Aon Benfield
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Global Catastrophe Recap

February 2018

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Executive Summary

- Heavy snow and frigid temperatures grip most of Europe as countries count the financial cost
- Magnitude-7.5 earthquake causes catastrophic damage in Papua New Guinea; at least 75 dead
- Flooding rain and convective storms lead to costly damage impacts in the Central & Eastern U.S.

An outbreak of cold, arctic air and Storm Emma affected a large portion of Europe during the second half of February and into early March as temperatures fell to some of their coldest levels in decades. Many countries across the entire continent reported frigid conditions, while other areas reported unusually heavy snow and freezing rain accumulation – including the United Kingdom. Thousands of flights were cancelled or delayed and many different sectors were closed due to inclement conditions. Governments reported that at least 88 fatalities were reported due to hypothermia and other incidents. The total financial cost, including business interruption, was expected to minimally reach well into the hundreds of millions (USD) – though likely to be higher. A high volume of filed insurance claims was already reported.

Two winter storms also led to widespread travel disruption in the United States.

A powerful magnitude-7.5 earthquake struck Papua New Guinea on February 26, killing at least 75 people and injuring more than 500 others. Officials reported that thousands of homes and other structures were destroyed due to ground shaking and subsequent landslides, with even more extensive impacts cited to regional infrastructure. A state of emergency was declared for the hardest-hit provinces of Hela, Southern Highlands, Enga, and Western. The government allocated PGK450 million (USD140 million) for initial recovery efforts, though the final damage bill is expected to be even higher.

A magnitude-6.4 earthquake struck just offshore eastern Taiwan on February 6, causing widespread damage across the city of Hualien. At least 17 people were killed and 278 others were injured.

An active stretch saw torrential rainfall and severe thunderstorms lead to widespread damage across central and eastern sections of the United States. At least 15 people were killed. States of emergency were declared in parts of Indiana, Missouri, Ohio, Kentucky, Michigan, and Louisiana due to flooding after thousands of properties were inundated. A tornado outbreak, including six twisters rated EF-2, caused damage in the Ohio Valley. Total economic damage was expected to minimally exceed USD200 million.

Severe thunderstorms affected Argentina that included an individual hailstone measured at 7.1 inches (18.0 centimeters) in diameter in Cordoba. If confirmed, it would be the largest hailstone ever recorded in the Southern Hemisphere.

Seasonal rainfall in Indonesia led to severe flooding across the archipelago. A combined 24 people were left dead or missing and nearly 30,000 homes were inundated by flooding or landslides.

South America recorded multiple big flood events in February, with parts of Brazil, Bolivia, and Argentina affected. Total economic damage was topped USD200 million to property, infrastructure and agriculture.

Other notable floods occurred in Malaysia, Canada, Malawi, and in the Middle East.

Cyclone Gita impacted several island nations in the South Pacific Ocean, causing significant damage in parts of Tonga, Fiji, Samoa, American Samoa, New Caledonia, and New Zealand. Damage to infrastructure and public structures alone was estimated at up to USD50 million.

United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/03-02/07	Winter Weather	Plains, Midwest, Northeast	7	Thousands	Millions
02/07-02/10	Winter Weather	Plains, Midwest, Northeast	5	Thousands	Millions
02/19-02/22	Flooding	Plains, Midwest, Southeast	10	Thousands	100+ million
02/23-02/27	Severe Weather	Plains, Midwest, Southeast	5	Thousands	100+ million

Multiple winter storms impacted central and eastern sections of the United States from February 3-7, bringing periods of heavy snow, freezing rain and ice. The inclement weather was particularly impactful in Iowa, where dozens of traffic accidents left at least seven people dead. Heavy snow elsewhere across the Midwest and Northeast saw accumulations approach of exceed 12 inches (30.5 centimeters) and led to road closures and some flight cancellations. Total damage was estimated in the millions (USD).

A series of winter storms developed and impacted parts of the Plains, Midwest and Northeast from February 7-10 in the United States. Significant snowfall – aggregated at nearly 20 inches (51 centimeters) – was recorded in major metro areas such as Chicago, IL, where the city tied a record with nine consecutive days of measurable snowfall, and Detroit, MI. Widespread damage in the affected areas was not reported, though there was notable disruption on the roads and at airports. Thousands of flights were cancelled or delayed.

A slow-moving storm system prompted consecutive days of heavy rainfall across parts of the Plains, Midwest, and Southeast from February 19-22. The combination of warm temperatures, accelerated snowmelt and the heavy rains led to dozens of rivers and streams swelling to above flood stage. Some of the worst flooding was reported in Indiana, Illinois, Michigan, and Wisconsin. At least 10 fatalities were reported during the event, including many due to vehicle accidents as much colder air behind the leading cold front led to icy conditions in the Plains. Total economic and insured losses were expected to exceed USD100 million.

Powerful thunderstorms led to an outbreak of tornadoes and damaging straight-line winds across the Plains, Midwest and the Southeast on February 24-25, causing widespread damage. The storms were in addition to continued significant riverine and flash flooding in these same areas which inundated thousands of homes, businesses and vehicles during a period beginning on February 19. At least five people were killed in storm-related incidents. States of emergency were declared in parts of Indiana, Missouri, Ohio, Kentucky, Michigan, and Louisiana due to flooding and thunderstorm-related impacts. Total economic and insured losses were estimated to each well exceed USD100 million.

Remainder of North America (Non-US)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/16	Earthquake	Mexico	0	18,000+	Millions
02/19-02/22	Flooding	Canada	0	Thousands	10s of Millions

A powerful magnitude-7.2 earthquake struck Mexico's Oaxaca state on February 16, though damage was not nearly as substantial as feared. No direct casualties were reported, though two people were injured. The tremor struck at 5:39 PM local time (23:39 UTC) with an epicenter located in the Sierra Madre del Sur mountain range in Southern Mexico and located nearest the city of Pinotepa Nacional. Reports indicated that more than 18,000 structures were damaged – mostly due to cracking – and additional impacts to infrastructure. At the peak, 1.3 million customers were without electricity. Total economic damage is expected well into the millions (USD).

Heavy rainfall associated with a storm system that spawned flooding in the United States also led to flood impacts in Canada. Most of the flood damage occurred in southern Ontario, including the communities of Brantford and Waterloo, after rivers overflowed their banks. Ice jams played a major role in the flooding. A state of emergency was declared in Brantford after the Grand River swelled and inundated many homes and businesses, prompting the mandatory evacuation of 2,200 residents. Total economic and insured losses were expected in the tens of millions (USD).

South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/29-02/08	Flooding	Bolivia, Argentina	7	Thousands	138+ million
02/09	Severe Weather	Argentina	0	Thousands	Millions
02/15-02/21	Flooding	Brazil	4	Thousands	10s of Millions

Tens of thousands of people were affected by flooding that impacted portions of Bolivia and Argentina at the beginning of February. At least seven fatalities were reported and large swaths of agricultural land were inundated. The most notable damage was incurred in River Pilcomayo Basin. Preliminary reports from agricultural sector industry groups estimated that total economic damage was poised to exceed USD138 million.

Severe thunderstorms spawned substantial hail across parts of Argentina on February 9. An individual hailstone measured at 7.1 inches (18.0 centimeters) in diameter was recorded at Cordoba. If confirmed, this would be the largest hailstone ever recorded in the Southern Hemisphere. The storms led to widespread damage to vehicles and structural windows, with estimated damage likely in the millions (USD).

Torrential rainfall caused widespread urban flooding in Rio de Janeiro, Brazil and elsewhere across Brazil from February 15-21. At least four people were killed. In Rio, an all-time historical record for 1-hour rainfall was broken as 123 millimeters (4.8 inches) of precipitation fell, surpassing the average monthly rainfall for the month of February. According to local media, dozens of homes were flooded in the neighborhoods. Part of a cycling route also collapsed near Sao Conrado due to a landslide. Other flooding was cited in Guaranta do Norte after a river overflowed. Total economic losses were well into the millions (USD).

Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/23-03/02	Winter Weather	Western, Central & Eastern EU	88+	Thousands	100s of Millions+

An outbreak of cold, arctic air engulfed a large portion of Europe during the second half of February as temperatures fell significantly below the freezing level. Many countries reported frigid conditions, while other areas reported unusually heavy snow accumulation – including in the United Kingdom. Virtually every country in Europe was affected by the wintry weather as thousands of flights were cancelled or delayed. Local governments reported that no fewer than 88 fatalities were reported due to hypothermia, notably in Poland. Heavy snowfall caused significant disruption in several countries. The total financial cost, including business interruption, was expected to minimally reach well into the hundreds of millions (USD) – though likely to be higher. A high volume of filed insurance claims was already reported.

Middle East

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/16-02/18	Flooding	Turkey, Iran, Iraq, Lebanon	3	Hundreds	Millions

A Mediterranean storm system triggered excessive rainfall accumulations across several Middle Eastern countries from February 16-18, causing localized flash flooding. At least three people were killed after flash floods and overflowing rivers led to severe damage in parts of Turkey, Lebanon, Iran, and Iraq. Hundreds of homes were inundated, though some of the worst damage occurred to local infrastructure. The flooding affected relief camps in Iraq, which accommodate more than 200,000 internally displaced.

Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/07-02/09	Flooding	Malawi	1	2,000+	Unknown

Periods of heavy rainfall led to widespread flooding in Malawi from February 7-9, killing at least one person. Among the hardest-hit areas included the Karonga District in the Northern Region, the Salima District in the Central Region, and Phalombe District in the Southern Region as many homes and other structures were left inundated. In total, more than 3,000 residents were displaced.

Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/03-02/12	Flooding	Malaysia	0	Hundreds	Millions
02/05-02/06	Flooding	Indonesia	4	7,228+	Millions
02/06	Earthquake	Taiwan	17	Thousands	100+ million
02/12-02/14	TS Sanba	Philippines	0	2,000+	<10 million
02/21-02/23	Flooding	Indonesia	20	20,000+	Millions

Torrential rainfall caused regional flooding in the Sarawak State, Malaysia located on the island of Borneo in the first half of February 2018. Nearly 5,000 were evacuated and hundreds of people sought shelter, notably in western and central parts of the state. Hundreds of homes and at least 17 schools were affected. Amounts of governmental aid for the impacted regions suggested that the cost of the flooding will be in the tens of millions of Malaysian ringgits.

Torrential rain prompted widespread urban flooding and landslides in Jakarta region on Java Island in Indonesia from February 4-6. At least four people were killed. More than 11,000 residents of low-lying areas around the nation's capital and in neighboring regions were evacuated after inundation depths exceeded 2.0 meters (6.6 feet). Much of the flooding occurred after officials were forced to open the gates of a reservoir in the upstream city of Bogor.

A strong, shallow magnitude-6.4 earthquake struck just offshore eastern Taiwan on February 6, causing widespread damage across the city of Hualien. At least 17 people were killed and 278 others sustained varying levels of injuries. The tremor followed days of foreshocks that swarmed just off the east coast of Taiwan. However, none of the previous temblors – which ranged from magnitude 4.0 to 6.1 – caused any damage. The event occurred on the second anniversary of another magnitude-6.4 event that left at least 117 people dead in southern Taiwan.

Tropical Storm Sanba made landfall in the Philippines' Mindanao on February 13. The minimal storm prompted flooding rains across central and southern sections of the country that led to roughly 2,000 homes reporting varying levels of inundation. At least 545 barangays indicated flood impacts, with more than 254,000 residents impacted by the storm. Total economic losses were expected to be less than USD10 million. Damage in agriculture reached approximately USD3.2 million.

A moderate magnitude-4.7 earthquake struck China's Yunnan Province at 10:09 PM local time on February 20 (14:09 UTC) with an epicenter near Jinping. Data from the Ministry of Civil Affairs (MCA) indicated that the tremor damaged more than 2,300 homes. Total economic losses were listed at CNY300 million (USD50 million).

Days of seasonal torrential rainfall on Indonesia's Java Island led to widespread flooding and a significant landslide in Pasir Panjang, leaving at least 20 people dead or missing. The rains, which were heaviest from February 21-23, left more than 20,000 homes inundated or damaged in the hardest-hit districts within Central Java province. Major damage was also cited to regional infrastructure and agriculture. Total damage was expected to reach into the millions (USD).

Oceania (Australia, New Zealand, South Pacific Islands)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
02/09-02/20	CY Gita	Tonga, Fiji, Samoa, New Zealand	1	10,000+	50+ million
02/26	Earthquake	Papua New Guinea	75+	Thousands	140+ million

Cyclone Gita impacted several island nations in the South Pacific Ocean from February 9-20. At least one fatality was confirmed. Most damage occurred in Tonga, where Gita impacted the archipelago at Category 4 intensity and became the strongest storm to impact the country since the modern records began 60 years ago. More than 7,700 homes and other structures were damaged or destroyed by high winds, storm surge and heavy rainfall on the main island of Tongatapu. Additional damage resulting from Gita was noted in Fiji, Samoa, American Samoa, New Caledonia, and New Zealand. Damage to infrastructure and public structures alone was estimated at up to USD50 million. Total economic costs were likely to push the final bill much higher. Tonga received a USD3.5 million payout from the Pacific Catastrophe Risk Insurance Company (PCRIC), the largest payout since the group established in 2016.

A powerful magnitude-7.5 earthquake struck Papua New Guinea at 3:44 AM local time February 26 (17:44 UTC February 25) with an epicenter located 89 kilometers (55 miles) south-southwest of Porgera. At least 75 people were killed, and more than 500 others injured. Officials reported that thousands of homes and other structures were destroyed due to ground shaking and subsequent landslides, with even more extensive impacts cited to regional infrastructure. A state of emergency was declared for the hardest-hit provinces of Hela, Southern Highlands, Enga, and Western. The government allocated PGK450 million (USD140 million) for initial recovery efforts, though the final damage bill is expected to be even higher.

Appendix

Updated 2018 Data: January

United States

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/03-01/05	Winter Weather	Eastern & Central U.S.	22	60,000+	1.1+ billion
01/08-01/09	Flooding	California	21	6,500+	100s of Millions+
01/14-01/17	Winter Weather	Plains, Midwest, Northeast, Southeast	16	Thousands	Millions
01/21-01/24	Winter Weather	Plains, Midwest	10	Hundreds	Millions

Remainder of North America (Non-U.S.)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/11-0/14	Flooding	Canada	0	Hundreds+	Millions

South America

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/14	Earthquake	Peru	2	2,541+	Millions

Europe

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-01/04	WS Eleanor & Carmen	Western & Central Europe	7	200,000+	1.0+ billion
01/06-01/07	Severe Weather	Spain	0	Hundreds	60+ million
01/08	Earthquake	Netherlands	0	3,000+	Millions
01/18	WS Friederike	Western & Central Europe	13	Thousands	2.0+ billion
01/20-02/01	Flooding	France	0	Thousands	100s of Millions+

Middle East

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/19-01/20	Winter Weather	Lebanon	15	N/A	Negligible

Africa

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/03-01/04	Flooding	Democratic Republic of Congo	44	Hundreds	Millions
01/12-01/13	CY Ava	Madagascar	73	4,800+	Millions
01/15-01/18	CY Berguitta	Mauritius, La Reunion	0	Thousands	10s of Millions
01/16-01/22	Flooding	Mozambique	11	15,000+	5.1+ million

Asia

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/01-01/07	Winter Weather	India, Nepal	94	N/A	Negligible
01/02-01/05	Winter Weather	China	21	3,500+	854+ million
01/13-01/17	Flooding	Philippines	11	1,900+	Millions
01/21-01/25	Winter Weather	Japan, China	5	Unknown	Millions
01/23	Earthquake	Indonesia	0	9,291+	Millions
01/24-01/29	Winter Weather	China	2	2,500+	1.1+ billion

Oceania (Australia, New Zealand, South Pacific Islands)

Date	Event	Location	Deaths	Structures/ Claims	Economic Loss (USD)
01/04-01/07	Flooding	New Zealand	0	3,600+	50+ million
01/31-02/02	Flooding	New Zealand	0	Thousands	10s of Millions

Additional Report Details

TD = Tropical Depression, TS = Tropical Storm, HU = Hurricane, TY = Typhoon, STY = Super Typhoon, CY = Cyclone

Fatality estimates as reported by public news media sources and official government agencies.

Structures defined as any building – including barns, outbuildings, mobile homes, single or multiple family dwellings, and commercial facilities – that is damaged or destroyed by winds, earthquakes, hail, flood, tornadoes, hurricanes or any other natural-occurring phenomenon. Claims defined as the number of claims (which could be a combination of homeowners, commercial, auto and others) reported by various public and private insurance entities through press releases or various public media outlets.

Damage estimates are obtained from various public media sources, including news websites, publications from insurance companies, financial institution press releases and official government agencies. Damage estimates are obtained from various public media sources, including news websites, publications from insurance companies, financial institution press releases and official government agencies. Economic loss totals include any available insured loss estimates, which can be found in the corresponding event text. Specific events may include modeled loss estimates determined from utilizing Impact Forecasting's suite of catastrophe model products.

Contact Information

Adam Podlaha
Head of Impact Forecasting
Aon Benfield Analytics
Impact Forecasting
+44.20.7522.3820
adam.podlaha@aonbenfield.com

Steve Bowen
Director (Meteorologist)
Aon Benfield Analytics
Impact Forecasting
+1.312.381.5883
steven.bowen@aonbenfield.com

Michal Lörinc
Catastrophe Analyst
Aon Benfield Analytics
Impact Forecasting
+420.234.618.222
michal.lorinc@aonbenfield.com

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