**Fact sheet - Europe**

**Climate Change Impacts and Risks**

Our current 1.1°C warmer world is already affecting natural and human systems in Europe (very high confidence). Impacts of compound hazards of warming and precipitation have become more frequent (medium confidence). Largely negative impacts are projected for southern regions. (ES-Ch13)

**Key Risks**

Four key risks have been identified for Europe, with most becoming more severe at 2°C global warming levels (GWL) compared with 1.5°C GWL in scenarios with low to medium adaptation (high confidence). From 3°C GWL and even with high adaptation, severe risks remain for many sectors in Europe (high confidence). (ES-Ch13)

**Key Risk 1: Mortality and morbidity of people and changes in ecosystems due to heat**

The number of deaths and people at risk of heat stress will increase two- to threefold at 3°C compared with 1.5°C GWL (high confidence). Above 3°C GWL, there are limits to the adaptation potential of people and existing health systems (high confidence). (ES-Ch13; 13.7.1)

Warming will decrease suitable habitat space for current terrestrial and marine ecosystems and irreversibly change their composition, increasing in severity above 2°C GWL (very high confidence). Fire-prone areas are projected to expand across Europe, threatening biodiversity and carbon sinks (medium confidence). (ES-Ch13)

**Key Risk 2: Heat and drought stress on crops**

Substantive agricultural production losses are projected for most European areas over the 21st century, which will not be offset by gains in Northern Europe (high confidence). While irrigation is an effective adaptation option for agriculture, the ability to adapt using irrigation will be increasingly limited by water availability, especially in response to GWL above 3°C (high confidence). (ES-Ch13)

![Climate impacts drivers and socio-ecological vulnerabilities](image)

**Figure 1:**
Changes in climate hazards for global warming levels of 1.5°C and 3°C based on the CMIP6 ensemble with respect to the baseline period 1995-2014, combined with information on present exposure or vulnerability.

(a,b) number of days with temperature maximum above 35°C (TX35) and population density. (Figure 13.4a,b)

(c,d) daily precipitation maximum (Rx1 d) and built-up area. (Figure 13.4c,d)
Key Risk 4: Flooding and sea level rise

Above 3°C GWL, damage costs and people affected by precipitation and river flooding may double. Coastal flood damage is projected to increase at least tenfold by the end of the 21st century, and even more or earlier with current adaptation and mitigation (high confidence). Sea level rise represents an existential threat for coastal communities and their cultural heritage, particularly beyond 2100. (ES-Ch13)

Adaptation Options and Barriers

Residual risks

In many parts of Europe, existing and planned adaptation measures are not sufficient to avoid the residual risk, especially beyond 1.5°C GWL (high confidence). Residual risk can result in losses of habitat and ecosystem services, heat related deaths, crop failures, water rationing during droughts in Southern Europe and loss of land (medium confidence). (ES-Ch13)

Climate Resilient Development

Closing the adaptation gap requires moving beyond short-term planning and ensuring timely and adequate implementation (high confidence). Inclusive, equitable and just adaptation pathways are critical for climate resilient development. The success of adaptation will depend on our understanding of which adaptation options are feasible and effective in their local context (high confidence). (ES-Ch13)