

## Warmer World Threatens Livelihoods in South East Asia

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Already vulnerable region faces rising sea-levels, ocean warming, and more intense typhoons, says new report  
The rising possibility of a warmer world in the next two decades is magnifying the development challenges South East Asia is already struggling with, and threatens to reverse hard-won development gains, according to a new scientific report released today by the World Bank Group.  
Turn Down the Heat: Climate Extremes, Regional Impacts and the Case for Resilience, was prepared for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics. It builds on a World Bank report released late last year, which concluded the world would warm by 4 degrees Celsius (4C) above pre-industrial levels by the end of this century without concerted action now. This new report looks at the likely impacts of present day (0.8C), 2C and 4C warming on agricultural production, water resources, coastal ecosystems and cities across Sub-Saharan Africa, South Asia and South East Asia. South East Asia includes Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, the Philippines, Singapore, Thailand, Timor-Leste and Vietnam.  
This new report outlines an alarming scenario for the days and years ahead - what we could face in our lifetime, said World Bank Group President Jim Yong Kim. "The scientists tell us that if the world warms by 2C - warming which may be reached in 20 to 30 years - that will cause widespread food shortages, unprecedented heat-waves, and more intense cyclones. In the near-term, climate change, which is already unfolding, could greatly harm the lives and the hopes of individuals and families who have had little hand in raising the Earth's temperature.  
The report synthesizes the most current peer-reviewed literature and supplements it with computer modeling. It describes two scenarios: an extreme 4°C warming and a more modest 2°C warming. The report reveals how rising global temperatures are increasingly threatening the health and livelihoods of the most vulnerable populations. In Sub-Saharan Africa, food shortages will become more common, while in South Asia, shifting rain patterns will leave some areas under water and others without enough water for power generation, irrigation or drinking. In South East Asia, the degradation and loss of coral reefs will diminish tourism, reduce fish stocks, and leave coastal communities and cities more vulnerable to storms.  
Countries in the South East Asia region are particularly vulnerable to the sea-level rise, increases in heat extremes, increased intensity of tropical cyclones, and ocean warming and acidification because many are archipelagoes located within a tropical cyclone belt and have relatively high coastal population densities.  
Many South East Asian countries are already taking concerted actions to address the impacts of climate change, but this report tells us that we need to do much more. We need to both intensify and accelerate these actions to reduce the ever-increasing vulnerability of populations to climate risk, especially the poor and vulnerable, said Axel van Trotsenburg, World Bank Vice President for East Asia and Pacific.  
The report examines the most significant climate risks for South East Asia in a 2°C world: Sea levels are rising faster than previously projected and cyclones will intensify. The report finds that a sea-level rise of as much as 50 cm by the 2050s may already be unavoidable as a result of past emissions, and in some cases, impacts could be felt much earlier. This will cause greater destruction and result in flooding fields for extended periods, and inundate delta areas with intrusions of salt water into fields and in groundwater used for drinking. The report also projects that typhoons will increase in intensity (category 4 and 5).  
The three river deltas of the Mekong, Irrawaddy and the Chao Phraya are all with significant land areas below 2m above sea level are particularly at risk. Agriculture, aquaculture, fisheries, and tourism are the most exposed sectors to climate change in these deltas. Coastal cities, with their concentration of increasingly large populations and physical assets, are also highly exposed to increased storm intensity, long-term sea-level rise, and sudden onset coastal flooding. Bangkok, Ho Chi Minh City, Jakarta, Manila, and Yangon are among the cities that are projected to be most affected.  
Coral reefs will come under severe stress. With increasing ocean acidification, there is a high risk (50 percent probability) of annual coral reef bleaching events occurring as early as 2030. Projections indicate that all coral reefs in South East Asia are likely to experience severe stress by the year 2050, hurting marine fisheries, tourism, and livelihoods. There are about 138 million people living on coasts and within 30 kms of a coral reef who are likely to suffer major social, economic, and nutritional impacts as a result of climate change.  
Rural and coastal livelihoods are threatened. The report projects that fish stocks in the Java Sea and the Gulf of Thailand will suffer due to increased water temperature and decreased oxygen levels, with very large reductions in average maximum fish body size by 2050. The Mekong Delta produces around 50 percent of Vietnams total agricultural production and contributes significantly to the countrys rice exports. A sea-level rise of 30 cm, which could occur as early as 2040, could result in the loss of about 12 percent of rice production.  
Countries need support to help re-orient their development plans so that climate change is factored into their planning process to build on efforts already underway. The Government of Vietnam has sought Bank support to respond to the challenges of climate change and the opportunity to shift to climate resilient, low-carbon growth, and the Philippines has enacted a Climate Change Act and a National Disaster Risk Reduction and Management law that marks a big improvement in how the country is dealing with the challenge of climate change, said van Trotsenburg.  
The evidence presented in the Turn Down the Heat series demonstrates the importance of the World Bank Groups climate change mitigation, adaptation, and disaster risk management work to development and poverty reduction. The Bank is helping 130 countries across the globe take action on climate change. Last year, it doubled its financial support for adaptation - from 2.3 billion in fiscal year 2011 to 4.6 billion in fiscal year 2012. Increasingly the Bank is supporting action on the ground to finance the kind of projects that help the poor grow their way out of poverty, increase their resilience and reduce emissions.  
In the Philippines the biggest risks are due to more severe impacts storms will have on informal settlements and coastal communities. The Bank is working with the Government of the Philippines to enhance the countrys capacity to deal with climate impacts as well as help ensure its overall national public expenditure is appropriately targeted to deal with these challenges. Together with other development partners, the Bank is also helping in the preparations for priority projects that aim to improve flood management and resilience in Metro Manila.  
In Vietnam some of the biggest impacts will be on flooding in urban areas due to the impact of sea intrusion in the Mekong Delta. The Bank is working with the Government of Vietnam on a series of policy actions to mitigate climate change impacts and is discussing programs in Ho Chi Minh City and in the Mekong Delta to address some of these threats.  
In Thailand the severe flooding suffered in Bangkok in 2011 was a precursor to what the city can expect in a warming world. After the floods the Bank worked with the Government of Thailand to come up with recommendations on how to better manage flooding. 4 degrees Celsius = 7.2 degrees Fahrenheit 2 degrees Celsius = 3.6 degrees Fahrenheit  
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