

Asia's coasts to experience most extreme weather

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Cities will also suffer from heat stress, extreme precipitation, inland and coastal flooding, as well as drought and water scarcity, according to the report “Climate Change 2014: Impacts, Adaptation and Vulnerability.” Credit: artesiawells

Over the next 50 years, people living at low altitudes in developing countries, particularly those in coastal Asia, will suffer the most from

extreme weather patterns, according to researchers.

Unbearable heat waves, typhoons of unprecedented speeds and flash floods have been an increasing occurrence globally. It's not just a coincidence that these extreme weather events have been happening more frequently, said researchers at the Common Future under Climate Change conference.

Hundreds of millions of people will be affected by coastal flooding and land loss as global temperatures rise, icecaps melt and sea levels rise. Cities will also suffer from heat stress, extreme precipitation, inland and [coastal flooding](#), as well as drought and water scarcity, according to the report "Climate Change 2014: Impacts, Adaptation and Vulnerability".

Historical climate projections for the Indian subcontinent suggest an overall increase in temperature by two degrees, which has resulted in a noticeable rise in heat waves and hot days.

Sumetee Pahwa Gajjar, who leads [climate change](#) research at the Indian Institute for Human Settlements, has conducted a regional diagnostic study for the critical risks and impacts of climate change in the semi-arid regions of Maharashtra, Karnatak and Tamil Nadu states in south-western and peninsular India. She found that rising occurrences of heat waves and hot days affected the health sector, mainly due to an increased outbreak of diseases and increased risk of heat stress. They also placed a big strain on the agricultural sector as well as on livestock and fisheries.

Francis Zwiers, director of the Pacific Climate Consortium, says human actions, such as the burning of fossil fuels, have increased the odds of extreme weather occurrences.

Events that used to happen every 25 years now happen every 15, he explains. One example is the European heat wave of 2003, during which

35,000 people died. It was the most extreme event of its kind since 1500 AD. In May 2015, India was struck by a severe heat wave that killed more than 2,500 people.

While it is all very new, research is examining weather models for future climates to show the probability of extreme events.

A recent study published in June 2015 in *Nature Climate Change* used 25 climate computer models to test the connection between global warming and extreme weather occurrences. It found that man-made global warming is responsible for about 75% of all hot-temperature extremes worldwide in the past 100 years and for about 18% of heavy rainfall. The study said climate change will cause higher percentages of extreme weather in future decades. For example, by the middle of this century, if temperatures continue to rise, about 95% of all heat waves and around 40% of precipitation extremes will be due to human influence.

Past research from the United Nations' Intergovernmental Panel on Climate Change has also shown that [heat waves](#) and heavy precipitation can be attributed in some part to global warming.

However, it is hard to confirm a distinct correlation. Climate systems are very complex and natural variability makes it difficult to separate out human influence on [extreme weather events](#) from other factors. In addition, [extreme weather](#) is relatively rare and it can take a long time to identify significant trends.

Adaptation has proven hard, especially in poverty stricken regions.

"Barriers to adaptation arise from resource-intensive development pathways, flawed governance mechanisms, inadequate information and socio-cultural characteristics," says India's Sumetee Pahwa Gajjar.

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