DE-RISKING CLIMATE CHANGE

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Asia is at the front line of climate change. Extreme heat in India, Pakistan, and Bangladesh, wildfires in Australia, typhoons in Japan, are real and present dangers and likely to become more frequent as climate change intensifies. McKinsey's report on "Climate risk and response in Asia", finds that, without adaptation and mitigation, Asia is expected to experience more severe socioeconomic impacts of climate change than other parts of the world.

Large cities in the Indian Subcontinent could be among the first places in the world to experience heat waves that exceed the survivability threshold. Without mitigation and adaptation, the average share of working hours lost each year in India due to extreme heat and humidity could increase by over 40 per cent by 2050. The impact will fall disproportionately on the economically vulnerable who are engaged in outdoor employment such as construction, agriculture, and logistics. The risk going forward will increase as the climate continues to change.

Leading Indian corporates tell us they are already observing physical manifestations of climate change. One major industrial company reported unprecedented patterns of localised rainfall and flooding in the past three years (exceeding 65-year maximum levels), requiring them to replace and reinforce drainage systems in certain facilities. According to a study commissioned by Tata Global Beverages in 2016, Assam's tea growing productivity could decline by up to 40 per cent due to the impact of climate change by 2050.

Our research makes the case for a localised understanding of the physical risks and impacts of climate change, and the need for policy, business leaders, and community leaders to incorporate adaptation and mitigation measures into decision making at every level. Just as information systems and cybersecurity have become integrated into corporate and public-sector decision making, climate change will also need to feature as a major factor in decisions. Organisations must take decisive steps to adopt new mindsets that incorporate climate risk, build the necessary tools and capabilities to diagnose risks, and integrate understanding of climate risk into all decision making.

Climate science tells us that some amount of warming over the next decade is already locked in due to past emissions, and temperatures will continue to rise. This implies the need for adaptation strategies to offset the impact of severe and/or frequent climate hazards. An effective adaptation plan for the region includes reducing exposure, hardening assets, investing in resilience, crowding-in private capital financing, and new data-driven approaches to measure climate risk.

India anticipates a significant infrastructure build out over the next decades with projects worth \$1.77 trillion across 34 sub sectors, according to the National Infrastructure Pipeline. These provide a unique opportunity to embed climate risk into infrastructure design. For brownfield assets such as highways, hydroelectric dams and coastal construction, we see an urgent need for climate risk impact assessments and appropriate adaptive and remedial actions.

Robust regulations around outdoor work could significantly reduce the economic risk of lost hours as well as the toll on life from heat waves. Investment in adaptive technology — active cooling measures, such as air-conditioning, and passive cooling measures including traditional

building design — can reduce the direct impacts.

The good news is that we have started to see some Indian states and cities pursuing such policies. Ahmedabad City Corporation introduced a heat action plan — the first of its kind in India — in response to the 2010 heat wave that killed 300 people in a single day. The city now has a heat-wave early warning system, a citywide programme of roof reflectivity to keep buildings cool, and teams to distribute cool water and rehydration tablets during heat waves.

Mitigation is essential to prevent a buildup of risk, particularly given that Asia accounts for 45 per cent of global emissions. Key mitigation actions in Asia include: a shift from coal to renewables, as coal accounts for 90 per cent of power emissions in the region; decarbonising industrial operations that account for more than one-third of the region's overall emissions; transforming agriculture and forestry, which, combined, account for 10 percent of CO2 emissions in Asia; and decarbonising road transport and buildings, which account for more than 30 per cent of global greenhouse gas emissions.

A major challenge for India is to reduce reliance on coal while continuing to meet its growing energy needs in a manner that is affordable to the broadest section of population. Renewable energy has grown rapidly in India and can contribute 30 per cent of gross electricity generation by 2030, according to the Central Electricity Authority. McKinsey's analysis indicates that renewable hybrid systems could be competitive with coal fired plants over the next 8-10 years. Such a transition must be accompanied by programmes for providing skilling and employment opportunities for the 1.5 million strong workforce who are currently employed in the coal value chain.

Climate change is real and present, and it brings both dangers and opportunities. Through mitigation and adaptation, India can not only survive but thrive on the front lines of climate change.

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