

Extreme heat and summer energy poverty

EPAH Lunch talk #19

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16 July

European Environment Agency



The European Environment Agency

Supporting sustainability policy through knowledge



- An independent **EU agency**
- Analysing, assessing and providing **information**
- An interface between **science and policy**
- Dependent upon **strong networks** to carry out its work

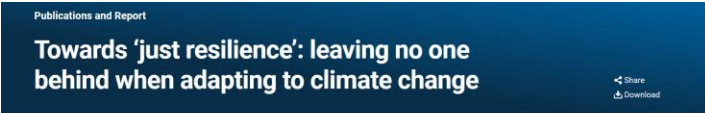


Economic losses and fatalities from weather- and climate-related extremes
Briefing | Published 02 Jul 2025
Image © Justine Lepaulard, ImaginAIR/EEA

Analysis and data Publications Economic losses and fatalities from w...

Link

This briefing is about the significant fatalities and economic losses from natural hazards between 1980 and 2023. It also examines the widening insurance protection gap, includes fresh data on six Western Balkan countries and insights to complement the relevant annual indicator.



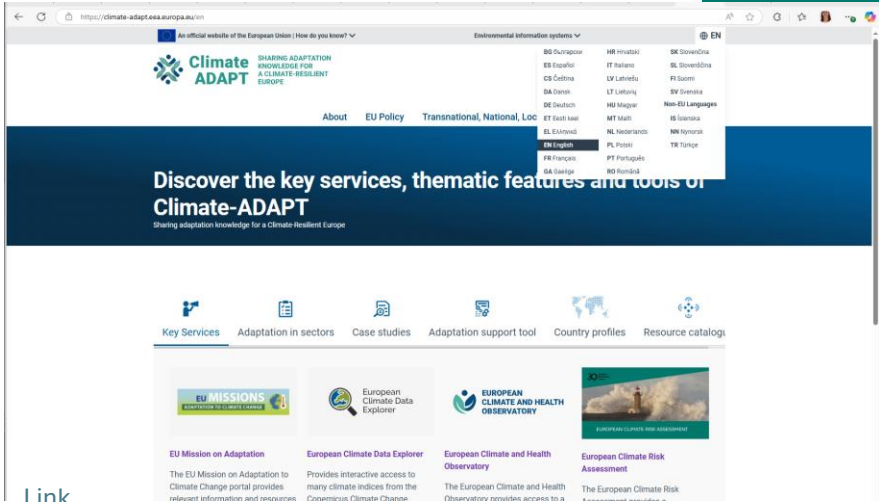
Towards 'just resilience': leaving no one behind when adapting to climate change
Publication and Report
Database Publication and reports Towards 'just resilience': leaving no on...

Description

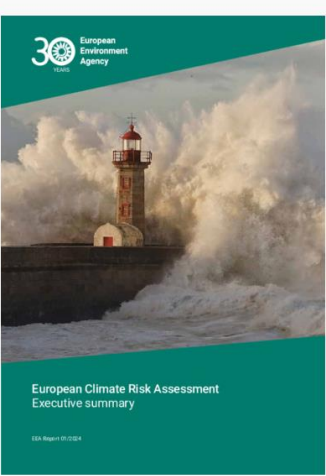
Despite efforts to adapt to climate change in Europe, the most vulnerable groups in society are still the most affected. Projected climate change, an ageing society and persisting socio-economic inequalities mean that differences in vulnerability and exposure to climate change are likely to continue. In addition, adaptation responses may worsen existing inequalities or even create new ones. This briefing looks at how climate change affects vulnerable groups and how these impacts can be prevented or reduced through equitable adaptation actions. It also presents examples of equity-oriented policies and measures from across Europe.

Date of publication: 2022
Keywords: equitable adaptation actions, just resilience, socio-economic inequalities, vulnerable groups
Climate impacts:

Link



Link



European Climate Risk Assessment Executive summary
EEA Report 01/2024

Social fairness in preparing for climate change: how just resilience can benefit communities across Europe

EEA Report 04/2025 10 Jun 2025

There is a clear need to ramp up justice considerations in adaptation. By integrating justice into adaptation efforts and addressing the unique needs and vulnerabilities of different social groups, policymakers can create more resilient and equitable communities that are better prepared to cope with climate-related hazards.

EN PDF: TH-01-25-012-EN-N - ISBN: 978-92-9480-717-5 - ISSN: 1977-8449 - doi: 10.2800/3683343

Link

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Analysis and data Publications The impacts of heat on health surveill...

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European Climate Risk Assessment

EEA Report 01/2024

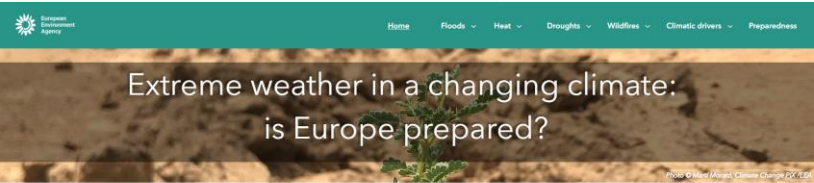
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11 Mar 2024

The first European Climate Risk Assessment (EUCRA) identifies 36 climate risks that pose a threat to Europe's energy and food security, ecosystems, infrastructure, water resources, financial stability, and people's health. It shows that many of these risks have already reached critical levels and can become catastrophic without urgent and decisive action. The knowledge in this first-of-its-kind assessment is synthesised to support strategic policymaking.



ISBN: 978-92-9480-627-7



In this portal, you can explore how heatwaves, floods, droughts and wildfires are increasingly affecting Europe. Through interactive maps and charts, you can find out what happened in the past, what's projected for the future and see examples of how the continent is preparing.

The portal aims to raise awareness among decisionmakers and the public about the urgent needs to both mitigate and adapt to climate change, and strengthen societal resilience.

Environmental, climatic, and sustainability-related factors determine whether stability and resilience can endure. In Europe, we need to invest in overall security, including into measures to protect people from extreme climate events.

Environmental degradation, climate change and unsustainable practices threaten resources, socio-economic stability and public health, and cause geopolitical conflicts.

We need to shift towards proactive climate resilience in our economy, society and infrastructure to enhance European competitiveness.

Europe must prioritise climate resilience as urgently as economic competitiveness and food and energy security. The costs of inaction will exceed today's investment.

Link



Urban adaptation in Europe: what works?

EEA Report 14/2023

29 Apr 2024

Average temperatures across Europe are rising faster than the global average, and Europe's cities are feeling the impacts of climate change more regularly and more severely. With the summer of 2023 breaking temperature records, the case for investing in societal resilience to climate change has never been clearer.

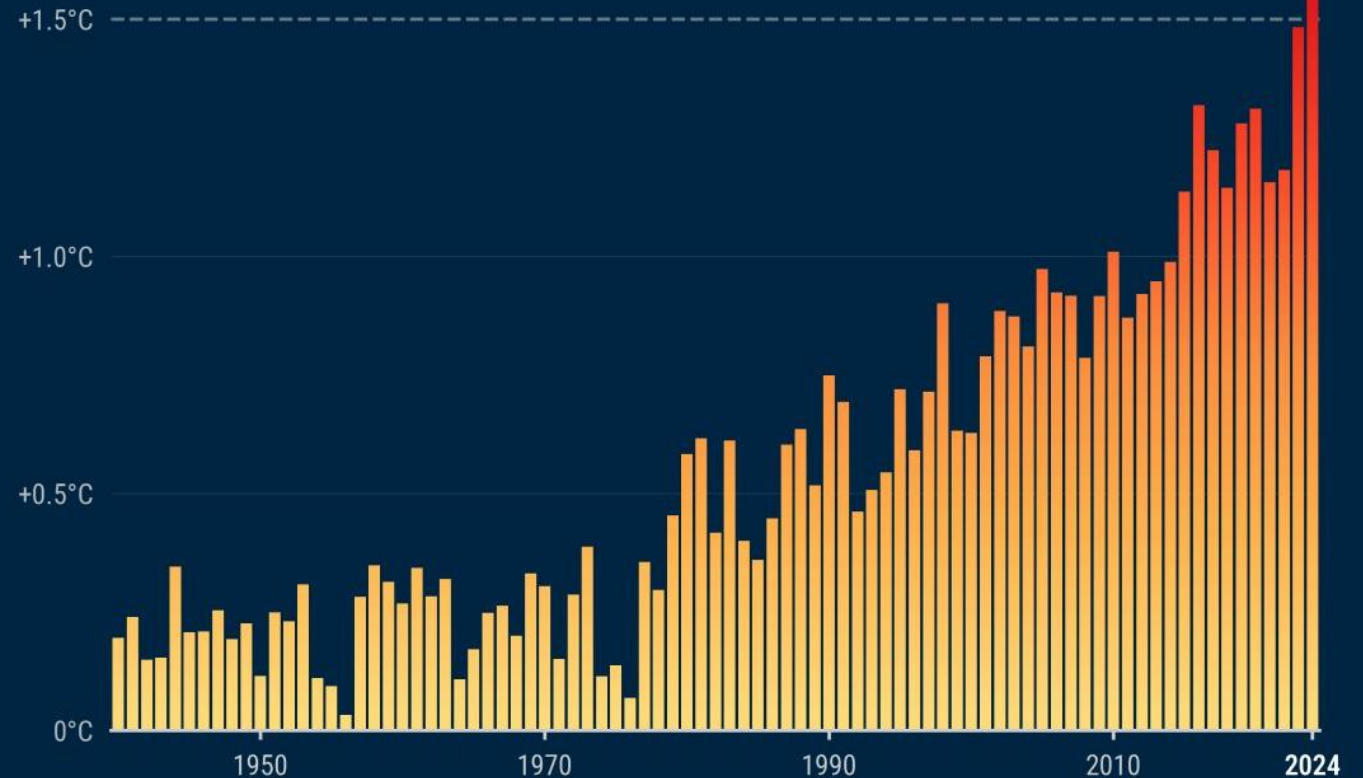
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Download PDF report

Global climate change and associated risks: our current reality



Annual global temperature anomalies relative to pre-industrial (1850-1900)
Data: ERA5 (1940-2024) • Credit: C3S/ECMWF



PROGRAMME OF
THE EUROPEAN UNION





Infrastructure cluster



Health cluster

Climate risks for 'Infrastructure' cluster	Urgency to act	Risk severity			Policy characteristics		
		Current	Mid-century	Late century (low/high warming scenario)	Policy horizon	Policy readiness	Risk ownership
Pluvial and fluvial flooding		+++	+++	++	Long	Medium	Co-owned
Coastal flooding		+++	+++	+++	Long	Advanced	Co-owned
Damage to infrastructure and buildings (*)		++	++	++	Long	Medium	Co-owned
Energy disruption due to heat and drought (hotspot region: southern Europe)		++	++	++	Medium	Medium	Co-owned
Energy disruption due to heat and drought							ned
Energy disruption due to flooding							ned
Spatial planning and building standards key policy levers to reduce heat-related health risks => Need to consider future climate change (projections)							
Climate risks for 'Health' cluster							
Heat stress – general population		+++	+++	+++	Long	Medium	National
Population/built environment due to wildfires (hotspot region: southern Europe)		+++	+++	+++	Medium	Medium	Co-owned
Population/built environment due to wildfires		+++	++	++	Medium	Medium	Co-owned
Well-being due to non-adapted buildings (*)		++	++	++	Long	Medium	Co-owned
Heat stress – outdoor workers (hotspot region: southern Europe)		+++	+++	+++	Short	Medium	Co-owned
Heat stress – outdoor workers		+++	+++	+++	Short	Medium	Co-owned
Pathogens in coastal waters		+	+	+	Medium	Medium	Co-owned
Health systems and infrastructure		+++	++	++	Medium	Medium	National

Legends and notes

Urgency to act

- Urgent action needed
- More action needed
- Further investigation
- Sustain current action
- Watching brief

Risk severity

- Catastrophic
- Critical
- Substantial
- Limited

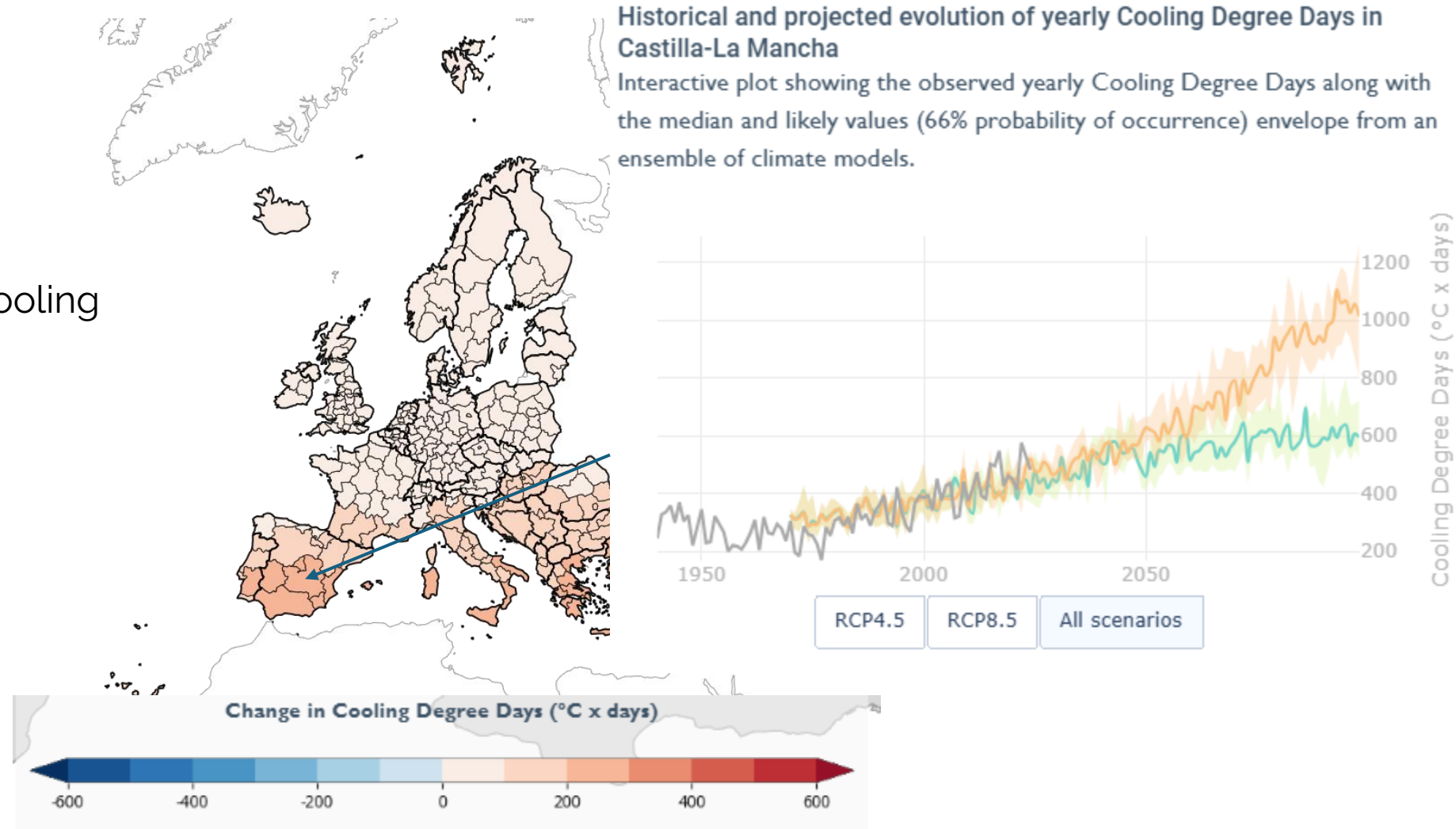
Confidence

- Low: +
- Medium: ++
- High: +++

high warming scenario (late century).

Heating and cooling degree days (ECDE)

Increased energy use for cooling and heating



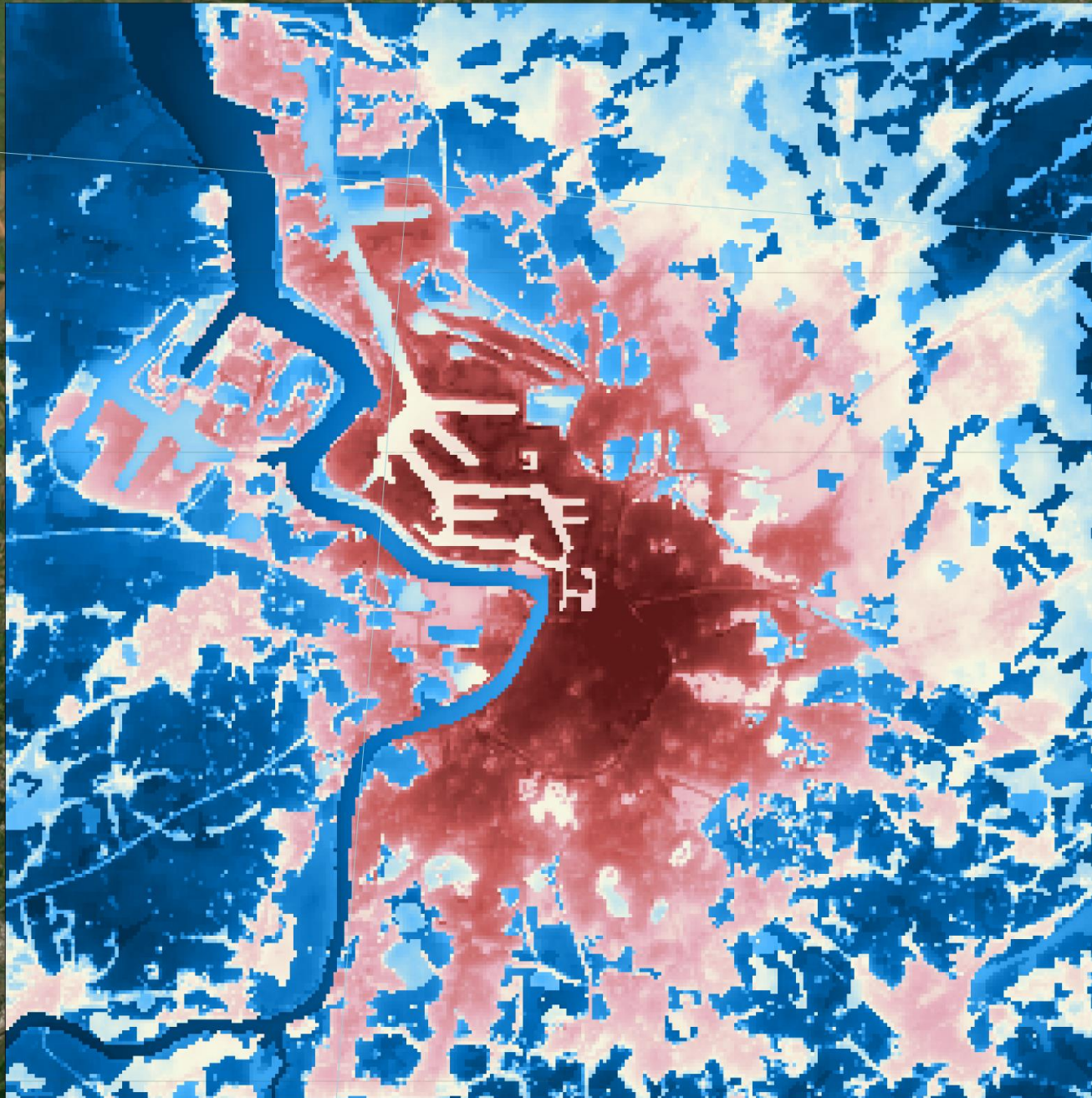
Why do we need to adapt our cities?

* Urban surface temperatures up to **10-15°C warmer**

* **27%** urban areas with significant (>10%) increase in population in floodplains 2011 -2021

Urban heat island effect, Antwerp, Belgium.

Copernicus Health Services/VITO



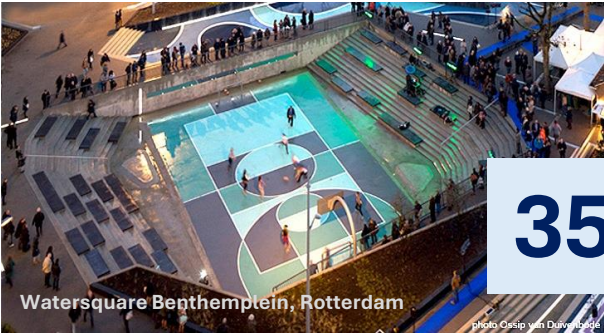


Urban adaptation in Europe: What works? Implementing climate actions in Europe's cities

Green roofs, walls, and urban vegetation help reduce the urban heat island effect, manage stormwater, and improve air quality

Physical & Technological

- Grey Infrastructure
- Early warning systems



35%



20%

Governance & Institutional

- Planning, regulations, networks

Economic & Finance

- Incentives, insurance



3%

How are cities adapting to climate change?

Nature-based Solutions

- Green & Blue infrastructure



15%

Knowledge & Behavioural change

- Awareness raising
- Capacity building

27%



Social fairness in preparing for climate change: how resilience can benefit communities across Europe

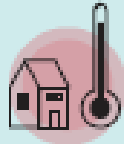


Built environment

Summer energy poverty

19%

of the EU population is unable to keep their house comfortably cool in the summer.



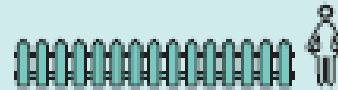
Unequal access to green

Less than half of EU urban population has green space within 300m of their homes.

Green space is generally less available to lower-income urban households.

Increasing justice in adaptation measures

Ensure that cost and other barriers are overcome for low-income groups, particularly renters, to access adaptation measures.

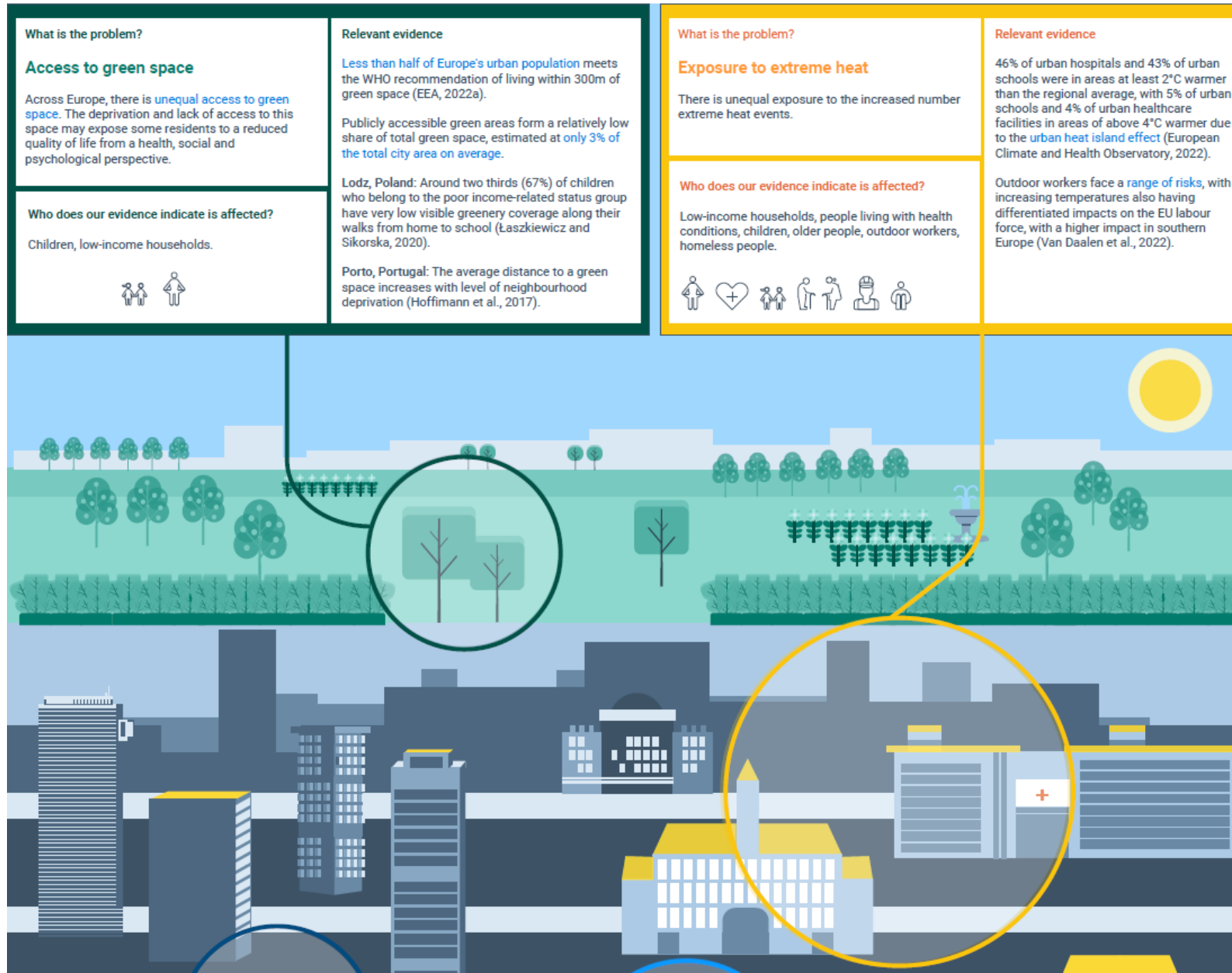


Concrete examples of what is needed

- Financial support for home improvements
- More inclusive government mechanisms
- Protections from extreme weather for outdoor workers
- Inclusive planning for green infrastructure.

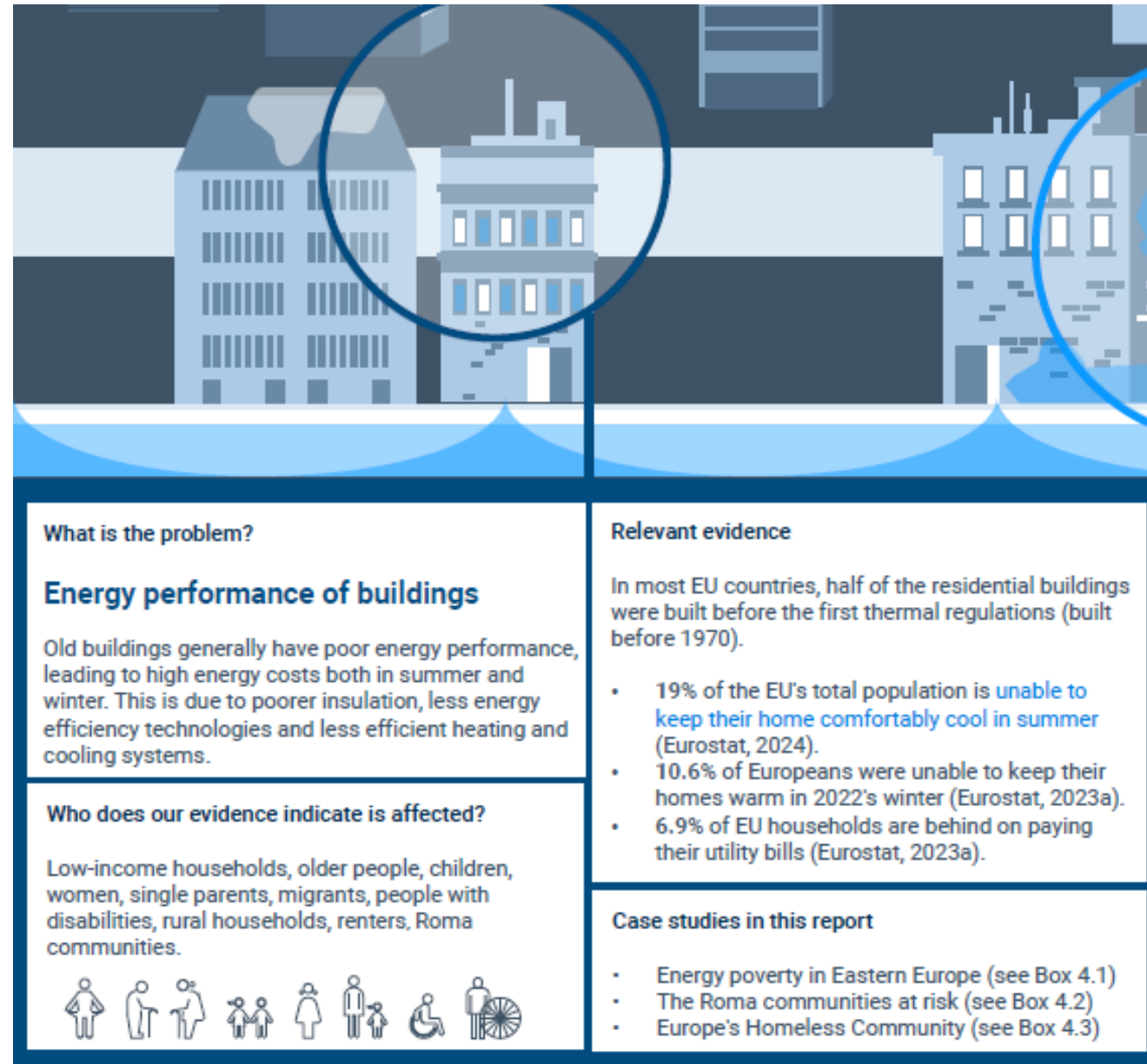
Source: Social fairness in preparing for climate change

Social fairness in preparing for climate change: how injustice manifests within the built environment



Source: Social fairness in preparing for climate change

Social fairness in preparing for climate change: how injustice manifests within the built environment



Source: Social fairness in preparing for climate change

Adaptation to address social inequalities

- Many building renovation approaches to reduce energy consumption **unfairly burden low-income residents (particularly renters)**:
 - Prohibitive upfront costs for low-income homeowners
 - Impossibility to move out for long-term renovation projects
 - Investments in building renovations by landlords leading to housing becoming less affordable for renters (leading to 'renovictions')
- Ways to make targeted measures for **building improvements more just**:
 - At EU level: Renovation Wave, Energy Performance of Building Directive, Social Climate Fund
 - At national level: MS examples
 - France: law protecting tenants that legislates a cap on rent increases (max. 15% of actual costs of renovations)
 - Belgium: 'Sociale Energie Sprong' - speeding up retrofitting of social housing, while maintaining overall cost affordability, through prefabricated external cladding



Source: [Social fairness in preparing for climate change](#)

Reducing summer energy poverty



**Climate
ADAPT**

SHARING ADAPTATION
KNOWLEDGE FOR
A CLIMATE-RESILIENT
EUROPE



CooltoRise outdoor intervention and schoolyard cooling.
Source: © Carmen Sánchez-Guevara.

[CoolroRise, Spain, Italy, Greece and Bulgaria](#)

Oasis schoolyard in Paris

Example of a green schoolyard. Source: Ville de Paris



[Paris Oasis Schoolyard Programme, France](#)

Thank you



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