Climate scientists warn of more super-typhoons

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In an emotional speech to the UN Climate Change summit in Warsaw, the chief delegate for the Philippines, Naderev Saño, warned that massive tropical storms like Super Typhoon Haiyan, which just devastated his country, would become more frequent unless action was taken to reduce greenhouse gas emissions.

Haiyan hit the central Philippines last Friday leaving a trail of utter devastation in its wake. The United Nations yesterday raised the death toll to 4,460, nearly double the previous day and far higher than the final toll predicted by President Benigno Aquino earlier in the week. The UN also said more than 900,000 people were displaced and nearly 12 million people affected. A week after the catastrophe, millions lack adequate shelter, food, clean water and medical care.

"What my country is going through as a result of this extreme climate event is madness," Saño told the Warsaw conference. "The climate crisis is madness. We can stop this madness. Right here in Warsaw. Typhoons such as Haiyan and its impacts represent a sobering reminder to the international community that we cannot afford to procrastinate on climate action ...

"Science tells us that simply, climate change will mean more intense tropical storms. As the Earth warms up, that would include the oceans. The energy that is stored in the waters off the Philippines will increase the intensity of the typhoons and the trend we now see is that more destructive storms will be the new norm," he said.

The fifth assessment of the Intergovernmental Panel on Climate Change (IPCC), updated to include the latest climate studies, concluded: "The average tropical cyclone wind speed is likely to increase but the global frequency of tropical cyclones is likely to decrease or remain unchanged." In other words, global warming might not increase the number of tropical cyclones, also known as typhoons and hurricanes, but it raises the chances of far stronger and more devastating storms.

Typhoon Haiyan was one of the most intense ever recorded to have made landfall. According to the US military's Joint Typhoon Warning Center, Haiyan had winds reaching a sustained peak as high as 315 km/h, with gusts rising to a staggering 380 km/h, and a massive storm sea surge of around 5 metres. If accurate, these figures would make Haiyan worse than Hurricane Camille, the previous strongest recorded, which hit the US northern Gulf Coast in 1969 with sustained winds of 305 km/h.

Kerry Emanuel, a climate scientist at the Massachusetts Institute of Technology, is one author of a 2010 study which forecast that the average intensity of tropical cyclones would increase by up to 11 percent by the end of the century.

Emanuel explained to the media: "The tragedy of this particular storm is that it reached its [upper] limit just about the time it made landfall." Coastal towns and cities on Philippine islands, such Leyte and Samar, were not only lashed by extremely high winds, but were inundated by a wall of water that resembled the 2004 Asian tsunami. Many of those who died drowned.

Philippine weather officials estimated Haiyan's wind speeds substantially lower than those of the Joint Typhoon Warning Centre—a sustained peak of 235 km/h, with gusts up to 275 km/h. This significant disparity points to the limitations of the means used to collect the data, which in the Western Pacific rely primarily on satellite and radar technology. Philippine meteorologists do not have access to the US military's typhoon observation and prediction systems.

In the North Atlantic, satellite data is complemented by direct observations collected by aircraft loaded with

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sophisticated weather equipment—known as “hurricane hunters”—which fly directly into the storms. The additional data has allowed American meteorologists to greatly refine predictions of the paths and intensities of North Atlantic hurricanes.

The US military discontinued the flights in the Pacific in 1987 and no other government conducts such operations. “Since then, we’ve been pretty blind,” climate scientist Emanuel told the *New York Times*. He has recommended the establishment of an international typhoon centre, as well as aircraft or drones to track future tropical storms in the Pacific.

The lack of “hurricane hunters” in the Pacific raises an obvious question: would more accurate warnings about Haiyan’s intensity and trajectory have enabled lives to be saved?

Global warming is not only raising water temperatures, but sea levels as well, compounding the danger of the storm surges associated with typhoons. Jeff Masters, director of meteorology for the Weather Underground web site, told Reuters that rising sea levels had added about 5 percent to Haiyan’s storm surge. Whereas sea levels are estimated to have risen by two centimetres over the past century, the IPCC climate change assessment predicts rises of between 26 and 62 centimetres in the coming century.

The appeal by Philippine delegate Saño to the Warsaw summit will fall on deaf ears. As at previous international gatherings, the need to reduce carbon emissions is completely subordinate to nationalist rivalries and economic interests, especially of the major powers. No agreement has been reached to replace the very modest proposals contained in the so-called Kyoto Protocol, let alone the measures required to achieve the reductions generally agreed by climate scientists to be needed to prevent global warming.

The US, in particular, is intent on blocking a push by poorer countries for financial compensation for the impact of climate change, which is largely the historic product of advanced industrialised countries. The economic damage caused by more severe tropical cyclones alone could be immense. The Philippines has been hit by an average of 22 storms a year over the past decade, with damage averaging $200 million per typhoon.

The devastation caused by Typhoon Haiyan is not simply the product of immense forces of nature, but also of the profound social gulf between rich and poor that leaves millions of people highly vulnerable to such catastrophes. The homes flattened in cities and towns of the central Philippines were overwhelmingly the flimsy shanties of the poorest layers of society. While climate change is undoubtedly increasing the danger of future disasters, it is also a useful device for Philippine politicians, from President Benigno Aquino down, to divert attention from their own responsibilities and those of big businesses, local and foreign, in maintaining the present system of class exploitation that is deepening this divide.

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