



Natural disasters

2017



335

Reported
disasters



9,697

Dead
people



96 million

People
affected



334 billion

US\$ economic
damage

Lower mortality,
higher cost

Executive Summary

In 2017, 335 natural disasters affected over 95.6 million people, killing an additional 9,697 and costing a total of US \$335 billion. This burden was not shared equally, as Asia seemed to be the most vulnerable continent for floods and storms, with 44% of all disaster events, 58% of the total deaths, and 70% of the total people affected. Despite this, the Americas reported the highest economic losses, representing 88% of the total cost from 93 disasters. China, U.S., and India were the hardest hit countries in terms of occurrence with 25, 20, and 15 events respectively. Given the large land mass of each country, these results are not surprising.

Compared to the previous decade (2007-2016), there were fewer natural disasters, deaths, and total people affected in 2017, but with a higher price tag. Number of natural disasters in 2017 were similar to the annual average of 354 events, below the average of 68,273 killed per year, and well below the 210 million annual average people affected. In terms of economic losses however, there was a 49% increase than the previous average of \$141 billion.¹ After 2011, characterized by a devastating earthquake/tsunami in Japan, 2017 was the most expensive year in the decade due to a series of powerful hurricanes across the U.S. and the Caribbean. These include Hurricane Harvey, Hurricane Irma, and Hurricane Maria, costing \$95 billion, \$80.7 billion, and \$69.7 billion respectively. When looking at types of events, 2017 was characterized by a higher number of reported storms with 127 compared to the annual 98 average. Similar patterns were seen with wildfires, with 15 compared to the annual 9 average, and landslides, with 25 compares to the annual 17 average.

Mortality is quite low compared to the annual average of the last decade of 68,273. This is likely due to three events with very high mortality: the 2010 earthquake in Haiti (222,500 deaths); the 2008 Cyclone Nargis in Myanmar (138,000 deaths); and the 2008 Sichuan earthquake (87,000 deaths). The deadliest event in 2017 was the landslide in Sierra Leone in August, with 1,102 reported dead or missing, followed by Cyclone Okchi in December with 884 reported dead or missing in India and 27 deaths in Sri Lanka. Notably, these two events are characterized by a high number of missing, representing over half of the total death toll.

Specifically for the African and American continents, the 2017 mortality is higher than the 10 years average due to the occurrence of the landslide, earthquake (mentioned below), and hurricanes. These figures do not consider the revised death toll of Hurricane Maria in Puerto Rico from 64 deaths to 4,645 excess deaths,² or more recently 2,975 excess deaths.³ Additionally, although the total affected, 95.6 million, is well below the yearly average of the last decade of 210 million, Africa and the Americas have a greater proportion of people affected than the yearly average.

In terms of disaster events reported, the year was characterized by a record hurricane season with heavy losses, both economic and human, with at least 340 dead or missing for the 3 main hurricanes: Irma, Maria, and Harvey. In addition to hurricanes, losses were also seen as a result of two major earthquakes: one in September in Mexico with 369 fatalities and one in November in Iran/Iraq with at least 450 fatalities. Additionally, two strong wildfires in Portugal contributed to the human cost, with 64 fatalities in June and 45 fatalities in October. A single flood killed 834 people and affected almost 27 million people in August in India, Nepal and Bangladesh, and in China, 12 million were affected by a flood during the Mei-Yu season.

The data reported above suggest an emerging trend in natural disaster events demonstrating lower mortality but higher cost.

1 Economic loss figures were adjusted with the current US dollar value.

2 See article at NEJM – <https://www.nejm.org/doi/10.1056/NEJMsa1803972>

3 See report by the George Washington University: <https://publichealth.gwu.edu/content/gw-report-delivers-recommendations-aimed-preparing-puerto-rico-hurricane-season>

Occurrence of natural disasters

Figure 1

Number of disasters by continent and top 10 countries

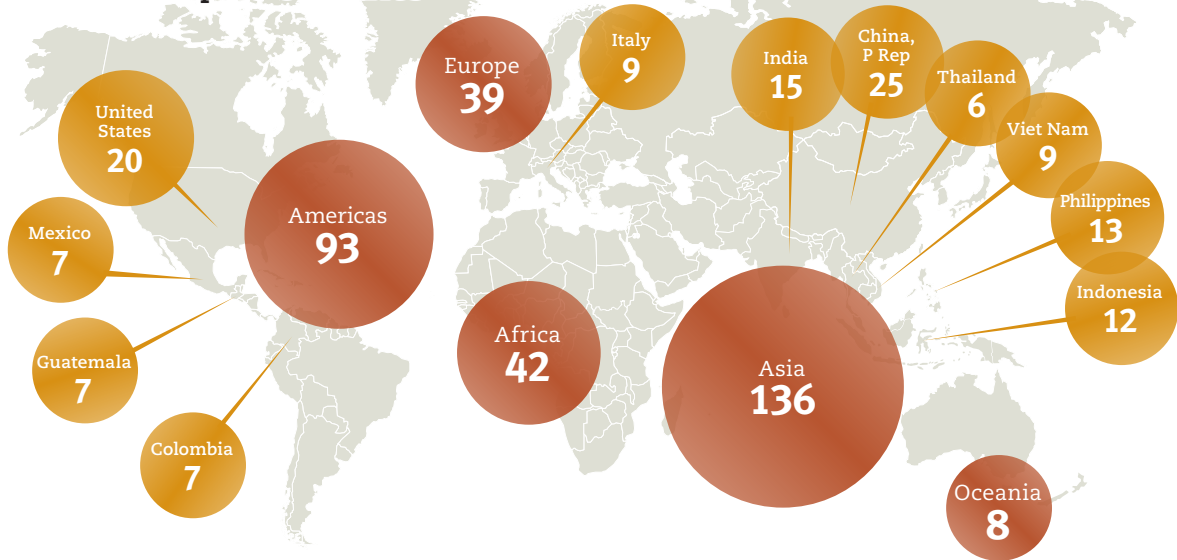


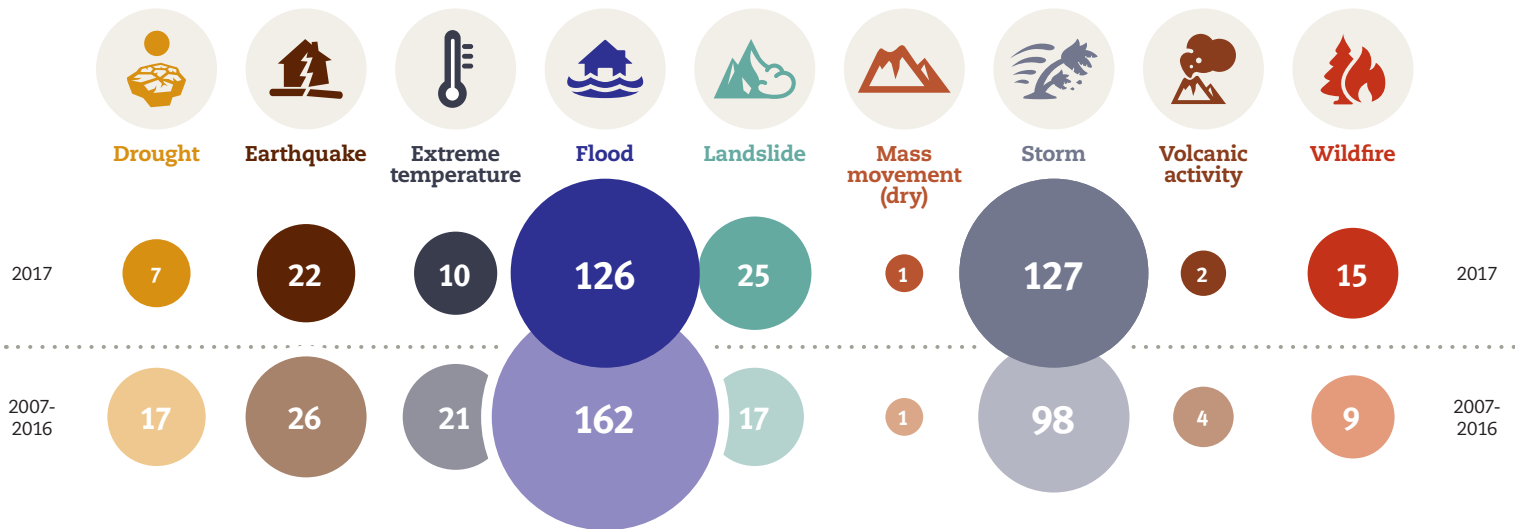
Figure 2

Occurrence by disaster type:
2017 compared to 2007-2016

354
2007 to 2016

>

335
in 2017



Human impact: total deaths⁴

Figure 3

Share of deaths (%)
by continent

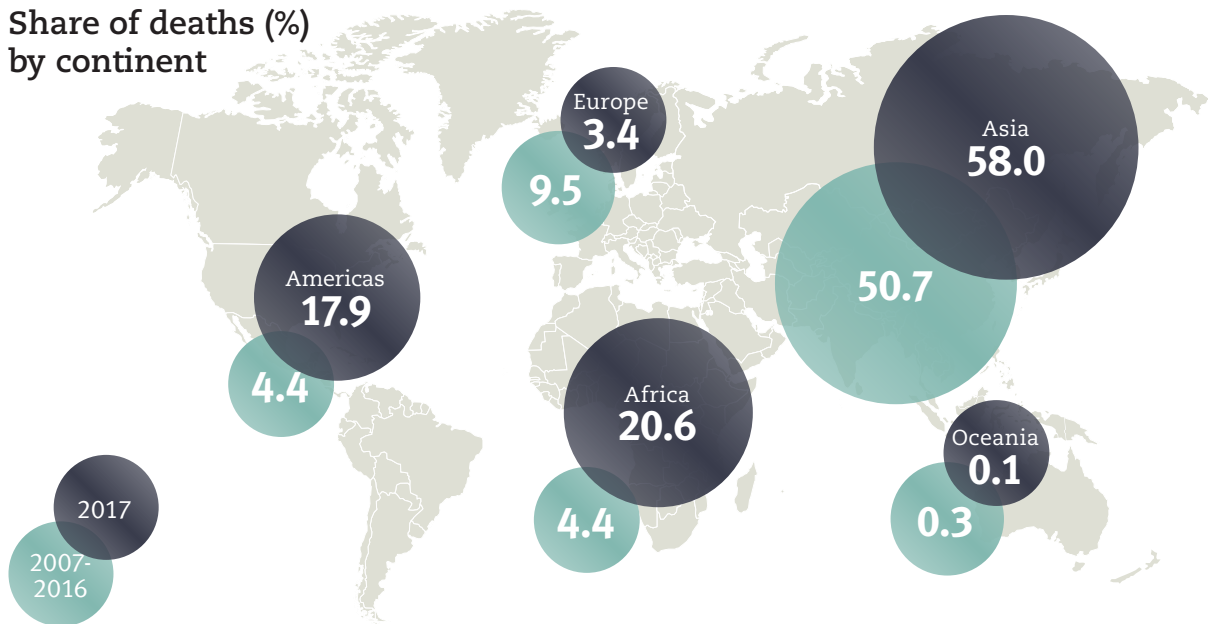


Figure 4

Number of deaths by disaster type:
2017 compared to 2007-2016

68,274
2007 to 2016

>

9,697
in 2017

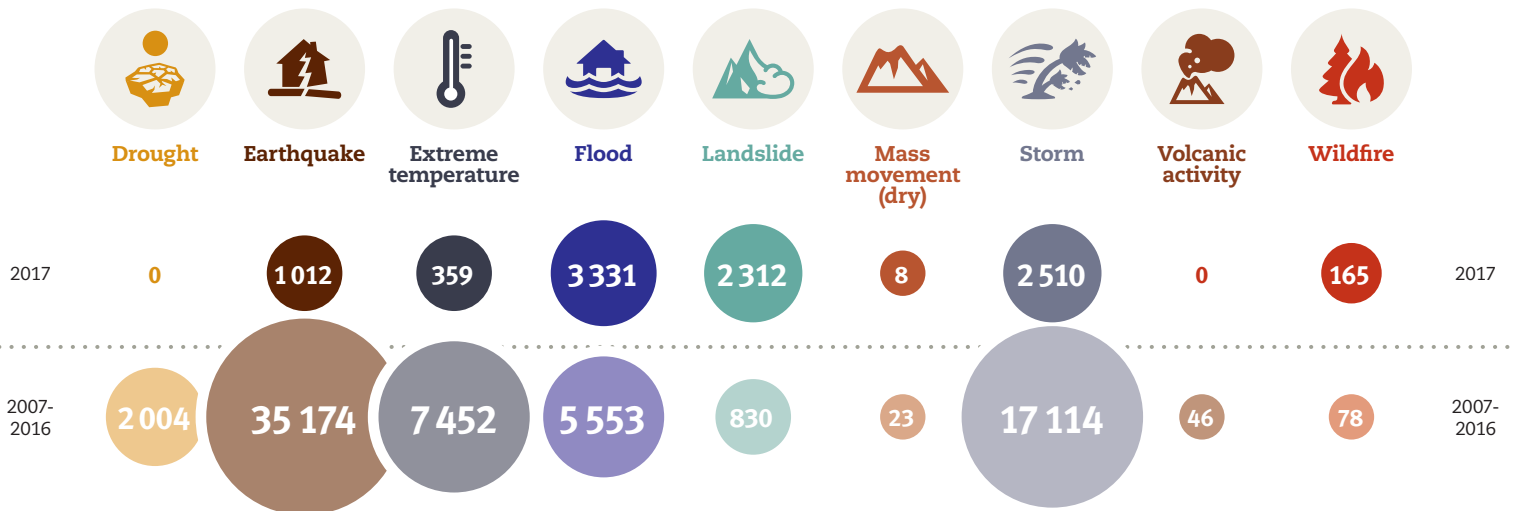


Table 1

Top 5
mortality

Sierra Leone	Mudslide	1 102
India & Sri Lanka	Cyclone Ockhi	911
India, Nepal, Bangladesh	Flood	834
Iran & Iraq	Earthquake	454
Mexico	Earthquake	369

⁴ Persons confirmed as dead and persons missing and presumed dead

Human impact: total affected⁵

Figure 5

Share of affected (%) by continent

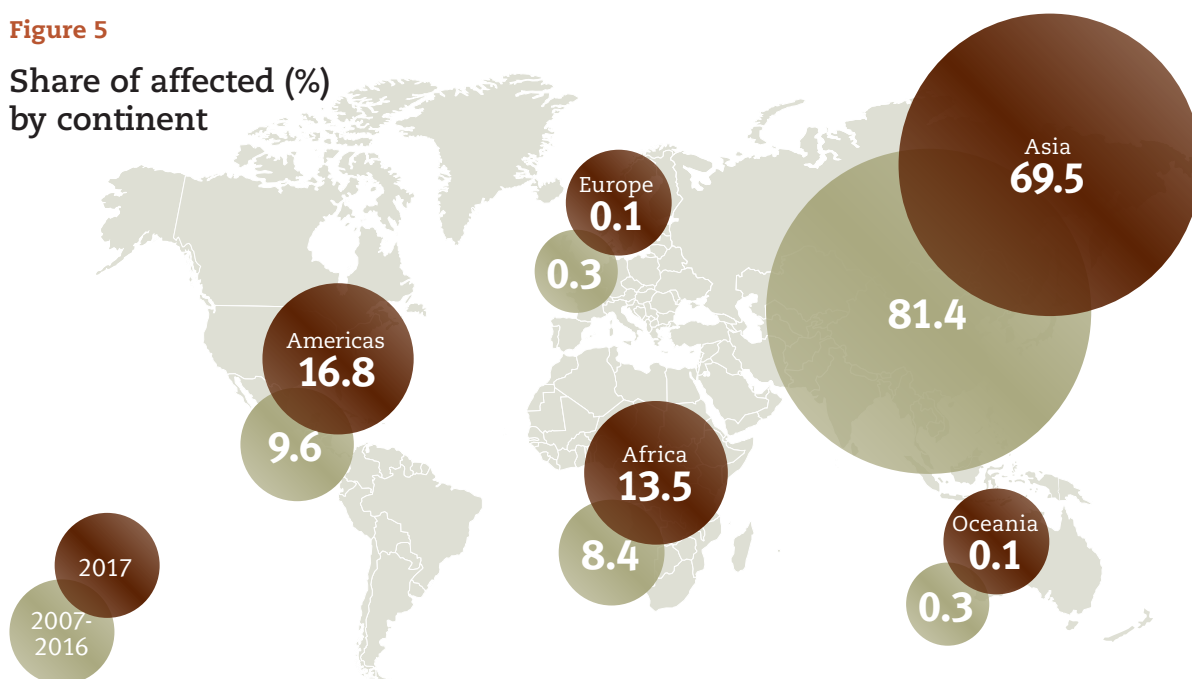


Figure 6

Number of affected (million) by disaster type: 2017 compared to 2007-2016

210
2007 to 2016

>

96
in 2017

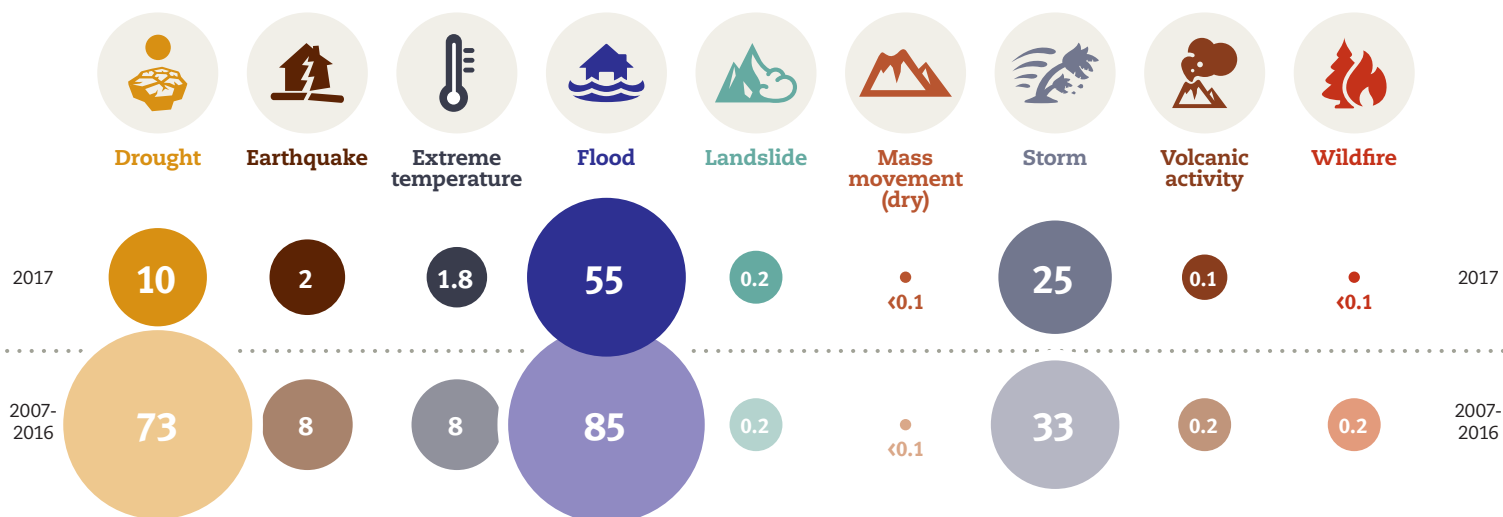







Table 2

Top 5 total affected

	India, Nepal, Bangladesh	Flood	26.9 million
	China	Flood	12.0 million
	Caribbean & USA	Hurricane Irma	10.1 million
	Viet Nam, Philippines	Typhoon Damrey / Ramil	4.3 million
	Mauritania	Drought	3.9 million

⁵ Sum of injured, homeless and affected

Economic Losses

Figure 7

Share of economic losses (%) by continent

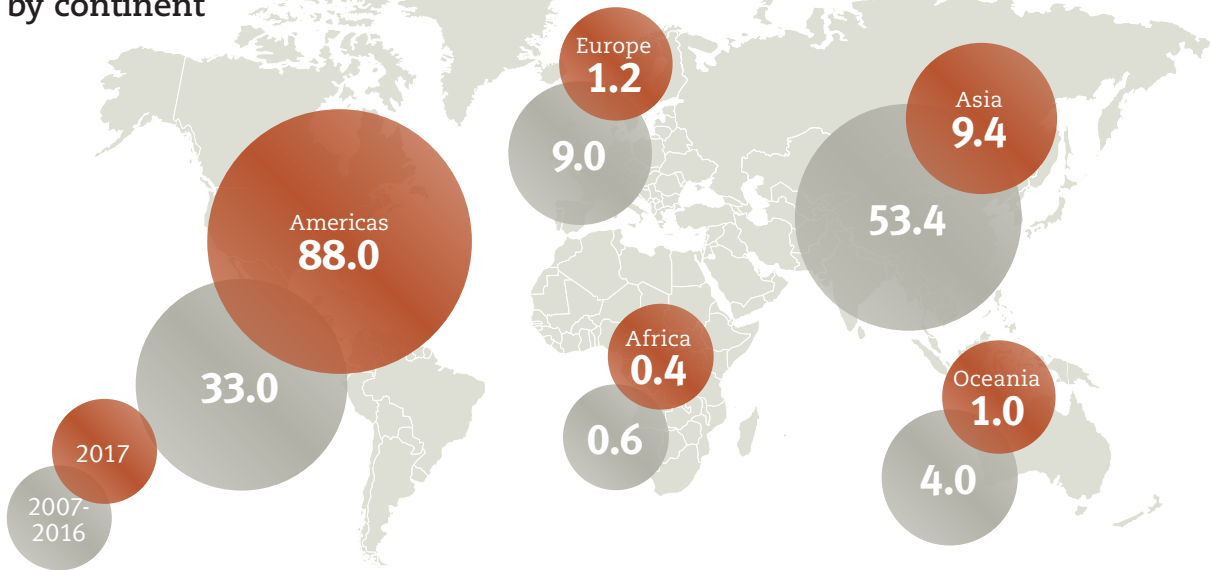


Figure 8

Economic losses (billion US\$) by disaster type: 2017 compared to 2007-2016

142 **<** 334
2007 to 2016 in 2017

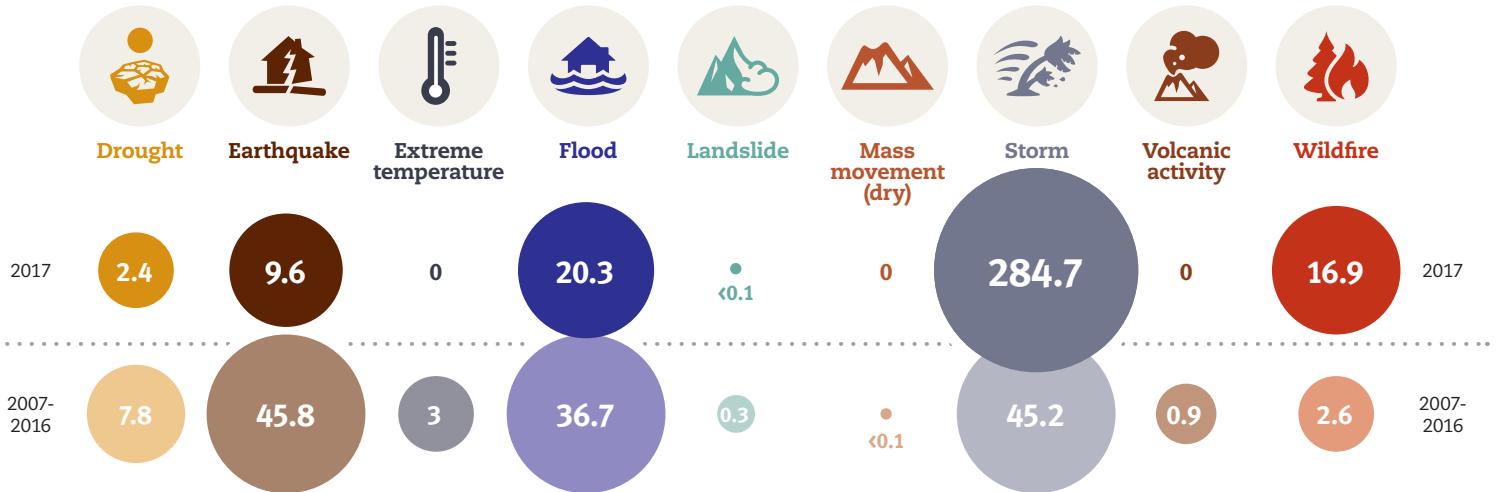


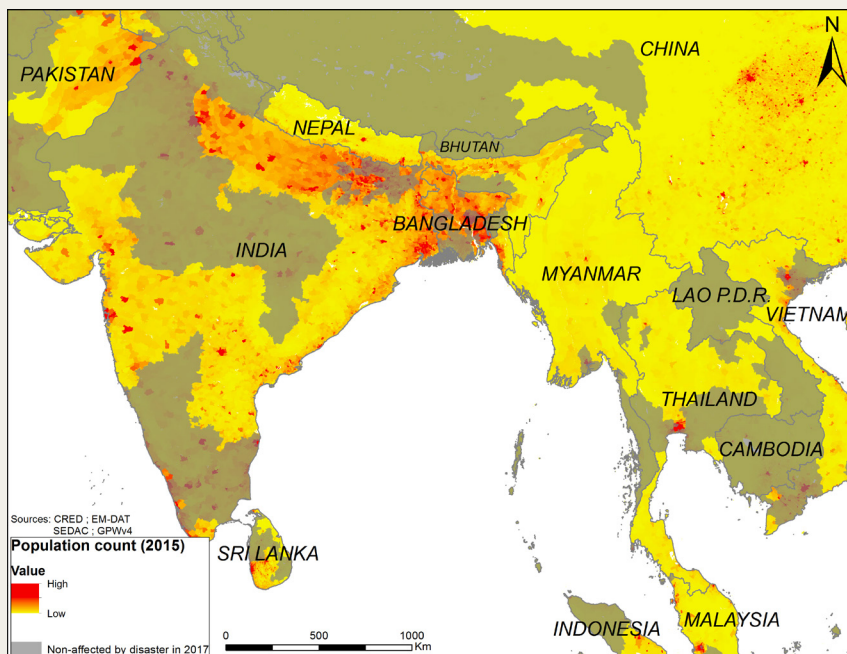
Table 3

Top 5 economic losses

USA	Hurricane Harvey	95 billion
USA & Caribbean	Hurricane Irma	80.7 billion
USA & Caribbean	Hurricane Maria	69.7 billion
USA	Wildfire	13 billion
China, Vietnam, Macao & Hong Kong	Typhoon Hato	7.1 billion

Georeferenced disasters⁶

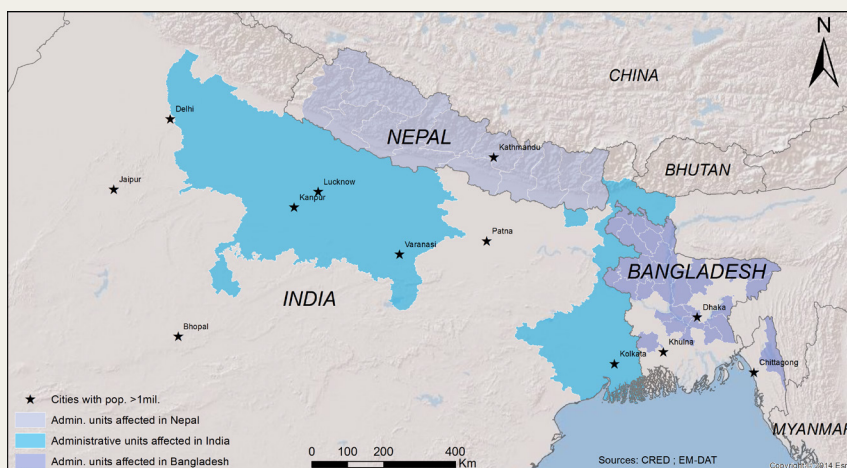
4.2 billion people, or more than half the worldwide population, were potentially exposed to natural disasters in 2017. When counting if a region was affected by multiple disasters, this number jumps to more than 11.2 billion people.



Map 1

Population and administrative zones affected by natural disasters in South and South-East Asian region

Flooding in India, Nepal, and Bangladesh reportedly affected almost 27 million people, with 450 million people living in the area identified as potentially exposed (PPE). Out of those potentially exposed, 18% were directly affected in Bangladesh, 6% in Nepal, and 2.5% in India. Estimations for both those directly and potentially affected contribute to understand the burden of the disaster on the population and where the greatest vulnerability may be.



Map 2

Administrative units affected with the highest number of people affected – Flood in August in India, Nepal and Bangladesh

6 For more information on Georeferencing, see CredCrunch 47, CredCrunch 43 & CredCrunch 36.

About EM-DAT

Since 1988, CRED has maintained the Emergency Events Database (EM-DAT). Initially created with the support of the WHO and the Belgian government, the main objectives of EM-DAT are to inform humanitarian action at the national and international levels in order to improve rational decision-making in disaster preparedness, provide objective data for assessing communities' vulnerability to disasters and help policy-makers set priorities.

EM-DAT contains core data on the occurrence and effects of more than 23,000 natural and technological disasters from 1900 to the present day. It is compiled from various sources (UN agencies, the US Office of Foreign Disaster Assistance, national governments, the International Federation of Red Cross and Red Crescent Societies, NGOs, insurance companies, research institutes and the media) according to a priority list.

CRED defines a disaster as “a situation or event that overwhelms local capacity, necessitating a request at the national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering”. Only natural disasters (biological excluded) are included in this publication. For a disaster to be entered into the database, at least one of the following criteria must be fulfilled:

- 10 or more people reported killed
- 100 or more people reported affected
- declaration of a state of emergency
- call for international assistance

Since 2014, EM-DAT also georeferences natural disasters, adding geographical values to numeric data which is essential for deeper analysis.

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