East Asia, says: "Richer countries tend to make more efforts to respond to problems like climate change. Japan and South Korea are doing more than China."

The Philippines is further down the path of dealing with climate change, he adds. "The really important lesson is to invest more in protection like better buildings and castle defense. As countries like China and the Philippines get richer, they need to spend more on protection."

Regional cooperation is also key. Pooling emission targets can cut costs of meeting them by about a quarter. The reality is that climate change and its effects do not respect national borders.

Climate change has a wide impact, and can hit economic growth, the external performance of economies and public finances. And climate change is difficult to plan for because the impact is not even, but poorer and lower-rated countries are hit hardest. This, in turn, is likely to cause more global inequality.

"Rapidly urbanizing and energy-hungry Asia and the Pacific is on the way to becoming one of the world's major producers of greenhouse gas emissions, but it is also home to the largest number of climate-vulnerable people," says Michael Rattinger, a climate change specialist at the ADB's Regional and Sustainable Development Department.

"There is an urgent need to de-carbonize the economy while increasing climate resilience. It is not an exaggeration to say that the global battle against climate change will be won or lost in this region," Rattinger says.

The region must step up efforts to adapt to climate change, he says, as delaying will simply add to the cost. Governments are acting to reduce greenhouse gas emissions but the current targets of these plans are simply not enough.