

Cascading climate risks: strategic recommendations for European resilience

Without action, dangerous cascading climate risks will continue to grow. This summary contains recommendations to transform European institutions, societies and international relations and to meet the challenge.

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Summary for Policymakers
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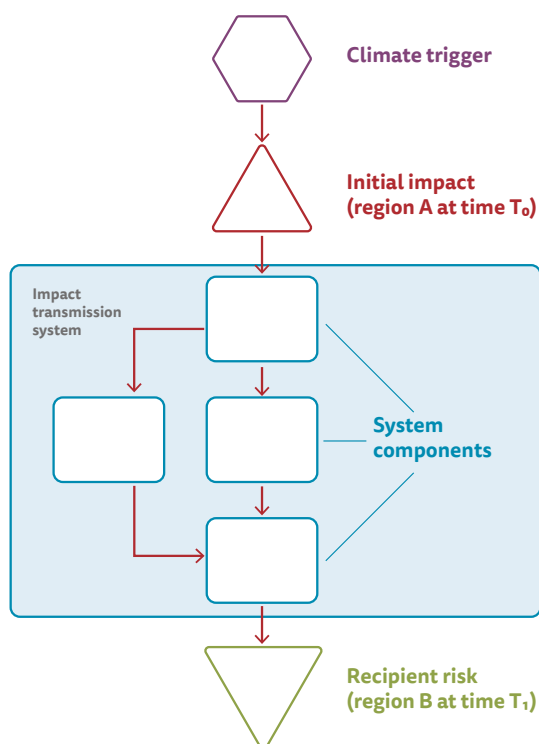
Introduction

This summary presents 21 strategic recommendations for building resilience to cascading climate risks in Europe and beyond. Recommendations draw on work from across the CASCADES project and have been tested and refined in consultation with European Union (EU) institutions, national government representatives and wider stakeholders from within and outside Europe.

What are cascading climate risks?

Direct climate change impacts such as heatwaves, floods and wildfires pose serious risks to European societies. Impacts beyond Europe's borders, in countries with less capacity to prepare, respond and adapt, will be even greater.

Figure 1. Transmission of climate impacts across sectors and regions



Source: Carter, T. et al. (2021), *A conceptual framework for cross-border impacts of climate change*, Global Environmental Change, Vol.69

'Cascading climate risks' materialize when a climate impact transmits through systems, across sectors and borders. Shocks occurring in remote locations can severely disrupt societies and economies far away, including in Europe.

Europe's exposure to cascading climate impacts increases if countries, communities and companies outside the EU do not have the capacity to prevent climate impacts from occurring, escalating and propagating.

Cascading climate risks are, as yet, little understood and seldom assessed or managed. This is extremely dangerous. Without action, the risks will continue to grow in the coming years. This summary, and the accompanying report, recommend how European stakeholders, particularly the EU, should respond.

Examples of cascading climate risk

Simple

Flooding in a downstream country caused by melting glaciers in an upstream country.

Complex

Food affordability crisis in Europe, resulting from global food market inflation, triggered by drought-induced crop failure in a breadbasket region, compounded by conflict elsewhere in the world, which disrupts grain distribution.

Through cascading risks, climate impacts can escalate or diminish, compound and create feedback loops. There are limits to the predictability of cascades, but decision-makers can and must take steps to prepare for them.

Background and context

European institutions do not fully grasp the threat of cascades and are ill-prepared to manage them.

Why are cascading climate risks Europe's concern?

Europe's resilience is tied to the fates of countries across the world through its relationships and dependencies within globalized systems. Europe is also bound to more climate-vulnerable countries by its historical responsibility for emissions, its obligations as a responsible global actor, and its partnerships in global resource flows.



The success or failure of global adaptation will determine the level of risk faced in Europe

Cascading climate risks invite countries to recalculate what is in their national interest, and what investments they are willing to make in systemic resilience.

If strategic adaptations are made in time, action to address cascading climate risks can present opportunities. Through action on cascading climate risks, decision-makers in Europe and beyond can pursue systemic resilience that delivers multiple dividends for security, sustainability and the well-being of their societies.

The geopolitical context

European policymakers must respond skilfully to cascading climate risk in an increasingly turbulent geopolitical context. No continent is more open and connected to the rest of the world than Europe. This integration brings huge benefits, but also increased exposure to geopolitical shifts, economic shocks and

cascading climate risks. It also brings great potential for leadership in an area of risk governance where international ties are both source and solution.

What is resilience?

Increasingly, 'resilience' is defined as the capacity of a system to thrive in changing and uncertain conditions, rather than simply to endure hardship, or 'bounce back' to an original state.

[...] it involves the capacity to absorb shocks, avoid tipping points, navigate surprise and keep options alive, and the ability to innovate and transform in the face of crises and traps.

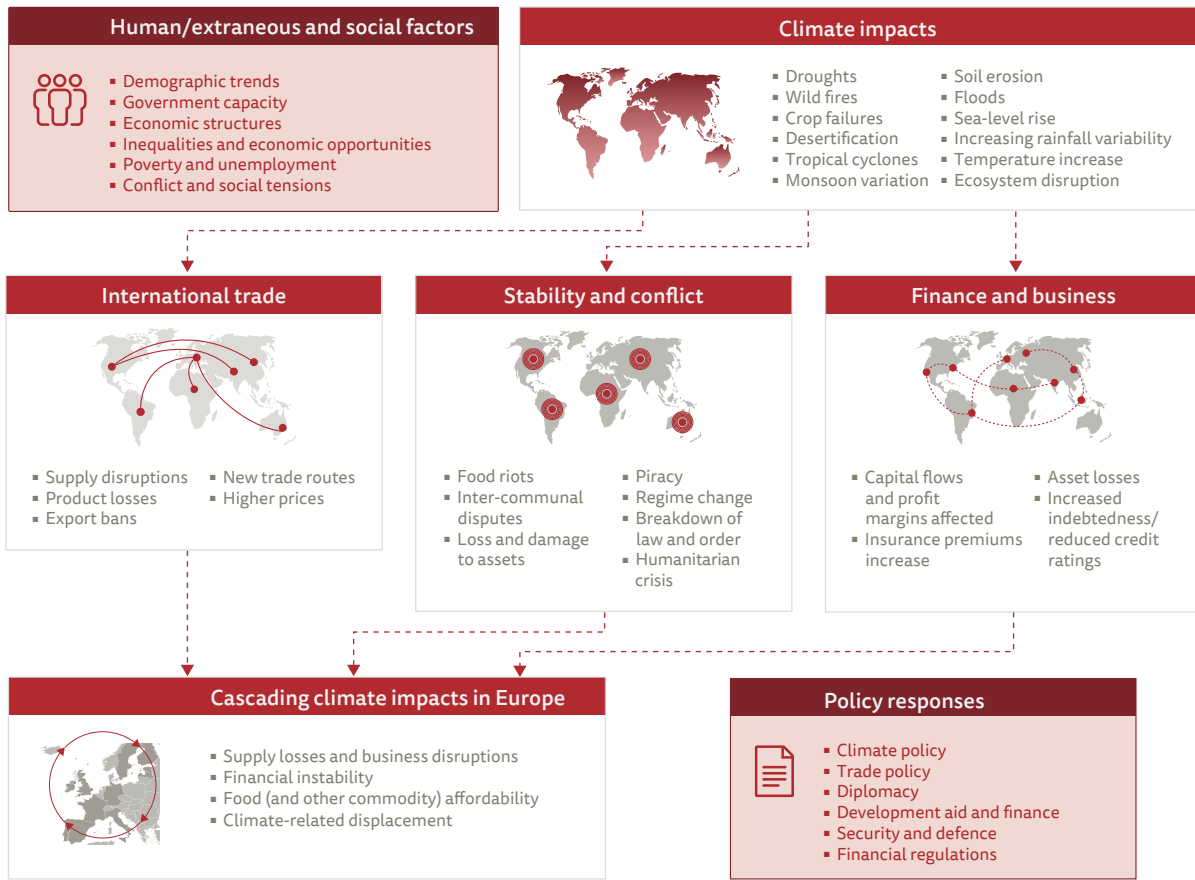
Rockström, J., et al. (2023), *Shaping a resilient future in response to COVID-19*. Nature Sustainability

Because cascading climate risks propagate within global systems, system-wide or 'systemic' resilience solutions will often be needed. This will require countries to work together to protect their mutual self-interests.



A forest ranger looks on as a wild forest fire rages near the Moroccan city of Ksar el-Kebir in the Larache region on 15 July 2022. Photo © Fadel Senna/AFP/Getty Images

Figure 2. Some examples of Europe's exposure to cascading climate risks



Source: Hildén, M. et al. (2020), *Cascading climate impacts: a new factor in European policy-making*, www.cascades.eu/publication/cascading-climate-impacts.



Protestors pushing symbolic empty shopping trolleys lead a demonstration against rising food costs and energy bills in Rome, Italy in October 2022. Photo © Stefano Montesi/Getty Images.

Using this summary report

Recommendations are presented in six clusters, each addressing a specific aspect of European resilience (see Figure 3). Readers interested in a specific policy field or topic can go directly to the relevant section.

Each cluster provides context before describing an overall recommendation, which is supported by three to four more detailed recommendations. These are followed by a brief description of **what is at stake** if action is not taken.

The recommendations are numbered to enable cross-referencing, so interested readers can find further details and justification in the **main recommendations report**. The main report also provides a full methodology through which recommendations were derived.

Read the full **recommendations** and access CASCADES tools and resources at www.cascades.eu

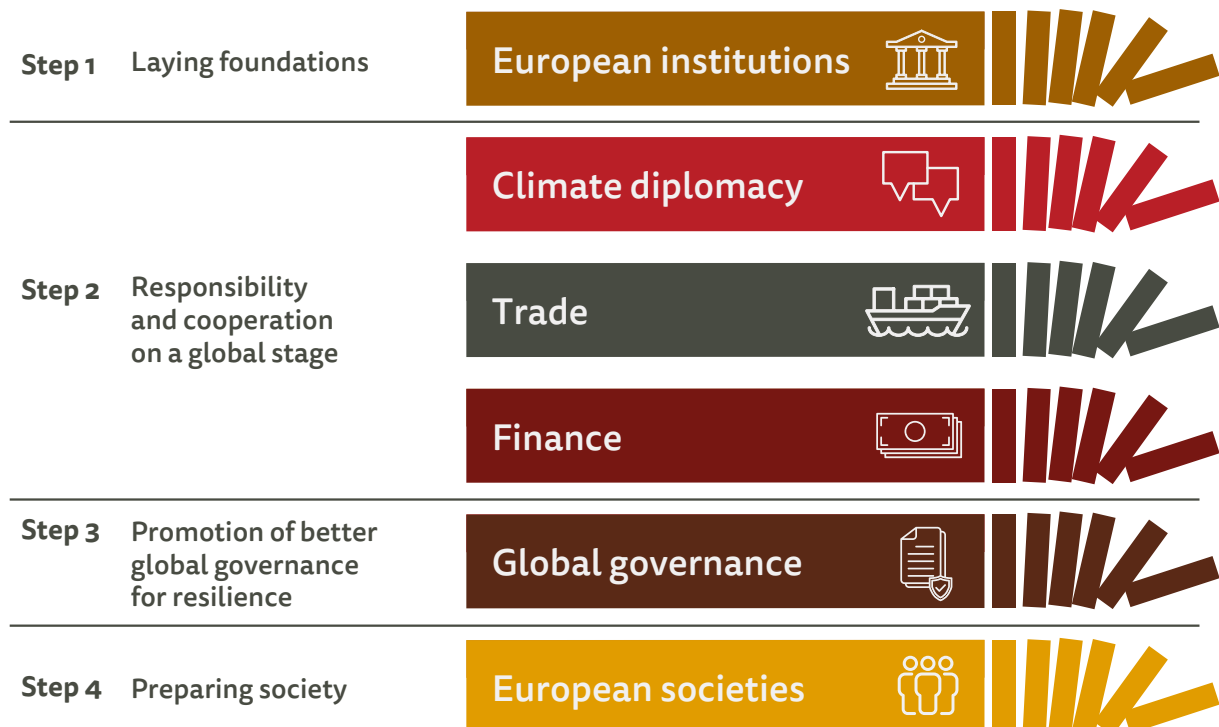
Relevance of the recommendations beyond Europe

While the focus of the CASCADES project is on the EU, its findings, as with cascading climate risks themselves, have implications across the globe. This summary is therefore relevant to policymakers and wider stakeholders beyond the EU.

Different regions, countries and sectors will each face their own unique challenges and circumstances. There are, however, points of commonality.

All regions and countries need to consider how they will be affected by cascading climate risk. Actions to address these risks will themselves have cascading impacts on other countries, as will inaction. Adaptation therefore needs to be inclusively planned and implemented, with cooperation at international and global scales.

Figure 3. Recommendation clusters



European institutions



The EU civil service needs to be fit to handle the complex challenge of adapting to cascading climate risk.

The European Commission must **build a civil service fit for the cascading climate risk challenge**. This means increasing staff and institutional capacity to understand and manage cascading climate risk.

This process will require effort and commitment but is not without precedent. Reflection on the Commission's response to the COVID-19 pandemic, and to Russia's war in Ukraine presents opportunities to learn about inter-service cooperation, responsiveness and flexibility in the face of systemic crises.



The capability to understand and manage cascading risks will only become more important in years to come

Cascading climate impacts cannot be fully predicted. Much more can be done, however, to **build understanding (Rec 1.1)**, including: identifying the cascading risks the EU faces and perpetuates and those that are initiated within its borders. By building cascade identification into risk assessment practices and taking steps to map cascading climate risk, the EU can be better prepared to **establish risk ownership (Rec 1.2)** and to **allocate resources and measure success (Rec 1.3)**. Eventually, countries will need to develop a 'whole-of-government' approach for cascading risk management. Non-government stakeholders, including in the private sector and civil society, will also need to be continuously and effectively engaged in cascading risk governance.

The **development of a risk and resilience mindset (Rec 1.4)** across EU institutions will have wider benefits for Europe, as cascading risk, including from non-climatic shocks, becomes an increasingly common challenge for policymakers in an interconnected and potentially resource-strained world. As an acknowledged risk amplifier, climate change and its effects will play a role in many of these risk cascades.

What is at stake?

If the EU fails to mainstream resilience and reform institutional risk governance, Europeans will be left exposed to a wide range of cascading risks. The EU will miss opportunities to prevent harm and disruptions to European societies. The economic and social costs of reacting to cascades as they unfold are likely to far outstrip the costs of early strategic adaptation and resilience-building.



Brussels, Belgium: A view of the Berlaymont building, headquarters of the European Union Commission. Photo © Dominique Faget/AFP/Getty Images.

Climate diplomacy



Coherent EU external action will facilitate the mutually beneficial partnerships needed to reduce global vulnerability to cascading climate risk.

Responsibility and cooperation on a global stage

No country, region or sector can govern cascading climate risks alone; yet cascading climate risks must be better governed if resilience is to be achieved. The EU therefore needs to effectively deploy climate diplomacy and foreign policy for European resilience.



Without action, the human and financial costs of disaster management and relief will escalate

The EU will need to build its capability to promote widespread resilience through external action. A first step will be to **meet and exceed adaptation finance commitments (Rec 2.1)** combined with **increased technical assistance and political engagement with partner countries (Rec 2.3)**. Recognizing the shared, though not equal risks and opportunities stemming from cascading climate risks, the EU must effectively contribute to the resilience of low- and middle-income countries. This means meeting existing climate finance and official development assistance (ODA) spending commitments, and ambitiously ramping up adaptation support and finance. This is both in the EU's self-interest, and for the global public good.

It is possible to build resilience with one hand, while undermining it with the other. Inter-service cooperation is therefore needed to **improve policy coherence to avoid harm and to harness synergies (Rec 2.2)**. The need to improve policy coherence is relevant not just to development policy, but also to wider foreign policy and security

actions, and through trade and financial activities. Such an approach would enable the EU to iteratively **cooperate, lead and build trust within the international system (Rec 2.4)**, by demonstrating its firm and ongoing commitment to EU and wider resilience to cascading climate risks.

What is at stake?

Regions surrounding and close to Europe, including the Sahel, the Middle East and North Africa, are extremely vulnerable to climate change, with some sub-regions already experiencing severe instability.

If it is preoccupied with reacting to preventable cascades in Europe and its neighbourhood, the EU will be more vulnerable to risks emerging in distant regions, where it may have less influence. If action is not taken to strengthen relations and restore trust with partners, the EU's ability to coordinate vital third-country responses to cascades will be eroded, and its standing and influence as a global actor will be diminished.



Community seed banks, such as this EU-funded one in Kenya, can boost climate resilience by preserving local agrobiodiversity and acting as a knowledge-sharing hub for local farmers. Photo: S. Samuel (CCAFS).



The fragility of European supply chains is increasingly apparent; the EU needs a trade system that builds and benefits from resilience.

One of the key challenges for European actors is to develop a shared understanding of what a resilient trade system would look like. This should include aspects such as the diversity and connectivity of European trade links, the level of redundancy, storage capacity and domestic production in Europe, the flexibility of European trade diplomacy, and issues relating to the equity and affordability of resilience in Europe and beyond.



There is a growing recognition that today's trade system is dangerously fragile

A strategic approach to resilient trade

If a more strategic approach is taken, trade can both support and benefit from resilience. As a first step towards this, it will be necessary to **formulate a trade resilience strategy for Europe (Rec 3.1)**. Such a strategy could facilitate a move away from narrow cost reduction/profit maximization motives towards an approach that supports wider societal objectives and global goods via trade policy.

Countries will need to balance investment in long-term, stable trade partnerships with flexibility to maximize resilience to shocks and dynamic responses in a more volatile world of cascading risk. As part of this, the EU would need to **expand the scope of the Critical Entities Directive (Rec 3.2), support and facilitate supply chain 'restructuring' (Rec 3.3) and improve risk data and disclosure (Rec 3.4)**.

What is at stake?

Without coordinated, long-term strategies for managing trade-related cascading risks, European

actors will have to react to multiple crises in ways that will likely undermine their resilience over the long term.



Poor awareness of cascades and incoherent foreign policy can exacerbate cascading impacts

A short-term and incoherent form of adaptation is not in the strategic interests of Europe. It will lead to increasing disruption to the profitability of European businesses, with implications for competitiveness, investment and jobs. It will reduce the EU's ability to access critical and strategic resources via trade and to achieve its twin green and digital transitions. European citizens will be exposed to repeated affordability crises, and pressures on the environment in Europe and elsewhere will increase.



In April 2022, operations were disrupted at the Port of Durban, sub-Saharan Africa's largest shipping terminal, after the heaviest rains in more than six decades caused severe flooding. Photo © Phill Magakoe/Getty Images.



The low carbon transition already under way in the finance sector must also deliver resilience to cascading climate risks. Public and private finance each have important and complementary roles to play.

Transparency and accountability for broad resilience

As climate risks and impacts intensify, it will be hard, if not impossible, for financial institutions to sustain their profitability if they do not contribute to broader resilience. A shift is needed from a pure profit-maximization paradigm in European financial institutions, to one that strives also to deliver resilience for all stakeholders: the recipients of finance and investments outside Europe, financial institutions themselves and European societies.

Financial markets are cross-border systems in which changes far afield can affect assets and profits of Europe-based actors

Financial institutions and actors need to better understand and manage climate risks that cascade within financial systems. **Enhancing cooperation, communication and disclosure (Rec 4.1)** and action to **reform risk assessment and monitoring approaches (Rec 4.2)** will enable climate risk to be more accurately priced. This, in turn, will incentivize investments in adaptation and shift the dial on which projects are considered 'risky'. These changes support proper allocation of funding for climate action and adaptation, bolstering the contribution of private finance and better enabling the EU to **mobilize innovative European finance for widespread resilience (Rec 4.3)**.

Such changes would enable both public and private finance to fulfil their crucial roles in achieving

global climate action. This requires unprecedented levels of investment in adaptation, and financial commitment to building widespread resilience.

What is at stake?

The approach of the European financial system to adaptation will directly influence livelihoods where European investments are made, both in Europe and the wider world. Without action, financial institutions in Europe and beyond will be exposed to shocks and mounting systemic risks, which the European financial system may inadvertently amplify.

Reacting to this, some governments may be forced to increase their reliance on sovereign debt spending, potentially reducing their ability to invest in long-term societal resilience, thus feeding a vicious circle. Governments outside Europe may become more reliant on alternative international lenders, marginalizing the EU.

Unless climate resilience is adopted as part of the core objectives of European financial institutions, and cascading climate risks are fully accounted for, climate adaptation will continue to be neglected.



Prime Minister of Barbados, Mia Mottley arrives to attend the New Global Financial Pact Summit at the Palais Brongniart in Paris on June 22, 2023. Photo © Ludovic Marin/Getty Images.

Global governance



Resilience in Europe depends on the EU's success in navigating challenging geopolitical headwinds and re-establishing its legitimacy and influence as a trusted leader on the global stage.

The nature and scale of the threat posed by cross-border cascading climate risk is just beginning to be understood. By considering the implications for and beyond Europe, the EU is an early mover. Leadership for effective cascades management can and should follow, with the EU championing the necessary multilateral, inclusive, rules-based global governance needed to coordinate, reach compromise and invest in building resilience to cascading climate risk.

Promotion of better global governance for resilience

Action by the EU to build its own capabilities on cascading climate risk, to assume concrete responsibility and cooperate meaningfully on the global stage, will give the EU much-needed credibility and legitimacy to promote better global governance for resilience.

Tracing and acknowledging the threads of cascades will transform the incentives to engage in global efforts to address climate risks

Countries across the world need to take steps both to lead and cooperate for better governance of cascading risks. High-income countries should approach this endeavour in a spirit of solidarity with low- and middle-income countries, based on an acknowledgment of deep interdependence. Tracing



The Conference on the G20 Compact with Africa was held in Berlin on 20 November 2023. The Compact aims to be “the key format for dialogue and cooperation between reform-oriented African countries, G20 partners and beyond”. Photo © Markus Schreiber/Pool/AFP/Getty Images

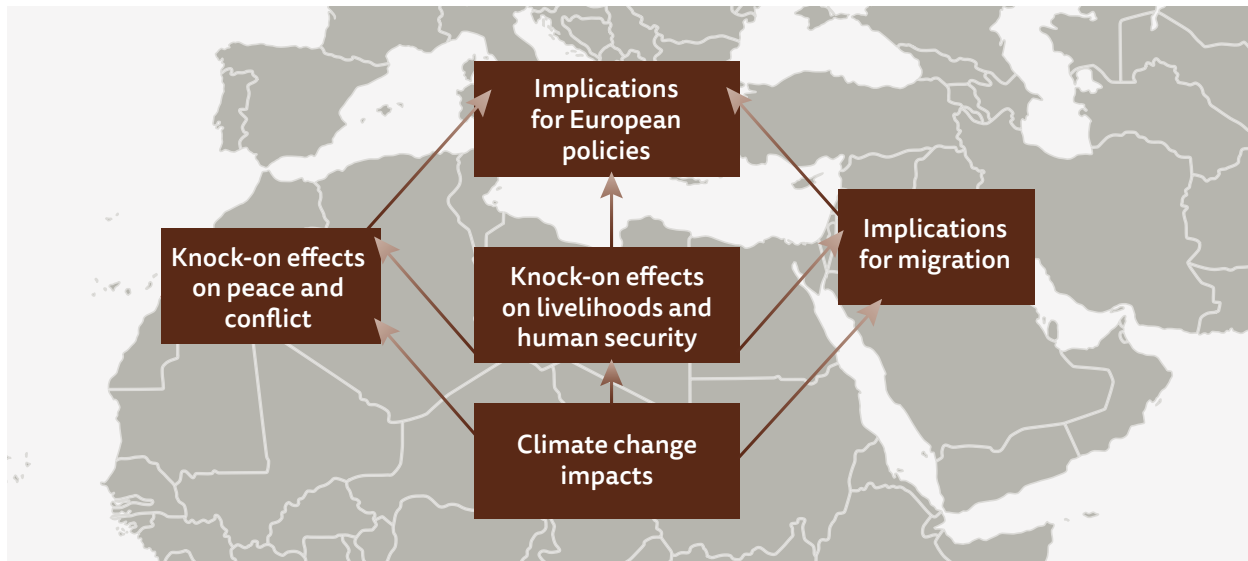
and acknowledging the threads of cascading climate risks through globalized systems will transform the incentives for high-income countries, including the EU, to engage in global efforts to combat and address climate change-related risks.

There is much to be learned about cascading climate risks, and how they should best be addressed. As learning advances, knowledge, skills and best practice should be shared within and across sectors and borders.

Leadership for effective cascading climate risk management will need to **champion global governance that is fit for cascades (Rec 5.1)**: in essence, multilateral, inclusive, rules-based global governance with the aims of justice, sustainability and resilience.

To achieve these aims, the EU would need to **support the reform of international structures (Rec 5.2)** through concerted efforts, strategic

Figure 4. Climate impacts on EU foreign, security and development policy



vision and persistent diplomacy. Cascading climate risks are shared between countries, though not equally, and their management requires good faith engagement and redoubled commitment to building, rather than diminishing global trust and cooperation. This will require compromise on behalf of the EU and its member states; but it is an investment that will rapidly pay dividends.

The EU also needs to **give climate security a home (Rec 5.3)**. This will help the Commission to build a cooperative approach to managing climate-related security challenges. Avoiding the securitization of resilience can help to avert destabilizing and reactive responses, which are likely to create traps and feedback loops for the EU.

The EU must also demonstrate commitment and investment by **making trade and financial flows work for resilience, not against it** (see **Trade** and **Finance** recommendations). By combining direct investments with more just financial and trade flows, the EU can pull more forcefully in the direction of increasing resilience.

What is at stake?

Europe's exposure to cascading climate impacts increases if countries, communities and companies outside the EU do not have the capacity to prevent climate impacts from escalating and propagating. The same is true if international institutions do not or cannot facilitate cooperation to counter such risks.


As cascading climate impacts play out in an increasingly unstable world, a retreat from multilateralism will feed polarization, will further damage and impoverish countries most at risk of direct climate and cascading climate impacts, and will isolate the EU. This will ultimately constrain the EU's options for building resilience and managing cascades.



Individuals, communities, businesses and civil society must be prepared for disruption and be capable of contributing to resilience.

Preparing society

The role of society in cascading risk management and response cannot and should not be an afterthought. Businesses, local governments, civil society organizations and individuals will all be affected by cascading climate risks. All will play a crucial role in resilience. Fostering preparedness across society should therefore be a key pillar of the EU's approach.



Cascading climate impacts have the potential to increase inequality, cause political instability, feed extremism and destabilize societies

To achieve this, the European Commission should proactively work with member states to **engage and support wider society (Rec 6.3)** in adaptation. Rushed, reactive approaches are more likely to trigger or exacerbate social conflict and decrease political capital to effect the necessary changes. It will be important to provide technical support to member states in **developing resilient local economies and communities (Rec 6.1)** and to support member states to **reduce social inequality and strengthen cohesion (Rec 6.2)**.

European resilience will depend on having informed, thriving societies, with sufficient political and social capital to endure shocks and participate in adaptation.

What is at stake?

The cascading impacts of climate change are becoming increasingly difficult for European citizens, businesses and civil society to ignore. Political reticence to actively engage the public as part of the solution will reduce options for building European resilience.

Resilience requires long-term planning that may run against short-term societal, economic and political incentives. As stresses increase, such long-term agendas may become increasingly unpopular and difficult to prioritize, trapping the EU and member states in 'fire-fighting' mode, while risks continue to escalate.

If the public is insufficiently prepared, shocks from cascading risks, including known political 'triggers' such as rising food prices and entrenched negative perceptions of the impacts of increased migration, will compound existing strains on societies. This in turn will undermine the potential for measured, constructive government responses.



A "Climate Refugee Camp" of three hundred miniature tents outside the headquarters of the European Central Bank (ECB) in Frankfurt calls attention to the plight of climate refugees on October 17, 2008. Photo: © John MacDougall/ Getty Images.

Conclusions

The European Union is not prepared to manage cascading climate risks. Changing this is an urgent necessity for two reasons.

First, climate hazards will intensify and accelerate over the next 10 to 15 years. Historic failures in mitigation mean that even if greenhouse gas emissions can now be rapidly curbed, warming will continue until at least 2040.



Current finance for adaptation falls far short of what is needed and is dwarfed by the scale of future demand

The level of adaptation action that is currently planned and financed falls far short of what is needed to build resilience to proliferating climate hazards. Escalating cascading climate change impacts are, therefore, inevitable.

The EU has no option but to decide between a reactive or proactive approach to cascading climate risks. The more proactive it can be, the lower the human and economic cost will be.

The current speed of warming:

+0.1°C
every **3.5 years**

Second, rapid systemic change is necessary to curb greenhouse gas emissions, limit climate hazards, and adapt to ongoing and inevitable climate change.

'[...] governments need to support systems transformations that mainstream climate resilience and low GHG emissions development... Reaching net zero emissions by or around mid-century and implementing concurrent transformative adaptation requires broad and rapid changes in existing practices.'

UNFCCC (2023), Technical dialogue of the first global stocktake

A concerted and proactive response to cascading climate risks offers an opportunity for European policymakers to increase their understanding of systemic challenges and build risk and resilience thinking. Seizing this opportunity will enable those tasked with effecting rapid, systemic change to do so in ways that benefit rather than undermine widespread and longer-term resilience.

Cascading climate risks are likely to transform international relations and human experience as the planet warms. Decision-makers can still influence this transformation. By examining the threads of cascading climate risk, which run throughout complex global systems, the EU and other international actors can better understand the current social and economic fabric. This understanding will help them to weave a more resilient future for all.

About the authors

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About CASCADES

The CASCADES project – CAScading Climate risks: towards Adaptive and resilient European Societies - ran from September 2019 until December 2023 and was funded by the European Union under Horizon 2020 (Grant Agreement 821010). The Potsdam Institute for Climate Impacts Research (PIK) coordinated a consortium of 12 partners from across Europe with expertise on climate change, foreign policy, trade, finance, development and policy and stakeholder engagement.

The project has produced in excess of 50 deliverables, more than 30 journal articles and several policy briefs and communication products such as videos, podcasts, policy simulations, serious games and other resources. See: www.cascades.eu.

Front cover: an aerial view of a flooded district just outside Bangkok, Thailand, on 7 November 2011. Thailand experienced the longest duration flooding event in its recorded history, causing the closure of seven major industrial parks and thousands of factories supplying key components to the car and electronics industries, with knock-on supply chain disruption for European manufacturers. Photo: Copyright © Paula Bronstein/Getty Images.



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