NatCatSERVICE

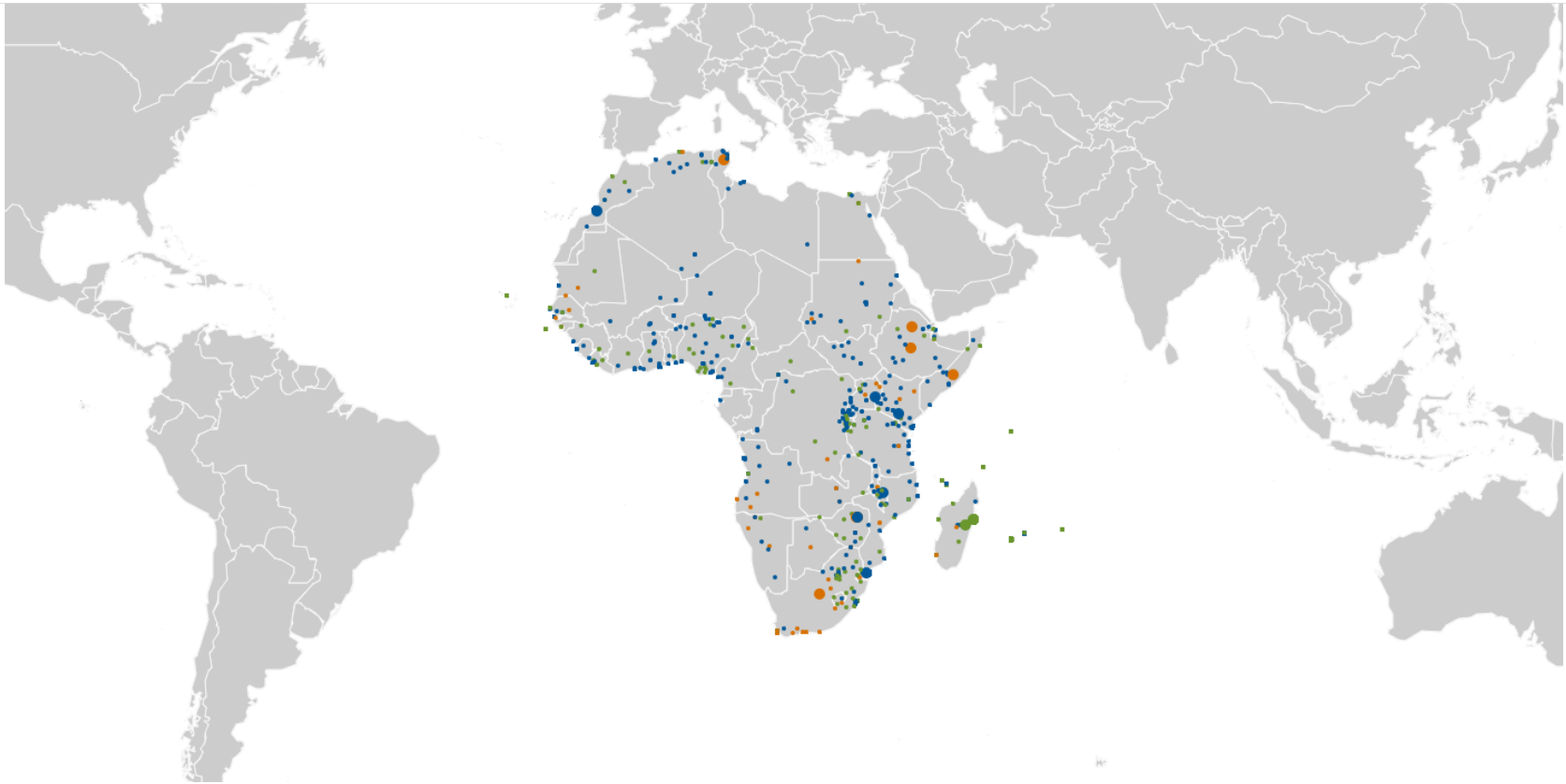
Relevant weather-related loss events in Africa 2013 – 2018

24 May 2019

Munich RE

Geographical overview

Relevant weather-related loss events in Africa 2013 – 2018



Source: Munich Re, NatCatSERVICE, 2019

- Small, medium and large loss events
- Catastrophes

476 registered events

- Meteorological events (Tropical cyclone, extratropical storm, convective storm, local storm)
- Hydrological events (Flood, mass movement)
- Climatological events (Extreme temperature, drought, forest fire)

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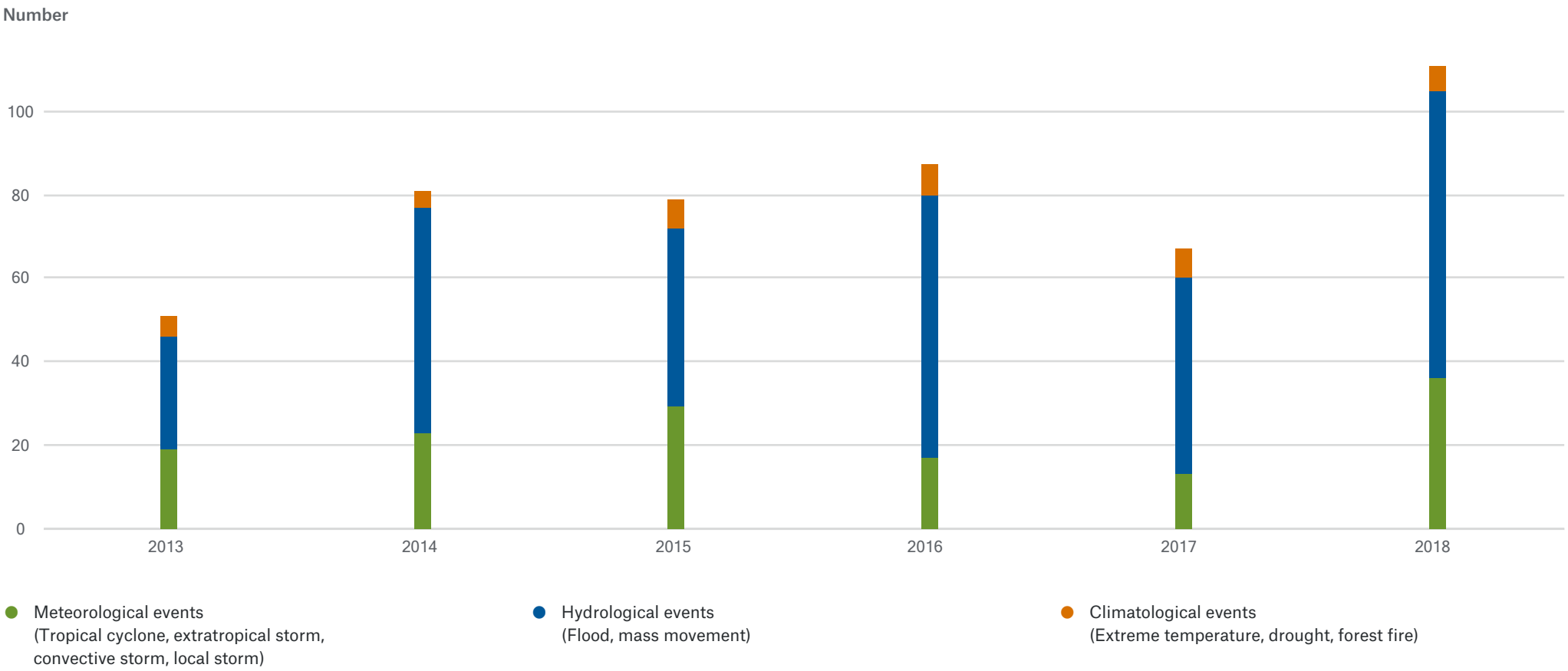
Number of events

Relevant weather-related loss events in Africa 2013 – 2018



Accounted events have caused at least one fatality and/or produced normalised losses ≥ US$ 100k, 300k, 1m, or 3m (depending on the assigned World Bank income group of the affected country).

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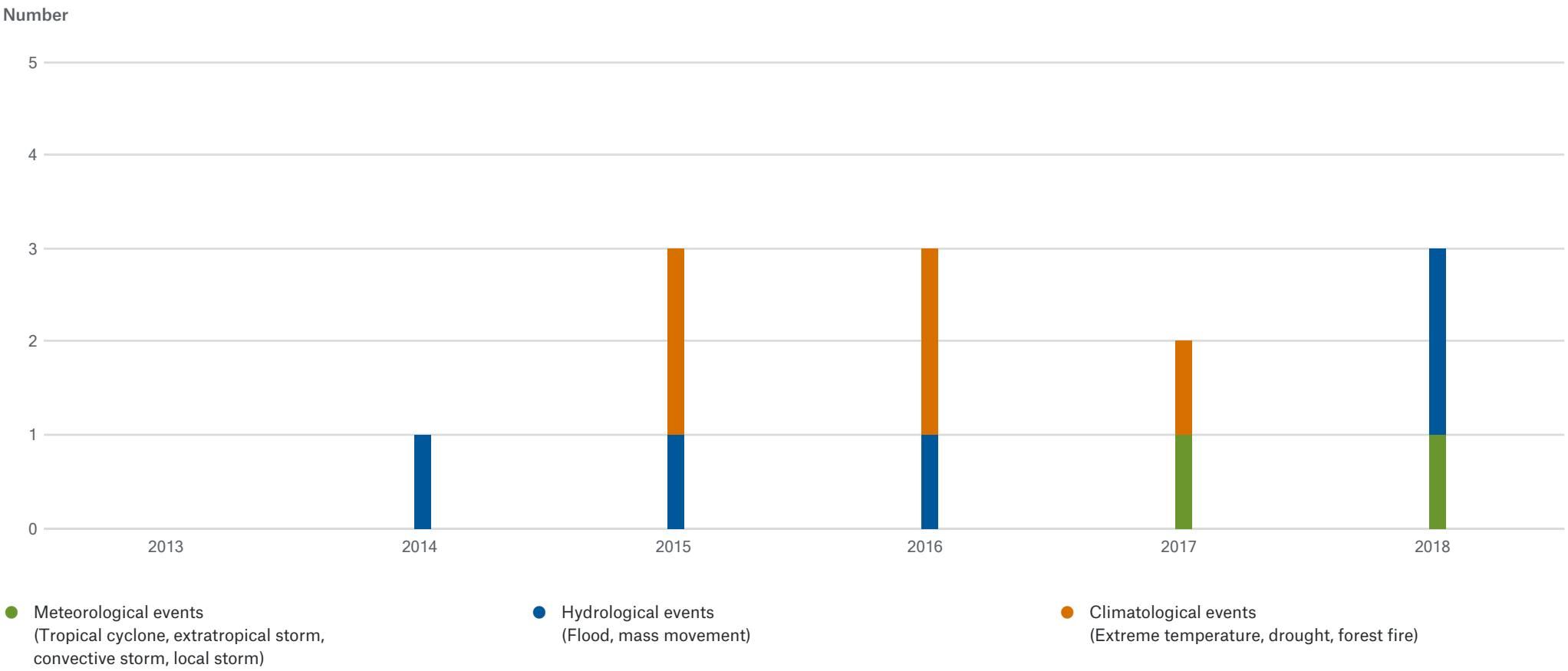
Number of events

Catastrophic weather-related loss events in Africa 2013 – 2018



Accounted events have caused ≥ 1,000 fatalities and/or produced normalised losses ≥US$ 100m, 300m, 1bn, or 3bn (depending on the assigned World Bank income group of the affected country).

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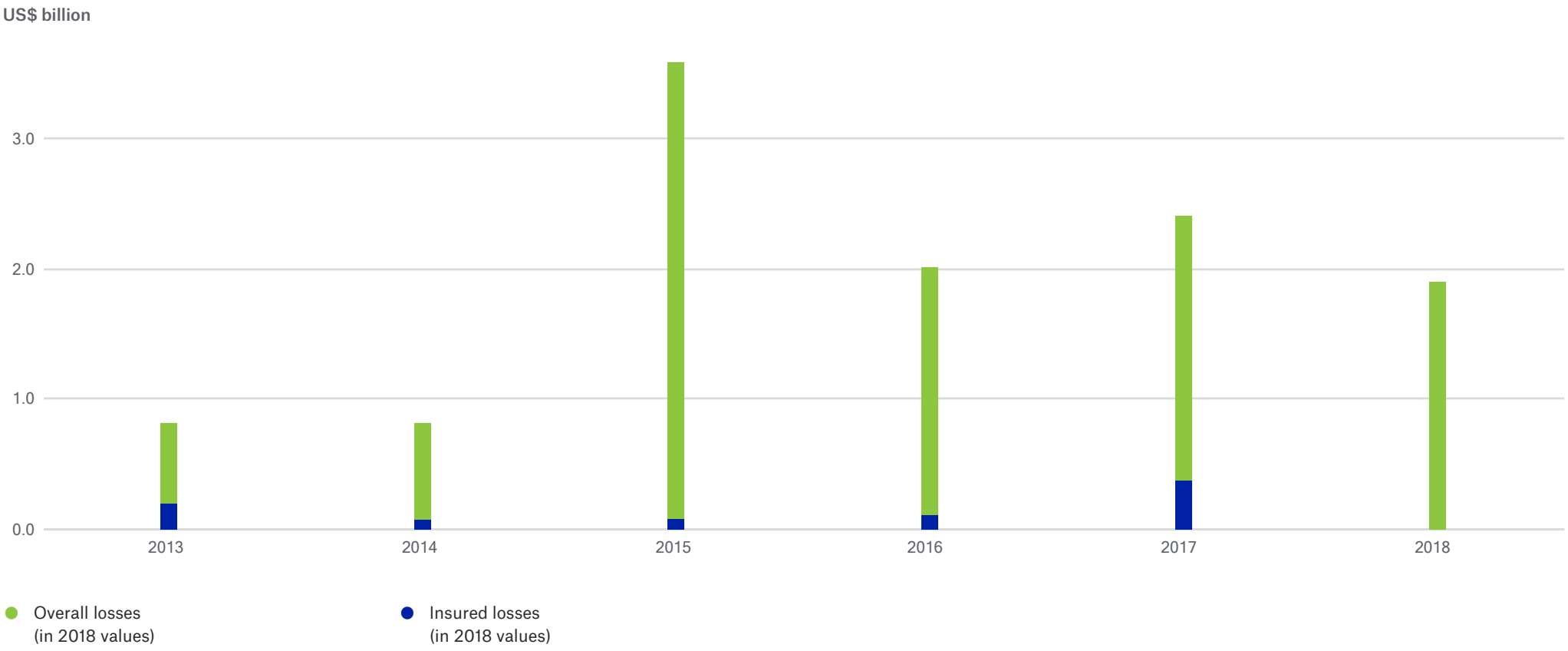
Overall and insured losses in US$

Relevant weather-related loss events in Africa 2013 – 2018



Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

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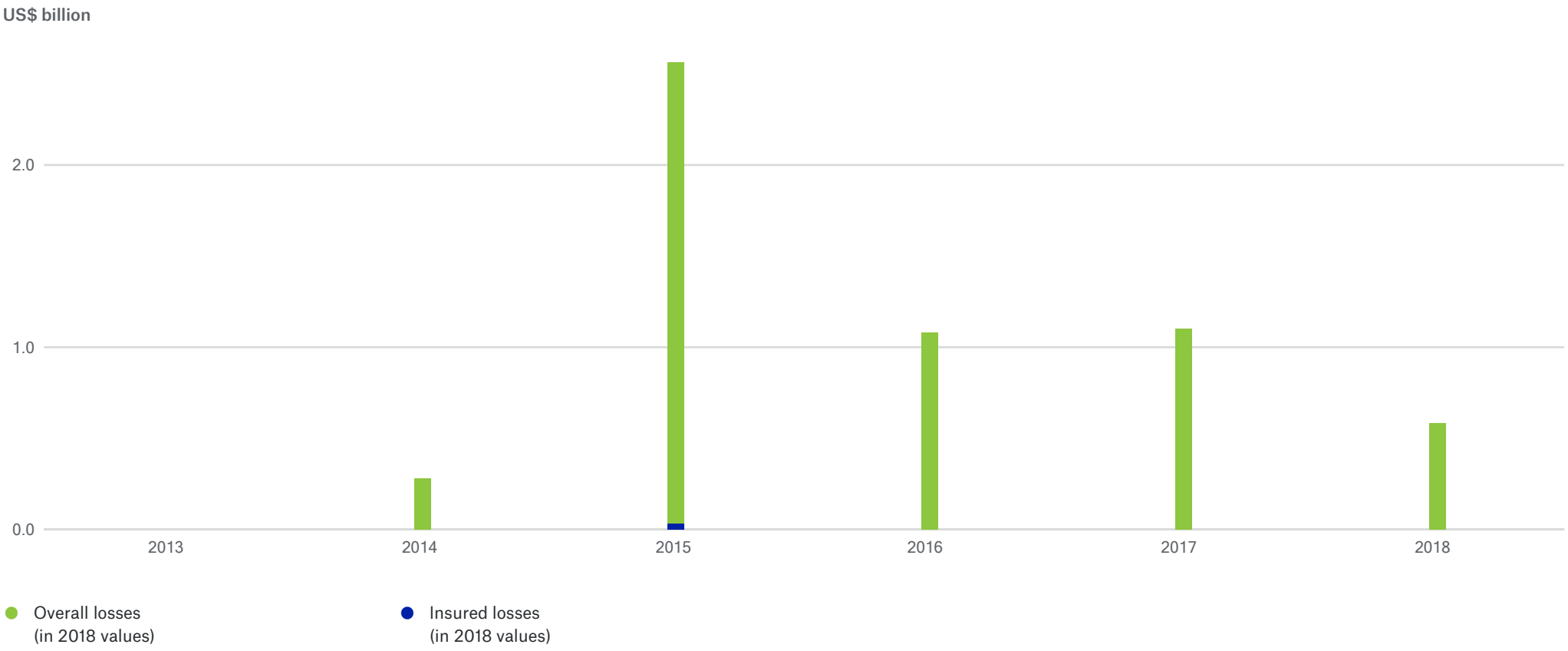
Overall and insured losses in US$

Catastrophic weather-related loss events in Africa 2013 – 2018



Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

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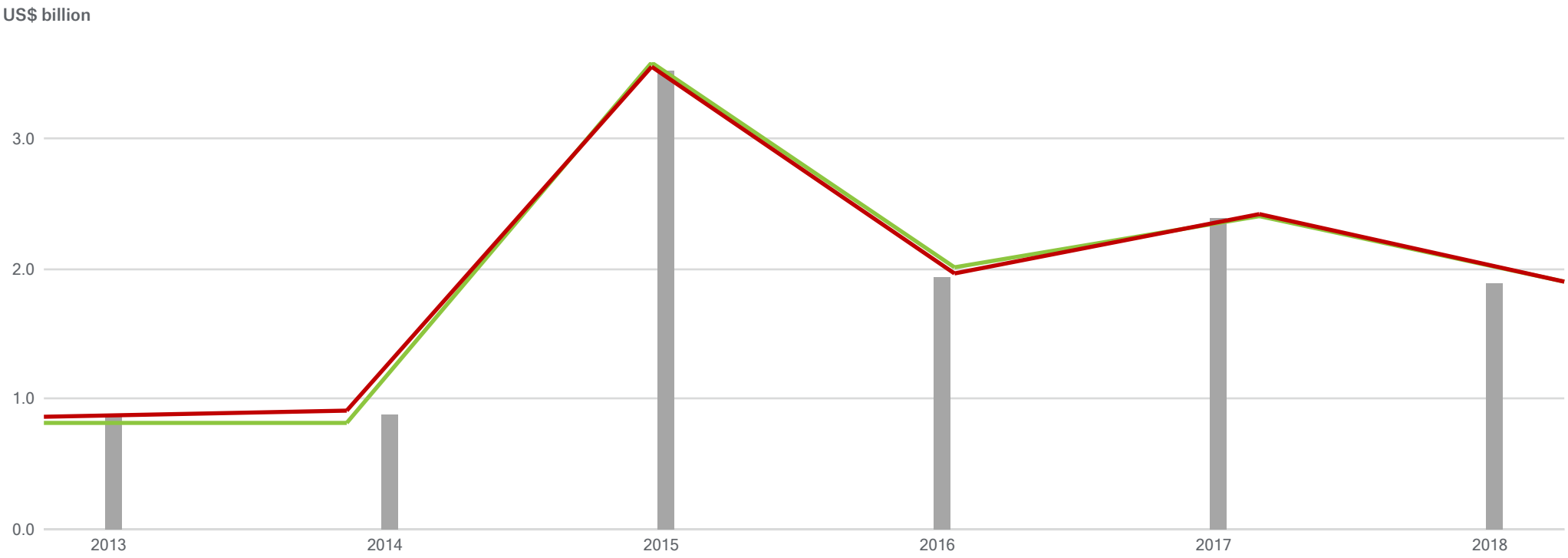
Overall losses in US$: nominal, inflation adjusted, and normalised

Relevant weather-related loss events in Africa 2013 – 2018



- Nominal overall losses
- Inflation adjusted overall losses (in 2018 values)
- Normalised overall losses (in 2018 values)

Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.
Normalization via local GDP developments measured in US$.

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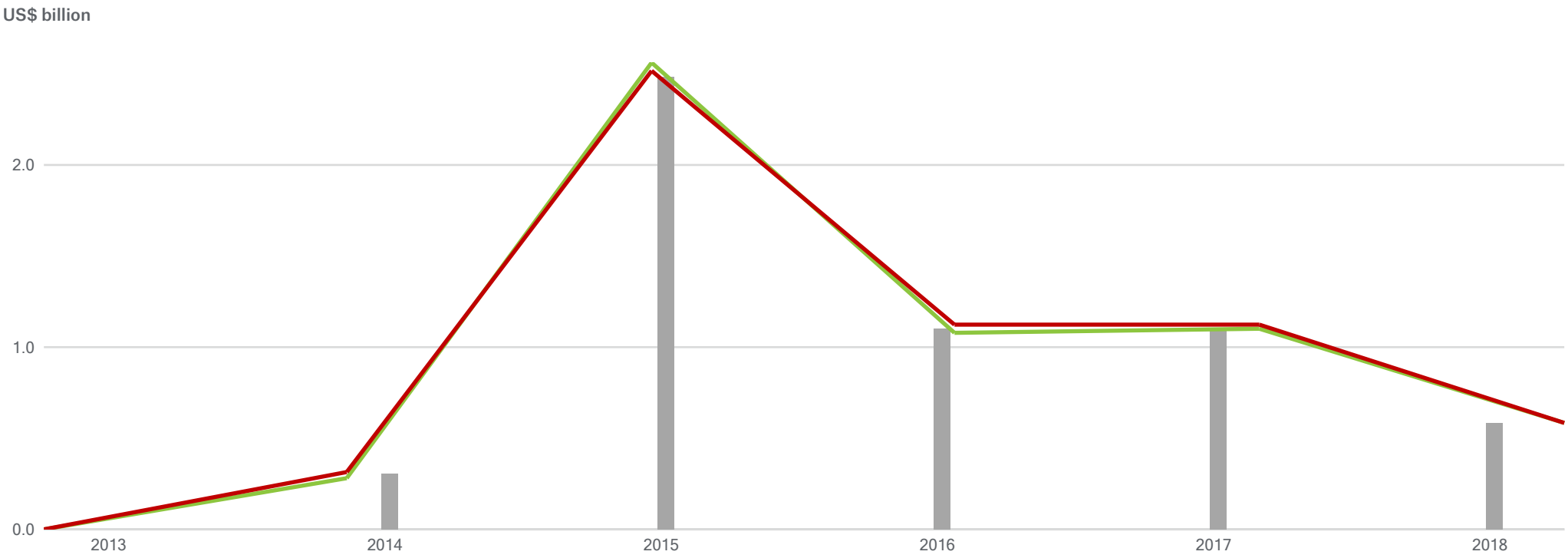
Overall losses in US$: nominal, inflation adjusted, and normalised

Catastrophic weather-related loss events in Africa 2013 – 2018



- Nominal overall losses
- Inflation adjusted overall losses (in 2018 values)
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Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.
Normalization via local GDP developments measured in US$.

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Percentage distribution by event family

Relevant weather-related loss events in Africa 2013 – 2018

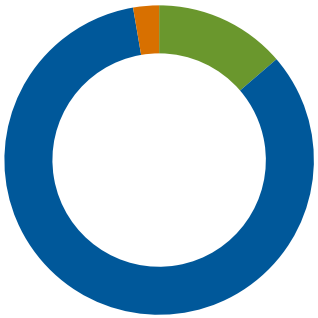
Number of events:
476

- 28.6%
- 63.8%
- 7.6%

Overall losses:
US$ 11,500m

- 12.9%
- 31.9%
- 55.2%

Fatalities : **7,247**



- 13.7%
- 83.6%
- 2.7%

Insured losses :
US$ 810m

- 37.0%
- 31.1%
- 31.9%

- Meteorological events (Tropical cyclone, extratropical storm, convective storm, local storm)
- Hydrological events (Flood, mass movement)
- Climatological events (Extreme temperature, drought, forest fire)

Accounted events have caused at least one fatality and/or produced normalised losses ≥ US$ 100k, 300k, 1m, or 3m (depending on the assigned World Bank income group of the affected country).

Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

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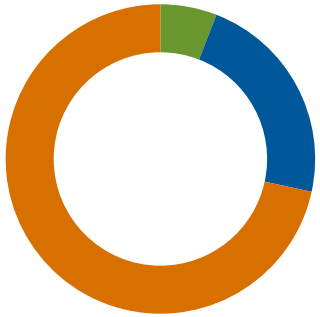
Percentage distribution by event family

Catastrophic weather-related loss events in Africa 2013 – 2018

Number of events:
12

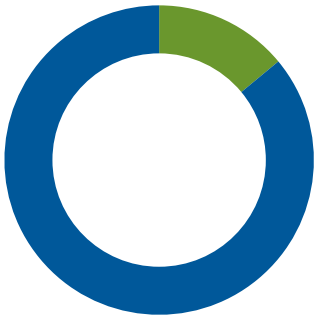
- 16.7%
- 41.6%
- 41.7%

Overall losses:
US$ 5,600m



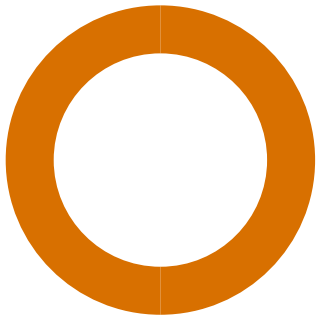
- 5.9%
- 22.5%
- 71.6%

Fatalities : **943**



- 14.0%
- 86.0%
- 0.0%

Insured losses :
US$ 27m



- 0.0%
- 0.0%
- 100.0%

- Meteorological events (Tropical cyclone, extratropical storm, convective storm, local storm)
- Hydrological events (Flood, mass movement)
- Climatological events (Extreme temperature, drought, forest fire)

Accounted events have caused ≥ 1,000 fatalities and/or produced normalised losses ≥US$ 100m, 300m, 1bn, or 3bn (depending on the assigned World Bank income group of the affected country).

Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

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5 costliest events ordered by nominal overall losses

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, original values)	Insured losses (US$m, original values)	Fatalities
Jan - Dec 2015	Drought	South Africa, Angola, Zimbabwe, Botswana, Madagascar, Malawi, Mozambique, Namibia, Zambia	1,800		
Jan - Dec 2017	Drought	Somalia, Ethiopia, Kenya	930		
Jun - Dec 2015	Drought	Ethiopia, Somalia	500		
Jan - Oct 2016	Drought	Zimbabwe, Angola, Lesotho, Madagascar, Mozambique, Namibia, South Africa, Swaziland, Zambia	500		
Jan - Dec 2016	Drought	Tunisia: Kairouan, Monastir, Jendouba	500		

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5 costliest events ordered by nominal insured losses

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, original values)	Insured losses (US$m, original values)	Fatalities
7 - 13 Jun 2017	Wildfire (Knysna Fire)	South Africa: Western Cape, Eden, Knysna, Cape Town, Brenton-on-Sea, Belvedere, Nania, Eastford, Welbedacht, Green Pastures, Rheenendal	420	200	9
28 Nov - 1 Dec 2013	Hailstorm, flash flood	South Africa, Swaziland	300	160	2
9 - 10 Oct 2017	Flash flood, hail	South Africa: KwaZulu-Natal, eThekwini, Durban, Nquthu, Gauteng	320	140	13
2 Jan 2014	Cyclone Bejisa, storm surge	Reunion: Le Port, Saint-Gilles, Saint-Leu, Le Tampon	150	60	1
9 Nov 2016	Flash flood, severe storm	South Africa: Gauteng, Alexandra, Ekurhuleni, Johannesburg	150	50	6

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5 deadliest events

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, original values)	Insured losses (US$m, original values)	Fatalities
14 Aug 2017	Landslide	Sierra Leone: Western Area, Freetown, Regent	30		500
Jan - Mar 2015	Flood	Malawi, Mozambique, South Africa, Zimbabwe	470		430
Jan - Apr 2013	Flood	South Africa, Angola, Botswana, Malawi, Mozambique, Zimbabwe	40		272
2 - 5 Jun 2015	Flash flood	Ghana, Togo	100		263
Dec 2016 - Feb 2017	Flood	Zimbabwe: Harare, Mashonaland East, Mashonaland West, Mashonaland Central, Masvingo, Midlands, Metabeleland North, Binga	100		246

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5 costliest events ordered by inflation adjusted overall losses

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, in 2018 values)	Insured losses (US$m, in 2018 values)	Fatalities
Jan - Dec 2015	Drought	South Africa, Angola, Zimbabwe, Botswana, Madagascar, Malawi, Mozambique, Namibia, Zambia	1,900		
Jan - Dec 2017	Drought	Somalia, Ethiopia, Kenya	930		
Jan - Oct 2016	Drought	Zimbabwe, Angola, Lesotho, Madagascar, Mozambique, Namibia, South Africa, Swaziland, Zambia	510		
Jan - May 2018	Drought	South Africa: Western Cape, Cape Town	500		
Jun - Dec 2015	Drought	Ethiopia, Somalia	500		

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5 costliest events ordered by inflation adjusted insured losses

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, in 2018 values)	Insured losses (US$m, in 2018 values)	Fatalities
7 - 13 Jun 2017	Wildfire (Knysna Fire)	South Africa: Western Cape, Eden, Knysna, Cape Town, Brenton-on-Sea, Belvedere, Nania, Eastford, Welbedacht, Green Pastures, Rheenendal	420	200	9
28 Nov - 1 Dec 2013	Hailstorm, flash flood	South Africa, Swaziland	270	140	2
9 - 10 Oct 2017	Flash flood, hail	South Africa: KwaZulu-Natal, eThekwini, Durban, Nquthu, Gauteng	320	140	13
9 Nov 2016	Flash flood, severe storm	South Africa: Gauteng, Alexandra, Ekurhuleni, Johannesburg	180	58	6
2 Jan 2014	Cyclone Bejisa, storm surge	Reunion: Le Port, Saint-Gilles, Saint-Leu, Le Tampon	130	51	1

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5 costliest events ordered by normalised overall losses

Relevant weather-related loss events in Africa 2013 – 2018

Date	Event	Affected Area	Overall losses (US$m, in 2018 values)	Fatalities
Jan - Dec 2015	Drought	South Africa, Angola, Zimbabwe, Botswana, Madagascar, Malawi, Mozambique, Namibia, Zambia	1,700	
Jan - Dec 2017	Drought	Somalia, Ethiopia, Kenya	950	
Jun - Dec 2015	Drought	Ethiopia, Somalia	620	
Jan - Oct 2016	Drought	Zimbabwe, Angola, Lesotho, Madagascar, Mozambique, Namibia, South Africa, Swaziland, Zambia	540	
Jan - May 2018	Drought	South Africa: Western Cape, Cape Town	500	

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Explanation for the interpretation of loss data statistics
Number statistics and loss thresholds

Number statistics are influenced by a constantly improved reporting of small-scale loss events over the time (*reporting bias*). There is a need to distinguish between **registered** and **relevant** loss events.

- **Registered loss events** are all evens recorded by NatCatSERVICE. The range extends from *insignificant* to *catastrophic* loss events expressed in overall losses and / or fatalities.The reporting bias is particularly high for high frequency and low impact events.

- **Relevant loss events** exceed defined thresholds of *normalised* overall losses and/or fatalities.These events are considered in number statistics and trend analyses. Threshold values are:
    - Fatalities ≥ 1
    - Normalized overall loss ≥ US$ 100k, 300k, 1m, or 3m (depending on assigned World Bank income group of each affected country)

- **Type of data filtering is helpful for** reduction/elimination of reporting bias and for conclusions on changes in frequency of occurred loss events.

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Explanation for the interpretation of loss data statistics
Inflation adjustment and normalization of NatCat loss data

Three ways of presenting loss data:

- Nominal losses: values as they originally occurred
- Inflation adjusted losses: accounting for changes in monetary equivalent
- Normalized losses: accounting for growth of values and assets

Inflation adjustment:

- Loss value in local currency is *adjusted to inflation* via the country's consumer price index (CPI) under consideration of exchange rate fluctuations between the local currency and the US$.

Normalization:

- Loss value in US$ is *normalized* via the development of locally resolved (1° x 1°) nominal gross domestic product data in US$ between year of occurrence and today.

Inflation adjusted loss data is helpful for...

- How high would a historic loss value be in today's money?

Normalized loss data is helpful for...

- What losses would a historic event cause when exposing today's values and assets?
- Conclusions on loss drivers like changes on the hazard side or effectivity of prevention measures

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