



# Approaches and activities of the European Commission in the field of adaptation to climate change

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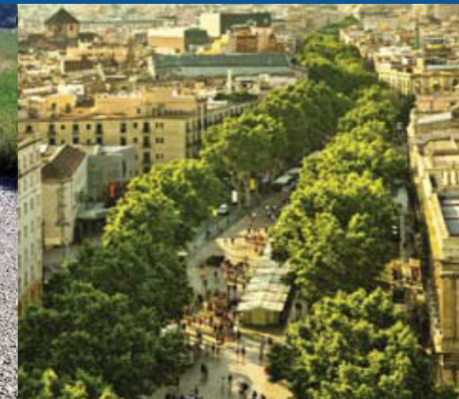
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Climate Change 2019  
Challenges and Solutions

Bratislava

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# Climate Change impacts: the need to act



## Climate change increases frequency & intensity of extreme weather events

- Its impacts on lives, livelihoods, and assets are everywhere, but uneven

## In 2019, wildfires caused extensive & abnormal damage in EU

- More wildfires in the first four months of 2019 than the whole of 2018.

## Economic losses in EU from weather and climate-related extremes are ~EUR 12 billion per year (1980-2017)

- In Slovakia, EUR 1.6 billion losses in 38 years, but only 6% insured
- meteo and hydrological events caused 63% of monetary losses
- Heatwaves caused 85% of the fatalities



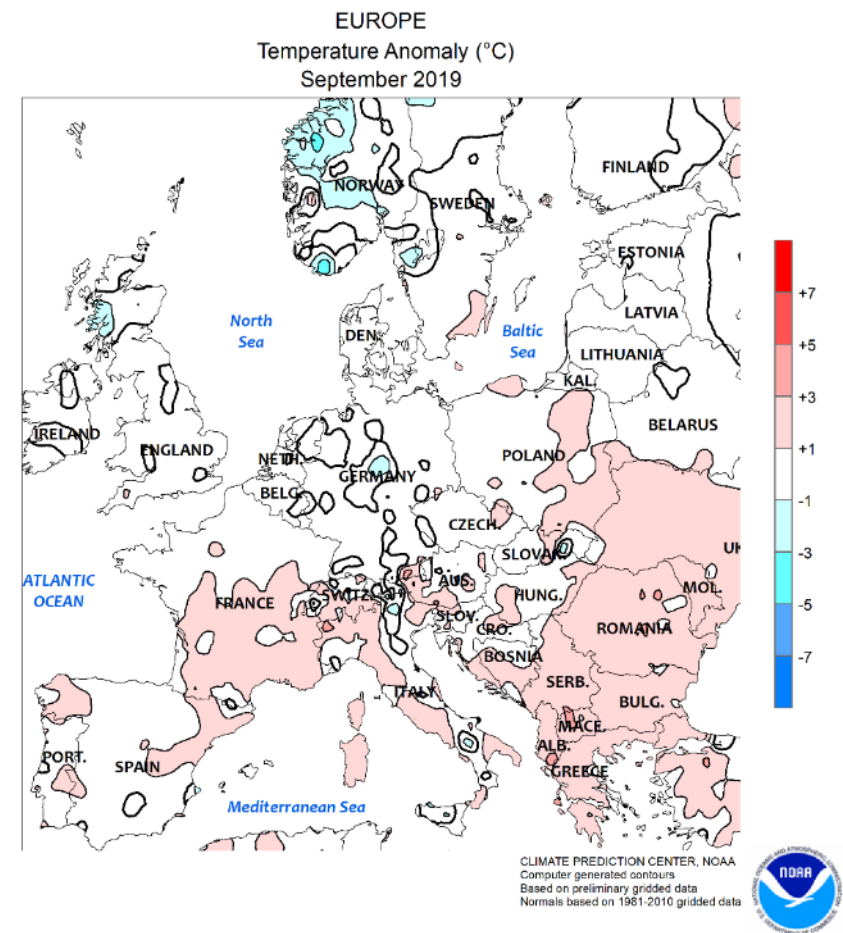
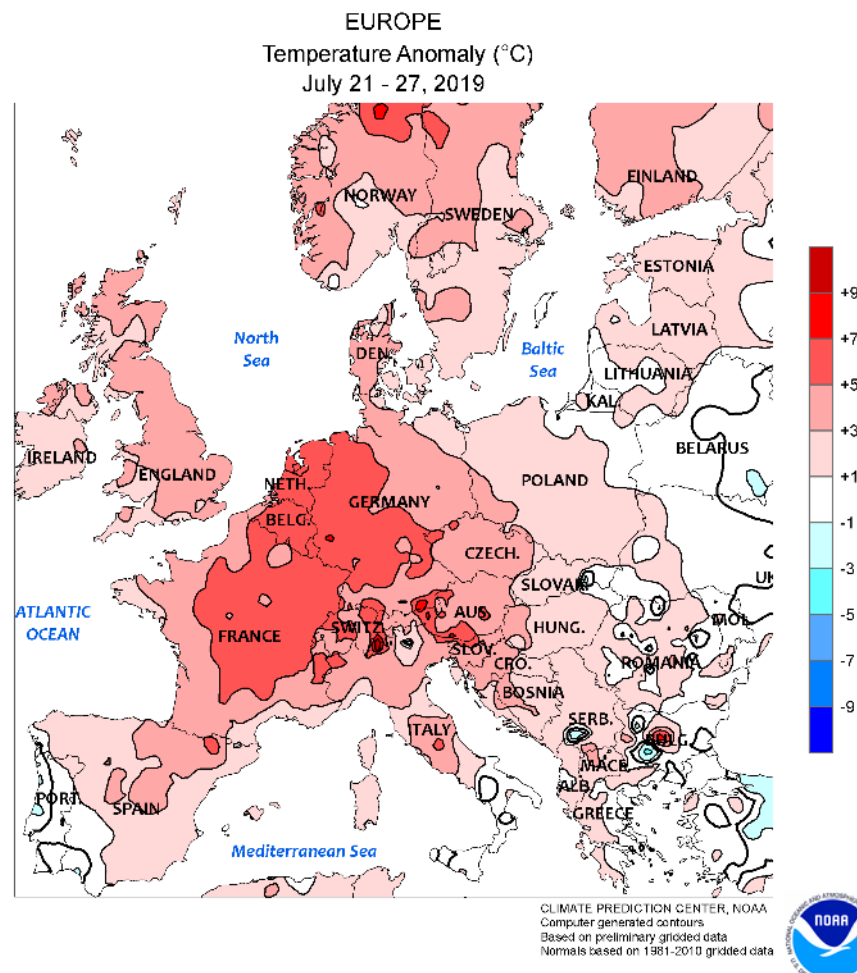
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# Climate Change impacts: the need to act now



## The warmest year EVER on record for Europe was 2019 ( $>3^{\circ}\text{C}$ above normal)

- Climate change made the July heatwave at least five times more likely



# Climate Change impacts: all regions are affected



## 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

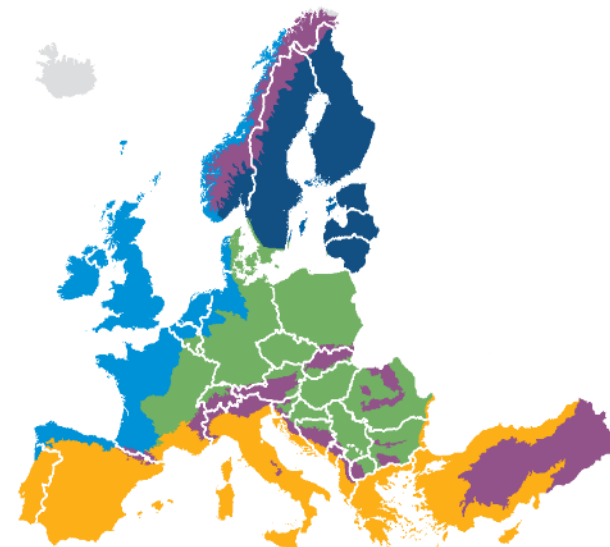
Increase in heavy precipitation events  
Decrease in snow, lake and river ice cover  
Increase in precipitation and river flows  
Increasing potential for forest growth and increasing risk of forest pests  
Increasing damage risk from winter storms  
Increase in crop yields  
Decrease in energy demand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

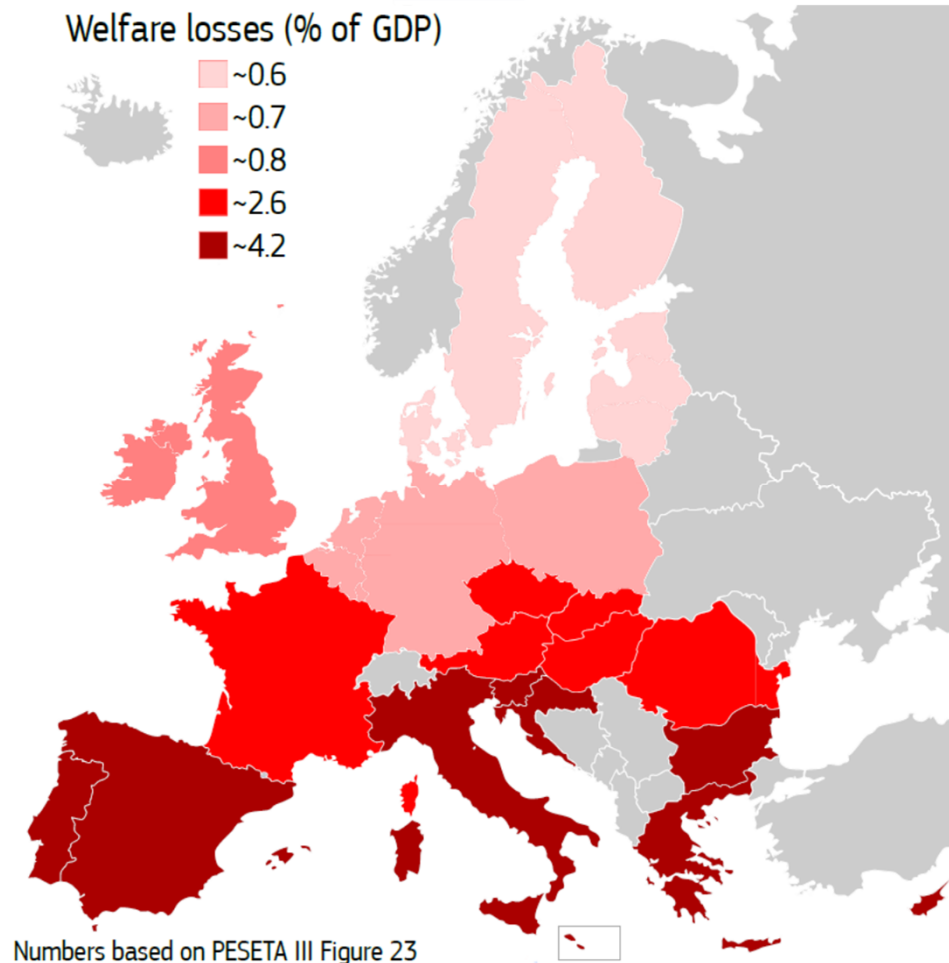
Large increase in heat extremes  
Decrease in precipitation and river flow  
Increasing risk of droughts  
Increasing risk of biodiversity loss  
Increasing risk of forest fires  
Increased competition between different water users  
Increasing water demand for agriculture  
Decrease in crop yields  
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



Source: 2016 EEA report on climate change, impacts and vulnerability



# Climate Change impacts: the future is not rosy



## Welfare losses (% of GDP) by 2100 in >2°C warming scenario

Sectors included: agriculture, energy, labour productivity, river and coastal floods, mortality

Source: JRC PESETA III

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### Adaptation (IPCC)

*The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.*



- Investments for urban infrastructure  
e.g. improve water retention, urban drainage, building standards
- Development of green and blue infrastructure  
e.g. forests, parks, wetlands, green walls/roofs, floodplains
- Implementation of 'soft' measures  
e.g. sharing information, capacity building, involving stakeholders

# EU strategy on adaptation to Climate Change



## 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

## Make EU-level action 'climate-proof'

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

## Make decision-making better informed

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



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# EU strategy on adaptation to Climate Change



# Main findings of the evaluation

## Evaluation criteria

✓ relevant   ✓ effective   ✓ efficient   ✓ coherent   EU ✓ added value

## More work needed to:

- implement and monitor national strategies
- bridge newly emerging knowledge gaps
- address territorial and social differences in vulnerability to climate change

## Also, new developments since 2013:

- More extreme events (e.g. heatwaves, droughts, storms, wildfires 2x, floods 4x compared to 1980) – likelihood increased by climate change
- Higher future damage estimates (e.g. 10-fold increase for critical infrastructure by the end of the century)
- International context: Paris Agreement, Sendai Framework for DRR, SDGs

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## Where are we now?



- 26 MS have national strategies (but implementation/monitoring lags)
- Around 26% of all EU cities & 40% of large ones have adaptation plans
- 60 ongoing projects under LIFE covering adaptation
- On insurance and sustainable finance, only recent activity (e.g. taxonomy)
- EU budget (MFF) mainstreaming: done, but a few sectors missed, e.g. maritime & social
- Climate proofing guidance - work underway



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# How do we adapt?



## Heat waves



- Green spaces and corridors in urban areas
- Cooling and drinking fountains
- Early warning systems to help us prepare for the heat in advance

## Flooding



- Reducing impervious surfaces (asphalt) and introducing more 'sponge-like' surfaces to absorb excess water
- Early warning systems
- 'Water-sensitive' buildings with green roofs to absorb rainwater



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# How do we adapt?



## Health



- Food and water borne diseases; pollen and other allergens; new 'tropical' diseases; heatwaves
- Urban residents and vulnerable groups particularly exposed
- Many public authorities have taken action, yet more ambition is needed:
  - preparedness for heatwaves + other extreme events
  - air pollution modelling + monitoring
  - essential health services during disasters
  - infectious disease surveillance
- Food production and consumption as a lever for health and environmental sustainability

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# How do Member States adapt?



## Promoting action by Member States: National Adaptation Strategies



Source: EEA (2018)

- National Adaptation Strategy Adopted
- National Adaptation Strategy under development
- Outside coverage

### Slovakia (EEA)

Item	Status
National Adaptation Strategy	<ul style="list-style-type: none"><li>• Adopted</li></ul>
National Adaptation Plan	<ul style="list-style-type: none"><li>• Being developed</li></ul>
Impacts, vulnerability and adaptation assessments	<ul style="list-style-type: none"><li>• Completed</li></ul>
Research programmes	<ul style="list-style-type: none"><li>• Currently being undertaken</li></ul>
Meteorological observations	<ul style="list-style-type: none"><li>• Established</li></ul>
Climate Projections and Services	<ul style="list-style-type: none"><li>• Established</li></ul>
CC IVA portals and platforms	
Monitoring, Indicators, Methodologies	<ul style="list-style-type: none"><li>• Being developed</li></ul>
Monitoring Mechanism Regulation	<ul style="list-style-type: none"><li>• Last reporting on Adaptation (Art. 15) submitted</li></ul>
National Communication on the UN Framework Convention on Climate Change	<ul style="list-style-type: none"><li>• Last National Communication Submitted</li></ul>

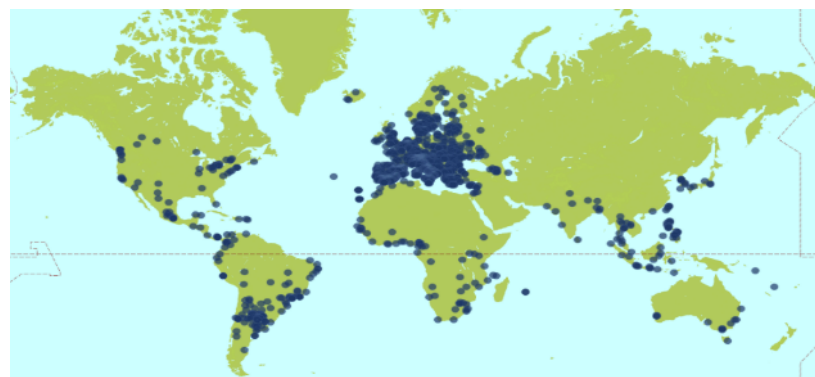


# How do Cities adapt?



## Covenant of Mayors for climate and energy

- In EU, 9,200+ signatories, covering some 240 million people
- 6,100+ Sustainable Energy and Climate Action Plans submitted; total greenhouse gas reduction of 23% achieved (target is 27% by 2020, i.e. beyond EU target)
- New commitments since 2015:  
40% emissions reduction by 2030, and development of local adaptation plans
- Slovakia: 38 signatories, covers ~870,000 people (~ 16% of total population)



~10% of global population

# How do Cities adapt?



## Local level action examples



**Scheme for the purchase of rainwater management installations in Bratislava, Slovakia**

**Reopening a canal for storm water management in Växjö , Sweden**



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# What next...



- **Possible new Adaptation Strategy as part of the Green Deal**

**Objective: protect people, planet and prosperity against impacts of climate change**

- Links to international agenda (Paris, Sendai) – EU leading on adaptation
- address new developments in health and climate change (possible new virtual observatory)
- Improve decision making and planning (possible common governance framework for climate economic loss data)
- Bridge the climate financial protection gap (possible toolbox and Increased EU monitoring)
- Expand climate-proofing of EU investments and beyond
- Horizon Europe mission on Adaptation to Climate Change (moonshot)



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# Thank you!

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