

SPOTLIGHT

THE ATLANTIC HURRICANE SEASON

and the importance of resilience

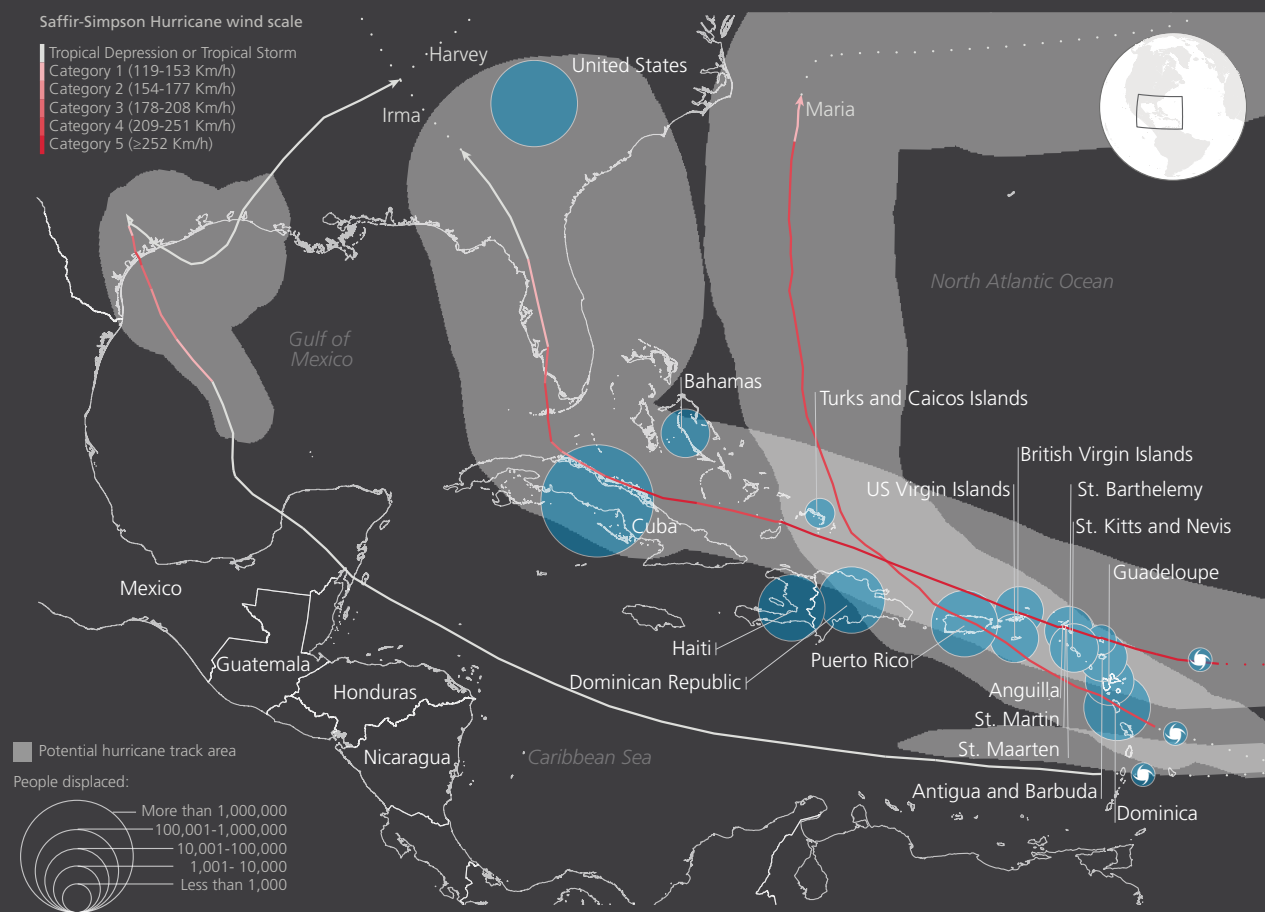
The 2017 Atlantic hurricane season was the seventh most active since records began in 1851 and the most active since 2005. Ten hurricanes affected around 20 countries and territories, of which six developed into category 3 storms or above.²⁰⁷ The three major hurricanes, Harvey, Irma and Maria, displaced over 3 million people in the space of a month. They hit as the region was still

recovering from the devastation wrought by hurricane Matthew, which displaced 2.2 million people in 2016.

The 2017 season set several new records. Harvey was the wettest recorded tropical cyclone in US history, dumping around 137 centimetres of rainfall on the continent.²⁰⁸ More than 19 trillion gallons of rainwater fell in parts of Texas, causing widespread floods and prompting the largest disaster response in the state's history.²⁰⁹ It was also the first major hurricane to make landfall in the US since Wilma in 2005, the 12-year gap being the longest on record.

Hurricane Irma was the most powerful hurricane ever recorded in the Atlantic, with maximum sustained winds of 296 km/h, accompanied by torrential rain and storm surges.²¹⁰ It also triggered the highest number of new displacements associated with a disaster in 2017 at more than 2 million, accounting for 11 per cent of the global total of 18.8 million. Irma affected 15 countries and territories, more than any other storm of the season.

FIGURE 6: People displaced by the three main storms of the Atlantic Hurricane Season 2017



Sources: IDMC analysis from several sources (e.g. FEMA, COE, Copernicus EMS, IOM, CDEMA, local governments, IFRC DMIS), Hurricane paths and track area NOAA (2017), population data from the Demographic and Social Statistics of the United Nations (UNSD, 2015).

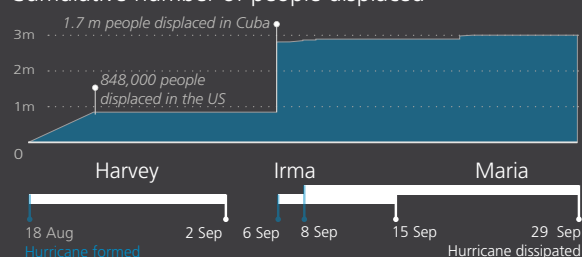
The US endured significant impacts and received most of the media coverage, but a number of Caribbean islands, including **Cuba**, **Dominica** and **Puerto Rico** also suffered substantial losses and displacement both as a result of pre-emptive evacuations and the damage and destruction of homes.

Dominica bore the brunt of hurricane Maria, which tore across the island as a category 5 storm on 18 September. Every household was affected. Dominica was unprepared for such an intensive event, making recovery and reconstruction challenging and slow. Three months after the disaster, only eight per cent of the island's inhabitants, mainly those living in the cities of Roseau and Portsmouth, had had their electricity supply restored.

🌀 Around **3 million** people in 16 countries and territories were displaced during the 2017 Atlantic Hurricane Season. Most of the displacements were triggered by three major hurricanes: Harvey, Irma and Maria.

Event name	Country	Displaced People	Percentage of the displaced population in the territory
Harvey	United States	848,000	0.3
	Cuba	1,738,000	15.3
	United States	202,000	0.1
	Dominican Republic	24,000	0.2
	St. Maarten (Dutch part)	13,000	31.7
	Haiti	13,000	0.1
	St. Martin (French part)	11,000	2.7
Irma	British Virgin Islands	6,000	19.2
	Bahamas	1,600	0.4
	Guadeloupe	1,500	0.3
	St. Barthelemy	1,500	16.2
	Antigua and Barbuda	1,400	1.5
	Anguilla	500	3.4
	US Virgin Islands	390	0.4
	Puerto Rico	190	0.01
	Turks and Caicos Islands	60	0.2
	St. Kitts and Nevis	33	0.1
Maria	Puerto Rico	86,000	2.3
	Dominica	35,000	47.4
	Dominican Republic	23,000	0.2
	US Virgin Islands	1,900	1.8

Cumulative number of people displaced



The economy, which depends on tourism and agriculture, was also hard hit. Post-disaster needs assessments suggest the tourism sector is likely to take at least a year to recover given the extent of infrastructure damage. This leaves people who depend on tourism for their living to face the dual challenge of losing their income while trying to rebuild their homes.²¹¹

Crops, boats and other farming and fishing equipment were also lost or destroyed, which will have a knock-on effect on neighbouring countries because Dominica is an important exporter of food to the region.²¹² The extent of the damage to the economy was such that people may be forced to leave the island in search of decent job opportunities and living conditions.²¹³

The total number of people Maria displaced on Dominica is hard to quantify. IOM identified around 3,000 people still living in collective centres across the island two weeks after the storm struck, but numerous unofficial displacement sites and host families were not assessed. Initial assessments of destroyed and damaged buildings put their number at between 17,000 and 20,000. These would have been home to 54,000 people, or about 80 per cent of the island's population.²¹⁴ Based on building assessments conducted by the government in mid-December 2017, we estimate that more than 35,000 people were displaced, and they are likely to remain so, until they fully recover from Hurricane Maria.

Like Dominica, **Puerto Rico** was also unprepared for Maria's impacts, making recovery and reconstruction slow. The island's economy was already in crisis, the result of years of mismanagement, and around 40 per cent of its inhabitants were living in poverty. This in turn meant that spending on social programmes was high, but Puerto Rico – which is an unincorporated US territory – receives little federal funding relative to its population size.²¹⁵ Nor had it received any federal disaster aid a month after Maria struck, unlike other affected areas of the US such as Florida, Georgia, Texas and the US Virgin Islands.²¹⁶

This despite the fact that Puerto Rico was left without mains drinking water, 80 per cent of its power grid was destroyed and mobile and other communications infrastructure badly damaged. Around 60,000 homes were still roofless three months after the disaster.²¹⁷ The island's economic losses were estimated to amount to around 73 per cent of its GDP, and the poverty rate to have increased by 10 per cent.²¹⁸

On the island of St. Maarten, the hurricane damaged or destroyed 70 per cent of homes and buildings. Photo: The Netherlands Red Cross/Arie Kievit, September 2017



The situation in Puerto Rico shows how economic drivers combine with a storm's short and longer-term impacts to reduce a population's resilience and heighten its vulnerability, which in turn increases the risk of displacement. Maria displaced at least 86,000 people on the island, of whom 70,000 were evacuated from flood-prone areas after the failure of the Guajataca Dam.²¹⁹ Many people who fled their homes, however, took shelter with friends and family and were not counted, making the estimate conservative. There was also significant migration to the continental US, and this is likely to continue. Some estimates suggest the island could lose around 14 per cent of its population by 2019 as a result of Maria's impacts.²²⁰

The 2017 hurricane season also hit **Cuba** hard. The island was in the throes of a severe drought and was still recovering from the aftermath of hurricane Matthew in 2016 when Irma made landfall on 9 September. The storm raged for more than 71 hours and affected 12 of Cuba's 15 provinces. More than 158,000 houses were reported damaged, of which more than 16,600 were partially collapsed and around 14,600 completely destroyed.²²¹

Cuba, however, offers a lesson in resilience. All Cubans are taught what to do when hurricanes approach from an early age. Disaster preparedness, prevention and response are part of the national curriculum, and people of all ages take part in drills, simulation exercises and other training. The island's civil defence system and meteorological institute are pillars of its disaster risk management system, and every individual has a role to play at the community level as a storm bears down. Schools and hospitals are converted into shelters and transport is quickly organised.²²²

Around 1.7 million people were evacuated before and during Irma, keeping them safe from its destructive power and demonstrating that, when managed as a resilience measure, displacement need not always be a negative outcome.