

The United Nations has cautioned of months of extreme weather in many of the world's most vulnerable countries brought about by what could be one of the strongest El Niño events to be recorded in 50 years.

El Niño — when warmer waters in the eastern tropical Pacific Ocean drive extreme weather conditions — causes drastic storms, dry spells and heavy floods, escalating the risk of disasters, diseases and forest fires, and jeopardizing power supply and food security at the local level.

“The main effect of El Niño in the Philippines is likely a reduction in rainfall,” said Dr Wendy Clavano, an earth systems scientist. “Drought already persists in parts of Mindanao and is forecast to last longer than in the rest of the Philippines.”

According to a World Food Programme (WFP) report, rice shortages are expected in the Philippines, Indonesia, Vietnam and other rice-consuming Southeast Asian countries while grain harvests have already been terribly hit by severe droughts in Central America and Africa.

This year's El Niño may be as severe as the one in 1997-98, when an estimated 23,000 people died.

“Water supply for domestic use and agriculture will suffer. Irrigation will be affected but farmers whose crops are rain-fed will suffer the most,” Clavano continued. “If the Amihan (winter monsoon) fails to bring enough rain, food security will become an issue.”

The lack of water has negative impacts on health and sanitation, including possible outbreaks of mosquito-borne diseases during a drought. “There is also a likelihood that air pollution will worsen as we switch from hydroelectric power generation to other non-renewable sources,” she warned.

Mindanao crisis

Clavano, who has a master's degree in environmental sciences from the University of Southampton in the United Kingdom and a doctoral degree from Cornell University in New York, has been invited to speak at the annual Xavier University - Research and Social Outreach event dubbed as "Festival of Ideas," which, this year, took on "El Niño: Mean Weather Kid."

"When the poorest suffer and more people become at risk of poverty, their children's health and schooling are affected, which in turn have lifelong impacts. These depressed abilities coupled with missed opportunities widen the social gap and fragment society further," Clavano remarked.

In their second semester outlook for the country, the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) reported that "Thirty-two provinces will likely be affected by the dry spell from August to November 2015," which means that what the country experiences now is expected to continue until the second quarter of 2016.

PAGASA identified the Mindanao provinces of Zamboanga del Norte, Zamboanga del Sur, Zamboanga Sibugay, Southern Cotabato, Sarangani, Sultan Kudarat, Basilan, Maguindanao and Sulu to be affected directly by El Niño.

According to PAGASA, the weather systems in July brought normal rainfall in western and central Mindanao but there was still shortage of rainfall in the provinces of Camiguin and Misamis Oriental. It said average ranges of temperature were recorded at 23°C to 34°C over lowlands of Mindanao and 19°C to 29°C over the mountainous areas of the second largest major island in the Philippines.

El Niño may persist until December 2015 then gradually weaken in early 2016, PAGASA reported.

"For this ongoing drought, any economic progress might be reversed. It will be important to understand the timing of drought impacts and know how to respond at the appropriate time to different needs and sectors," said Clavano, who has applied her remote sensing skills in various fields including oceanography and hydrology.

“Scientific information for 2015-2016 is available as much as six months in advance. Because of this, it is possible to plan for a more deliberate rather than an ad hoc disaster preparation and response,” Clavano related, adding that disaster risk reduction is also about exposure and vulnerability.

“This means that more often than not the problem is no longer scientific but institutional. In the field of disaster risk reduction, it is not enough to simply characterize a hazard and the uncertainties associated with the current science,” she said.

Clavano added, “When scientific forecasts do not match outcomes, people are put off. This is unfortunate. In fact, scientific knowledge and understanding are the foundations of technology and innovation that have improved the lives of many.”

Drastic melting of ice

Clavano explained the science behind El Niño and the stern melting of ice on Earth at the Festival of Ideas on November 25.

“I think that the Festival of Ideas is a contribution Xavier University can uniquely make in Cagayan de Oro. It is the office of Research and Social Outreach that would naturally provide such a venue and facilitate dialogue on issues that affect the city and its neighbors,” she said.

For Clavano, there is an urgent need to bring the ideas and concepts of disaster science closer to common experience. She underscored why climate change work matters for development in places far away from the cryosphere.

“Science needs to inform policy. In the Philippines, this is where I think the link is not strong. Scientific concepts need to be conveyed in a holistic yet simple way,” she said.

Born and raised in CDO, Clavano returned to the Philippines to work on disaster risk reduction problems, focusing on sea level change and rainfall climatology.

“National and local authorities as well as stakeholders need to build capacities for disaster resilience. Coordinated action in preparation and response is necessary; it also saves time and money. Trust needs to be fostered in the risk communication process.”

On November 26, a free screening was held at the Nursing Amphitheater featuring Jeff Orlowsky’s “Chasing Ice,” a 75-minute film of time-lapse photos of melting ice in the Arctic, Antarctic and mountain glaciers like the Himalayas through the creative lenses of award-winning nature photographer James Balog.

Clavano shared that the film is a remarkable expression of the issue of climate change. “Environmental sensitivity does not have to be drudgery or a finger-pointing exercise. The beauty of ice and snow and wild landscapes is enough for me. I hope the images are powerful enough to make us think and move us to act.” (Stephen J. Pedroza/XU)