



REPUBLIC OF TÜRKİYE
MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE
Turkish State Meteorological Service



State of the Climate in December 2023



Climate and Agricultural Meteorology Department
Research Department

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2023

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1. Introduction

The mean temperature of Türkiye in December 2023 was 8.3°C. This value was 3.5°C above the 1991-2020's normal (4.8°C).

Mean temperatures in December 2023 were above normal in whole Türkiye. This made it 1st warmest December since 1971.

Regional temperatures were above the long-term mean (1991-2020) in all 7 regions.

The lowest temperature was observed in Özalp with -21.3°C and the highest temperature was observed in Sinop with 27.4°C. There were 4 new extreme maximum temperature records.

Türkiye's areal mean precipitation in December 2023 was 68.5 mm. This value is approximately 10% below the 1991-2020's normal (75.7 mm).

During the December, rainfall were increased about 40% in western Eastern Anatolia, Adıyaman, Kahramanmaraş, Hakkari and Şırnak. On the contrary an decreased of 60% compared to normal was recorded in Konya.

In December, the highest precipitation was occurred in Rize with 155.5 mm and lowest recorded with 17.1 mm precipitation in Iğdır.

Regional precipitation in December were below normal (1991-2020) in all regions except Eastern Anatolia.

The number of rainy days in December throughout Turkey was below normal with 11.3 days (1991-2020 normal is 11.8 days). The number of rainy days occurred in the range of 15-20 days in Rize, Trabzon, İzmir ve Manisa; decreased to around 10 day in south Central Anatolia, Aydın, Denizli, Mersin, Kars, Iğdır and Mardin.

There are 86 extreme events have been reported in December 2023 in TSMS's Kardelen Database. Percentage of extreme events recorded in December 2023 were heavy rain-flood (21%), hail (6%), storm-tornado (37%), lightning (2%), snow (21%), landslide (2%), fog (7%) and avalanche (4%).

2. Temperature

The mean temperature of Türkiye in December 2023 was 8.3°C. This value was 3.5°C above the 1991-2020's normal (4.8°C) (Fig.2.1).

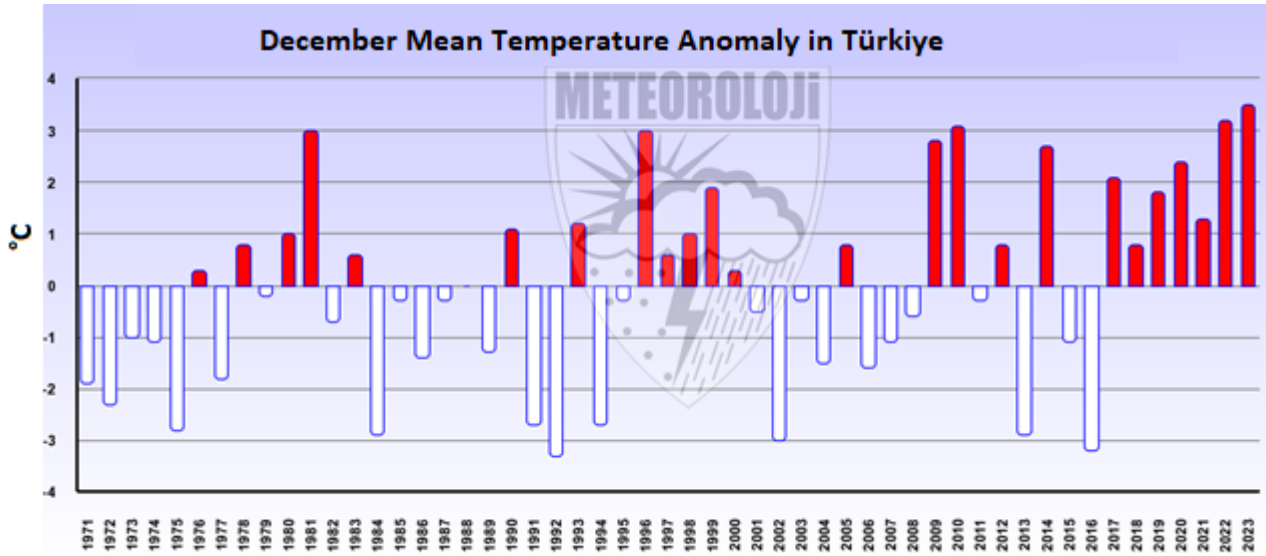


Figure 2.1 Monthly mean temperature anomalies in December (Url 1).

Mean temperatures in December 2023 were above normal in Türkiye. This made it 1st warmest December since 1971 (Fig.2.2).

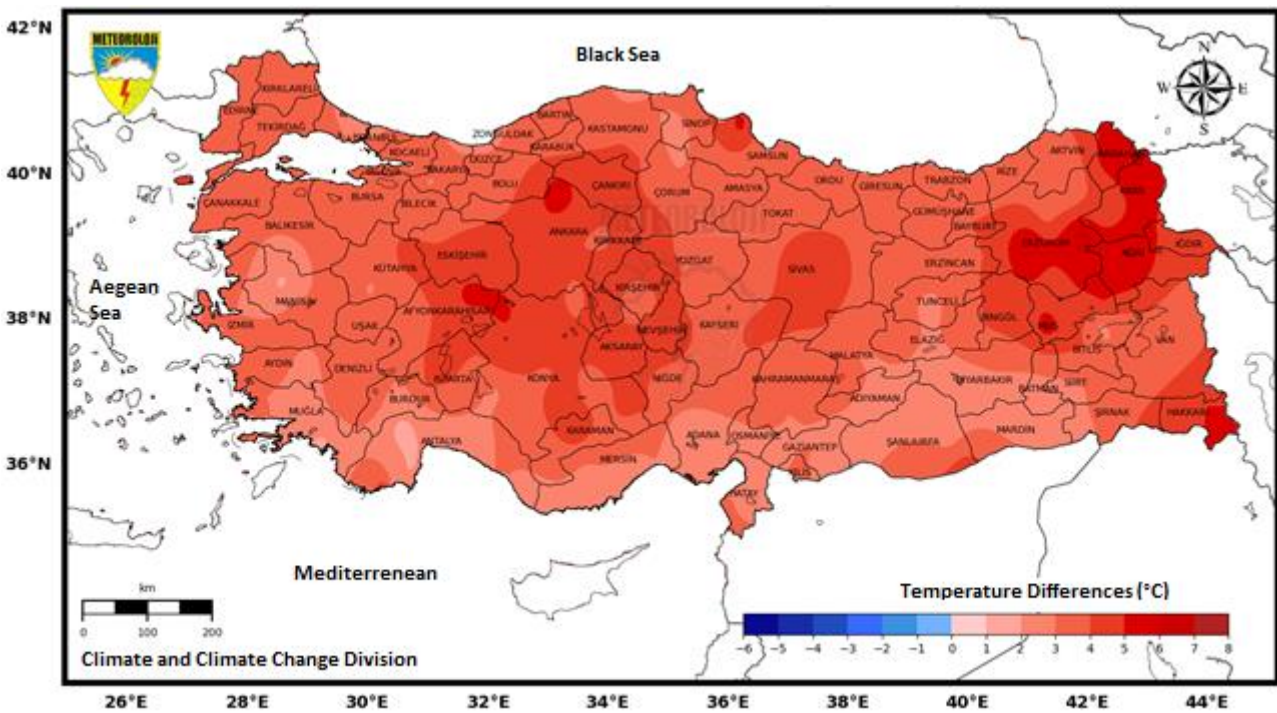


Figure 2.2. Spatial distribution of mean temperature anomaly in Türkiye in December 2023 (Url 1).

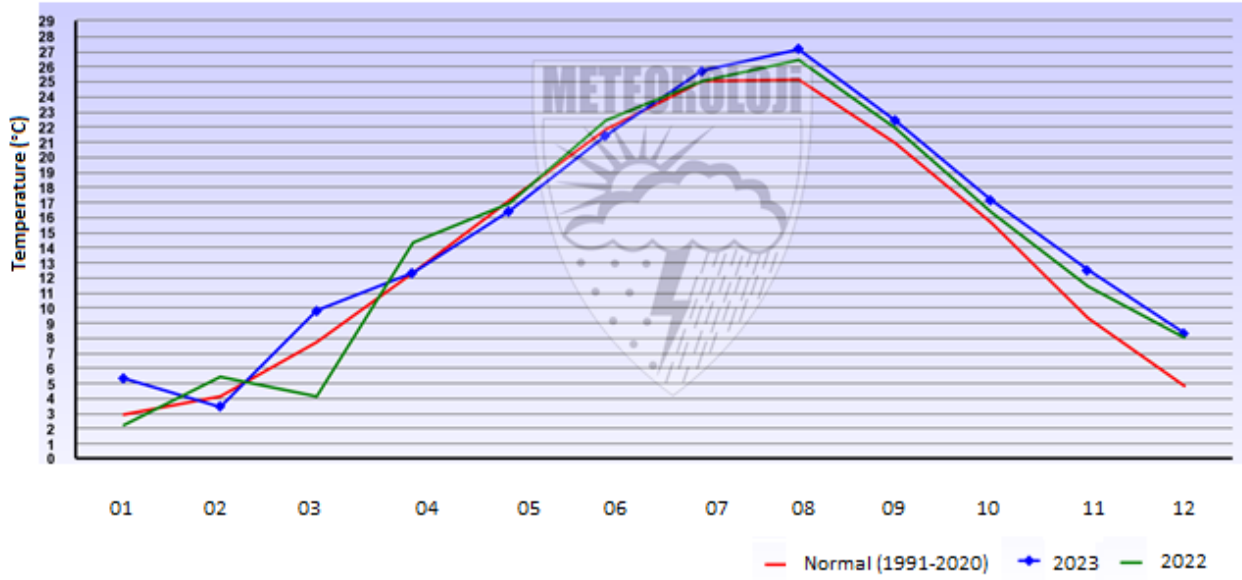


Figure 2. 3 The difference of the monthly mean temperature in 2023 from normal (1991-2020) (Url 1).

The monthly mean temperature of December was above its normal.

2.1. Regional Temperature

Regional temperatures were above the long-term mean (1991-2020) in 6 regions except Eastern Anatolia (Fig. 2.4).

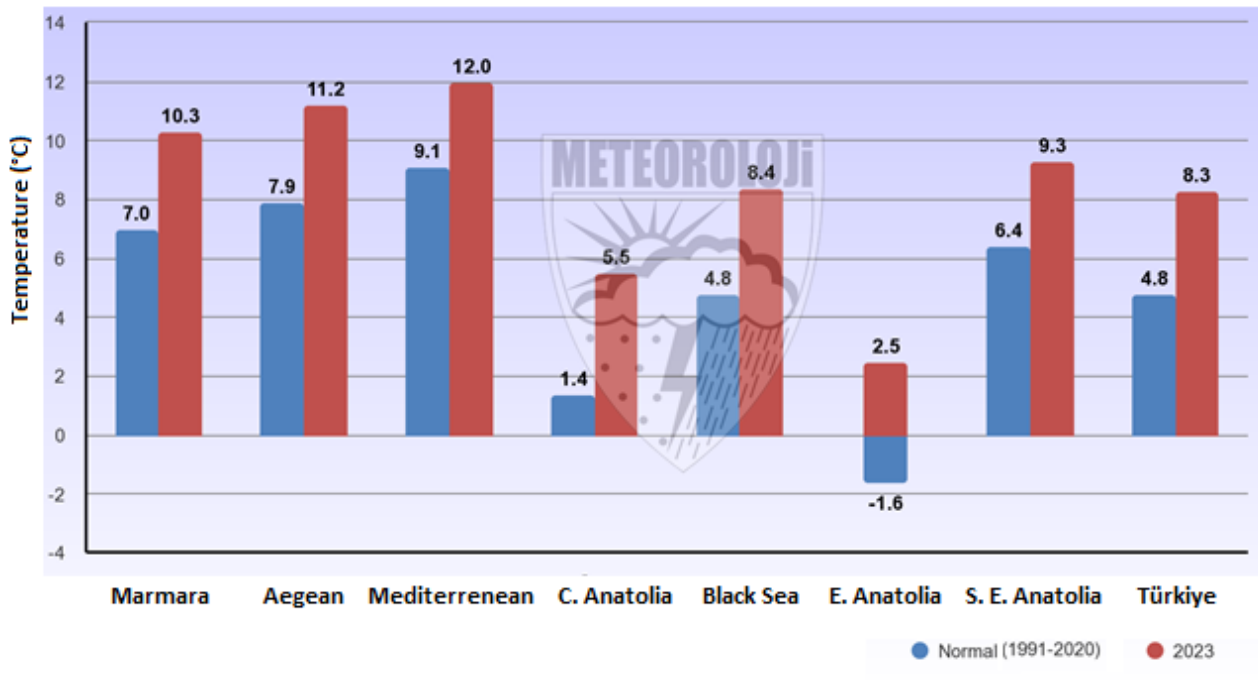


Figure 2. 4 Regional mean temperature differences in December 2023 (Url 1).

2.2. Extreme Temperature

The lowest temperature was observed in Özalp with -21.3°C and the highest temperature was observed in Sinop with 27.4°C . There were 4 new extreme maximum temperature records.

3. Precipitation

Türkiye's areal mean precipitation in December 2023 was 68.5 mm. This value is approximately 10% below the 1991-2020's normal (75.7 mm) (Fig. 3.1)

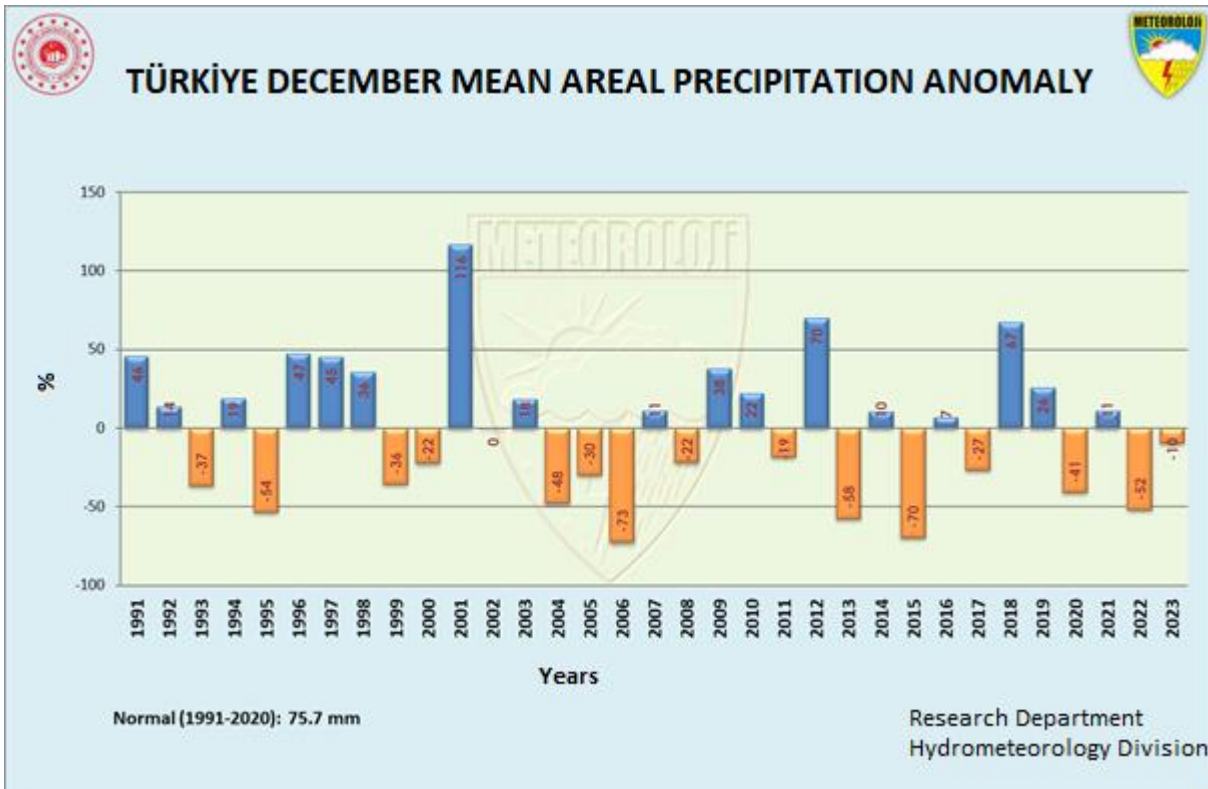


Figure 3. 1 Areal precipitation anomaly in December in Türkiye (Url 2).

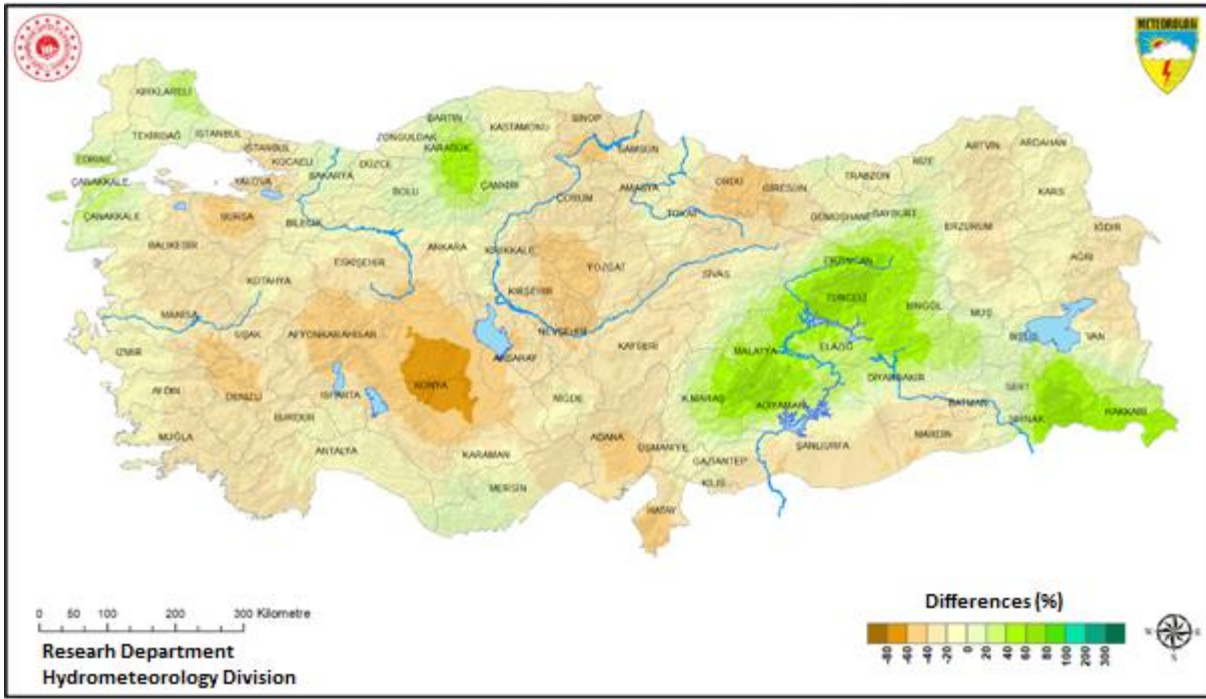


Figure 3. 2 Spatial distribution of mean precipitation anomalies in December 2023 (Url 2).

During the December, rainfall were increased about 40% in western Eastern Anatolia, Adıyaman, Kahramanmaraş, Hakkari and Şırnak. On the contrary an decreased of 60% compared to normal was recorded in Konya (Fig. 3.2).

3.1. Regional Precipitation

Regional precipitation in December were below normal (1991-2020) in all regions except Eastern Anatolia (Figure 3.3).

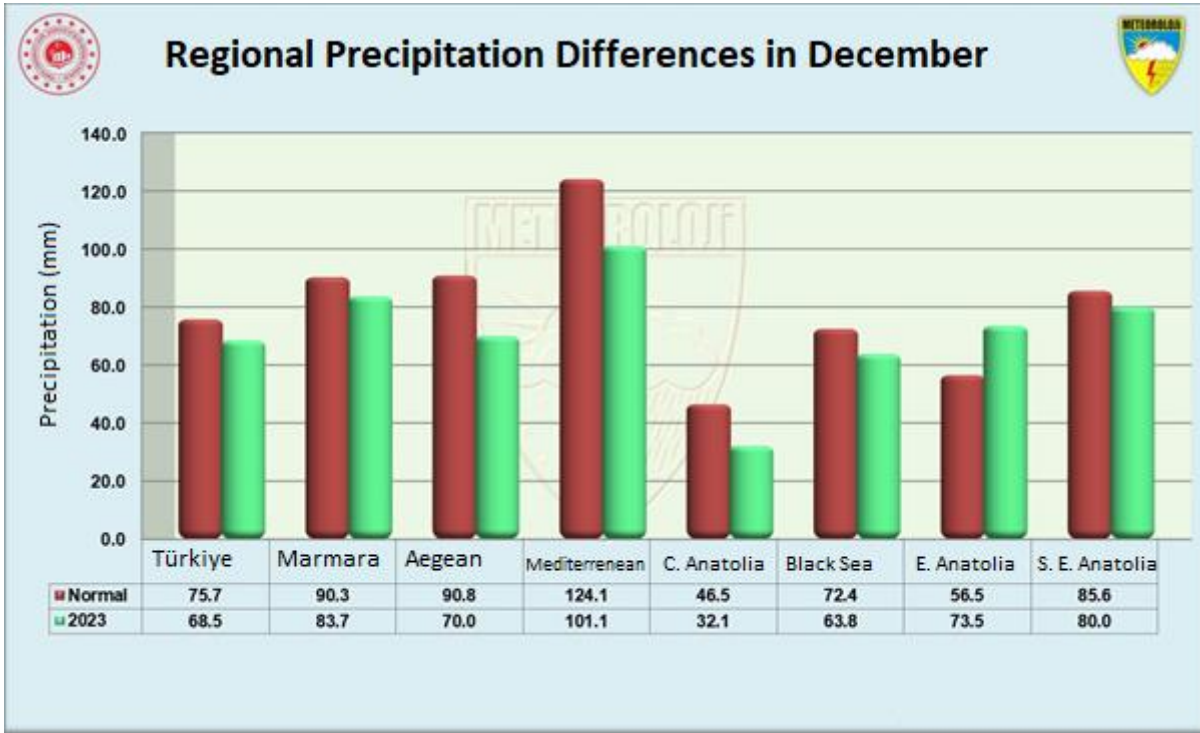


Figure 3. 3 Regional Precipitation Differences in December 2023 (Url 2).

3.2. Rainy Days

The number of rainy days in December throughout Turkey was below normal with 11.3 days (1991-2020 normal is 11.8 days). The number of rainy days occurred in the range of 15-20 days in Rize, Trabzon, İzmir ve Manisa; decreased to around 10 day in south Central Anatolia, Aydın, Denizli, Mersin, Kars, Iğdır and Mardin (Fig. 3.4).

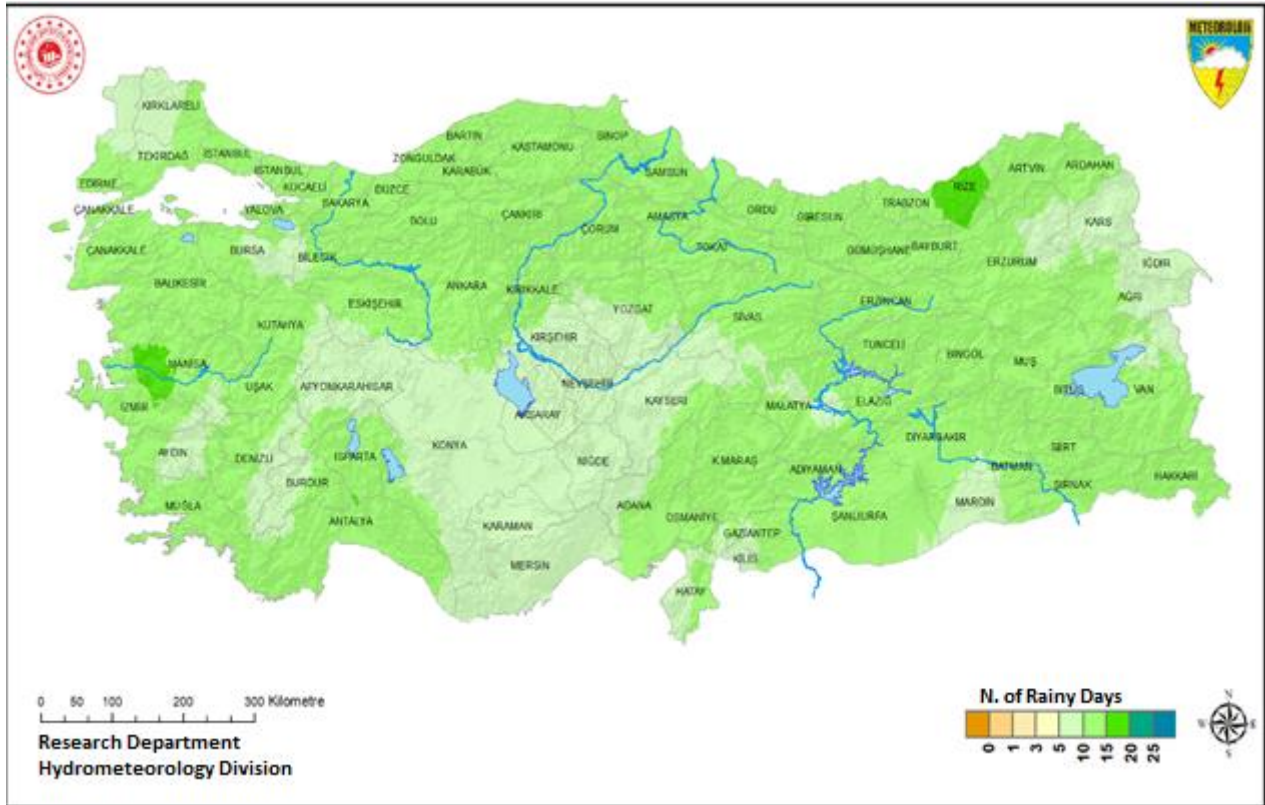


Figure 3. 4 Number of rainy days in December 2023 (Url 2).

3. Extreme Meteorological Events

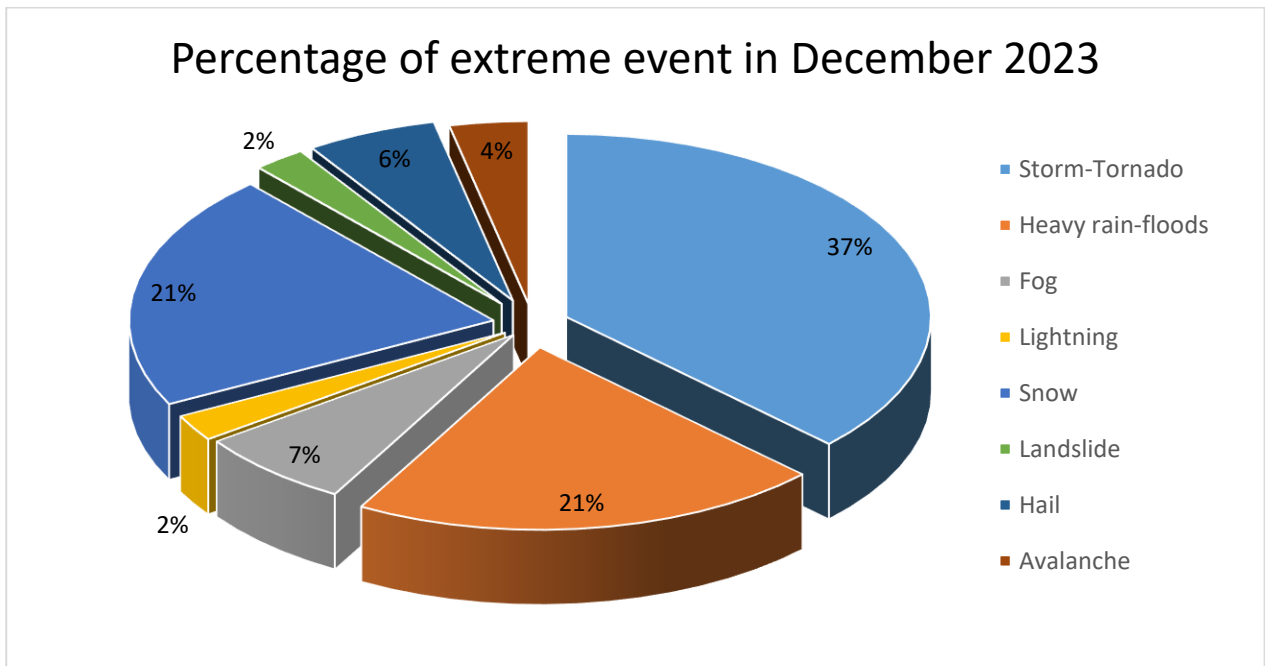


Figure 4.1. Percentage of extreme event in December 2023 (Url 3).

There are 86 extreme events have been reported in December 2023 in TSMS's Kardelen Database. Percentage of extreme events recorded in December 2023 were heavy rain-flood (21%), hail (6%), storm-tornado (37%), lightning (2%), snow (21%), landslide (2%), fog (7%) and avalanche (4%) (Fig. 4.1).

References

1. URL 1, Turkish State Meteorological Service, temperature analysis
<http://www.mgm.gov.tr/veridegerlendirme/sicaklik-analizi.aspx>
2. URL 2, Turkish State Meteorological Service, precipitation analysis
<http://www.mgm.gov.tr/veridegerlendirme/yagis-raporu.aspx>
3. URL 3, Turkish State Meteorological Service, Kardelen, meteorological extreme event database
<http://kardelen.mgm.gov.tr/BultenGenel/Klima/fevkGlnYeni.aspx>



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