

BCRA

Belgian Climate Risk Assessment



ICEDD
INSTITUT DE CONSEIL ET D'ÉTUDES
EN DÉVELOPPEMENT DURABLE



vito



LIÈGE université
Spiral

RAMBOLL



möbius

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An aerial photograph of a dry, cracked riverbed. The ground is a mix of light brown and grey, with a dense network of irregular cracks. A small, shallow pool of murky, greenish-brown water is located in the bottom right corner. The text 'cerac' is overlaid in the center in a white, lowercase, sans-serif font.

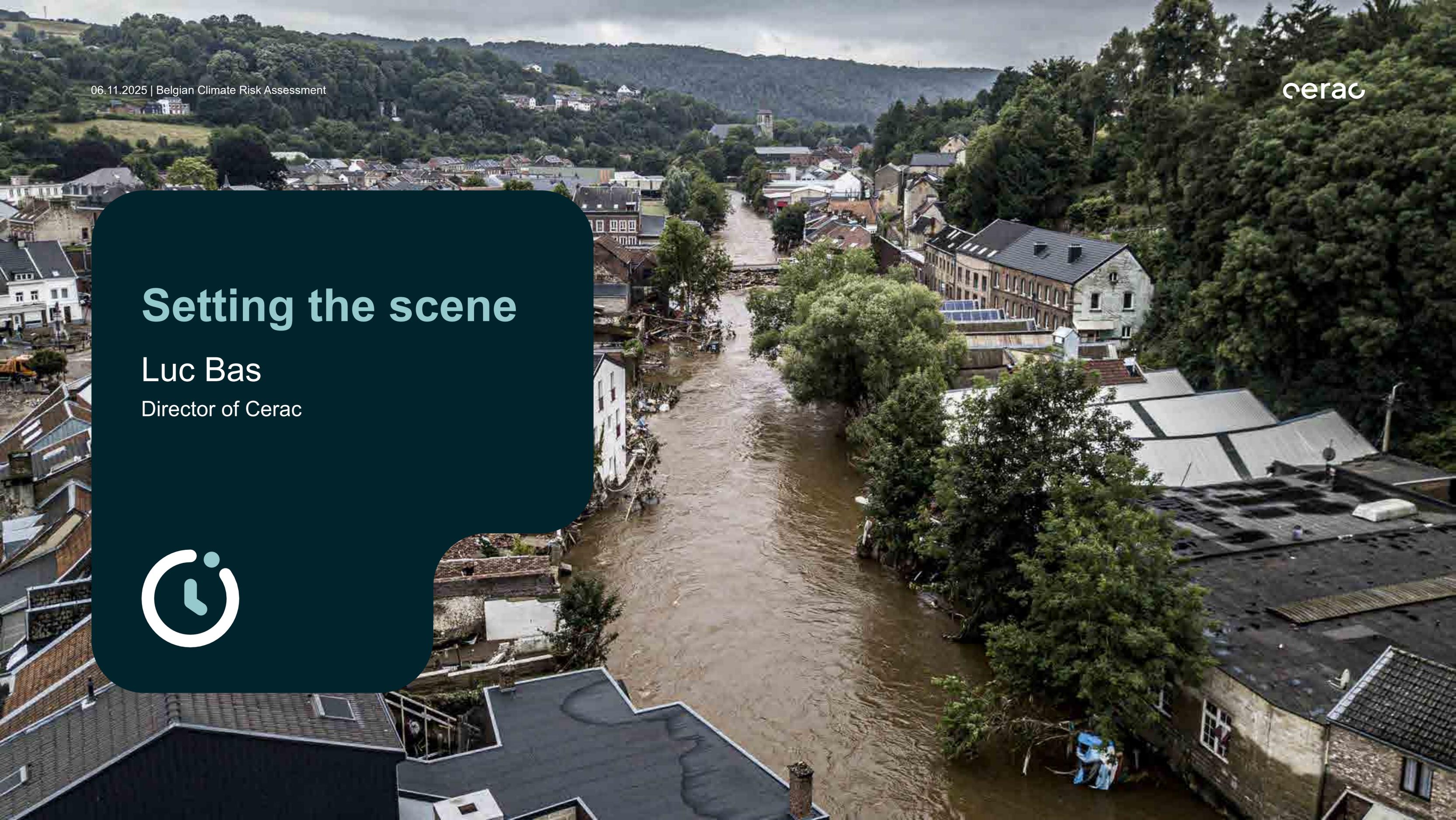
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Setting the scene

Setting the scene

Luc Bas

Director of Cerac



Setting the scene

Minister Jean-Luc Crucke

Minister of Mobility, Climate and Ecological
Transition





Setting the scene

Martin Špolc

Head of Adaptation Unit

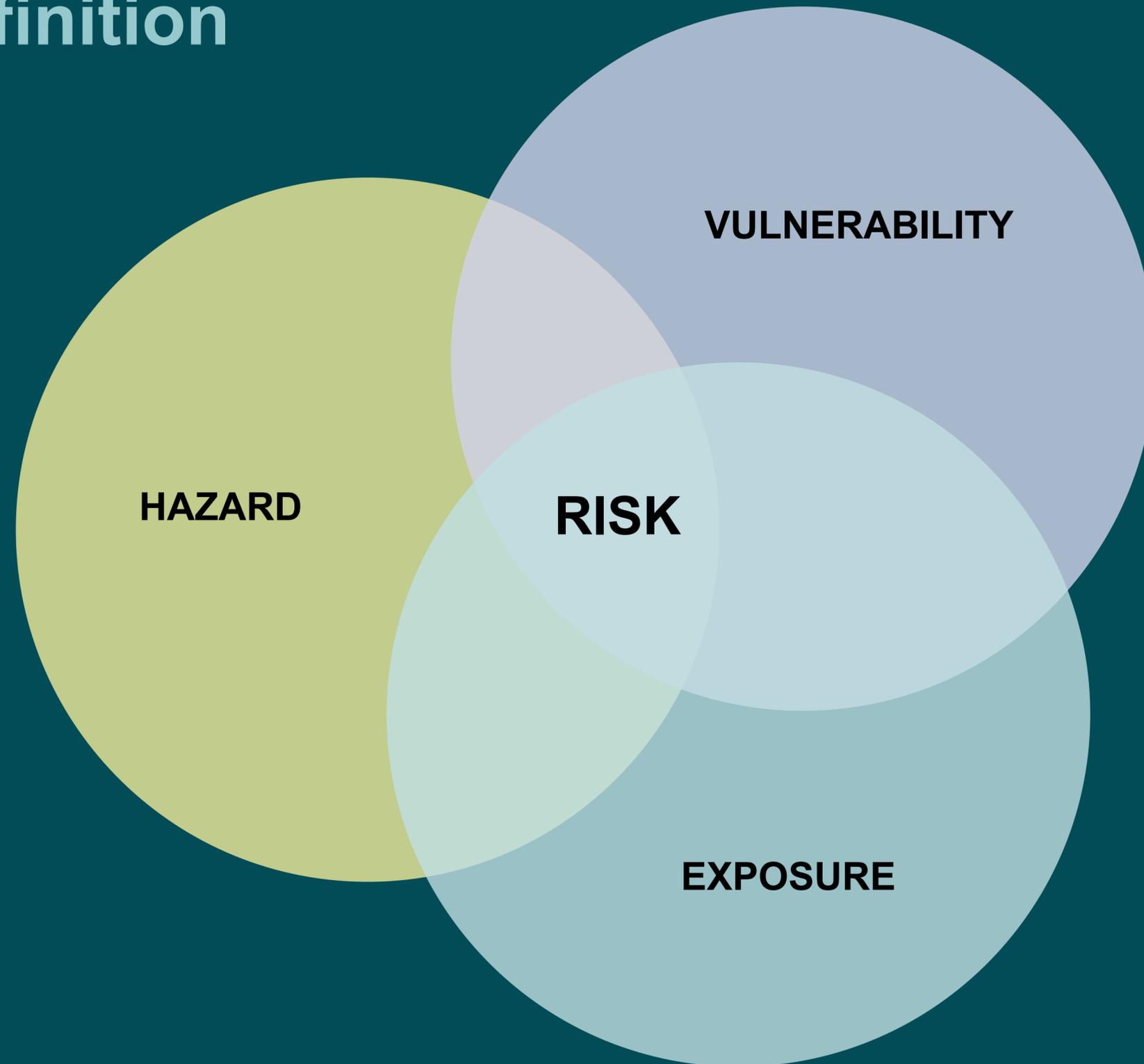
DG CLIMA | European Commission

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The Belgian Climate Risk Assessment
(BCRA)



Risk: a definition



Clusters



Ecosystems



Food



Infrastructure & buildings

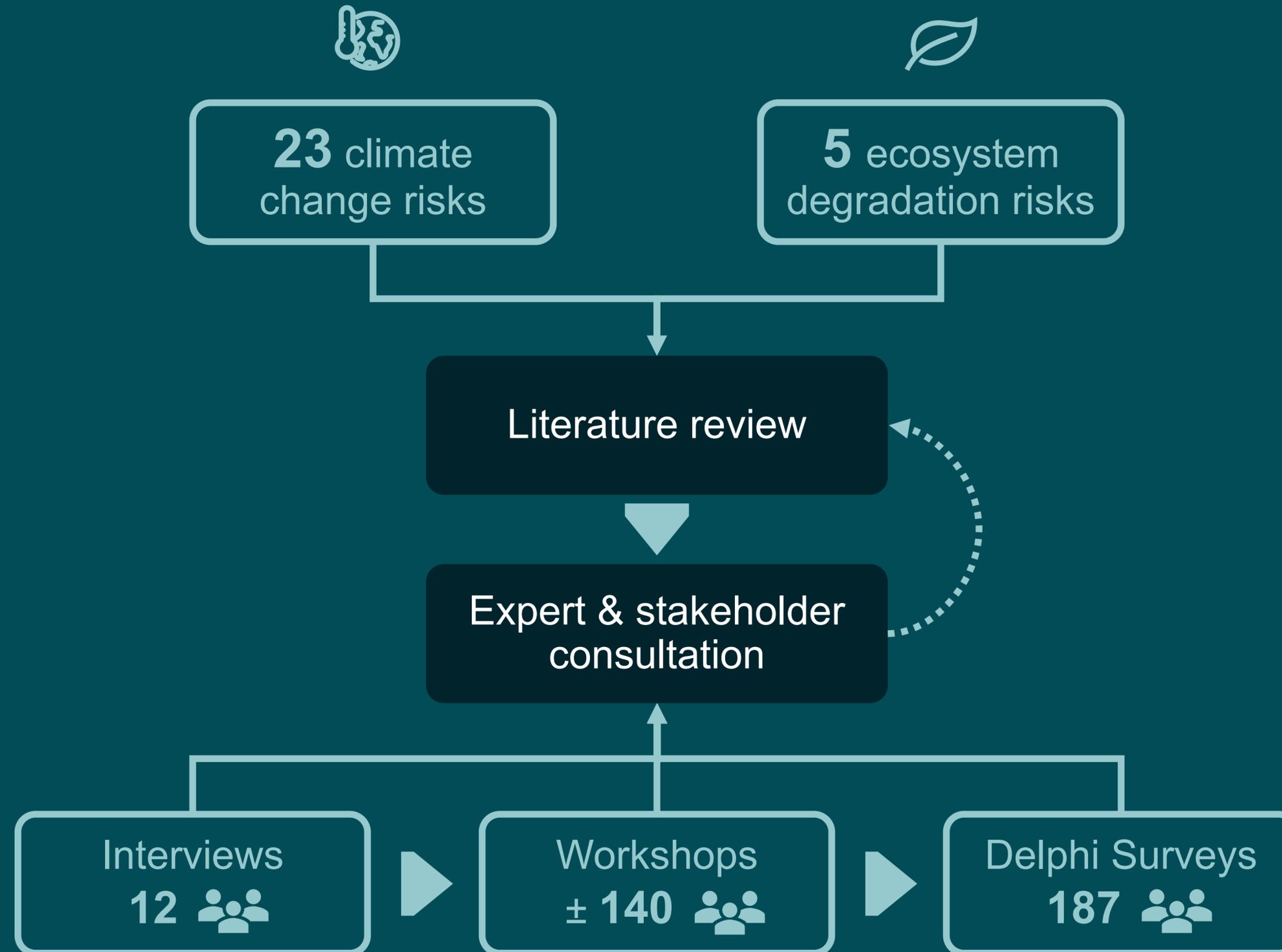


Health & wellbeing



Economy & Finance

Analysis



28 in-depth risk analyses



Climate risks



Ecosystem degradation risks

Ecosystems 	Food 	Infrastructure & Buildings 	Health & Wellbeing 	Economy & Finance 
Risk to forest ecosystems due to gradual climate change	Risk to crops due to adverse weather conditions	Risk to buildings due to flooding	Risk to human health due to heat stress	Risk to property insurance due to flooding
Risk to forest ecosystems from wildfire	Risk to food production from soil ecosystem degradation	Risk to buildings due to changing moisture regime	Risk to human health due to the increase of vector-borne disease	Risk to public finances due to climate change
Risk to soil ecosystems due to droughts and erosion	Risk to food production due to pollinator decline	Risk to infrastructures and buildings due to invasive alien plant species	Risk to human health due to the increase in non-communicable disease	Risk to international food prices due to climate change
Risk to freshwater ecosystems due to droughts	Risk to livestock production from increased spread of diseases	Risk to energy & transport due to extreme weather conditions	Risk to mental health due to climate change	Risk to strategic imports due to climate change
Risk to terrestrial coastal ecosystems due to sea level rise, coastal flooding and changes in soil salinity	Risk to food safety due to climate impacts on global agricultural production	Risk to civil and domestic water infrastructures due to droughts	Risk to human health due to the increase of pandemic zoonotic diseases	Risk to industry from water stress
			Risk to health systems and social care delivery due to climate change	
			Risk to social cohesion and inequalities due to climate change	
			Risk of internal people displacement in Belgium due to flooding	

Urgency matrix

Policy readiness
Risk ownership & policy readiness

Risk severity
Qualitative & quantitative thresholds

e.g. *risk to civil and domestic water infrastructure due to droughts*

			Very advanced	Advanced	Medium/low
Catastrophic	+++				
	++				
	+				
Critical	+++				
	++				
	+				
Substantial	+++				
	++				
	+				
Limited	+++				
	++				
	+				

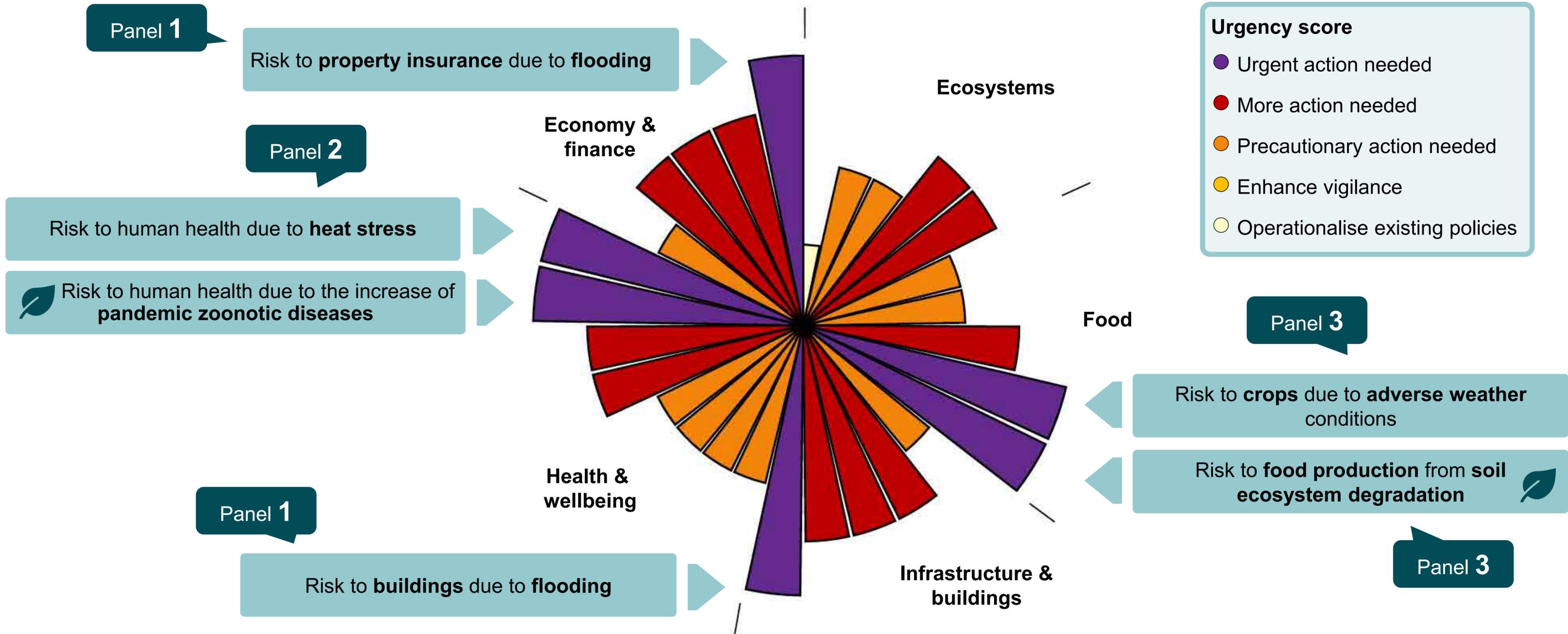
Confidence
sources, credibility, utility and consensus

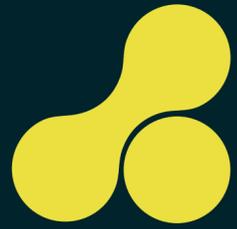
Urgency score (+ 3°)

- Urgent action needed
- More action needed
- Precautionary action needed
- Enhance vigilance
- Operationalise existing policies

e.g. more action needed

6 risks demand urgent action





The bigger picture

- ▶ Social
- ▶ Security
- ▶ Policy



Panel 2

Social vulnerabilities

Analysis on three levels:

- Assessing risk to social cohesion
- Describing societal vulnerabilities across all risks
- Analysing vulnerability transversally



Social aspects: transversal chapter



		Vulnerable groups																				
		Children	Elderly	Women	Low-income populations	People in social isolation	Homeless people	People with physical disabilities	People with chronic illness	Mental health conditions	Language barrier	Migration background	Healthcare workers	Farmers and agricultural workers	Outdoor workers	Socially vulnerable workers	Small businesses	Renters	Private owners	Urban populations	People near vulnerable ecosystems	Living in remote locations
Ecosystems	Risk to forest ecosystems due to gradual climate change	•	•	•		•		•													•	
	Risk to forest ecosystems from wildfire											•	•								•	
Food	Risk to crops due to adverse weather conditions																					
	Risk to food production due to soil ecosystem degradation																					
	Risk to food production due to pollinator decline																					
	Risk to livestock production from increased spread of diseases	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to food safety due to climate impacts on global agricultural production	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Infrastructure	Risk to buildings due to flooding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to buildings due to changing moisture regime	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to infrastructure and buildings due to invasive alien plant species	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to energy & transport infrastructure due to extreme weather conditions	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to civil and domestic water infrastructure due to droughts	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Health & wellbeing	Risk to human health due to heat stress	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to human health due to the increase of vector-borne diseases	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to human health due to the increase of non-communicable diseases	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to mental health due to climate change	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to human health from the increase of zoonotic diseases due to biodiversity loss	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to health systems and social care delivery due to climate change	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk of internal displacement of people in Belgium due to flooding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Economy & Finance	Risk to property insurance due to flooding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to public finances due to climate change	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Risk to industry from water stress													•	•	•	•	•	•	•	•	•
	Risk to strategic imports due to climate change													•	•	•	•	•	•	•	•	•
	Risk to international food prices due to climate change													•	•	•	•	•	•	•	•	•

Demographic

Socio-economic

Health-related

Cultural & linguistic

Occupational

Housing and geographic

Social vulnerabilities



Key messages

- Climate change disproportionately affects vulnerable groups and **amplifies social inequalities**
- Vulnerability is **multidimensional**
- Reducing inequalities **strengthens resilience** for society as a whole



Consider **social climate justice** as a condition of **national security**



Panel 4

Security aspects

- Cascading effects
- Climate risks are **systemic**
- **Reactive** vs **preventive** strategies



Current policy readiness

Ecosystems 	Food 	Infrastructure & Buildings 	Health & Wellbeing 	Economy & Finance 
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Policy readiness level



Policy aspects

4 dimensions:

- Risk awareness
- Risk ownership
- Policy framework
- Policy analysis

e.g. Risk to buildings due to flooding



Maps and flood risks management

Regions, Provinces,
Municipalities,...

European Floods Directive
(2007/60/EC)

Tools & frameworks BUT need improved
implementation, LT planning, coordination

Score: **Advanced**



Policy aspects

Key hurdles for policy readiness:

- Fragmented governance & institutional rigidity
- Temporal misalignment - short-term political & budget cycles vs long-term investment needed
- Financial constraints blocking large-scale adaptation
- Weak link between adaptation & security

The publications

Final report

+ Methodological report

+ 28 Technical papers

+ 28 risk summaries



Website

NL

cerac.be/nl/bcra

FR

cerac.be/fr/bcra

EN

cerac.be/en/bcra

Next steps

-  Raise awareness & ensure stakeholder ownership
-  Transform recommendations in actionable measures
-  Develop sectoral assessments for urgent risks
-  Further analysis of risks



Leena Ylä-Mononen | EEA

cerac



European
Environment
Agency



Good morning.



Synergies with UNEP's Adaptation Gap Report

Veronika Safrankova

UNEP Brussels



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BCRA Findings & Panel Discussions



Panel 1

Impact of floods on infrastructure
and the economy

10:30 – 11:30

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5.2 billion €

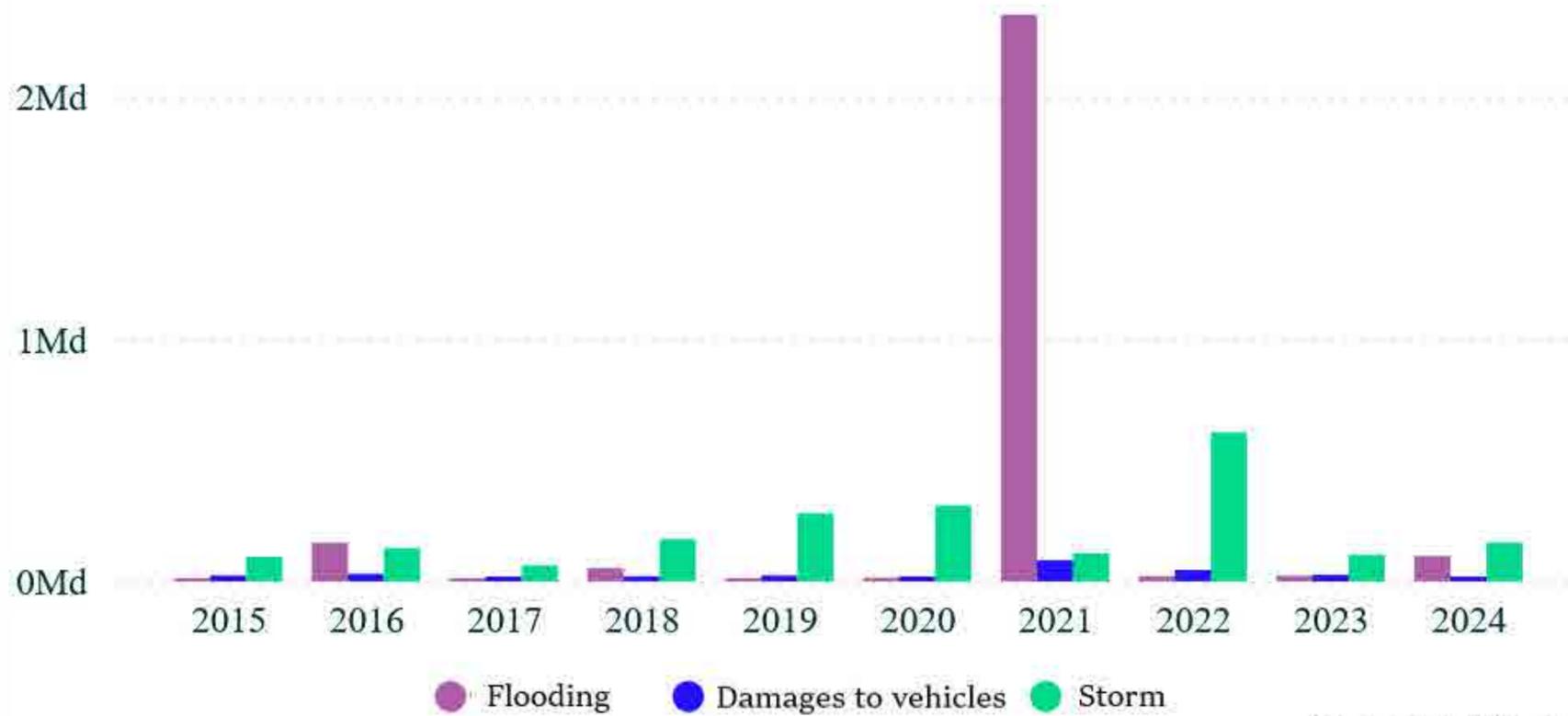
Estimated total repair costs after the July 2021 flooding.

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	+2°C	+3°C	+4°C
Severity	●●●○	●●●●	●●●●
Confidence	+++	+++	+++
Co-owned risk	Medium policy readiness		

- ▶ 2.4 billion € insured damages.
- ▶ 39 casualties, 100.000 affected, 15.000 left homeless.
- ▶ 45.000 houses and 11.000 vehicles highly damaged, 150.000 tons of waste, 559 affected bridges, 3.000 enterprise's buildings damaged.
- ▶ Regional solidarity mechanisms not funded, insurers had to step in.

Total cost of insured claims per year in euros



Source: Assuralia, 2025

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Flooding

Liquidity risk

Legal risk

Uninsurability

Public finances



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Questions?

Q&A on Mentimeter
(code 82817537)

Panel 1 – moderated by **Baudouin Regout**

Cathy Berx, Valérie Dejardin, Hein Lannoy, Géraldine Thiry



Coffee break

Next panel at 11:55

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Panel 2

Impact of increased heat on health
and vulnerable groups

12:00 – 13:00

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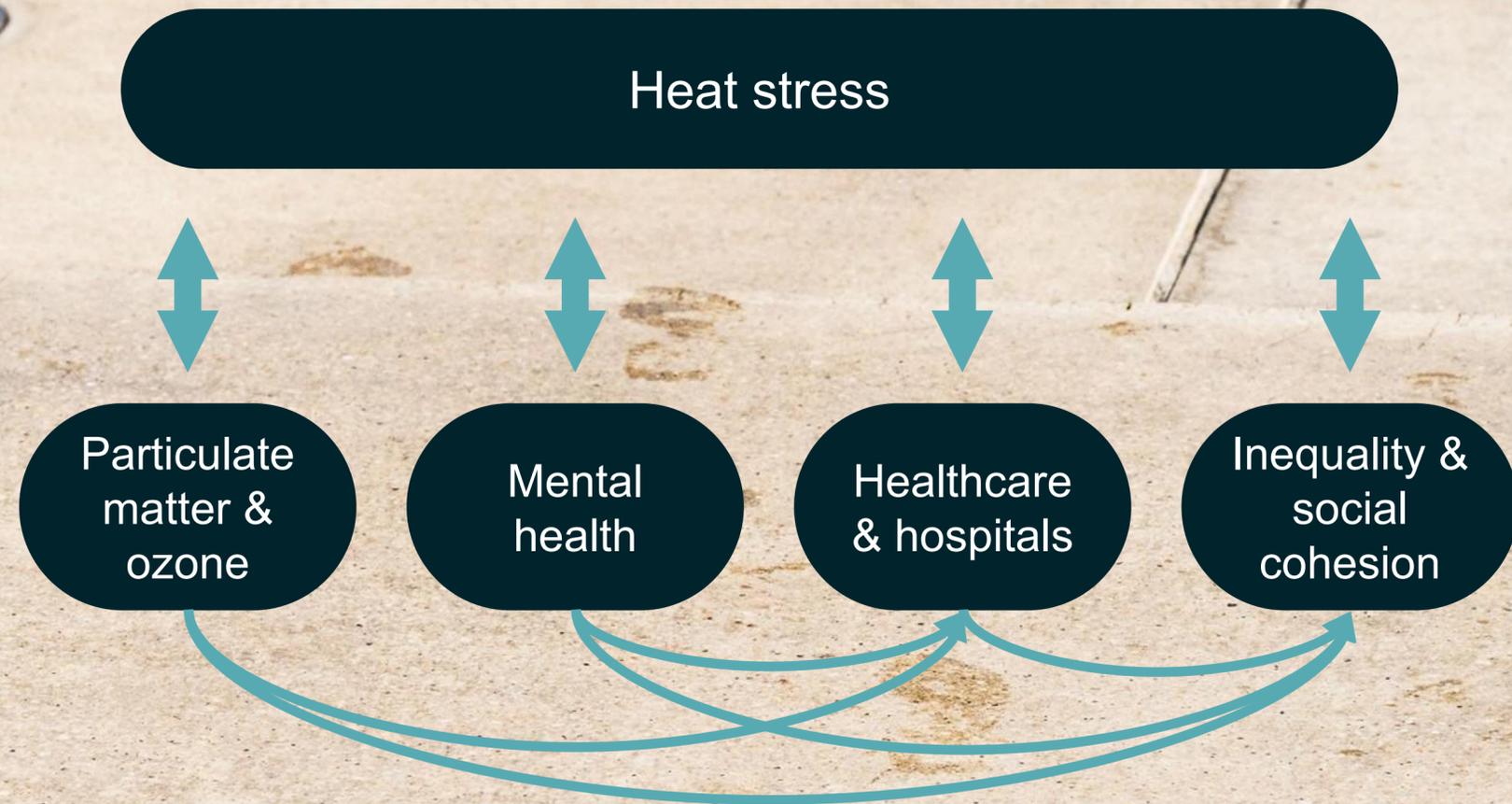
>1000

Annual heat deaths

	+2°C	+3°C	+4°C
Severity	●●●●	●●●●	●●●●
Confidence	+++	+++	+++
Co-owned risk		Medium policy readiness	

- ▶ Not just mortality
- ▶ Not just the elderly
- ▶ Urban Heat Islands

Beyond direct risks



A person in a blue shirt is splashing water on a tree trunk on a beach at sunset. The water is splashing upwards, creating a misty effect. The background is a bright, golden sunset over the ocean, with the sun low on the horizon, creating a shimmering effect on the water's surface. The person is in the foreground, and the tree trunk is the central focus of the splash.

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Questions?

Q&A on Mentimeter
(code 82817537)

Panel 2 – moderated by Barbara Dewulf

Steven Caluwaerts, Céline Nieuwenhuis, Sam Proesmans, Eline Vanuytrecht



Lunch break

Next panel at 13:55

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Panel 3

Impact of climate change on ecosystems and food production

14:00 - 15:00



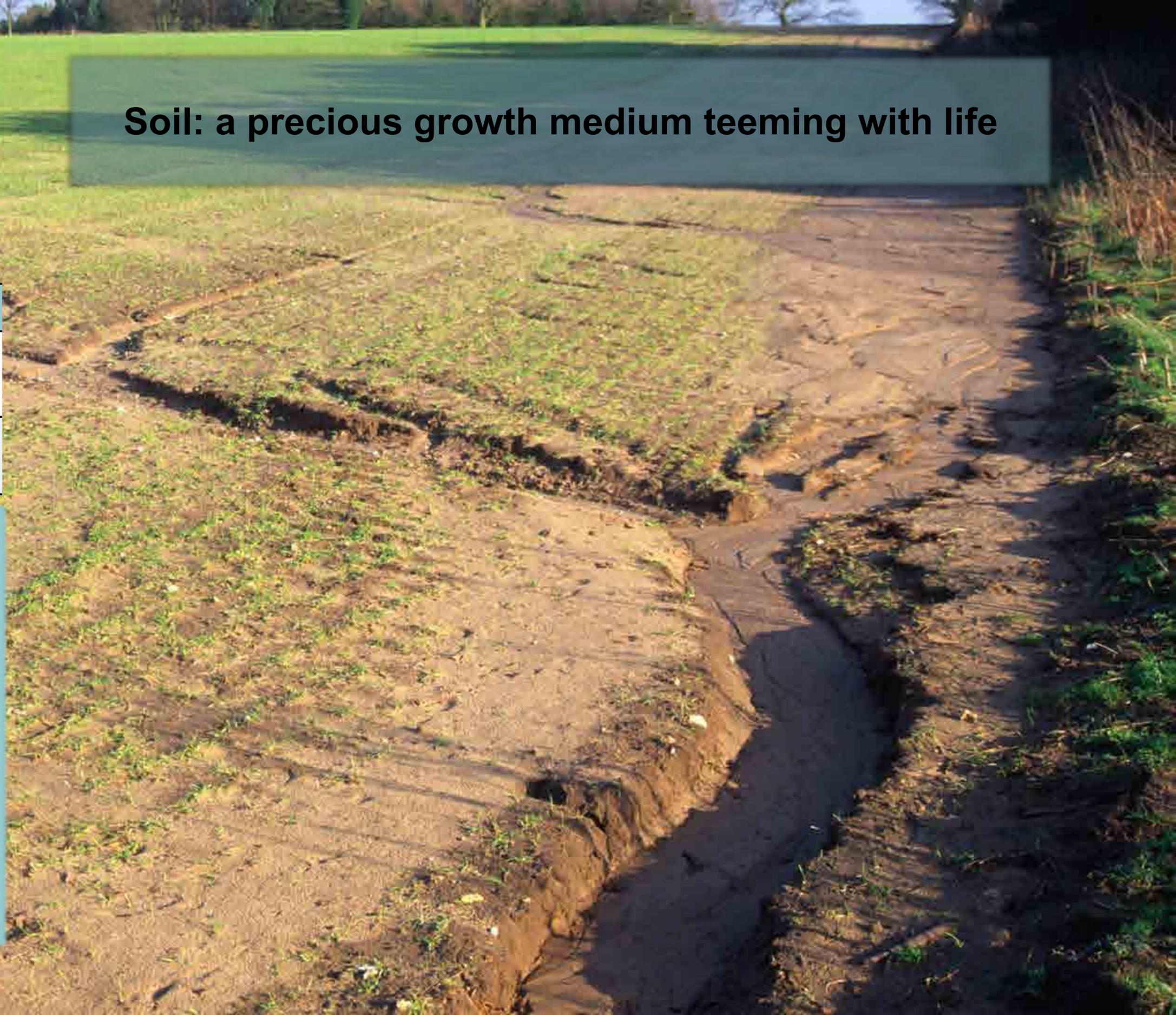
66%

of Belgian soil is potentially threatened in terms of its *biological functions*

	+2°C	+3°C	+4°C
Severity	●●○○	●●●○	●●●○
Confidence	++	++	++
EU-owned risk (CAP) Regional risk (implement)	Low to Medium policy readiness		

- ▶ Soil biodiversity is key for soil functions
- ▶ Anthropogenic disturbances drive loss of soil biodiversity
- ▶ Cascading climate-driven erosion & further degradation
- ▶ Soil recovery time scale far exceeding human time scale
- ▶ Consequences on food production, society

Soil: a precious growth medium teeming with life



12%

Belgian's self-supply rate
for *fruit & vegetables*

Unhealthy soil means a less resilient society

Severity	●●●○
Confidence	+++
Regional risk	Medium policy readiness

- ▶ **[Farmers]** declining yields & rising soil-related costs
- ▶ **[Water utilities]** declining natural filtration & higher treatment costs
- ▶ **[Municipalities]** more infrastructure damage
- ▶ **[Citizens]** higher water prices & reduced food security
- ▶ Impacts on rural economies, urban water supply & climate adaptation
- ▶ Soil degradation = **systemic risk**

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Questions?

Q&A on Mentimeter
(code 82817537)

Panel 3 – moderated by Els Barnard

Fanny Boeraeve, Olivier De Schutter, Hilde Eggermont, Stientje van Veldhoven



Panel 4

Climate & security – A new paradigm

15:00 – 16:00

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Questions?

Q&A on Mentimeter
(code 82817537)

Panel 4 – moderated by Pieter Wynant

Hannes De Reu, Geert van Aerschot, Genevieve van der Meeren, Willem van de Voorde

Next steps: Interview

Minister Alain Maron

Minister of Climate Transition, Environment,
Energy, Health, and Social action





Conclusions

Luc Bas

Director of Cerac



Reception

Opinions?



Comments?

Your feedback matters!

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