

# 8TH EAP THEMATIC PRIORITY OBJECTIVE

## **Climate change adaptation**



## 2 Climate change adaptation

### Enhancing the capacity to adapt, strengthening resilience and reducing vulnerability to climate change

Climate change is happening already – the summer of 2023 was globally the warmest summer on record and the fifth hottest in Europe <sup>(1)</sup>. Beyond deploying measures to cut greenhouse gas (GHG) emissions and slow the pace of global warming, there is also a need for proactive preparation and adjustment to the effects of climate change such as sea level rise, water scarcity, more frequent and more severe floods, heatwaves and storms. The [8th Environment Action Programme \(EAP\)](#) <sup>(2)</sup>, in line with the [Paris Agreement](#) <sup>(3)</sup> and the [EU Climate Law](#) <sup>(4)</sup>, requires continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. The [EU adaptation strategy](#) <sup>(5)</sup> aligns with these policies and aims to build resilience and ensure that the EU is well-prepared to manage the risks and adapt to the impacts of climate change.

The European Commission's [8th EAP monitoring framework](#) <sup>(6)</sup> includes two indicators and corresponding targets for 2030 to capture aspects of progress on climate change adaptation:

- An indicator on economic losses from weather- and climate-related extremes in the EU to monitor progress on achieving the target of reducing overall monetary losses from weather- and climate-related events.
- An indicator on drought impact on ecosystems to monitor whether the EU area affected by drought and loss of vegetation productivity will decrease.

The indicator assessment results are summarised further below. Overall, it is unlikely but uncertain that the ambition levels set for 2030 in relation to these two indicators will be met. Past trends in both cases show a deterioration of the situation. In addition, the [Intergovernmental Panel on Climate Change](#) <sup>(7)</sup> predicts that many climate-related extreme events, such as droughts, will become more frequent and severe around the world. It would be important to put in place comprehensive, integrated approaches to mitigate future impacts and to increase resilience against climate change.

The methodology used to determine the prospects of meeting the 2030 targets is described in Annex 2. It is also explained in the following key:

#### Methodology key

##### Will the objective be met by 2030?

	It is very likely	i.e. it answers 'yes' with a high degree of confidence to the question
	It is likely but uncertain	i.e. it answers 'maybe yes' to the question
	It is unlikely but uncertain	i.e. it answers 'maybe no'
	It is very unlikely	i.e. it answers 'no' with a high degree confidence
	It is unclear	i.e. the prospects cannot be determined (e.g., insufficient data/evidence, no correlation between indicator and selected objective)



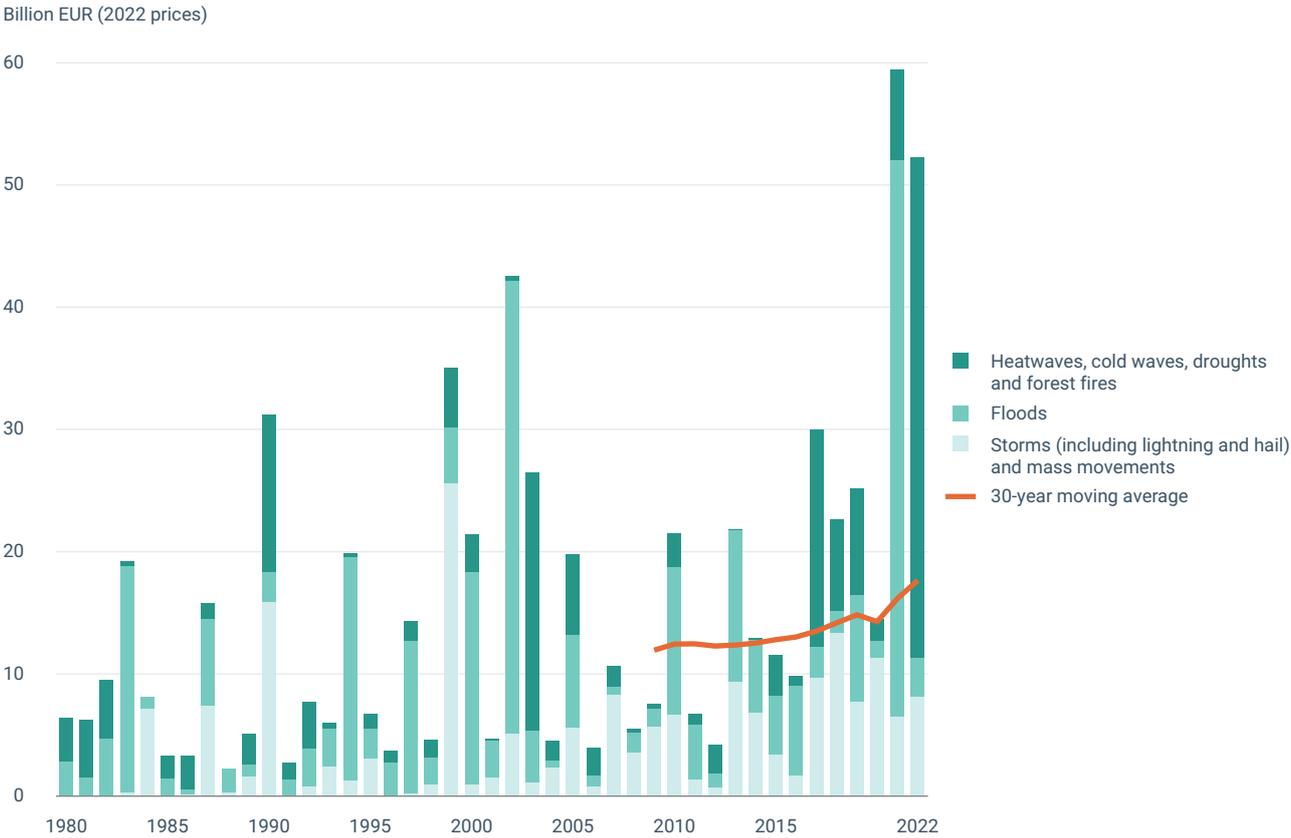
### Economic losses from climate- and weather-related extremes:

*Will monetary losses from weather- and climate-related events fall in the coming years?*



**Unlikely but uncertain.** Weather- and climate-related extreme events are projected to intensify further, though a full implementation of climate change adaptation strategies can limit the costs.

**Figure 2.1 Economic losses caused by weather- and climate - related extreme events, EU**



Source: Risklayer/EEA.

### Relevance and policy target

- Weather- and climate-related hazards, such as extreme temperature, heavy precipitation and droughts, pose risks to human health and the environment, and can lead to substantial economic losses.
- The EU Adaptation Strategy aims to build resilience and ensure the EU is well-prepared to manage these risks, and can adapt to the impacts of climate change. The EU aims, among other things, to ultimately reduce overall monetary losses from weather- and climate-related events.

**Indicator past trend (2009-2022, 30-year moving average, in 2022 prices):** increase ↑  
**Latest value (2022):** EUR 52.3 billion

- Between 1980 and 2022, the cost of weather- and climate-related extremes amounted to EUR 650 billion (2022 values), of which EUR 52.3 billion was in 2022. Hydrological events (floods) account for more than 40%, meteorological events (storms including lightning and hail, plus mass movements) for almost 30% and climatological events (mostly heatwaves but also droughts, forest fires and cold waves) for almost 30% of total losses.
- There is high variability from year to year in the economic losses, making it difficult to analyse trends. However, some statistical analysis (a 30-year moving average) shows that losses have increased over time.

### 2030 outlook

- It is uncertain but unlikely that the economic losses associated with extreme weather and climate events will fall by 2030.
- The Intergovernmental Panel on Climate Change <sup>(8)</sup> predicts that weather- and climate-related extreme events will become more frequent and severe around the world because of climate change. This could affect multiple sectors and cause systemic failures across Europe, leading to greater economic losses.
- The future cost of weather- and climate-related hazards depends not only on the frequency and severity of events but also on several other factors, such as the value and resilience of the assets <sup>(9)</sup><sup>(10)</sup> and the envisaged climate adaptation measures <sup>(11)</sup><sup>(12)</sup>.
- If fully implemented, the EU and the national adaptation strategies will contribute to limiting the economic costs of weather- and climate-related events. To do so, adaptation plans should ideally include a balanced set of measures, covering governance and institutional, economic and financial, physical and technological aspects, as well as nature-based solutions, knowledge and behavioural change <sup>(13)</sup>.



For more references and additional information, including at country level, see the full indicator version.



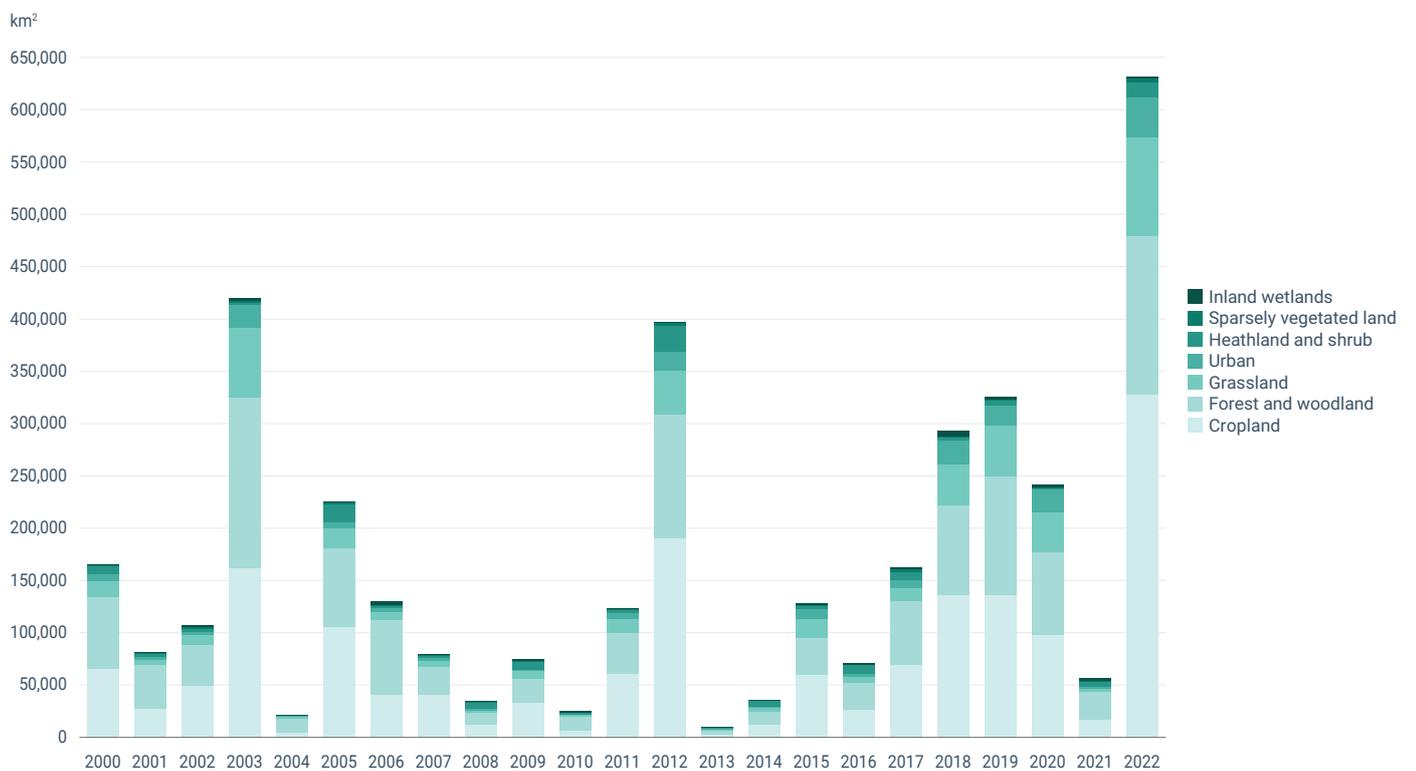
## Drought impact on ecosystems:

*Will the area impacted by drought decrease in the coming years?*



**Unlikely but uncertain.** The magnitude of drought events is projected to increase and it is uncertain whether climate change adaptation strategies will be effectively implemented.

**Figure 2.2** Area of drought impact on vegetation productivity, EU



Source: EEA/Copernicus Land Monitoring Service and Copernicus Emergency Service.

### Relevance and policy target

- Droughts hamper nature's ability to deliver a wide range of environmental, economic, social and biodiversity benefits. Droughts also impact the EU's ability to achieve its climate change mitigation <sup>(14)</sup><sup>(15)</sup> and adaptation <sup>(16)</sup> aims. It is therefore important that the EU take action to decrease impact severity and strengthen ecosystem resilience against climate change-related droughts.

### Indicator past trend (2000-2022): increase ↑

**Latest value (2022):** 631,000 square kilometres

- In 2022, the EU experienced its hottest summer and second warmest year on record, and with it the largest overall drought impacted area: 631,000km<sup>2</sup>. During the period 2000-2022, on average 4.2% (ca. 167,000km<sup>2</sup>) of EU land was affected annually by droughts due to low precipitation, high evaporation and heatwaves fuelled by climate change.
- The largest two affected areas were croplands, contributing to crop failures, and forests, which sequester large amounts of carbon and provide important habitats for wildlife. Grasslands and wetlands also showed significant increases in the impacted area. They are among the most biodiverse areas in the EU and have high carbon storage potential.

### 2030 outlook

- It is unlikely but uncertain that drought-affected areas will decrease by 2030.
- The extent of drought-affected areas increased over the examined period.
- Due to climate change, the frequency and intensity of heatwaves is projected to increase <sup>(17)</sup>, whereas in the continental and Mediterranean regions, summer precipitation is projected to decrease <sup>(18)</sup>.
- This means that drought-affected areas may not decrease by 2030 if EU and national wide adaptation strategies such as land management practices are not put in place in a timely manner to mitigate future impacts of droughts.



For more references and additional information, including at country level, see the full indicator version.

## References

1. Copernicus Climate change service, 2023, 'Summer 2023: the hottest on record' (<https://climate.copernicus.eu/summer-2023-hottest-record>) accessed 25 November 2023.
2. EU, 2022, Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a general Union environment action programme to 2030, Article 2(2)(b) (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022D0591>) accessed 27 November 2023.
3. UNFCCC, 2015, Paris Agreement ([https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)) accessed 27 November 2023.
4. EU, 2021, Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) no 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243/1, 9.7.2021) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1119>) accessed 27 November 2023.
5. EC, 2021, 'EU Adaptation Strategy' 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change' (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A82%3AFIN>) accessed 27 November 2023.
6. EC, 2022, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the monitoring framework for the 8th Environment Action Programme: Measuring progress towards the attainment of the Programme's 2030 and 2050 priority objectives (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0357>) accessed 27 November 2023.
7. Seneviratne, S., et al., 2021, 'Weather and climate extreme events in a changing climate' in: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* ([https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_11.pdf)) accessed 9 November 2021.
8. Seneviratne, S., et al., 2021, 'Weather and climate extreme events in a changing climate' in: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* ([https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_11.pdf)) accessed 9 November 2021.
9. Ranasinghe, R., et al., 2021, 'Climate change information for regional impact and for risk assessment', Masson-Delmotte, V., Zhai, et al. (eds), *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press.

10. Bednar-Friedl, B., et al., 2022, 'Europe', in: Pörtner, H.-O., et al. (eds), *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press.
11. Dottori, F., et al., 2023, Cost-effective adaptation strategies to rising river flood risk in Europe, *Nature Climate Change* 13(2), pp. 196-202 (<https://www.nature.com/articles/s41558-022-01540-0>) accessed April 4, 2023.
12. Vousdoukas, M. I., et al., 2020, 'Economic motivation for raising coastal flood defenses in Europe', *Nature Communications* 11, pp. 1-11 (<https://www.nature.com/articles/s41467-020-15665-3>) accessed 4 April 2023.
13. ETC/CCA, 2021, *Using Key Type Measures to report climate adaptation action in the EEA member countries*, ETC/CCA Technical Report No 2021/1, European Topic Centre on Climate Change Impacts, Vulnerability and Adaptation (<https://www.eionet.europa.eu/etcs/etc-cca/products/etc-cca-reports/using-key-type-measures-to-report-climate-adaptation-action-in-the-eea-member-countries>) accessed 31 October 2023.
14. EC, 'Delivering the European Green Deal' ([https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en)) accessed 28 November 2023.
15. EU, 2021, Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) no 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243/1, 9.7.2021) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1119>) accessed 27 November 2023.
16. EC, 2021, 'EU Adaptation Strategy' 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change (EUR-Lex - 52021DC0082 - EN - EUR-Lex (europa.eu)) accessed 27 November 2023.
17. Climate-ADAPT, 2022, 'Daily maximum temperature – monthly statistics, 2011-2099', European Environment Agency (<https://climate-adapt.eea.europa.eu/en/metadata/indicators/daily-maximum-temperature-monthly-mean-2011-2099#details>) accessed 31 October 2022.
18. Climate-ADAPT, 2022, 'Precipitation sum, 2011-2099' (<https://climate-adapt.eea.europa.eu/en/metadata/indicators/precipitation-sum-2011-2099#details>) accessed 31 October 2022.