

CLIMAAX COMMUNITY OF PRACTICE

8th event: Advancing Risk Analysis through Key Risk Assessment

September 18^o 2025

10:30-12 CEST



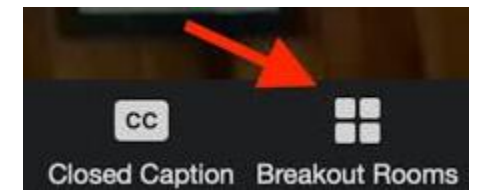
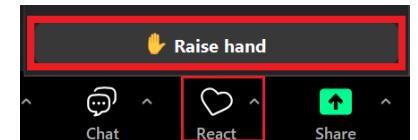
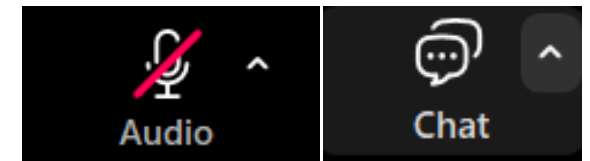
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CLIMAAX
climate ready regions

HOUSEKEEPING

- Please note that the meeting is being **recorded**.
- Please, keep your **mic off** during presentations.
- Feel free to post your **questions in the chat** (bottom of the screen) or raise your hand to talk
- Please note that we aim to have an **hands-on exercise in breakout rooms**



MEETING AGENDA

- ✓ 10:30- 10:35 **Welcoming & introduction to the webinar**
- ✓ 10:35-10:55 **Key Risk Assessment**
 - **Background and operationalization of the Risk Evaluation Dashboard** by Michaela Bachmann (IIASA)
 - **Key Risk Assessment application in Riga, Latvia** by Dace Zandersone (LVGMC)
- ✓ 10:55- 11:10 **Q&A and interactive discussion**
- ✓ 11:10- 11:40 **Breakout session: Testing the Risk Evaluation Dashboard in Practice**
 - *Introduction to the test case*
 - *Group discussion applying the dashboard*
- ✓ 11:40- 11:50 **Report back and wrap up**
- ✓ 11:50:12:00 **Closing remarks**



KEY RISK ASSESSMENT

BACKGROUND AND OPERATIONALIZATION OF THE RISK EVALUATION DASHBOARD



Michaela Bachmann

(International Institute for Applied
Systems Analysis, IIASA)



KEY RISK ASSESSMENT APPLICATION IN THE COASTAL FLOOD RISK WORKFLOW FOR RIGA, LATVIA



Dace Zandersone

Latvian Environment, Geology,
and Meteorology Centre (LVGMC)

Key Risk Assessment

Background and Operationalization of the Risk Evaluation Dashboard

Michaela Bachmann, IIASA
Reinhard Mechler, IIASA
Oscar Higuera Roa, IIASA

CLIMAAX Community of Practice Webinar
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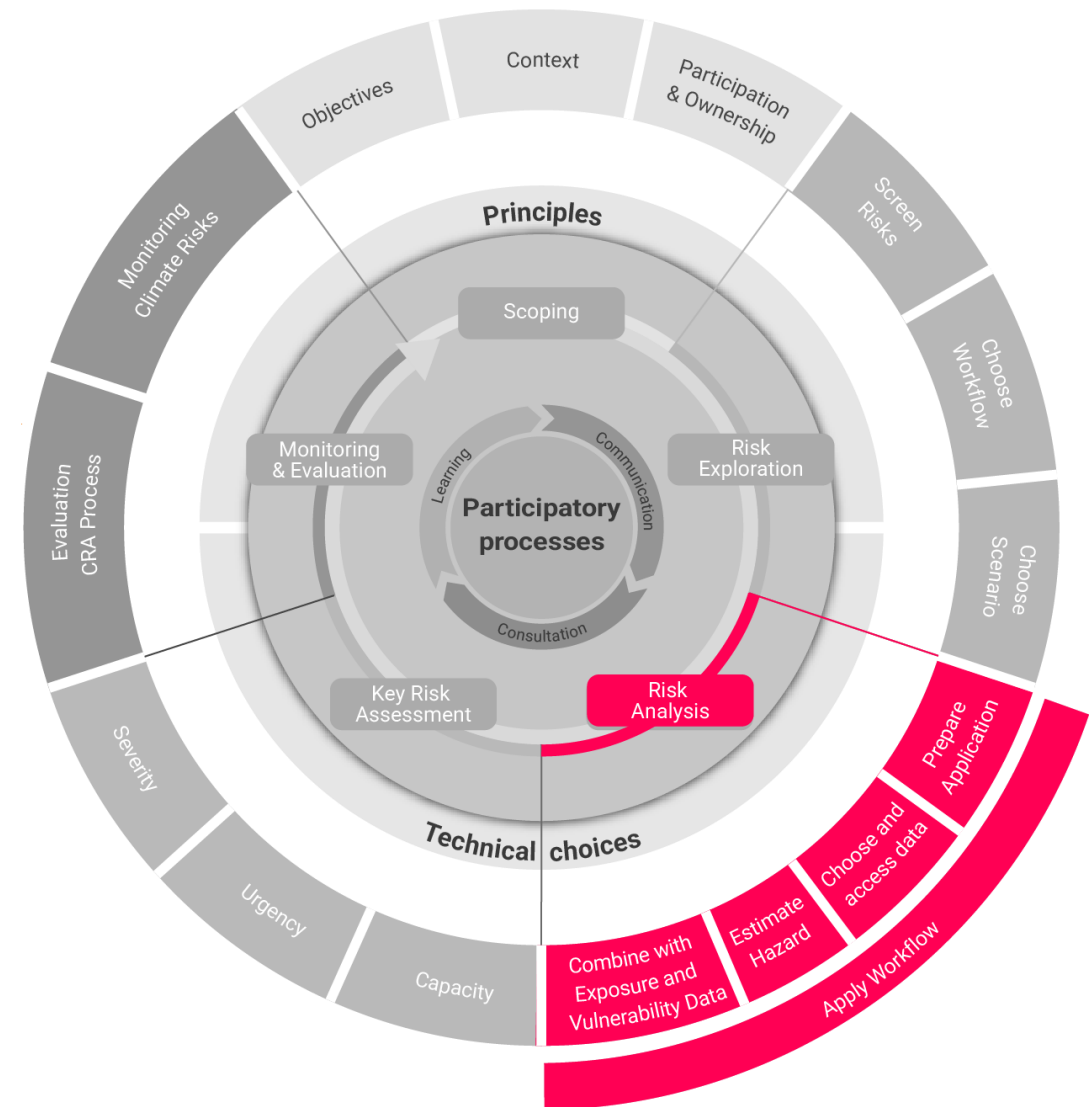
The CLIMAAX Framework for Climate Risk Assessment (CRA)



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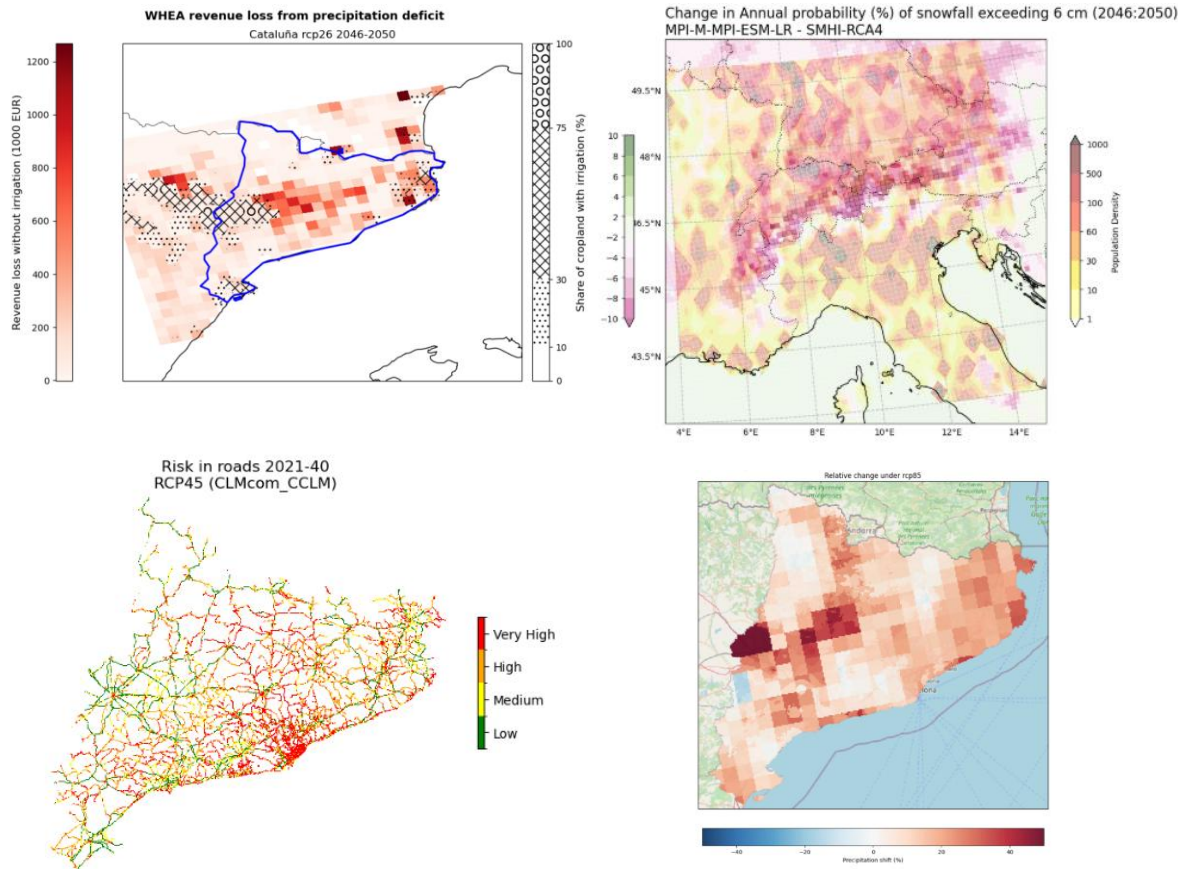


The CLIMAAX Framework for CRA – Quantitative Risk Analysis

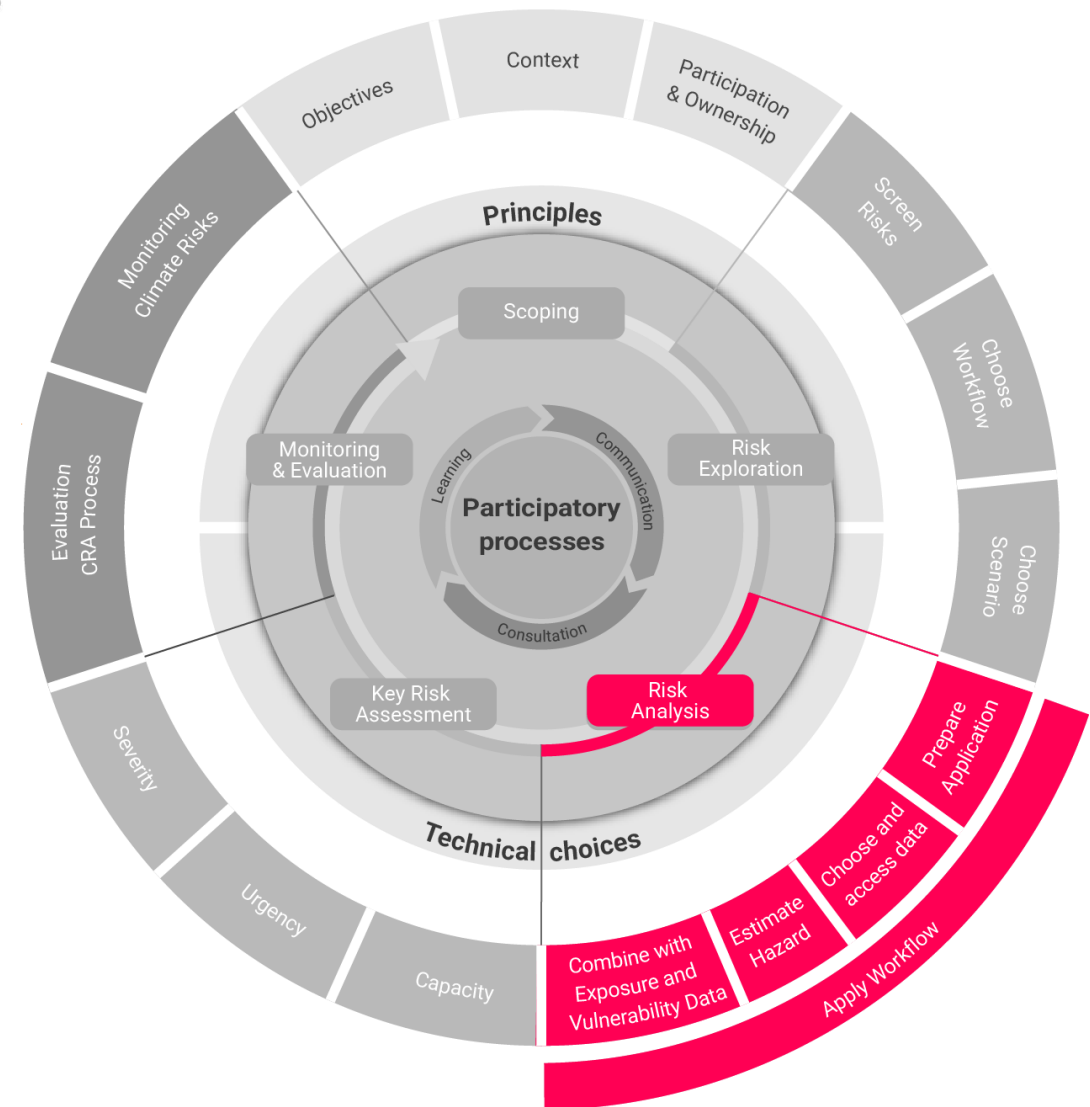


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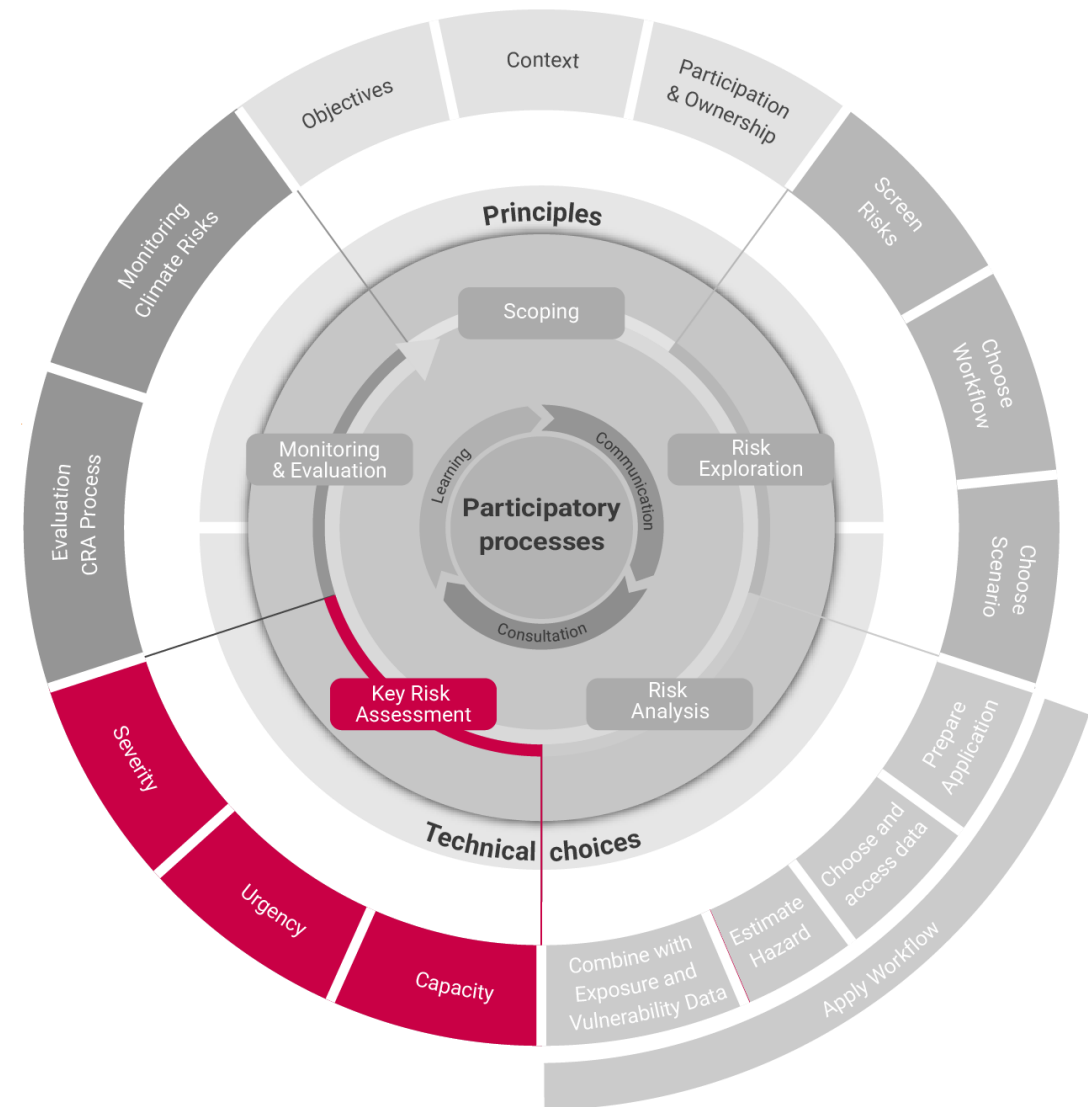
The CLIMAAX Framework for CRA – Quantitative Risk Analysis



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The CLIMAAX Framework for CRA – Key Risk Assessment

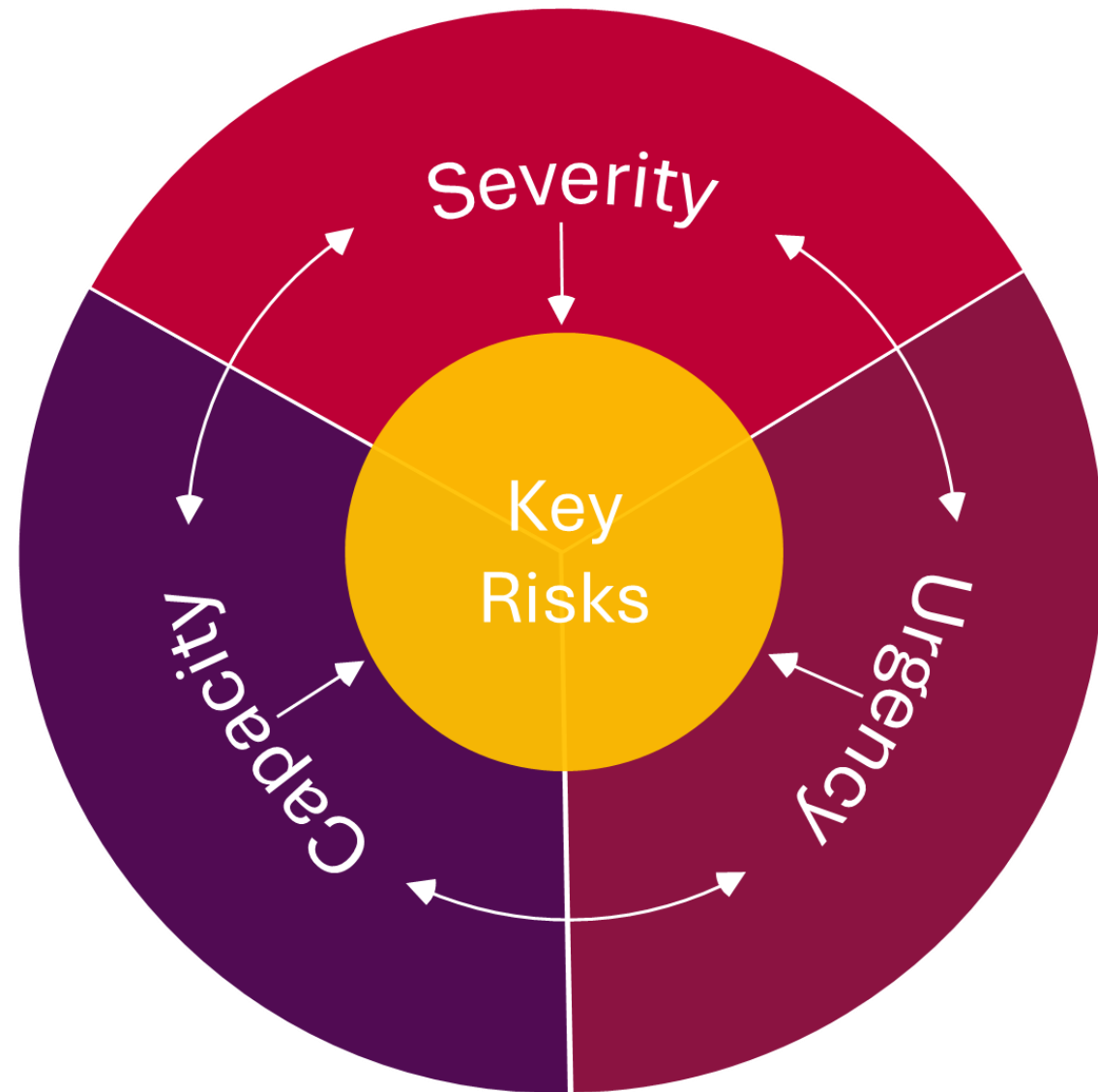


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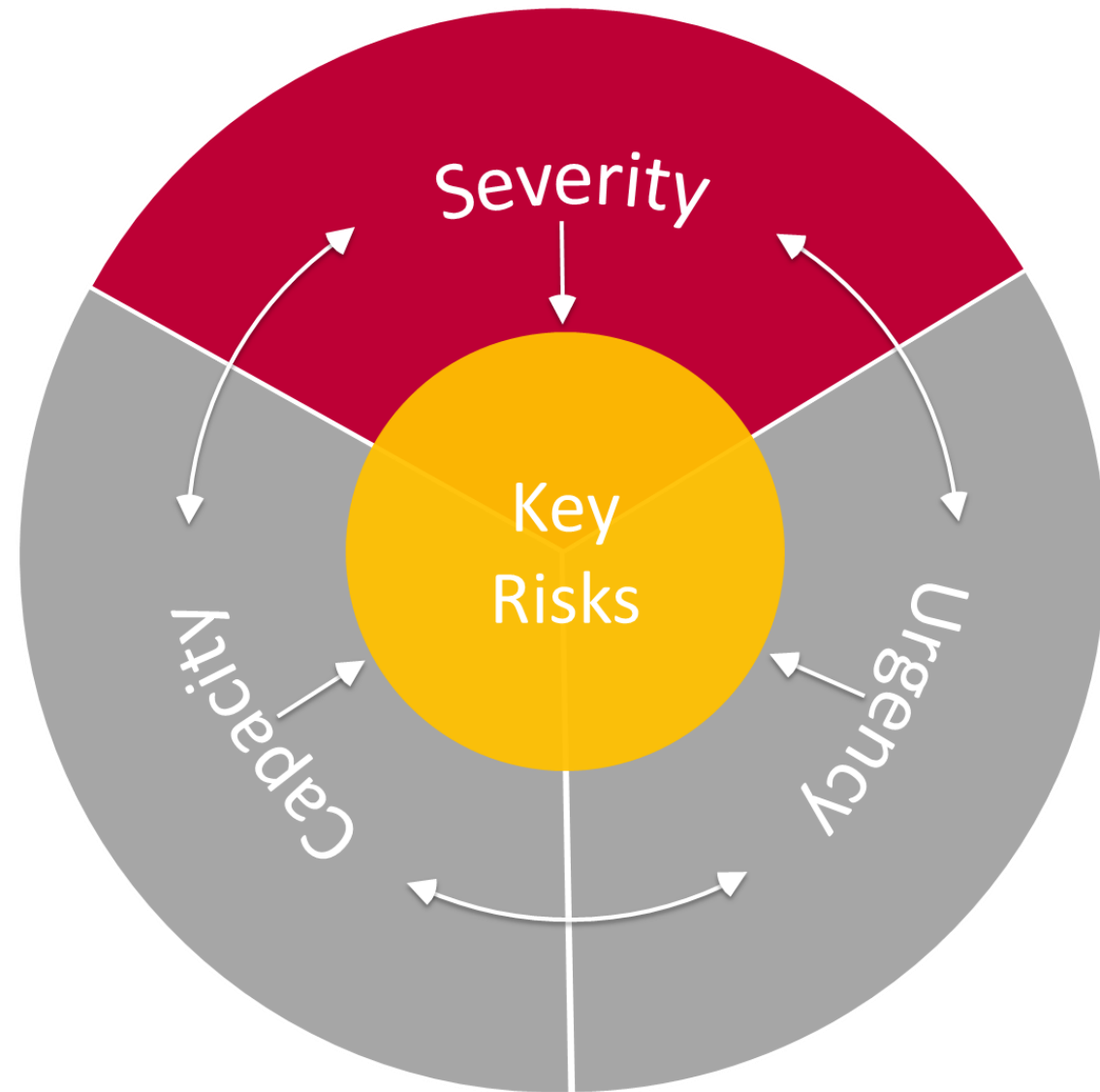


Key Risk Assessment

Severity, Urgency, Capacity

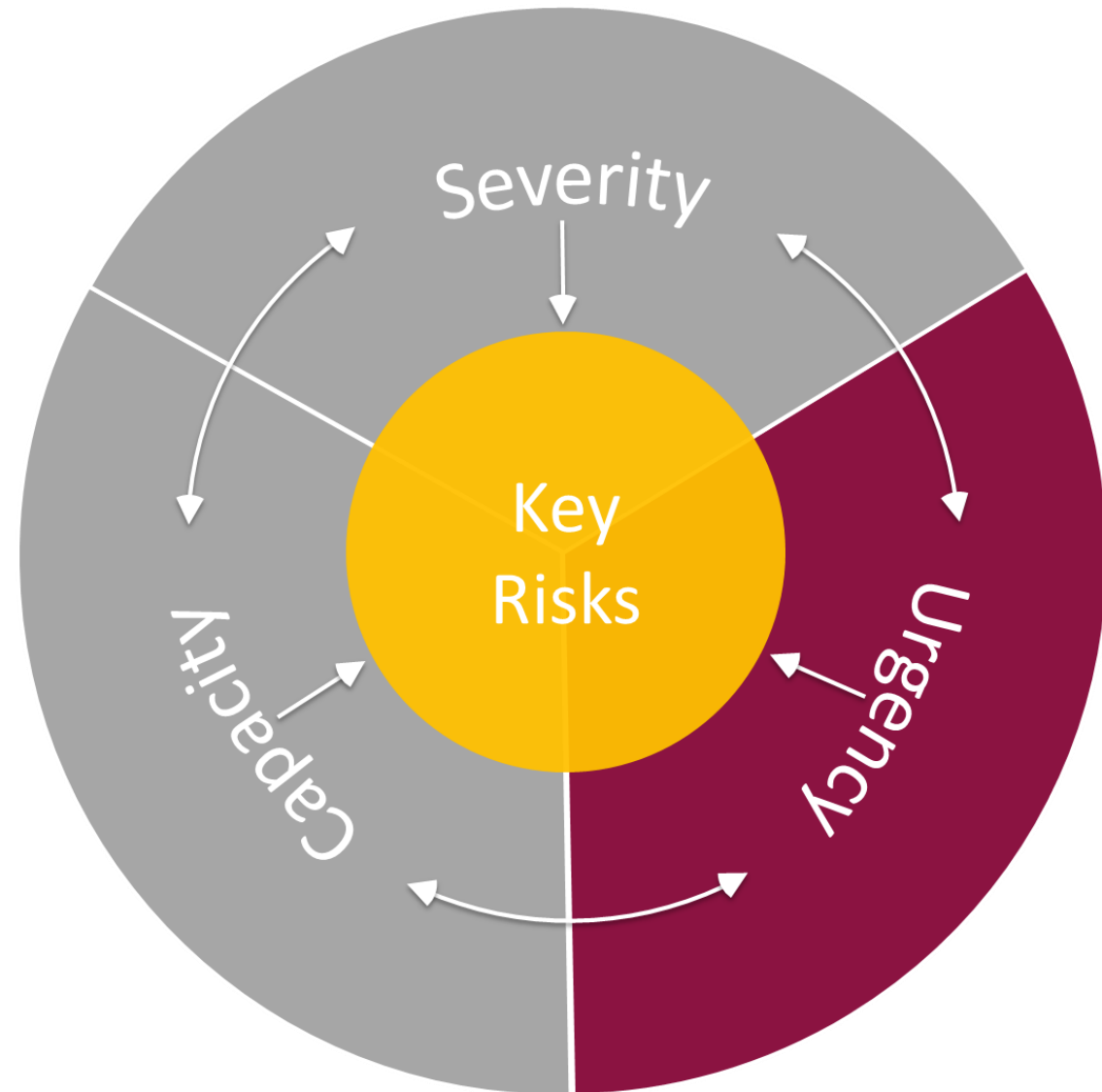


Key Risk Assessment Severity, Urgency, Capacity



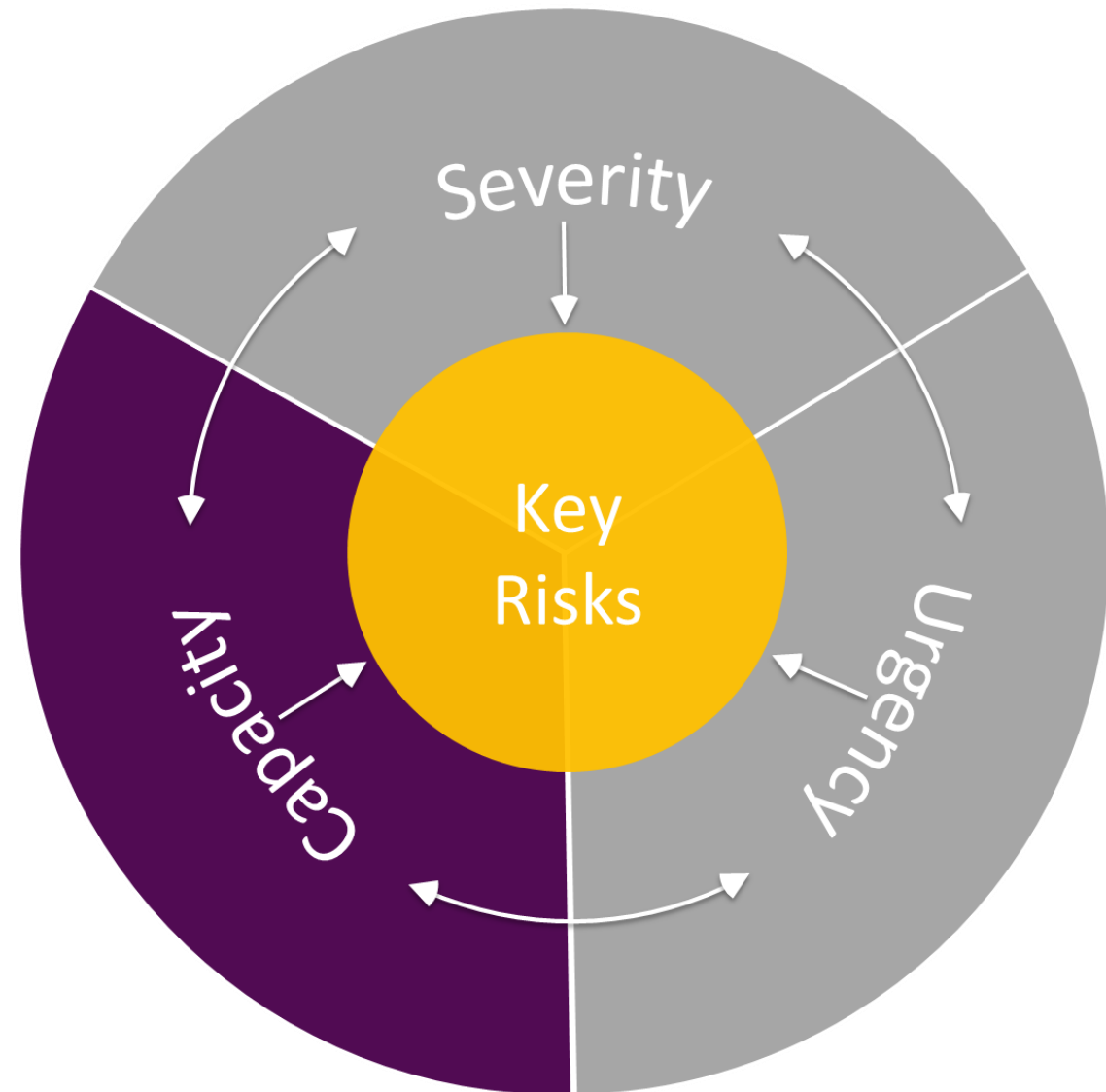
Key Risk Assessment

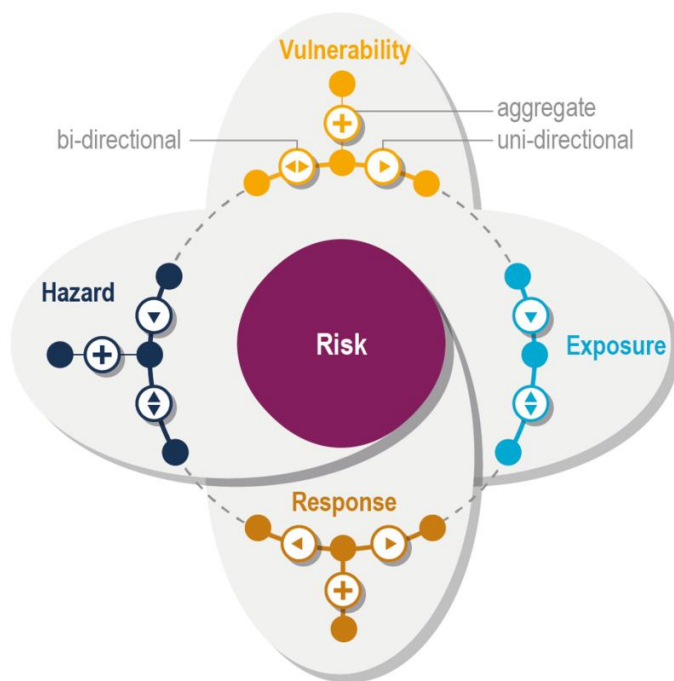
Severity, **Urgency**, Capacity



Key Risk Assessment

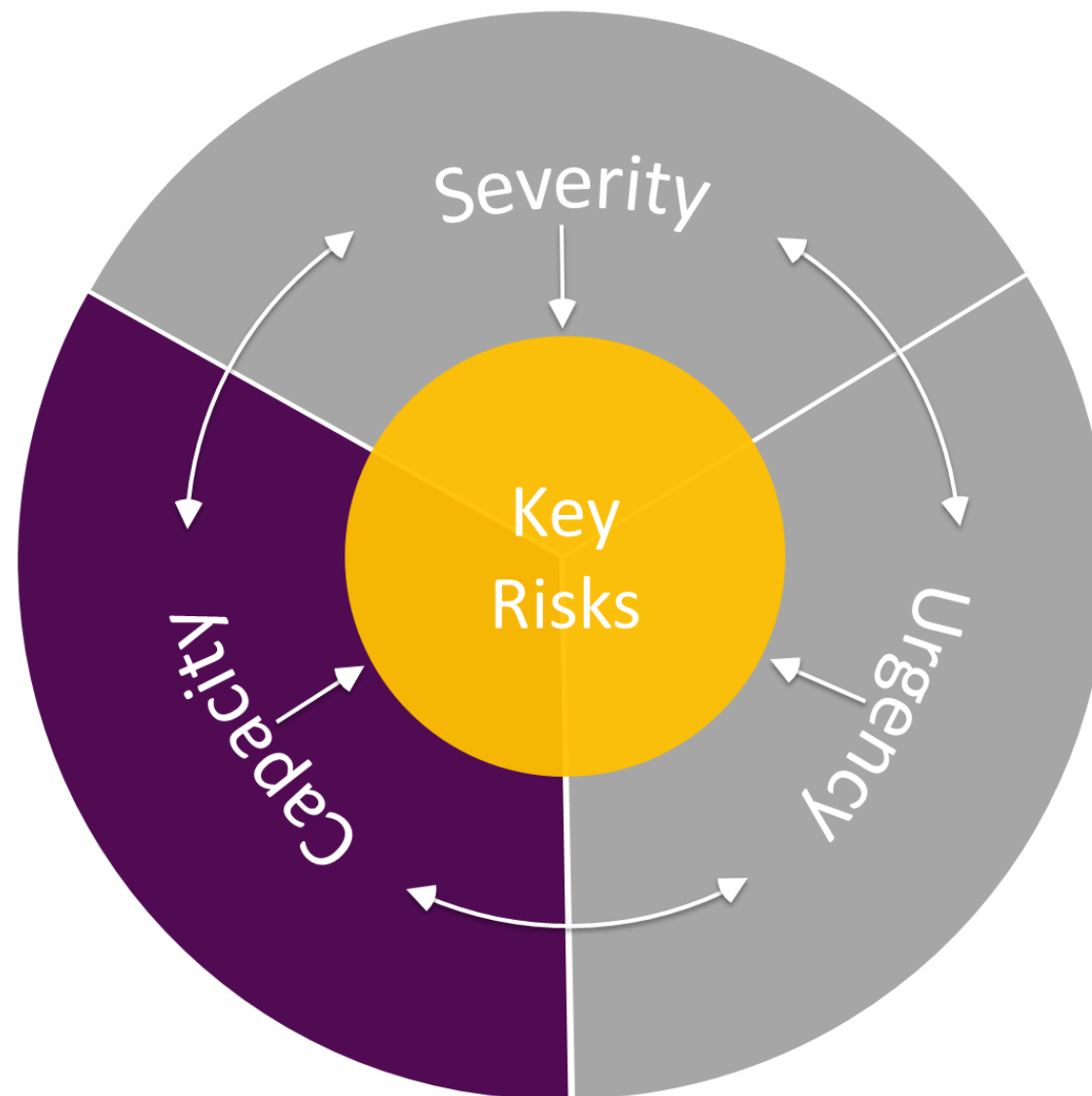
Severity, Urgency, **Capacity**





IPCC AR6, 2022

Key Risk Assessment Severity, Urgency, Capacity



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What is the CLIMAAX Framework?	
Before you start	▼
Scoping	
Risk Exploration	
Risk Analysis	▼
Key Risk Assessment	
Monitoring and Evaluation	
Integration in Climate Risk Management	
Risk workflows	
How to use risk workflows	▼
RIVER & COASTAL FLOODS	▼
HEAVY RAINFALL	▼
HEATWAVES	▼
DROUGHTS	▼
FIRE	▼
SNOW	▼
WIND	▼
Resources	
Support	▼
Guiding questions and answers	

Table 7 Possible considerations within assessment of risk severity, urgency and resilience capacity.

Severity	Urgency	Resilience Capacity
Risks are considered severe if potential impacts • Are high in magnitude or frequency (e.g., large areas affected, massive financial damage, severe increase of likelihood); • Negatively affect the functioning of relevant systems and processes with possibly irreversible consequences; • Have the potential to cause cascading effects (e.g., disease outbreak, biodiversity loss, destabilized supply chains, economic disruption, social unrest).	Urgency is related to the time components of hazard and depends on • The rate of change indicated through current and future severity; • Hazard acceleration trends (slow- vs. sudden-onset); • Persistence; • Timing of hazard occurrence (e.g., phases of heightened vulnerability such as critical timing of harvest season, tourist season).	Capacity considers any ability to absorb, adapt to and transform respective risk, originating • From general resilience capacity or specific processes and mechanisms in place to tackle the risk; • Within physical, financial, human, social and natural dimensions.



Tip

Key Risk Assessment Dashboard

(Risk Evaluation)

Risk Workflow	Severity		Urgency	Capacity	Risk Priority
	C	F		Resilience/ CRM	
River flooding					High
Coastal flooding					Low
Heavy rainfall					Very high
Heatwaves					High
Drought					High
Fire					Moderate
Snow					Low
Wind					Moderate

Severity

Critical

Substantial

Moderate

Limited

Urgency

Immediate action needed

More action needed

Watching brief

No action needed

Resilience Capacity

High

Substantial

Medium

Low

Risk Ranking

Very high

High

Moderate

Low



Key Risk Assessment

Application in the coastal flood risk workflow for Riga, Latvia

Dace Zandersone, LEGMC

CLIMAAX Community of Practice Webinar
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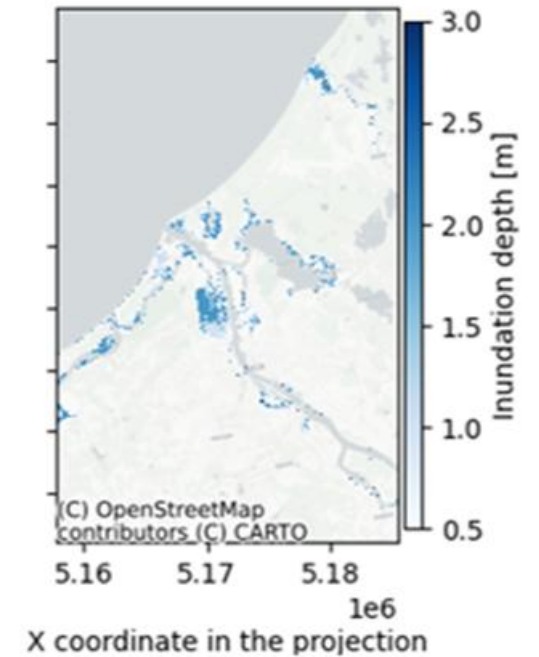
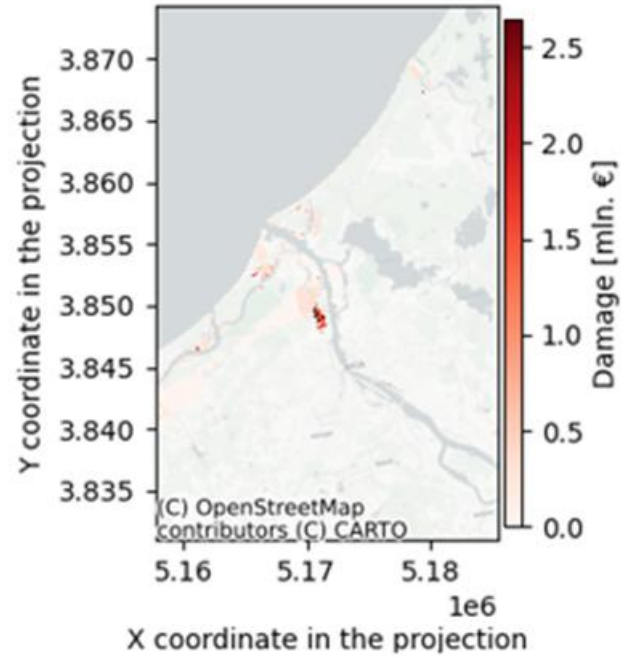


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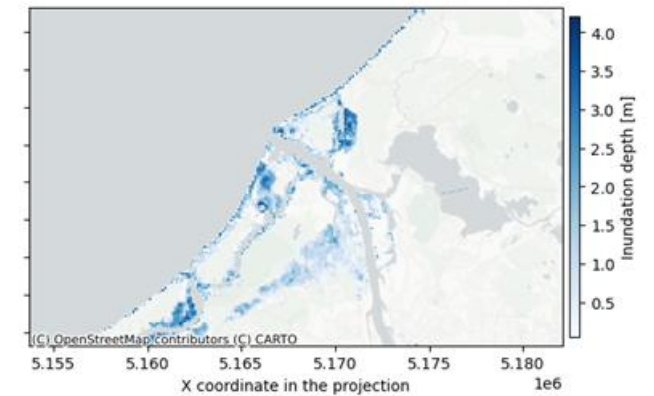
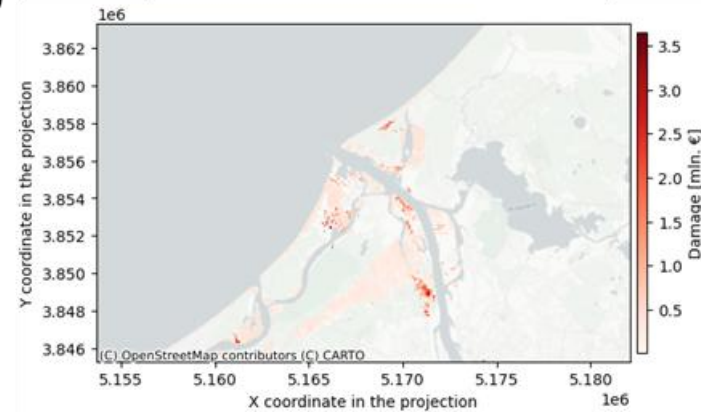
Coastal flood risk in Riga, Latvia

Risk analysis results for a) RCP4.5 in the year 2050 with local data and b) RCP8.5 for 2050 global data

a)



b)



Coastal flood risk in Riga, Latvia

Risk Workflow	Severity		Urgency	Capacity	Risk Priority
	C	F		Resilience/ CRM	
River flooding					
Coastal flooding					High
Heavy rainfall					
Heatwaves					
Drought					
Fire					
Snow					
Wind					

Severity	
	Critical
	Substantial
	Moderate
	Limited

Urgency	
	Immediate action needed
	More action needed
	Watching brief
	No action needed

Resilience Capacity	
	High
	Substantial
	Medium
	Low

Risk Ranking	
	Very high
	High
	Moderate
	Low

- Severity
 - Industrial development Spilve
 - Residential areas, city centre
- Urgency
 - Moderate (current) → substantial (future) severity
 - Sudden- & slow-onset hazard
- Capacity
 - Flood Risk Management Plan
 - Existing measures; more to be implemented



Break Out Session

Applying the Risk Evaluation Dashboard in Eurocity

Michaela Bachmann, IIASA
Reinhard Mechler, IIASA
Fulvio Biddau, CMCC
Dana Stuparu, Deltares

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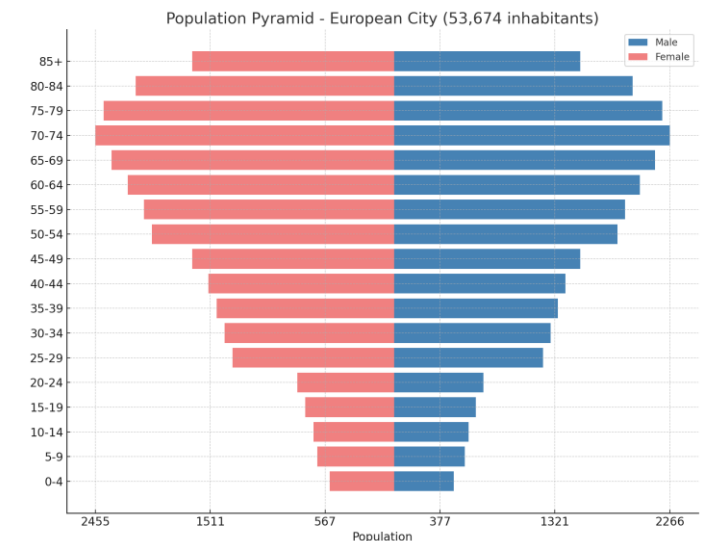
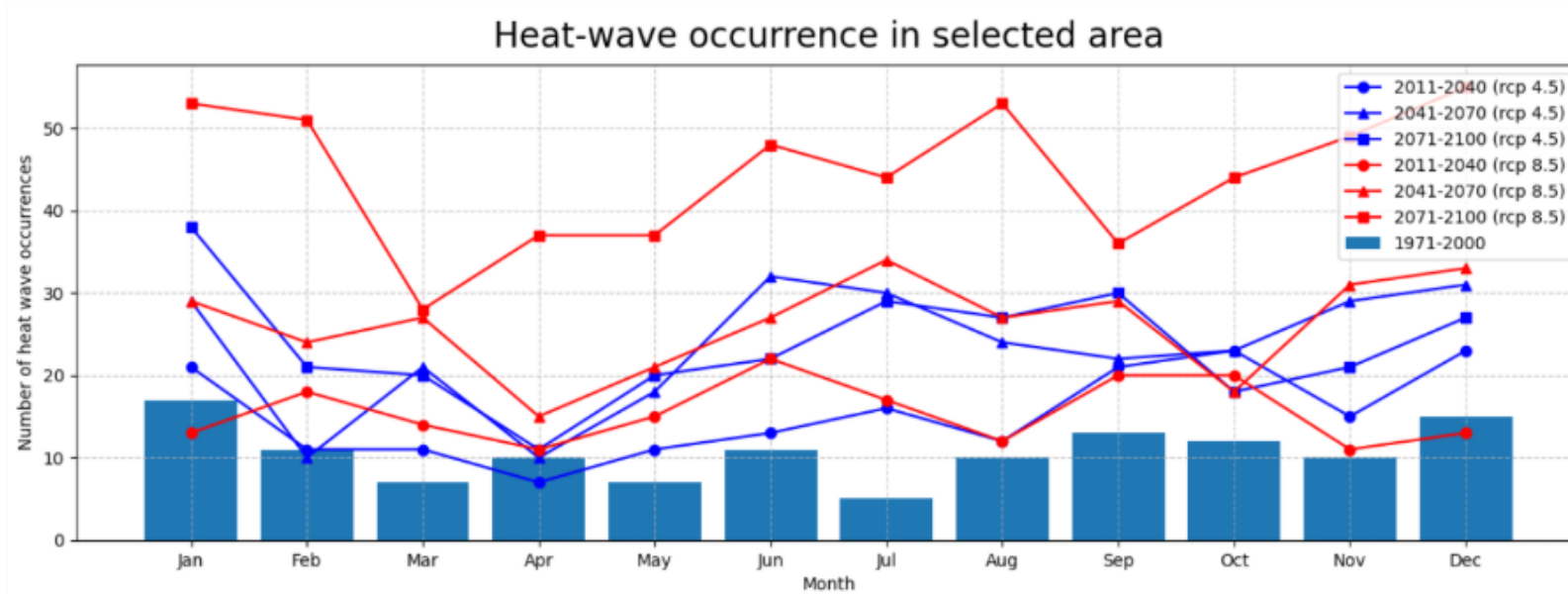


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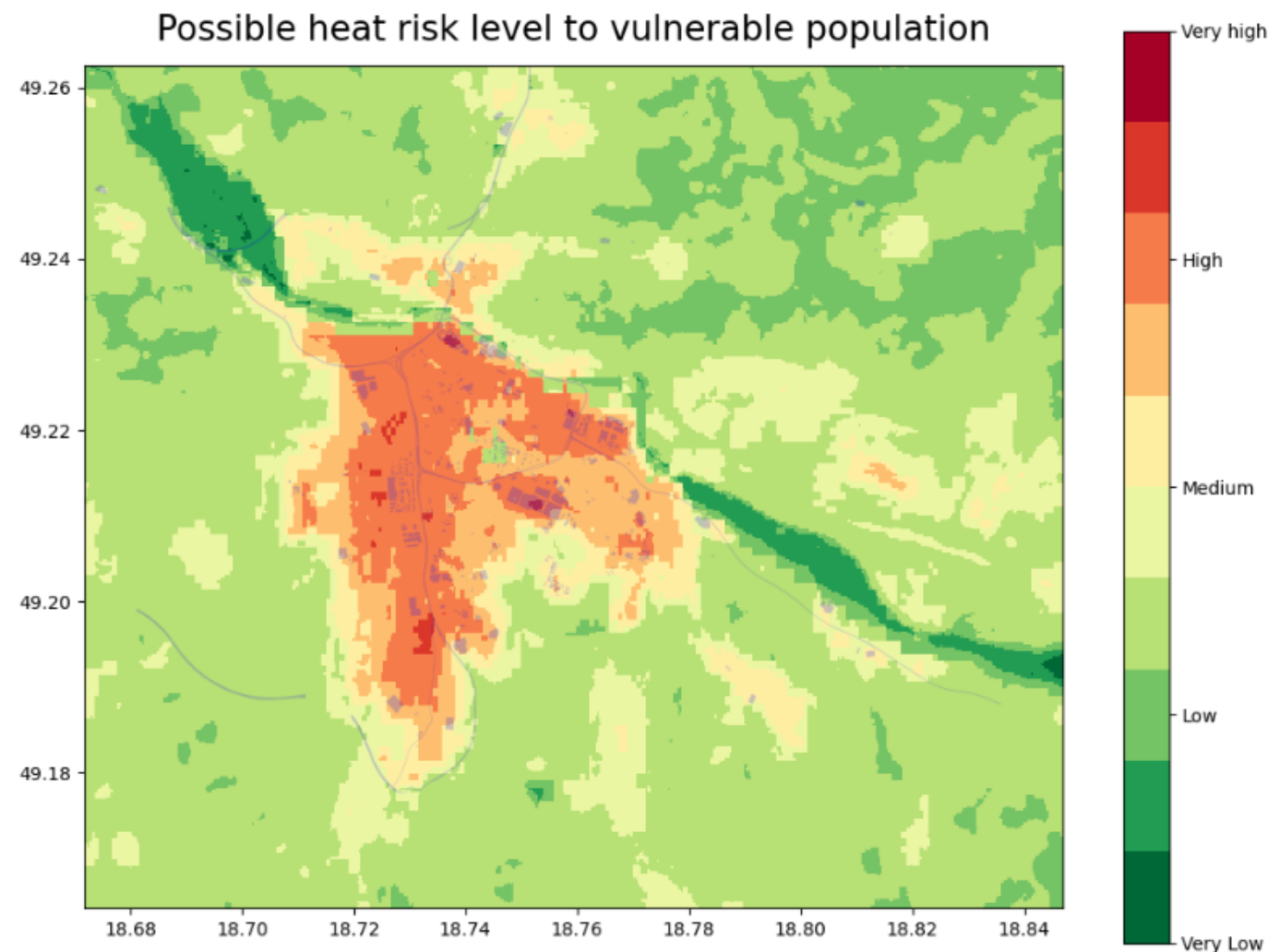
Heat Risk in a Eurocity

City profile

- Medium sized city in Europe; continental climate with increasing heatwaves
- Main sectors: Tourism, industry, services
- Challenges: Elderly, migration & low- income communities

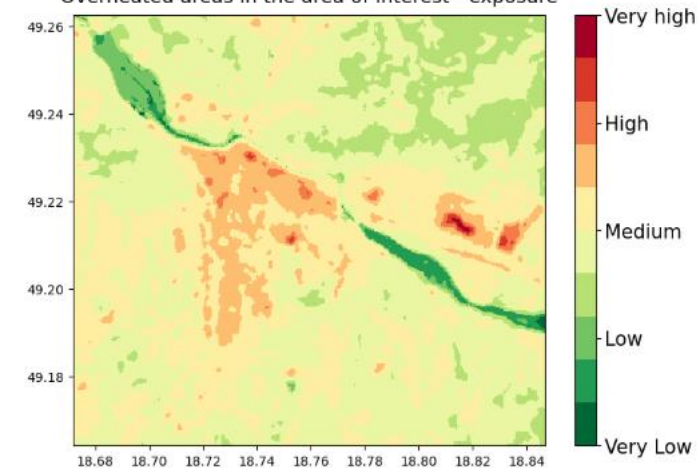


Heat Risk in a Eurocity RCP4.5 for 2050

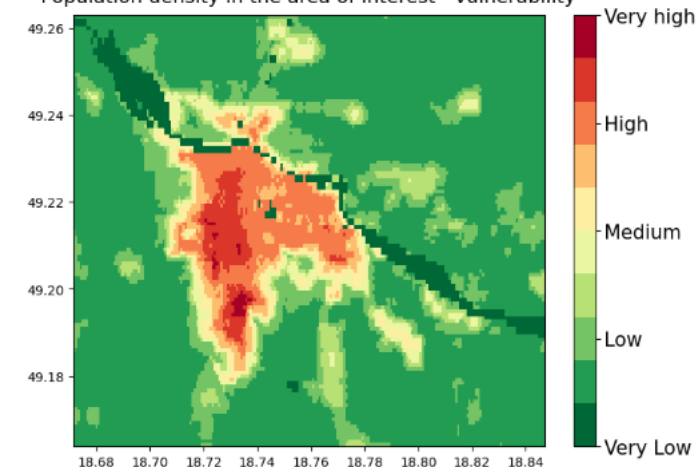


Exposure

Overheated areas in the area of interest - exposure

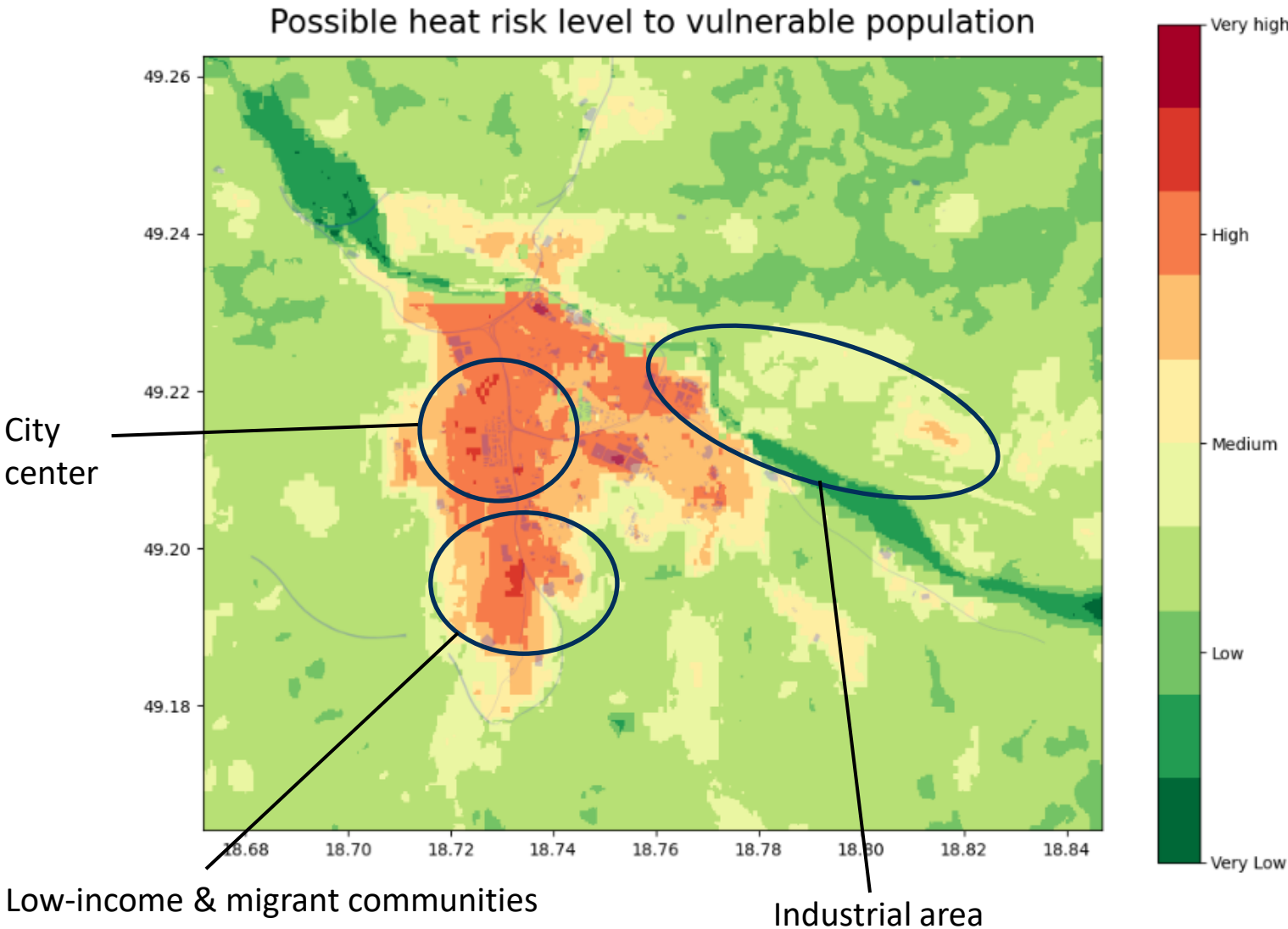


Population density in the area of interest - vulnerability

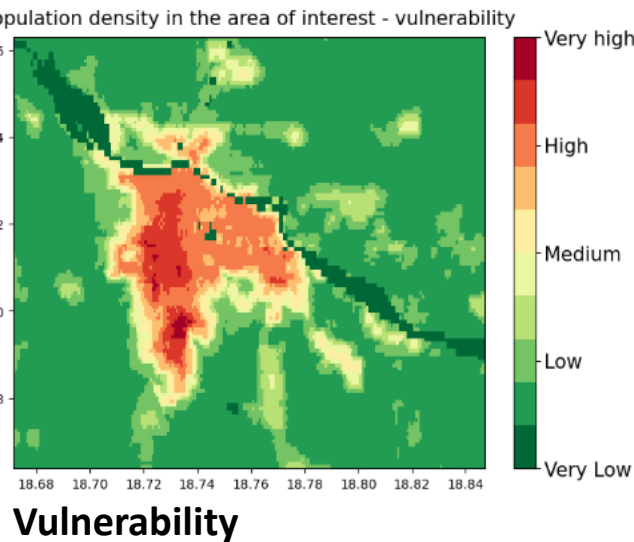
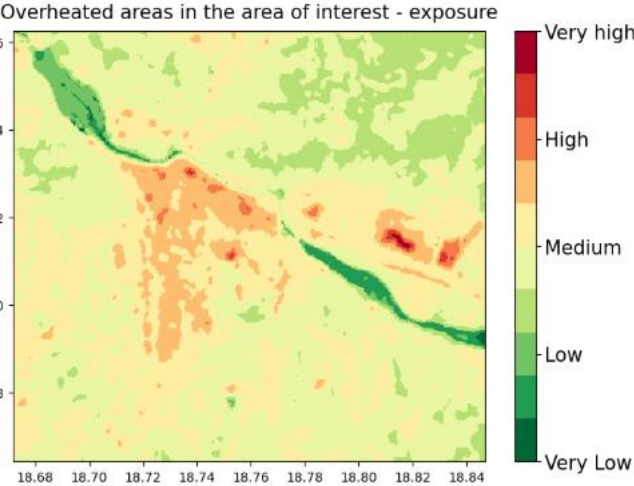


Vulnerability

Heat Risk in a Eurocity RCP4.5 for 2050



Exposure



Heat Risk in a Eurocity

Risk Workflow	Severity		Urgency	Capacity	Risk Priority
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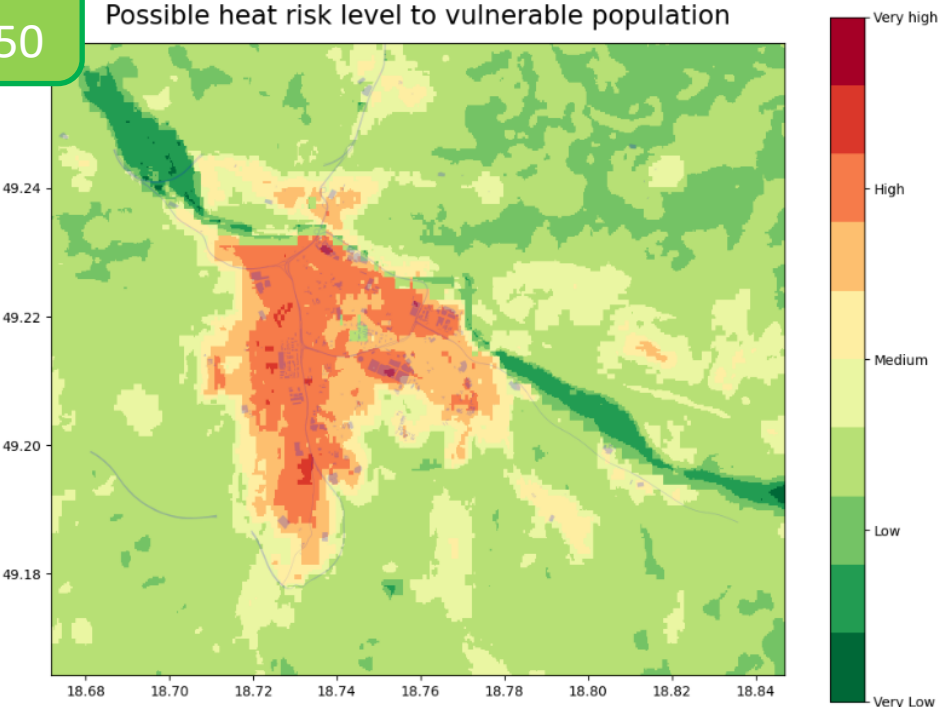
Urgency
Immediate action needed
More action needed
Watching brief
No action needed

Resilience Capacity
High
Substantial
Medium
Low

Risk Ranking
Very high
High
Moderate
Low

RCP4.5
for 2050

Possible heat risk level to vulnerable population



Severity

What may the **impact** of heat risk on this city be? E.g., think of high human loss, large areas affected, massive financial damage, important sectors affected, impairment of critical infrastructure.

Which potentially **irreversible consequences** may heat have for the city? E.g., human loss, loss of industrial or economic areas, destruction of ecosystems and biodiversity, loss of agricultural land.

What about **cascading effects**? E.g., E.g., disease outbreak, biodiversity loss, destabilized supply chains, economic disruption, so

Urgency

How fast is the severity expected to change?

Is it a slow- or sudden-onset event that is changing? How might this affect the urgency?

Potential to persist?

Capacity

Which **capacities** (financial, human, natural, physical and social) does the city have to cope with heat risk? E.g., low/high financial means, knowledgeable citizens, healthy ecosystems.

Which **specific interventions** may the city have already to deal with the risk? E.g., hazard protection plans, effective early warning systems, action plans, ...

Where are the main gaps/**missing capacities**?

Which risk ranking would you assign based on severity, urgency, and capacity?

UPCOMING EVENTS



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EVENTS AND ACTIVITIES IN PREPARATION

- **New series of webinars focused on specific hazards and workflows: each session featuring regional experiences and toolbox developers**
- **Public discussion forum: giving authorities and interested practitioners a space for peer-to-peer exchange**

How to use risk workflows

 RIVER & COASTAL FLOODS

 HEAVY RAINFALL

 HEATWAVES

 DROUGHTS

 FIRE

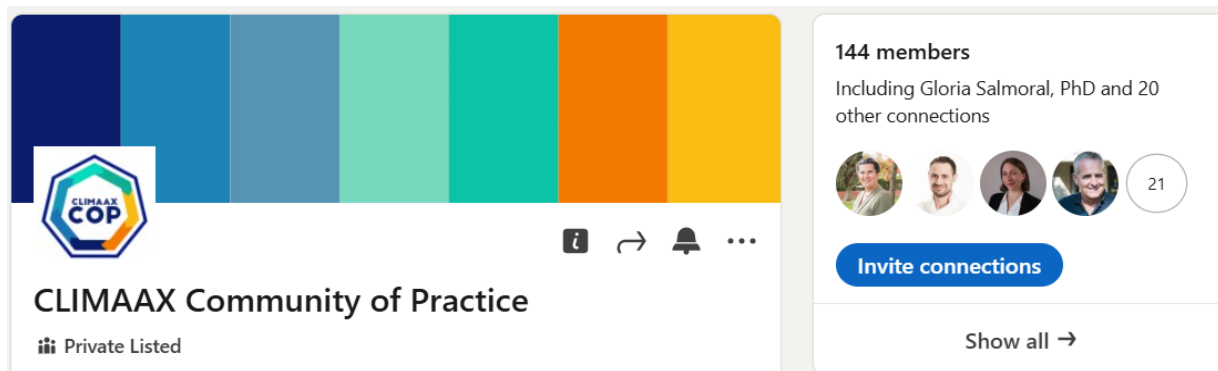
 SNOW

 WIND

HOW TO ENGAGE IN THE COMMUNITY OF PRACTICE

- Join our LinkedIn group
- Take our survey
- Subscribe to the CoP to receive communication of further updates

<https://www.climaax.eu/community-of-practice/>



!! Scan this !!



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Thank you and see you
next time!

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