

Adaptation to climate change in the EU

Elena Višnar Malinovská

Head of the Adaptation Unit, DG Climate Action, European Commission

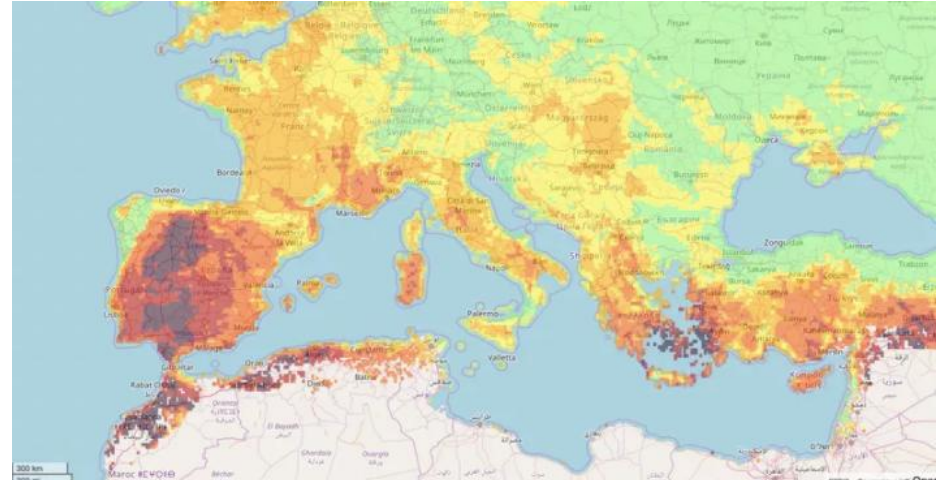
Brussels, 23 November 2017



One event, various consequences



National Geographic, 2017



European Forest Fire
Information System, 2017

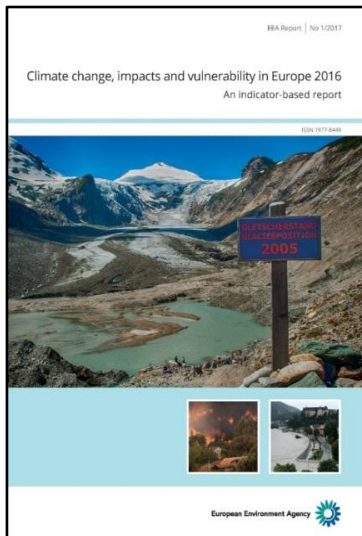


The Paris Agreement

- Ambitious long-term goals
 - limit temperature increase well-below 2°C
 - pursue 1.5°C
- Mitigation and Adaptation
- Universal agreement based on 190 nationally determined contributions (NDCs)
 - "Bottom-up" approach where all countries define their contributions
 - Contrary to Kyoto-Protocol where targets were defined "top-down"
- Entered into force in 2016 and now ratified by 166 countries, including the 28 Member States and the European Union

EU Climate change impacts and vulnerability assessment

(EEA, 2016)



Arctic region

- Temperature rise much larger than global average
- Decrease in Arctic sea ice coverage
- Decrease in Greenland ice sheet
- Decrease in permafrost areas
- Increasing risk of biodiversity loss
- Some new opportunities for the exploitation of natural resources and for sea transportation
- Risks to the livelihoods of indigenous peoples

Atlantic region

- Increase in heavy precipitation events
- Increase in river flow
- Increasing risk of river and coastal flooding
- Increasing damage risk from winter storms
- Decrease in energy demand for heating
- Increase in multiple climatic hazards

Mountain regions

- Temperature rise larger than European average
- Decrease in glacier extent and volume
- Upward shift of plant and animal species
- High risk of species extinctions
- Increasing risk of forest pests
- Increasing risk from rock falls and landslides
- Changes in hydropower potential
- Decrease in ski tourism

Coastal zones and regional seas

- Sea level rise
- Increase in sea surface temperatures
- Increase in ocean acidity
- Northward migration of marine species
- Risks and some opportunities for fisheries
- Changes in phytoplankton communities
- Increasing number of marine dead zones
- Increasing risk of water-borne diseases

Boreal region

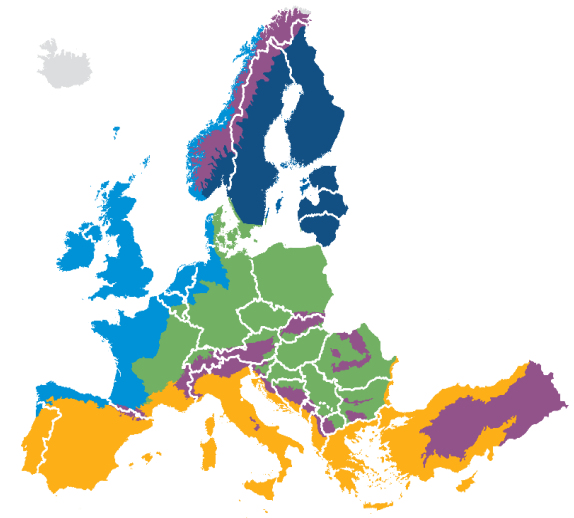
- Increase in heavy precipitation events
- Decrease in snow, lake and river ice cover
- Increase in precipitation and river flows
- Increasing potential for forest growth and increasing risk of forest pests
- Increasing damage risk from winter storms
- Increase in crop yields
- Decrease in energy demand for heating
- Increase in hydropower potential
- Increase in summer tourism

Continental region

- Increase in heat extremes
- Decrease in summer precipitation
- Increasing risk of river floods
- Increasing risk of forest fires
- Decrease in economic value of forests
- Increase in energy demand for cooling

Mediterranean region

- Large increase in heat extremes
- Decrease in precipitation and river flow
- Increasing risk of droughts
- Increasing risk of biodiversity loss
- Increasing risk of forest fires
- Increased competition between different water users
- Increasing water demand for agriculture
- Decrease in crop yields
- Increasing risks for livestock production
- Increase in mortality from heat waves
- Expansion of habitats for southern disease vectors
- Decreasing potential for energy production
- Increase in energy demand for cooling
- Decrease in summer tourism and potential increase in other seasons
- Increase in multiple climatic hazards
- Most economic sectors negatively affected
- High vulnerability to spillover effects of climate change from outside Europe



EU adaptation strategy

1. Promote action by all member states

- ✓ Encourage all MS to adopt adaptation strategies
- ✓ Provide funding to help them build resilience
- ✓ Launch voluntary adaptation initiative for towns and cities

2. Make EU-level action 'climate-proof'

- ✓ Further integrate climate adaptation needs into key vulnerable sectors eg agriculture, fisheries, energy, regional development
- ✓ Make infrastructure more resilient
- ✓ Promote insurance against disasters

3. Make decision-making better informed

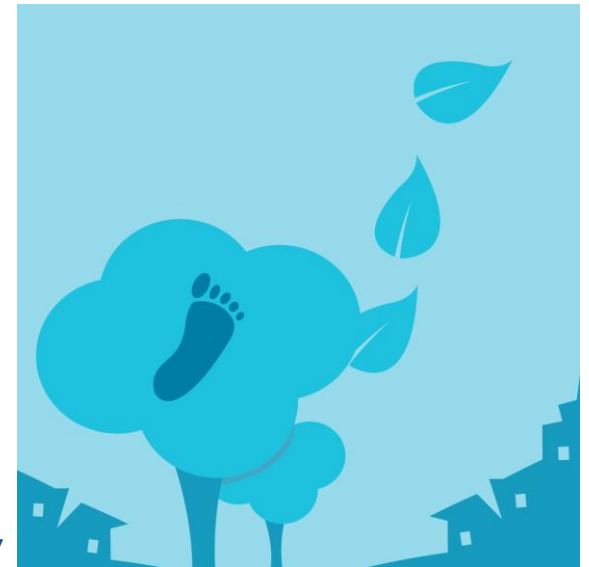
- ✓ Address knowledge gaps through research
- ✓ Develop European climate adaptation platform as 'one-stop shop' for adaptation information in Europe





EU funding for climate action

- ✳ **European Fund for Strategic Investment** (315bn) – half of the approved funds are climate related
- ✳ **At least 20%** of EU budget 2014-2020 to climate-related action, including development cooperation (€180 billion)
- ✳ Integrating climate considerations into **all main spending areas**, e.g. regional spending, agriculture, R&D
- ✳ **LIFE Programme** - more than €800 million for climate projects in 2014-2020 (split between mitigation and adaptation)
- ✳ **NER300 Programme** – one of world's biggest demonstration programmes for low-carbon technologies (new funds)





Mobilising local action: the new Covenant of Mayors for Climate & Energy



**Covenant of Mayors
for Climate & Energy**

7,600+ signatory cities,
930+ signatories to new CoM,
700 cities committed to adaptation
370+ regions, provinces & grassroots
associations, **40+** Associated Partners
ca. **60** Local & Regional Energy Agencies



5,100+
Action Plans developed



... average CO₂-emission
reduction of about **28%** by 2020

Copenhagen shows how cities can prepare for flooding

Copenhagen is exploring ways to cope with higher rainfall.



At Enghave park, sport zones will fill with water during heavy rain.

Images by Cowi, Tredje Natur and Platant.

ESIF: Climate proofing of (major) projects



Project Context and Assessment
Methodology

Vulnerability Assessment

Risk Assessment

Identification and Appraisal of Adaptation
Options

Integration of Adaptation Measures and
Residual Risk



Insurance of weather and climate-related disaster risk

- 433 billion € in economic losses caused by weather and climate-related extremes over the past 35 years (~30 % insured)
- Insurance as a risk transfer mechanism
- Insurance as a tool for signalling risks and provide incentive to mitigate risks
- Inventory and analysis of mechanisms to support damage prevention in the EU

Closing knowledge gap: PESETA

Projection of **economic impacts** of climate change

In **sectors** of the European Union

Based on **bottom-up analysis**

- A series of studies conducted by the European Commission's Joint Research Centre

PESETA III

By 2100, Europe may be **2.5°C to 4.7°C warmer**

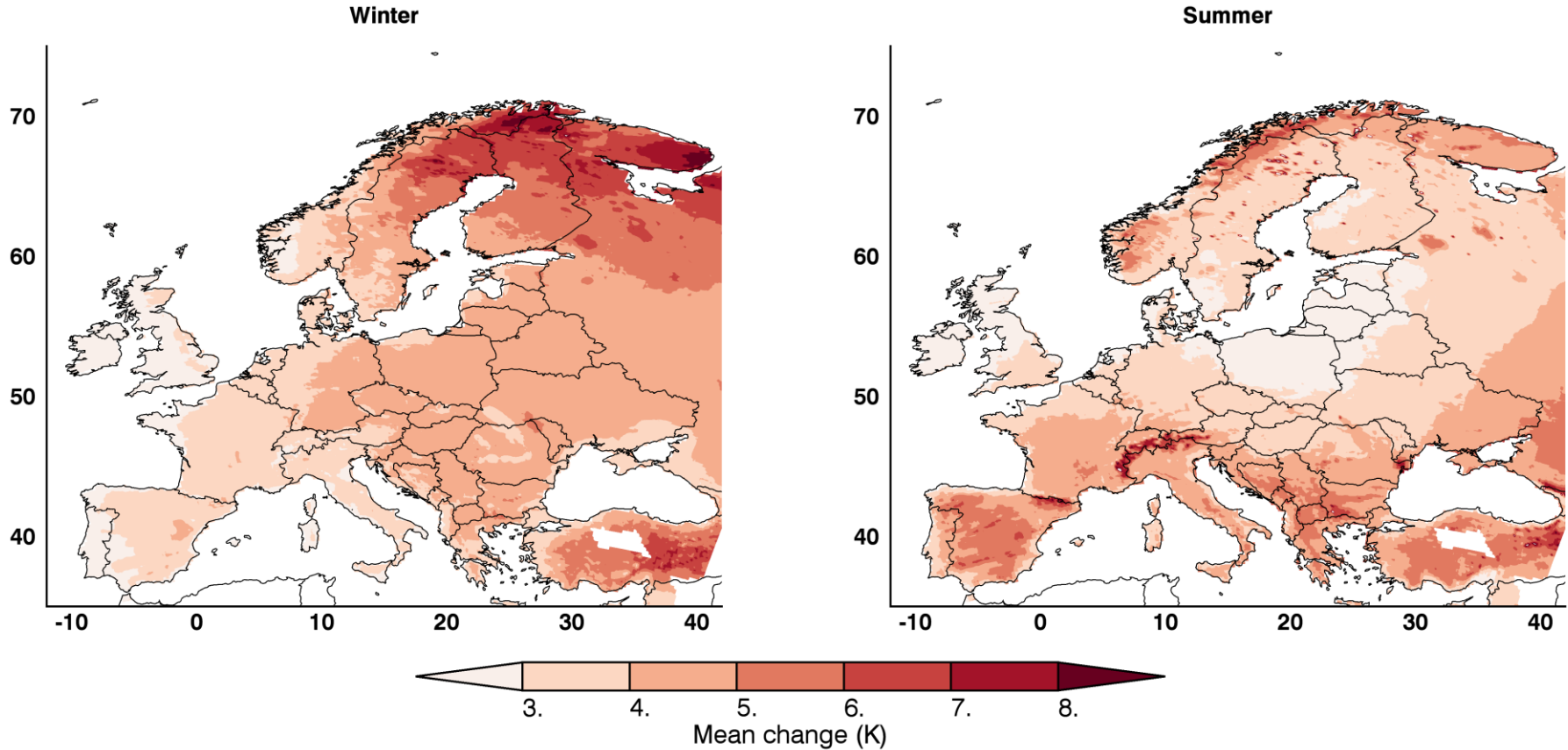
Impacts studied:

- Biophysical
- Socio-economic (partially covered + mostly static analysis)

Two main **scenarios**:

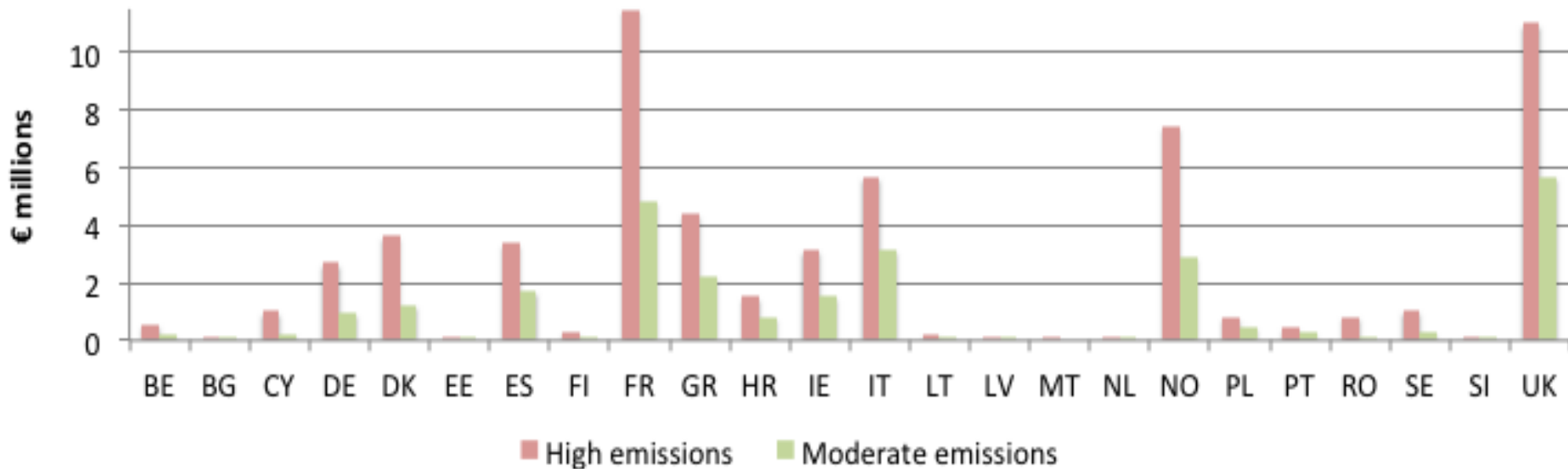
- High emissions (RCP 8.5)
- Paris: 2°C

CLIMATE – TEMPERATURE RCP 8.5

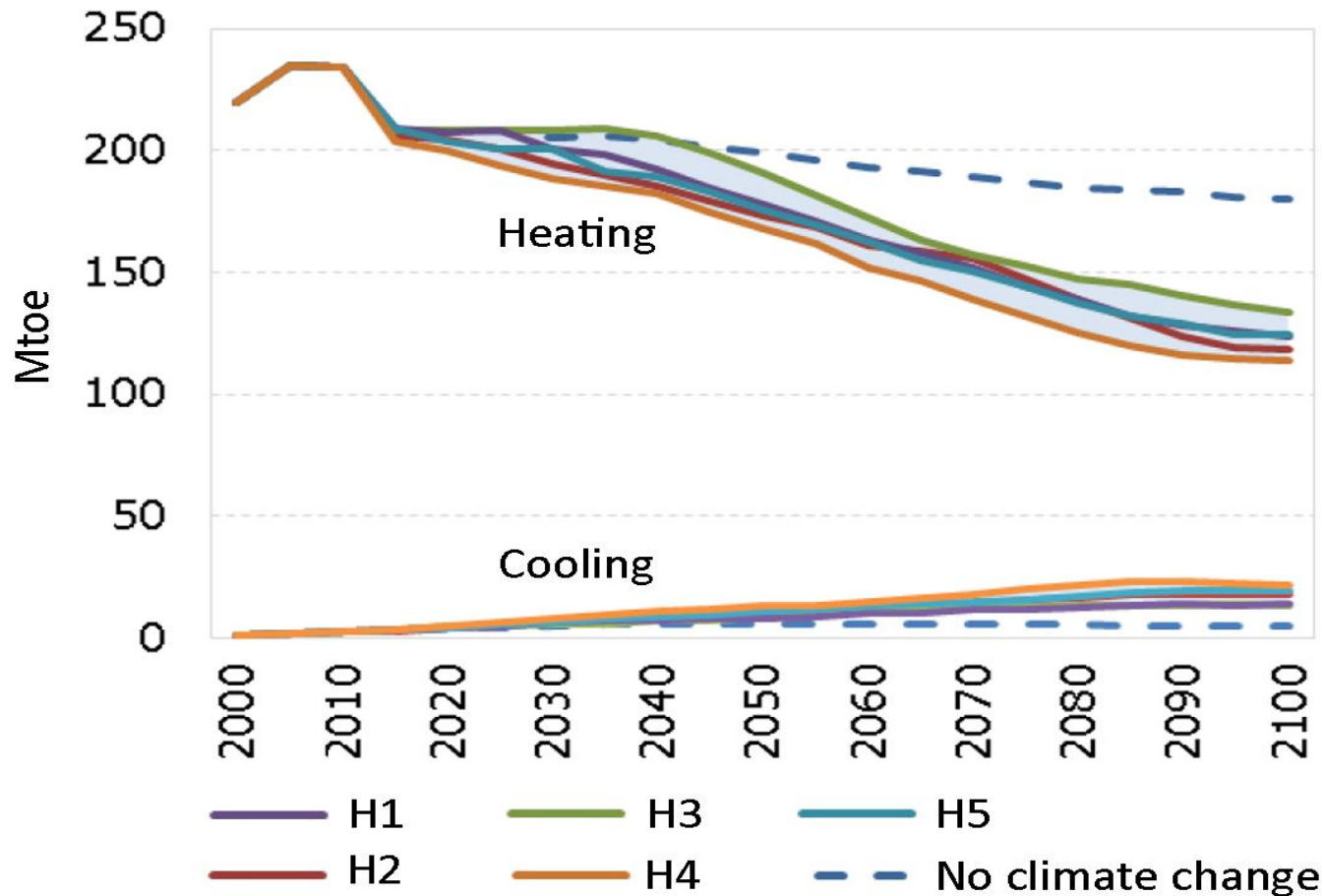


COASTAL FLOODS

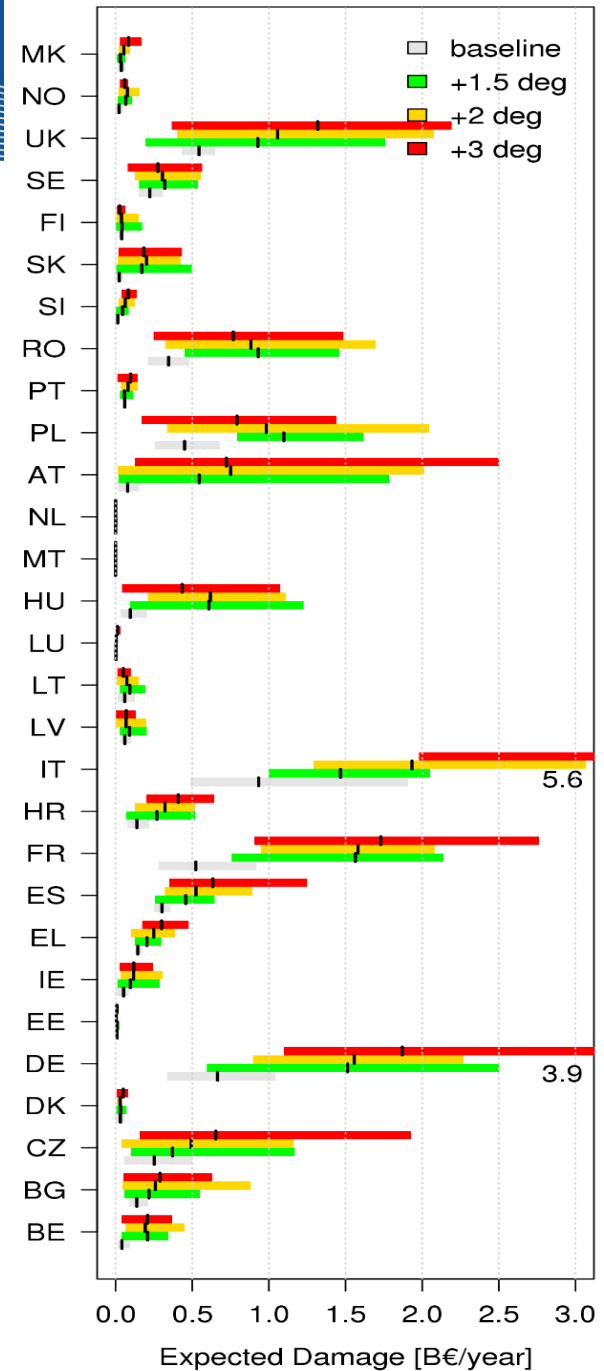
Economic damage in **€ billions** by 2100



RESIDENTIAL ENERGY DEMAND (HEATING AND COOLING)



RIVER FLOODS

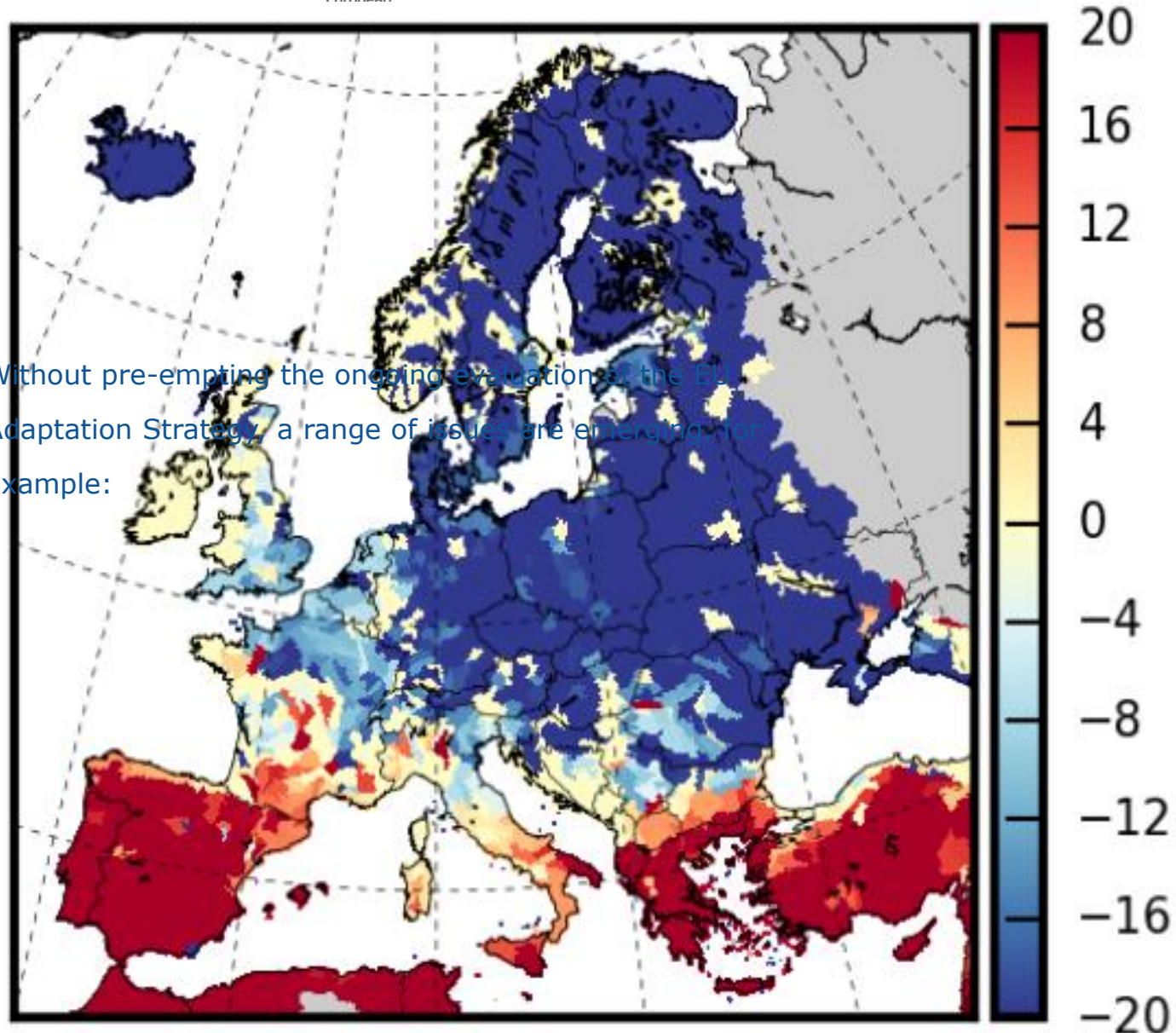


WATER

Changes in annual water dependency index (WDI)

- between the 2°C scenario and present
- in % change

Without pre-empting the ongoing evaluation of the EU Adaptation Strategy, a range of issues are emerging, for example:



Strengthening adaptation action

- 2017 evaluation with a possible review in 2018
 - Reflection on the **new vision/opportunities** created by the Paris Agreement
 - **Speeding up implementation** of adaptation action
 - Focus on **key sectors** (DRR, cities, water...) building on EU added value
 - Engaging the **private sector** and **businesses** in adaptation

Evaluation ongoing

Stakeholder Consultation Strategy published at https://ec.europa.eu/clima/policies/adaptation/what_en#tab-0-0

Evaluation Roadmap published at http://ec.europa.eu/smart-regulation/roadmaps/docs/2016_clima_011_evaluation_adaptation_strategy_en.pdf

Upcoming web based public consultation will be launched end-November and open for contributions for 12 weeks

Elements to consider for the future

International action on adaptation

- **Paris Agreement: alignment with the 5-year ambition cycle and preparation for the first Global Stocktake in 2023;**
- **bilateral cooperation with developing countries;**
- **Non-covered policy fields such as trade policy.**

Elements to consider for the future

Adaptation in key sectors

- Water & drought;
- Local and urban adaptation;
- Agriculture policy;
- Climate finance, insurance and business;
- Climate resilient infrastructure;
- Territorial development and cohesion,

But also

- transboundary cooperation and macro-regional approach;
- adaptation awareness

Thank you for your attention



THANK YOU!

Directorate-General for Climate Action ("DG CLIMA"):

<http://ec.europa.eu/clima>

EU Strategy on Adaptation to Climate Change:

http://ec.europa.eu/clima/policies/adaptation_en

Evaluation of the EU Strategy on Adaptation to Climate Change:

https://ec.europa.eu/clima/policies/adaptation/what_en#tab-0-0

