



## Climate Change Conjures Up 'Alarming' Scenarios in Southeast Asia

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A Vietnamese woman steers a boat as the sun rises along the Mekong Delta, where rice production could take a tumble due to climate change.  
Photononstop

Imagine these scenarios: The rice bowl of Vietnam cracking. Popular diving spots in the Philippines, Malaysia, and Indonesia lying idle with no tourists. Nearly half of Bangkok inundated with water.

Well, they could become a reality in 20 to 30 years—no thanks to the adverse effects of climate change in Southeast Asia exacerbated by forest fires particularly in Indonesia which recently blanketed the region with deadly smoky haze.

Scientists warn in a new World Bank report of major impacts on the region if the temperature rises by up to 2 degrees Celsius—warming which they say may be reached in two to three decades—fueled by the burning of fossil fuels and deforestation.

The warming climate will push up the sea level in the region and cause an increase in heat extremes, a higher intensity of tropical cyclones, and ocean acidification stemming from excess carbon dioxide in the air, according to the latest edition of the bank's "Turn Down the Heat" report.

The scientific report predicts a drop in agricultural production and widespread food shortages, rapidly diminishing fish catch, increasing water- and vector-borne diseases, and diarrheal illnesses, impacting mostly the urban poor, who constitute large proportions of city populations in the region.

The climate change effects will also dampen the region's tourism industry, a top money-spinner, as coral reefs in pristine waters that lure divers and help fish breed are rapidly destroyed.

### **'Alarming scenario'**

The World Bank issued its first "Turn Down the Heat" report last year, likening it to a wake-up call to climate change. It concluded that the world would warm by 4 degrees Celsius by the end of this century if no concerted action is taken.

In the new report, scientists say that if the temperature rises by just 2 degrees Celsius, warming may be reached in 20 to 30 years.

It gives a more detailed look at how the ongoing negative impacts of climate change could create devastating conditions especially for those vulnerable, predicting what the bank's chief Jim Yong Kim calls an "alarming scenario for the days and years ahead."

"The displacement of impacted rural and coastal communities resulting from the loss of livelihood into urban areas could lead to ever higher numbers of people in informal settlements being exposed to multiple climate impacts, including heat waves, flooding, and disease," the report said.

"Basically, you'll have a range of impacts on countries but the incidence on that will fall disproportionately on poor people, because fisheries and agriculture [are the key areas to be affected]," John Roome, the bank's director for sustainable development in the East Asia Pacific Region, told RFA.

He said that while there is greater awareness by governments to combat climate change, efforts needed to be accelerated by putting in place early warning, monitoring and evaluation systems, and allocating special budgets to mitigate the crisis.

"The alarming part is that a 4-degree world [where the temperatures are 4 degrees warmer] is not going to be a very pleasant place to live in for all the reasons that are set out in the report but there are things that can be done if countries act soon to stem the temperature rise so that [the rise] doesn't reach 4 degrees," Roome said.

### **Mekong Delta crop production drop**

The new report, based on analysis using advanced computer simulations to paint the clearest picture of vulnerabilities, says that as early as 2040, Southeast Asia's major rice-growing region—the Mekong River Delta in Vietnam—will see crop production drop by about 12 percent due to an estimated sea-level rise of 30 cm (nearly 1 foot).

The Mekong Delta, popularly known as the "rice bowl" of Vietnam and home to some 17 million people, makes up half of Vietnam's total agricultural production and contributes significantly to the country's rice exports.

"Any shortfall in rice production in this area because of climate change would not only affect the economy and food security of Vietnam but would also have repercussions for the international rice market," the report said.

The Mekong Delta is also Vietnam's most important fishing region. It is home to almost half of Vietnam's marine fishing vessels and produces two thirds of Vietnam's fish from aquaculture.

But saltwater intrusion associated with sea-level rise is already affecting freshwater and brackish aquaculture farms.

By 2050, the sea-level rise is expected to increase by over 30 percent of the total current area—1.3 million hectares— affected by saltwater intrusion in the delta, the report said.

### **Sea levels rising**

It also warns that floods due to sea-level rise will engulf 43 percent of Thailand's capital Bangkok around 2025, and about 70 percent in 2100.

Bangkok together with Jakarta, Yangon, Manila, and Ho Chi Minh City are projected to be among cities in Southeast Asia to be most affected by sea-level rise and increased storm surges.

### **Coral reefs, fish catches vulnerable**

The report said that rising ocean acidity caused by excessive carbon dioxide will lead to a significant loss of coral reefs and the benefits they provide as fish habitats, protection against storms, and revenue-generators in the form of tourism.

Thailand, Indonesia, the Philippines, Myanmar, and Cambodia were cited as "among the most vulnerable tourism destinations."

Based on the projections, all coral reefs in the Southeast Asia region are very likely to experience severe thermal stress by the year 2050, as well as chemical stress due to ocean acidification.

"Coral bleaching and reef degradation and losses are very likely to accelerate in the next 10–20 years; hence, revenue generated from diving and sport fishing also appears likely to be affected in the near term," the report said.

It also said that ocean fish catch in the southern Philippines is expected to be slashed by half due to warmer water temperatures and habitat destruction.

Fish in the Java Sea in Indonesia and the Gulf of Thailand are also projected to be severely affected, with "very large reductions" in average maximum body size by 2050.

### **Weather extremes and forest fires**

Scientists are also forecasting a significant increase in Southeast Asia in the intensity and maximum wind

speed of tropical cyclones making landfall. Heat extremes are expected to surge in the region.

More important, Southeast Asia is one of two regions—the other being the Amazon—which is projected to see, in the "near-term," a strong increase in monthly heat extremes with the number of warm days projected to increase to 45–90 days per year under a 2-degree temperature rise scenario or to 300 days in a 4-degree scenario.

The heat scare has also fueled concerns over a rise in brush, forest, and peat fires across Indonesia's Sumatra Island and in nearby Borneo Island.

Such fires recently caused a smoky haze in Indonesia, Malaysia, and Singapore and raised air pollution to hazardous levels.

The burning "causes a short-term problem with the smoky haze but in the medium- and longer-term would exacerbate climate change and warming," Roome said, calling for a concerted regional action to stem the crisis.

"If countries could put in place actions that could better manage the forest resource and the peat land to preserve the green cover and to preserve peat land, you will get two benefits—in the short term you wouldn't get the smoky haze and in the medium and longer term, it would reduce the impact on climate change," he said.

In all of East Asia, the biggest contribution to global warming come from China, particularly its energy sector, but the second biggest culprit is forest cutting in Indonesia, the biggest Southeast Asian nation.

"So one of the most important ways of mitigating climate change in Southeast Asia is to mitigate the reduction of forest cover—stop the rate at which forests are being burned or being chopped and stop the conversion of peat land," Roome said.