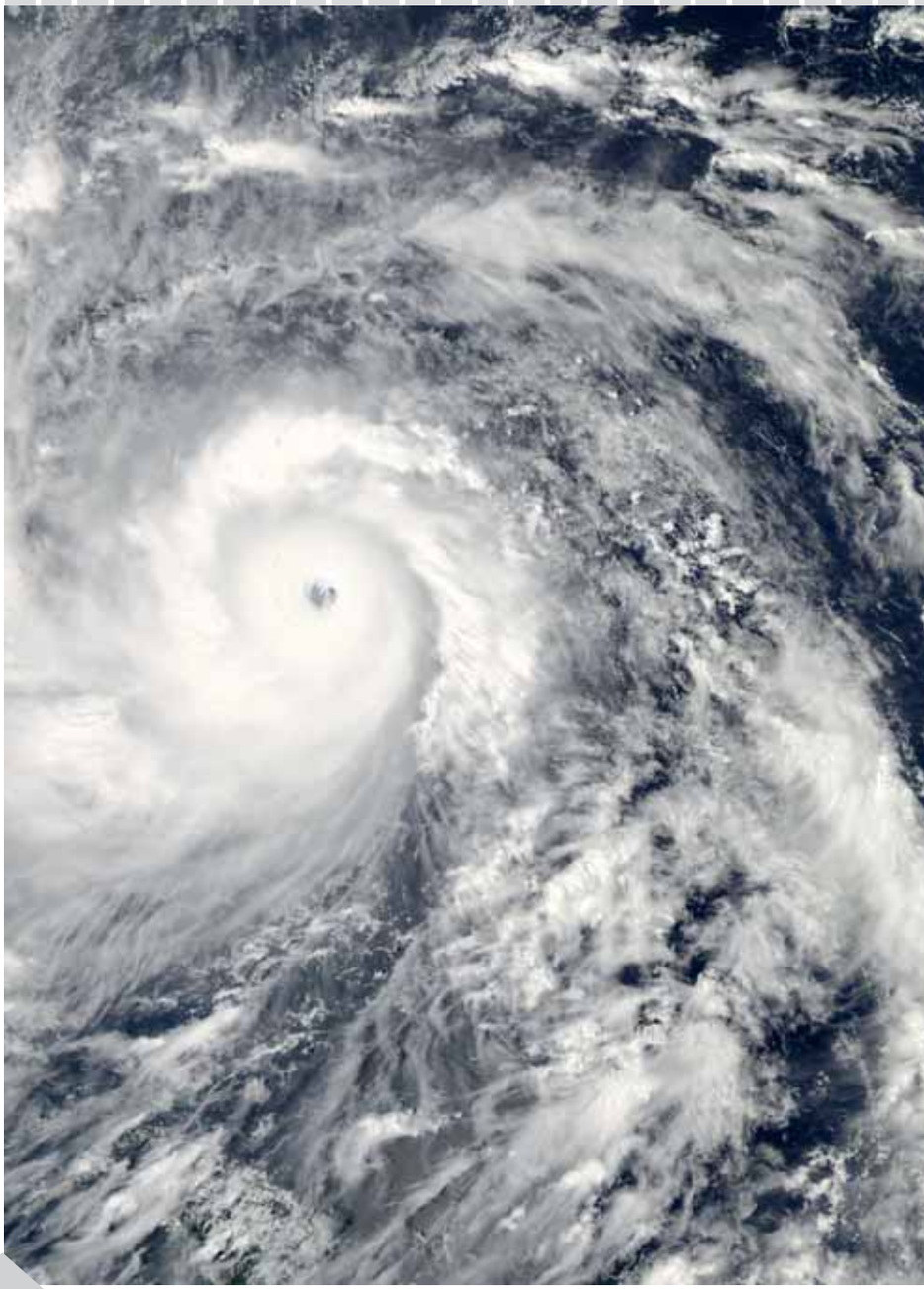
In the early hours of November 8, 2013, a new page was written in the Philippines' long history of disasters. The super typhoon Haiyan (which the Filipinos dubbed Yolanda) swept through the center of the archipelago with wind speeds of up to 315 kmph, leaving chaos and destruction in its wake. Three months later, there is still a lot to do.

HAIYAN: The Philippines tackles recovery after being struck by the super typhoon

GERENCIA DE RIESGOS Y SEGUROS

The genesis of the powerful typhoon was confirmed three days before it struck. At that point, it was still a Category 1 storm, but in just 24 hours Haiyan gained so much strength that it was upgraded to the highest level (Category 5) and was officially classed a super typhoon. The Philippine Atmospheric, Geophysical and Astronomic Services Administration (PAGASA) named it Yolanda.

With sustained wind speeds of 235 kilometers per hour and gusts of up to 315 kilometers per hour, Haiyan made its first landfall in the early hours of November 8 and plowed through the center of the Philippines from east to west, leaving chaos



and destruction in its wake. It then continued across the South China Sea on a straight course for Vietnam, which it hit, now weakened, with wind speeds of 100 kilometers per hour.

The figures released by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and the Philippine government paint a bleak picture of the devastation caused by the worst storm that has struck the archipelago in recent decades: 16 million people affected.

SUPER TYPHOON HAIYAN AFFECTED 16 MILLION FILIPINOS, LEAVING MORE THAN 4 MILLION HOMELESS

STATE OF EMERGENCY

The National Disaster Risk Reduction and Management Council (NDRRMC) constitutes the backbone of catastrophe management in the Philippines. Its members include representatives from every government department as well as the armed forces, the emergency services and civil society. There are four units with responsibility for different aspects of the disaster management cycle: Preparedness, Response, Prevention and Mitigation, and Rehabilitation and Recovery.

As the super typhoon approached, the Philippine authorities set about evacuating 800,000 people: the Asian country was clearly on the verge of one of the most devastating catastrophes in its history. This

time, the islands most affected by the tragedy were Samar and Leyte: towns and villages without water or electricity, roads blocked, trees uprooted, homes destroyed...

After the impact, a state of emergency was declared and several government ministers were sent to the area to oversee the response operations on the ground. These drew a number of criticisms: lack of resources, too little assistance provided too late, etc. A working group was also created to draw up a recovery plan.

DAMAGE APPRAISAL

Reinsurers and brokers have classed the super typhoon as the most deadly natural disaster of 2013, although there is no consensus on the number of fatalities. In late January, the NDRRMC announced a death toll of over 6,200, with few variations expected in the future.

The impact of the typhoon not only left a trail of fatalities but huge economic costs. A few days after the disaster, Bloomberg estimated damages of 14 billion dollars, nonetheless reporting that the equivalent of only 2 billion dollars would result in claims to insurers due to the scant penetration of insurance in the archipelago.

According to Philippine government figures, Yolanda has affected 16,078,181 people altogether (3,424,593 families), 28,626 people sustained injuries, and another 1,785 are reported missing. Haiyan also destroyed the homes of 4,095,280 Filipinos (890,895 families), and at the end of January 101,527 of these were still temporarily housed at one of the 381 evacuation centers.

REINSURERS AND BROKERS HAVE CLASSED THE SUPER TYPHOON AS THE MOST DEADLY NATURAL DISASTER OF 2013

In terms of the effect on homes, the typhoon hit a total of 1,140,332 houses, of which 550,928 were completely destroyed and 589,404 severely damaged. The losses in infrastructure and in the agricultural sector amount to more than 24.5 billion pesos, the equivalent of 412 million euros.

MOST AFFECTED SECTORS

Agriculture and fishing are undoubtedly the most affected sectors. The Philippine government estimates that the archipelago's battered economy will reduce gross domestic product (GDP) by between 8% and 10%. Between 50,000 and 120,000 tons of sugar and more than 131,000 tons of rice have been lost.

Meanwhile, more than one million families in the areas affected by the typhoon made a living from the prosperous coconut industry, but wind speeds of more than 300 kilometers per hour destroyed over 33 million coconut palms, some of which will take between six and eight years to grow again. Coconut oil is the country's principal raw material export and generates an average of 935 million dollars annually in export revenue.

In terms of fishing, the storm provoked by the super typhoon, with giant waves of up to 15 meters in height, destroyed over 30,000 boats. Filipino fishermen and farmers are facing enormous losses in the regions affected by Haiyan, warns the FAO. Yolanda flattened

crucial infrastructure: jetties and launching ramps, onshore cold storage, boat repair and maintenance workshops, etc. Key aquaculture infrastructure was also destroyed, including oyster rafts, mussel, crab and shrimp farms, as well as fish cages, hatcheries and fish ponds.

The economic losses for the sector are still being quantified but will be enormous. In 2011, deep-sea and offshore fishing in the areas affected accounted for 21% (514,492 tons) of the total Philippine municipal (carried out less than 15 kilometers from the coast and with boats of less than 3 tons) and commercial fishing sector, while the aquaculture in these regions, including algae, represents 33% of the national aquaculture production.

RECONSTRUCTION PLAN

The Philippines is facing an arduous and costly process of infrastructure reconstruction and economic regeneration.

One month after the disaster, the Philippine government put the reconstruction cost at around 250 billion pesos (approximately 4.25 billion euros). It also said that according to estimations from the National Disaster Risk and Reduction Management Council (NDRRMC), it would take between two and five years to completely rebuild the devastated areas.

Following the disaster, the government also plans to make key changes in the infrastructure network and has ordered the Environment Department to draw up a national plan aimed at minimizing the impact of natural disasters like typhoons, earthquakes, tsunamis and rising sea levels.

Typhoons, earthquakes and eruptions in the Philippines

According to the Spanish news agency EFE, these are some of the extreme weather events that have occurred in the Philippines:

- **August 1976.** A tsunami caused by a 7.9 magnitude earthquake devastated the Moro Gulf coast, leaving between 5,000 and 8,000 people dead, 90% of them because of a giant wave.
- **February 1984.** The ash, rocks and lava blasted from the Mayon volcano in the east of the country buried the town of Cagsawa, killing 1,200 Filipinos.
- **August 1984.** Approximately 1,350 people lost their lives when Typhoon Ike swept through the central provinces of the country.
- **July 1990.** A 7.8 magnitude earthquake ripped through a mountain near the city of Baguio in the north of the archipelago, causing 1,600 fatalities.
- **November 1991.** Tropical Storm Thelma caused flooding, killing 5,100 people in the city of Ormoc on Leyte Island.
- **February 2006.** An entire mountain collapsed in the center of Leyte Island, burying the town of Guinsaugon and claiming 1,126 lives.
- **December 2011.** Typhoon Washi shook the north of Mindanao Island, causing at least 1,080 fatalities.
- **December 2012.** Typhoon Bopha swept across the south of Mindanao Island, leaving nearly 2,000 people dead or missing.
- **November 2013.** Haiyan devastated the central provinces of the archipelago, with sustained wind speeds of 225 kilometers per hour and gusts that exceeded 300 kilometers per hour.

Meanwhile, the Department of Public Works and Highways will present a «structural resistance program» to improve the quality of the design and construction of buildings like schools, hospitals, police departments and fire prevention facilities to make them more resistant to natural disasters. In Tacloban, the capital of Leyte, a 40-meters-from-shore building ban has been enacted.

THE PHILLIPPINES ENVIRONMENT DEPARTMENT WILL DRAW UP A NATIONAL PLAN AIMED AT MINIMIZING THE IMPACT OF NATURAL DISASTERS

NATURAL DISASTERS IN THE PHILIPPINES

With around 20 typhoons a year, the Philippine archipelago, made up of more than 7,000 islands, is «accustomed» to the scourge of these natural disasters, not to mention other catastrophes like volcanic eruptions and earthquakes (see chart).

Its natural borders offer scant protection from the Pacific Ocean, which encounters no obstacles to reach the coast when a storm whips up. Typhoon Haiyan caused wind speeds of up to 315 kilometers per hour and giant waves of up to 15 meters in height.

But the main reason for so many natural disasters is the archipelago's location in the so-called Pacific Ring of Fire, one of the areas of the planet most prone to seismic and volcanic activity. That is why the country is frequently struck by tsunamis and earthquakes.

REDUCING THE RISK

Risk management is the only way to cope with natural disasters, and the Philippine authorities have invested significantly in disaster risk reduction (DRR) and climate change adaptation (CCA). In 2011, they dedicated 624 million dollars of public funds –2% of the national budget and 0.28% of the GDP– to DRR, and at least 5% of a local

authority's revenue is set aside for its Local Disaster Risk Reduction Management Fund.

The government also passed the Climate Change Act (CCA) in 2009, and, one year later, the Disaster Risk Reduction and Management Act (DRR). Furthermore, both DRR and CCA are cross-cutting concerns in economic policies, social development and the environment in the Philippine Development Plan 2011-2016.

A study by the Overseas Development Institute (ODI) in the United Kingdom, conducted before Typhoon Haiyan and included in the latest Oxfam Intermon report, rated the Philippines highly for its capacity to adapt to climate change and concluded that the country had a «better than average disaster risk management and adaptive capacity with a good chance of minimizing long-term disaster impacts now and in the future».

2013 natural disasters figures

International reinsurers and brokers have described Typhoon Haiyan as one of the most deadly events of 2013.

- **MUNICH RE.** According to the German reinsurer, the typhoon that swept through the southeastern Philippines at the beginning of November, leaving 6,000 people dead and millions homeless, caused damages to the tune of 10 billion dollars. However, the insured amount is less than 1 billion due to the scant penetration of insurance in the region. Munich Re puts the cost of natural disasters in 2013 at 125 billion dollars, whereas insurance companies covered 31 billion dollars. In total, the 880 natural disasters recorded in 2013 caused 20,000 fatalities, more than in 2012 but less than the 10-year average, which Munich Re puts at 106,000 fatalities.

- **SWISS RE.** The Swiss reinsurer also believes that Haiyan was the most deadly disaster of the year and estimates the death toll at over 7,000, with «substantial» material damages covered in a very limited way by the insurance companies. According to its estimations, the economic cost of the natural and human disasters that occurred in 2013 will amount to 130 billion dollars, compared with 196 billion in 2012. Altogether, the insurance industry will have to pay out 44 billion dollars for these disasters, a figure far lower than the 81 billion dollars paid out in 2012. These catastrophes claimed the lives of 25,000 people worldwide in 2013, which is a lot higher than the 14,000 recorded the previous year.

- **AON BENFIELD.** In its annual global climate and catastrophe report, Aon Benfield cites Typhoon Haiyan as the most deadly event of 2013, leaving nearly 8,000 people dead or missing. According to the broker, the losses insured for catastrophes in 2013 amounted to 45 billion dollars. Altogether, 296 climate events were recorded with combined economic losses of 192 billion dollars. Natural disasters caused total insured losses of 45 billion dollars, the lowest figure since 2009 and 22% below the 10-year average of 58 billion.

Hurricane, typhoon and cyclone: What's the difference?

In fact, all three terms refer to the same weather phenomenon. Scientists just call them different things depending on where they occur. Thus, in the North Atlantic and the Pacific they are called «hurricanes», in the northwestern Pacific, «typhoons», and in the northern Indian Ocean they are known as «severe cyclonic storms». In the southwestern Indian Ocean, they are «tropical cyclones», and so on.

What do vary are the seasons when they occur. While the Atlantic hurricane season runs from June 1 through November 30, the typhoon and cyclone seasons follow slightly different patterns. For example, in the northwestern Pacific, typhoons are most common from late June through December; in the northern Indian Ocean, they most frequently occur from April through December.

In any case, for these phenomena to be classed as a hurricane, typhoon or cyclone, they must reach wind speeds of at least 119 kilometers per hour. If a hurricane's wind speeds hit 179 kilometers per hour, it is upgraded to an «intense hurricane», and if a typhoon hits 241 kilometers per hour, it becomes a «super typhoon».

But Super Typhoon Yolanda has clearly shown that the measures implemented and the efforts invested in these matters always fall short, and there is still much work to be done in improving the response to impacts from future disasters, whatever their nature.

GLOBAL WARMING?

The monstrous typhoon that shook the world last November coincided with the Climate Change Conference in Warsaw (Poland). In recent years, scientists have debated whether global warming is making hurricanes stronger and more frequent, but there is no scientific consensus on the possible connection between climate change and these phenomena.

In general, Haiyan reflects an upward trend in risks from extreme weather events. Between the early 1970s and the year 2000, the number of Category 4 and 5 hurricanes doubled worldwide, and their virulence grew increasingly stronger.

The Warsaw Conference noted that the efforts a country makes to adapt to climate change or reduce the risk of disasters might be insufficient to mitigate the destruction caused by extreme weather events, and it therefore announced the creation of a mechanism to address the losses and damage that occur in spite of adaptation measures and policies. All that remains now is for governments to implement it.