Drought in a changing climate

A **first-ever** pan-European quantitative assessment of the economic impacts of drought in Europe.

EU & UK DROUGHT LOSSES PER YEAR

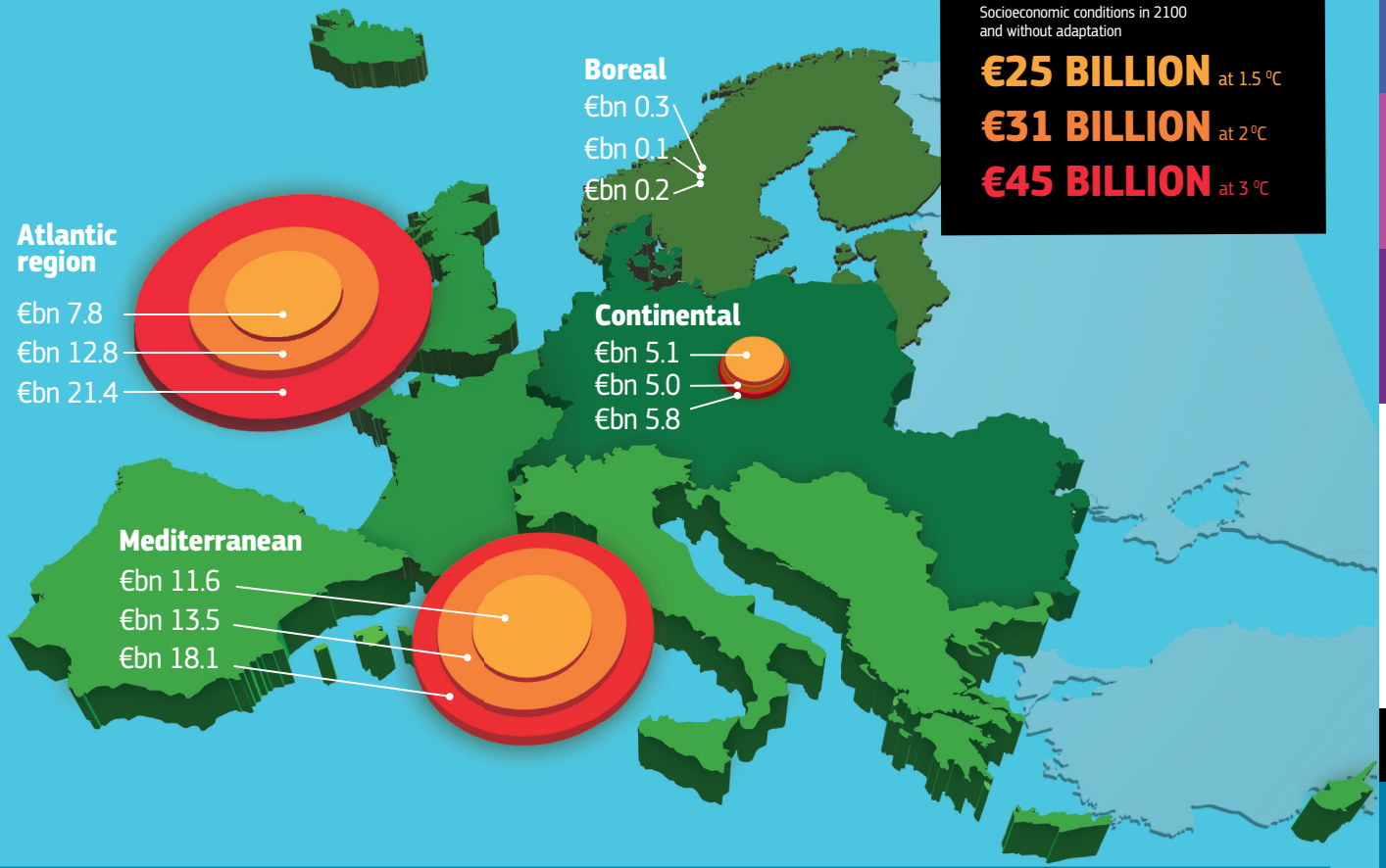
€9 BILLION present (1981 - 2010)

Socioeconomic conditions in 2100 and without adaptation

€25 BILLION at 1.5 °C

€31 BILLION at 2 °C

€45 BILLION at 3 °C



Modelled expected annual losses (billion €) for the present (1981 - 2010)

Mediterranean	Atlantic region	Continental	Boreal
3.6	2.5	2.6	0.3

Projected expected annual damages (billion €) based on socioeconomic conditions in 2100 and without adaptation, at:

1.5 °C 2 °C 3 °C

For more information, including assumptions of the modelling framework used, see: JRC PESETA IV project https://ec.europa.eu/jrc/en/peseta-iv

IMPACT ON SECTORS CONSIDERED

Agriculture
- Damages to crops and livestock losses
- Irrigation restrictions due to water scarcity

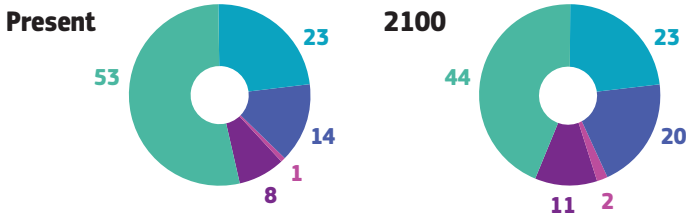
Power generation
- Reduction in hydroelectricity production
- Reduced capacity of cooling systems
- Possible shutdown of thermal and nuclear power plants

Public water supply
- Decreasing water availability
- Increasing competition amongst different sectors

Commercial shipping
- Interruption of navigation
- Reduction in cargo maximum capacity
- Transfer to other means of transportation

Buildings and infrastructure
- Damages due to soil subsidence
- Aquifer over-exploitation may aggravate damage to buildings from subsidence

Share of drought losses per socioeconomic sector (%)



KEY SUMMARY

- Drought will be more severe and persistant in southern and western Europe, whereas it will become less intense in northern and eastern Europe.
- Mediterranean and Atlantic regions are already contributing to about 68% of present losses, and this share will become 87% at 3 °C.
- Agriculture sector is most affected now and in the future, even if its economic importance is reduced in future European economies.

European Commission