





HEALTH PROTECTION IN CLIMATE-RELATED EU POLICIES: GAPS AND RECOMMENDATIONS





SUMMARY

Climate change is profoundly affecting physical, mental and social health. While the European Union (EU) has made significant progress in addressing these issues, critical gaps remain in integrating health considerations into climate-related policies. This policy brief highlights urgent areas for improvement, informed by findings from the European climate-health research project TRIGGER.

Several climate hazards and key health concerns — including mental health challenges, climate-induced displacement, and underexplored risks like cold waves — remain inadequately addressed. To improve climate-related EU policies and better safeguard public health, we recommend to:

- 1. Diversify the coverage of climate hazards and address cascading effects
- 2. Diversify the coverage of physical health impacts
- 3. Make mental health a priority
- 4. Address social disparities and invest in climate-resilient health systems to improve social health
- 5. Implement diverse policy measures to address climate-related health impacts
- 6. Incorporate comprehensive Health Impact Assessments (HIA)

By adopting a more holistic approach, the EU can more systematically reduce healthcare burdens, enhance climate resilience, and safeguard the well-being of its citizens.



CLIMATE CHANGE: A HEALTH EMERGENCY

Human health is severely threatened by the intensifying impacts of **climate change.** Temperatures in Europe are rising at twice the rate of the global average, with extreme climatic events becoming more frequent and intense. In recent decades, wildfire danger has shown an upward trend across Europe, while regions in the west, south and east have experienced substantial increases in extreme drought conditions. At the same time, extreme precipitation events have led to devastating floods in large parts of the continent. According to the first European climate risk assessment, these and other **climate-related hazards** can trigger complex cascading impacts on societies and economies in Europe, demanding urgent policy action. As the World Health Organization (WHO) warns, even a global warming of 1.5°C – the threshold set out in the Paris Agreement – puts lives at risk, and every additional tenth of a degree of warming will take a serious toll on people's lives and health.

Climate change impacts human health in different ways, affecting three interconnected spheres: physical, mental, and social health. Impacts on **physical health** include heat-related illnesses due to rising temperatures, injuries and fatalities from more frequent and severe extreme events (e.g. heatwaves, storms, floods), adverse impacts from air pollution, and the spread of vector-borne and water-related diseases.³⁻⁵ **Mental health** can be directly affected by physical health threats causing distress and trauma. Additionally, general worries about climate change ("climate anxiety") may induce or worsen mental disorders (e.g., depression, anxiety), insomnia and even suicidality.⁵ **Social health** faces cascading effects as climate hazards may damage houses and disrupt food production, healthcare services, and infrastructure, particularly compromising socially vulnerable groups to satisfy basic human needs. Moreover, climate-driven displacement and migration can fuel civil unrest and conflict, lead to unmet healthcare needs, trigger trauma, and widen social inequalities.⁶

To address the health impacts of the climate crisis, stronger cross-sectoral governance is essential. The European Green Deal – complemented by the Clean Industrial Deal since 2025 – represents a significant step forward, providing an overall policy framework to transform the European Union into a green, just and prosperous society by 2050. Its most ambitious objectives include climate-neutrality, the conservation and restoration of the Union's natural capital, and the protection of citizens' health and wellbeing from environmental risks and impacts. Achieving these objectives requires the prioritization of climate mitigation and adaptation policies that directly address and integrate health impacts of climate change. The European Parliament plays a key role in this effort, given its legislative and budgetary powers to guide member states' climate, environmental and health policies. Moving forward, the EU Commission's priorities for the period 2024-2029 clearly emphasise the implementation of key Green Deal objectives: boosting climate adaptation and ensuring the protection of all Europeans from climate-related impacts. The EU Horizon Project TRIGGER – a member of the European Climate-Health Cluster – is set out to contribute to these objectives.

This policy brief provides **recommendations to EU policymakers to better integrate health considerations into climate-related policies.** These recommendations are based on a gap analysis⁹ assessing how human health is accounted for in 11 key policy documents of the **European Green Deal**, three of them focusing on climate change and eight policies addressing climate-related topics: environmental protection and food production (see Figure 1). A combined approach of qualitative text analysis and generative artificial intelligence (AI) was used in the gap analysis to examine the policies' coverage of climate hazards, health impacts and policy measures. Finally, policies were assessed for their inclusion of health impact assessments.



Figure 1 - Methodology of the gap analysis

Policies considered in the gap analysis

EU Green Deal policies

Climate

- Climate Law (CL)
- Strategy on Adaptation to Climate Change (SACC)
- Climate Target Plan for 2030 **(CTP)**

Environmental

- General Union Environmental Action Programme to 2030 (EAP)
- Biodiversity Strategy for 2030 (BS)
- Forest Strategy for 2030 **(FS)**
- Soil Strategy for 2030 (SS)
- Directive on Soil Monitoring and Resilience (DS)
- Action Plan 'Towards Zero Pollution for Air, Water and Soil' (ZPAP)
- Nature Restoration Law (NRL)

Food

- Farm to Fork Strategy (FTFS)



Policy screening* 1) Which climate hazards are mentioned



HEAT AND COLD

- Rising mean air temperature
- Extreme heat
- Frost



SNOW AND ICE

WET AND DRY

- Snow, glacier and ice sheet Change in mean precipitation
 - Heavy precipitation and river flood
 - Aridity
 - Drought
 - Fire weather



WIND

- Change in mean wind speed
- Severe windstorm



- Rising relative sea level
- Coastal flood



OPEN OCEAN

- Rising mean ocean temperature
- Marine heatwave
- Ocean chemistry

2) Which health impacts of climate change are mentioned?



PHYSICAL HEALTH

- Direct heat impacts (e.g., dehydration, stroke)
- Heat impacts on cardiovascular and respiratory health
- Skin cancer linked to UV radiation
- Cold-related mortality Injuries from extreme events
- Drinking water contamination
- Diseases from bacteria and algae in bathing water
- Infectious and vector borne diseases
- Food-borne diseases
- Reactions to existing or new allergenic species
- Increased concentrations of air pollutants

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MENTAL HEALTH

- Trauma from extreme weather events
- Trauma from indirect impacts (e.g., displacement, stress)
- Workplace performance and behavioral change due to heat
- Climate anxiety

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SOCIAL HEALTH

- Unmet basic human needs
- Disrupted healthcare or emergency services
- Loss of community and widening of social disparities
- Loss of cultural and natural heritage

3) Which policy measures are mentioned?



POLICY MEASURES

- Awareness-raising campaigns
- Education and training of health professionals
- Emergency response preparation and drills
- Identifying vulnerable groups Research on health impacts of climate change
- Monitoring, surveillance, early warning systems
- Resilient infrastructure and nature-based solutions
- New governance structures
- New strategies for healthcare facilities
- Legislative developments
- Partnerships with various organizations

4) Further analysis of climate hazards and health impacts through generative AI



To what extent are health impacts assessed in the policies?

* The **climate hazards** considered coincide with those identified in the 6th Assessment Report of the IPCC.^{10,11} The **health impacts** and **policy measures** considered are derived from the European Climate and Health Observatory.



RECOMMENDATIONS

Climate Hazards

1. Diversify the coverage of climate hazards and address cascading effects

Key findings:

- While policies with an explicit focus on climate change address a wide range of climate hazards, the variety of climate hazards considered in policies on climate-related topics (i.e., environmental protection, food production) is rather limited (see **Table 1**).
- Hazards that receive broad attention include heavy precipitation and floods, dry weather extremes, and rising air and ocean temperatures. However, **critical gaps remain:** wind-related hazards, rising relative sea levels and changes in snow, glacier and ice sheets are **relatively neglected**. Changes in mean precipitation are only addressed by the **Climate Target Plan** (CTP).
- None of the analysed policies not even key climate policies such as the <u>Climate Law</u> (CL) address marine heatwaves, coastal floods or frost as hazards. The neglect of frost and cold waves is particularly worrisome. While global warming is expected to increase heatwaves and heat-related deaths in Europe, cold deaths still outnumber heat deaths by a factor of 3 to 4.¹² Moreover, Europe's climate is heavily influenced by the Atlantic Meridional Overturning Circulation (AMOC), a major ocean current system that transports warm surface waters towards Europe. Early signs of a potential collapse have already been observed, which could offset warming trends in Europe, paradoxically intensifying cold weather hazards.¹³
- Climate-related policies often fail to acknowledge intermediate or cascading hazards. For example, marine heatwaves and ocean warming threaten marine ecosystems triggering biodiversity loss and economic instability. Similarly, river, flash and coastal flooding severely threaten Europe's infrastructure, endangering energy, water and transport systems, affecting long-term human health.² Southern Europe faces critical risks to food security due to drought-induced crop failures, which indirectly affect human health.² Additionally, late-spring frosts and heavy rainfall can significantly impair food production.²

Table 1 - Climate hazards mentioned in the policies analysed

		EU Green Deal policies											
		Climate					Food						
		CL	SACC	СТР	EAP	BS	FS	SS	DS	ZPAP	NRL	FTFS	
	- Rising mean air temperature	~	~	~	~	~			~	~	~		
	- Extreme heat	~	~			~		~	~		~		
•	- Frost												
	- Snow, glacier and ice sheet	~		~					~		~		
	- Change in mean precipitation			~									
	- Heavy precipitation and river flood	~	~	~	~	~	~	~	~		~	~	
	- Aridity		~		~	~		~	~		~		
101	- Drought	~	~	~		~		~	~			~	
	- Fire weather	~	~	~	~	~	~		~		~	~	
*	- Change in mean wind speed	~					~						
7	- Severe windstorm	~	~	~					~		~		
*	- Rising relative sea level	~	✓										
	- Coastal flood												
	- Rising mean ocean temperature	~	~	~	~	~					~		
230	- Marine heatwave												
	- Ocean chemistry		~	~	~					~			

(CL) Climate Law - (SACC) Strategy on Adaptation to Climate Change - (CTP) Climate Target Plan for 2030 - (EAP) General Union Environmental - (BS) Biodiversity Strategy for 2030 - (FS) Forest Strategy for 2030 (SS) Soil Strategy for 2030 - (DS) Directive on Soil Monitoring (ZPAP) Action Plan 'Towards Zero Pollution for Air, Water and Soil' - (NRL) Nature Restoration Law - (FTFS) Farm to Fork Strategy



Recommended actions:

- A **broad range of climate hazards**, going beyond the commonly cited ones like rising temperatures and floods, **should be considered** in the development of climate-related policies. Furthermore, expanding the list of climate hazards to include air pollution (e.g., sand and dust storms, wildfire smoke) would enable a more comprehensive assessment of climate-related risks.
- The **inclusion of neglected hazards** (e.g., cold weather hazards, marine heatwaves, coastal flooding) should be high on the policy agenda.
- Policies should **consider intermediate and cascading effects of climate hazards** to provide a more holistic picture of the potential health impacts of climate change, addressing not only immediate health burdens but also indirect and long-term effects.²

Health Impacts

2. Diversify the coverage of physical health impacts

Key findings:

- Although physical health impacts are covered in each of the policies analysed, there are clear imbalances between different types (**Table 2**).
- The **most cited physical health impacts** across all policies are infectious and vector-borne diseases, and reactions to existing or new allergenic species, followed by increased concentrations of air pollutants.
- There is a limited coverage of other physical health impacts related to climate change, such as direct heat impacts, cardiovascular, respiratory and neurological health issues, skin diseases, cold-related mortality, injuries from extreme events, and water- and food-borne diseases.
- **Expand the focus on underreported yet critical physical health impacts** of climate change to ensure comprehensive risk assessment and policy response.
- Strengthen climate-related policies by providing **detailed assessments** of health impacts and explicitly linking them to specific climate hazards.

Recommended actions:

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Table 2 - Physical, mental and social health impacts mentioned in policies

		EU Green Deal policies										
		Climate CL SACC CT			EAP	BS	Environmental FS SS DS ZPAF			ZPAP	NRL	Food
	- Direct heat impacts (e.g., dehydration, stroke)											
	- Heat impacts on cardiovascular and respiratory health		V									
	- Skin cancer linked to UV radiation											
	- Cold-related mortality											
3	- Injuries from extreme events		~									
	- Drinking water contamination									~		
	- Diseases from bacteria and algae in bathing water											
	- Infectious and vector borne diseases	V	V		~	~	~		~	~		~
	- Food-borne diseases											~
	- Reactions to existing or new allergenic species			~		~	~	V	~	~	~	~
	- Increased concentrations of air pollutants			~		~			~	~		
	- Trauma from extreme weather events											
	- Trauma from indirect impacts (e.g., displacement, stress)											
7	- Workplace performance and behavioral change due to heat											
	- Climate anxiety									~		
	- Unmet basic human needs	~	~			~			~	~		~
000	- Disrupted healthcare or emergency services		~									
	- Loss of community and widening of social disparities		~				~	~	~	~		~
	- Loss of cultural and natural heritage		~	~	~	~	~	~	~	~		~

(CL) Climate Law - (SACC) Strategy on Adaptation to Climate Change - (CTP) Climate Target Plan for 2030 - (EAP) General Union Environmental - (BS) Biodiversity Strategy for 2030 - (FS) Forest Strategy for 2030 (SS) Soil Strategy for 2030 - (DS) Directive on Soil Monitoring (ZPAP) Action Plan 'Towards Zero Pollution for Air, Water and Soil' - (NRL) Nature Restoration Law - (FTFS) Farm to Fork Strategy

3. Make mental health a priority

Key findings:

- The **potential impacts of climate change on mental health,** including trauma, stress and climate anxiety, **are largely overlooked in the policies analysed** (Table 2). For example, the **EU Strategy on Adaptation to Climate Change** (SACC) considers physical injuries from extreme weather events but fails to address mental health effects such as post-traumatic stress.
- If mental health impacts are mentioned, it is only in generic terms, without further specification (e.g., trauma, depression).
- Only one of the policies analysed, the <u>EU Action Plan "Towards Zero Pollution"</u> (ZPAP), addresses a specific impact of climate change on mental health, namely climate anxiety.
- The four categories of mental health impacts differentiated by the EU Climate and Health Observatory are rather limited and partially lack further specification and classification.

Recommended actions:

- Given the growing evidence linking mental health and climate change, climate-related policies should explicitly **integrate mental health impacts**, incorporating relevant impact assessments and targeted prevention, management and coping strategies.
- Address remaining knowledge gaps on climate change and mental health by establishing dedicated funding streams to support further research.
- Although gaps in knowledge remain, current knowledge is sufficient to **develop and fund programs offering mental health and psychosocial support (MHPSS)**, as issued by the WHO. These programs could contribute to the <u>EU Healthier together</u> initiative and targets on climate action (<u>Target 13.1-5</u>) and mental health (<u>Target 3.4</u>) under the Sustainable Development Goals.





4. Address social disparities and invest in climate-resilient health systems to improve social health

Key findings:

- The four **social health impacts** derived from the European Climate and Health Observatory are at least partially addressed by most of the policies analysed, with the <u>EU Strategy on Adaptation to Climate Change</u> (SACC) covering all of them and the <u>Nature Restoration Law</u> (NRL) none (Table 2). The social health impact most often addressed is the loss of cultural and natural heritage, while the potential disruption of healthcare and emergency services is often neglected.
- Although social factors such as income, employment, access to health services, and education can greatly affect how vulnerable individuals and communities are to climate hazards, the **policies analysed largely ignore the connection to social disparities.**
- Similar to the classification of mental health impacts, the European Climate and Health Observatory's categorisation of social health impacts lacks detail and specification.
- Although the **future displacement of people** due to climate change is widely acknowledged in research¹¹, and could have a profound impact on Europe¹⁴, this is currently **not adequately reflected in climate-related policies.** In addition, **the importance of identifying vulnerable groups** is generally missing.

Recommended actions:

- To address the potential disruption of healthcare services, the EU should **invest in climate-resilient health systems.** The WHO provides an operational framework https://www.who.int/publications/i/item/9789240081888 for countries to build climate-resilient health systems.
- A higher level of specification of social health impacts than currently provided by the European Climate and Health Observatory is needed for policy development. Critical social health impacts like malnutrition, access to health services or forced displacement and migration need to be addressed in future climate-related policies to ensure comprehensive preparedness and resilience.
- The **identification and protection of vulnerable groups** is crucial to ensure health equity and climate justice in the design of climate adaptation and mitigation measures. Adequate funding should be provided for this line of research.

Policy Measures

5. Implement diverse policy measures to address climate-related health impacts

Key findings:

- The policies analysed largely fail to mention measures to address or mitigate potential health impacts of climate change (Table 3).
- The highest number of measures (5) is mentioned in the <u>EU Strategy on Adaptation to</u> <u>Climate Change</u> (SACC), while some of the policies analysed do not even contain a single measure.
- Included policy measures are limited to the promotion of research into climate-related health impacts, infrastructural and nature-based interventions or governance and legislative measures.
- Educational, behavioural and social interventions remain largely overlooked.





Table 3 - Policy measures mentioned in policies

		EU Green Deal policies											
			CL CL	limate SACC	СТР	EAP	BS	En FS	vironn ss	nental DS	ZPAP	NRL	Food FTFS
	- Research on health impacts of climate change - Monitoring, surveillance, early warning systems - Resilient infrastructure and nature-based solutions			> > > > > > > > > >				~					
	 New governance structures New strategies for healthcare facilities Legislative developments Partnerships with various organizations 	care facilities									y		
	Measures that are not mentioned in the analyzed policies: Awareness-rais campaigns	the Awareness-raising trail		n and health	1		Emerg onse p and o	repara	ation		vuln	ntifying erable oups	•

(CL) Climate Law - (SACC) Strategy on Adaptation to Climate Change - (CTP) Climate Target Plan for 2030 - (EAP) General Union Environmental - (BS) Biodiversity Strategy for 2030 - (FS) Forest Strategy for 2030 (SS) Soil Strategy for 2030 - (DS) Directive on Soil Monitoring (ZPAP) Action Plan 'Towards Zero Pollution for Air, Water and Soil' - (NRL) Nature Restoration Law - (FTFS) Farm to Fork Strategy

Recommended actions:

- Climate-related EU policies should support **educational and behavioural initiatives** to inform the public about climate-related health risks and prepare them to respond to emergencies. This includes the creation of knowledge-sharing and learning platforms. **Health professionals need training** to recognise and address climate-related health impacts. Previous research has identified limited awareness among the public and health professionals as a key barrier to health-related adaptation.¹⁶
- Climate-related EU policies should promote social interventions to empower local governments and communities to protect health against climate-related hazards. To address health disparities, it is crucial to identify vulnerable groups and tailor interventions to their needs, recognising social determinants of health such as income, employment, housing, and education.¹⁷

6. Incorporate comprehensive Health Impact Assessments (HIA)

Key findings:

- While some of the policies analysed consider health-related indicators and perform qualitative or quantitative assessments, greater efforts are needed to ensure that health impacts are consistently assessed and integrated into policy planning.
- Few policies consider a quantitative Health Impact Assessment (HIA) with specific indicators. Moreover, **existing indicators primarily focus on physical health impacts**, such as air pollutant concentrations, direct heat effects, cold-related mortality and illness, and diseases from bacteria and algae in bathing water. In contrast, **indicators for social health impacts are rarely included** mostly limited to water availability and drought while **indicators for mental health are entirely absent.**

Recommended actions:

- Health Impact Assessments (HIA) should be systematically integrated into EU policy evaluation processes, similar to the established frameworks for **Strategic Environmental Assessments** (SEA) and **Environmental Impact Assessments** (EIA). This integration would strengthen the European Green Deal and contribute to the **EU4Health vision** for a healthier European Union.
- The EU could adopt the **World Health Organization's** <u>HIA tool</u>, which equips policymakers with comprehensive information about the health consequences of policies.¹⁸
- In addition to indicators on physical health, HIA should also incorporate **specific indicators** for social and mental health impacts.





Conclusions

Policymakers have a unique opportunity to lead the way in tackling health impacts of climate change in climate-related policies, both by diversifying and deepening the focus of climate hazards and cascading hazards, their health impacts and policy measures to address them. We call on policymakers to integrate comprehensive Health Impact Assessments (HIAs) more systematically into climate-related EU policies, thereby contributing to a Health-in-All-Policies approach to policymaking.

As the TRIGGER project advances, it will provide ground-breaking evidence and foster collaboration among stakeholders to refine effective policy solutions. Together, let us take bold and proactive steps toward building a healthier, more equitable, and climate-resilient future for all.

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