KICK-OFF WEBINAR Second Open Call

4th of April 2025





Agenda

TIME	SPEAKER	ΤΟΡΙΟ
12:00-12:05	Davide Michielin (CMCC)	Welcome
12:05-12:15	Frederiek Sperna Weiland and Dana Stuparu (Deltares)	Introduction of the project
12:15-12:25	Erika Meléndez (UPC)	FSTP project schedule and procedures
12:25-12:35	Michaela Bachmann (IIASA)	Overview of the Framework
12:35-12:45	Christopher Polster (ECMWF)	Support mechanisms and the Handbook
12:45-12:55	Fulvio Biddau (CMCC)	Community of Practice
12:55-13:00	Davide Michielin	Q&A





Housekeeping







CLIMAAX

CLIMAte risk and vulnerability **A**ssessment framework and toolbo**X**

Frederiek Sperna Weiland (Deltares) Project coordinator

4th of April 2025







EU Mission on Adaptation

Aims to support EU regions, cities and local authorities in their efforts to build resilience against the impacts of climate change

By 2030 support for at least 150 European regions and communities

CLIMAAX one of the ways → Improved understanding of climate risks - now and in the future







Bring existing tools and services beyond state-of-the-art by improving accessibility and tailoring to the local contexts

CRA standardization and connection to European policies

Exploiting options for a sustainable service





CLIMAAX - Key elements

Dana Stuparu (Deltares) Project manager

4th of April 2025





CLIMAAX in the first two years

Project started January 2023 – runs until December 2026

- Development of multi-hazard CRA Handbook Framework & Toolbox
- Pilot applications to test the CRA workflows: *Zilina, Finland, Catalunya, Setubal, Latvia*
- First regions batch (37 regions) started on the 1° of October 2024 & submitted their first deliberable end of March

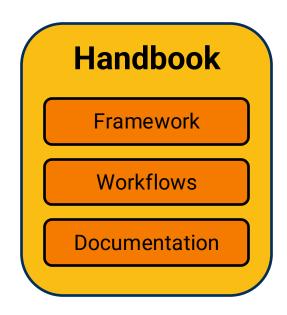




CLIMAAX Handbook

Website: handbook.climaax.eu

- Climate Risk Assessment (CRA)
- Created by CRA experts
- Conceptual and technical guidance
- Experience from pilot regions
- Active Community of Practice (COP)







CLIMAAX Framework and substeps

Norms & principles

- Inventory of experience, best practices
- Consultation in regions & sectors

Practical guidance

- Quality assurance
- Comparability for multi-risks
- Guiding questions

Follow-up

 uptake into DRM and climate adaptation strategy





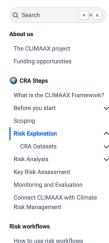


CLIMAAX Framework

Step-by-step with

- Descriptions
- Illustrations
- References
- Guiding Questions

CLIMAAX climate ready regions



∠ RIVER & COASTAL FLOODS ✓ → HEAVY RAINFALL ✓ > HEATWAVES ✓ > DROUGHTS ✓ FIRE ✓ NOW ✓ WIND ✓ Coding resources Glossary ✓

Risk Exploration

Ξ



Carrying out the Risk Exploration step kicks off a comprehensive process that starts with identifying hazards and risks that are most apparent or of significant concern to key stakeholders and the wider public. Leveraging current knowledge, including insights from experts and stakeholders identified in the scoping phase, allows a first identification of impacted sectors (including activities, supply chains, processes, and infrastructure) and geographic areas at risk (such as ecosystems, landscapes, and communities). It is useful for stakeholders to consider past and ongoing impacts on different sectors, areas and vulnerable groups, and connect them to specific hazards and risks to make "risk" more tangible at this early stage of the CRA process. A deeper dive into the system aspects may concretize affected entities (key systems, elements, sectors, communities, social groups, sub-regions), functions or processes that hold significant value in the local context (e.g. stakeholder interests, community priorities or public agenda) and a priori reveal (transboundary) connects or dependencies. These considerations are key for exploring risk in more depth and to choose Risk Workflows. From this step, potential risks can be narrowed down and prioritized by broadly exploring hazards, exposures

Guiding questions

- How is the scoping phase applied? Which parts of the scoping phase are relevant for the workflow and scenario selection?
- How does the existing stakeholder knowledge come into play?

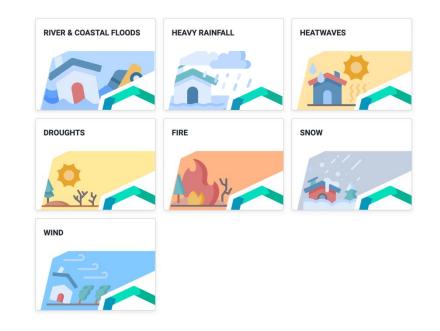




CLIMAAX Workflows

- Implementation of **Risk Analysis**
- Risk = Hazard × Exposure × Vulnerability

- Grouped by hazard
- Starting point, building blocks, examples
- To be adapted to the local context







Project support

- Service desk for JupyterHub, Workflows and Framework
- Forum (public)
- Drop-in sessions
- Explanatory videos

Support

Support is offered by the CLIMAAX project for climate risk assessments following the Framework and utilizing the workflows in this Handbook.

Public and exclusive support

The Handbook with the Framework description, workflows, technical documentation and supporting pages are **public** and open to everyone. You can reach out to us with questions and <u>contribute</u> via the Forum and GitHub, independent of your relationship with the CLIMAAX project.

The <u>service desk</u> and <u>JupyterHub</u> are **exclusively** offered to our project partners and participating regions that receive financial support through the CLIMAAX project (i.e., selected regions of the CLIMAAX open calls).





Financial Support for Third Parties

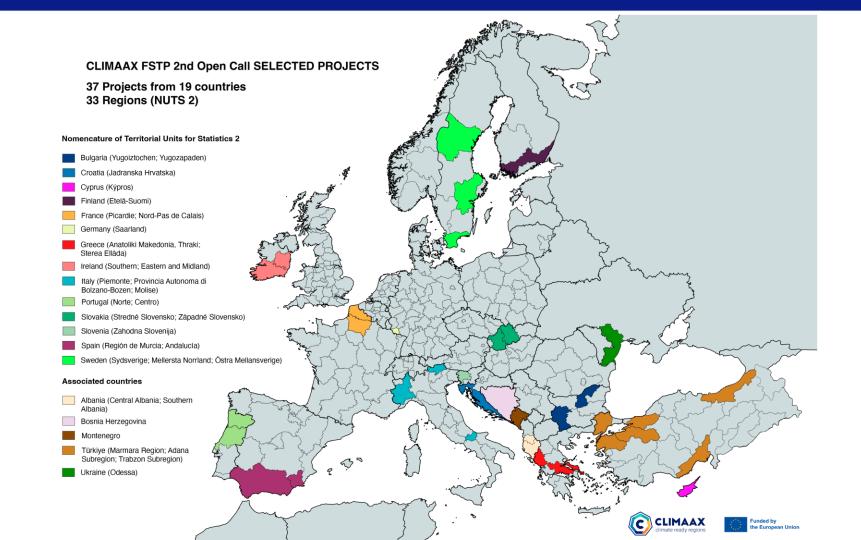
Schedule and Procedures

Erika Meléndez & Gisela Vilalta CRAHI-UPC

4th of April 2025







Project planning and timeline

PHASE 1: Common	PHASE 2: Refined	PHASE 3: Adaptation	
Methodology - Multi-risk	Regional/Local Multi-Risk	strategies and improved Risk	
climate assessment	Assesment	Management Plans	
M1 - M6: Mar. 2024 – Aug. 2025	M7 - M16: Sep. 2025 – Jun. 2026	M17 - M22: Jul. 2026 – Dec. 2026	



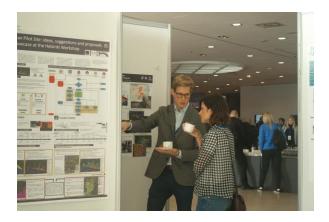




Expected live meetings

1° Workshop (Barcelona, ES): 10-11th June 2025

Pilot sites and FSTP beneficiaries to present experiences, challenges.





Final Workshop (Brussels, BE): December 2026

Beneficiaries to present all Phases final results .





Deliverables review

PHASE 1: Common	PHASE 2: Refined	PHASE 3: Adaptation	
Methodology - Multi-risk	Regional/Local Multi-Risk	strategies and improved Risk	
climate assessment	Assesment	Management Plans	
M6: August 2025	M16: June 2026	M22: December 2026	

Deliverable 1. Implementation of the CLIMAAX common methodology for multi-risk assessment and analysis of the results **Deliverable 2.** Refined regional/local high-resolution analysis and risk assessment and comparison of results **Deliverable 3.** Contribution to local adaptation strategies and improved risk management plans





Deliverables review

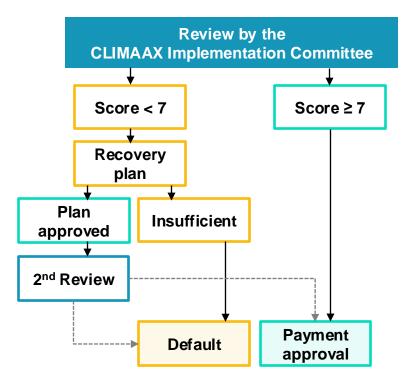
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Deliverable 1. Implementation of the CLIMAAX common methodology for multi-risk assessment and analysis of the results **Deliverable 2.** Refined regional/local high-resolution analysis and risk assessment and comparison of results **Deliverable 3.** Contribution to local adaptation strategies and improved risk management plans

Information on how to submit the deliverables and guidelines to be shared in the next few weeks

Deliverables review

- Beneficiaries submit the Deliverables to the CLIMAAX Implementation Committee.
- The evaluation will be done based on the following criteria included in the SGA:
 - Deliverable quality 40%
 - Performance indicators 50%
 - $\circ~$ Deadline Compliance 10%
- Each criterion will be scored from 0 to 10.
- The **threshold** to continue with the next phase is **7 points**.
- If the Deliverable does not reach the threshold, a recovery plan will be ask.







Payments

• The payments will follow a lump sum scheme.

PAYMENT MILESTONES	DELIVERABLE	DATE	% TOTAL GRANT
Phase 1 CLIMAAX methodology	Multi-risk climate assessment	M6	30%
Phase 2 Refined local high- resolution risk assessment	Refined regional/local multi-risk assessment	M16	40%
Phase 3 Exploration of local adaptation strategies. and improved risk management plans	Adaptation and improved risk management report	M22	15%
Final payment	Final payment (delayed payment mechanism)	Est. November 2027	15%
	100%		

- Following the rules of the Horizon Europe program, a delayed payment mechanism will be applied to the 15% of the financial support amount awarded to each sub-project, which will be paid to the beneficiaries once the whole CLIMAAX project is completed.
- This should happen within 9 months after the end of the CLIMAAX project, expected on the 28th of February 2027.





Framing the Climate Risk Assessment Process An introduction to the CLIMAAX Climate Risk Assessment Framework

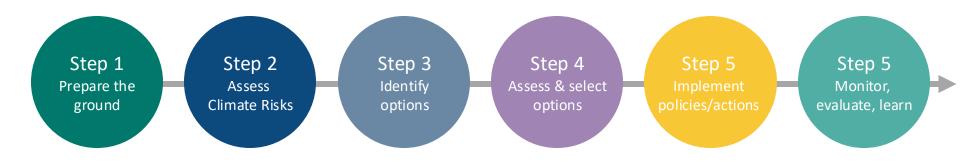
Michaela Bachmann IIASA

4th of April 2025





Towards Climate Resilience

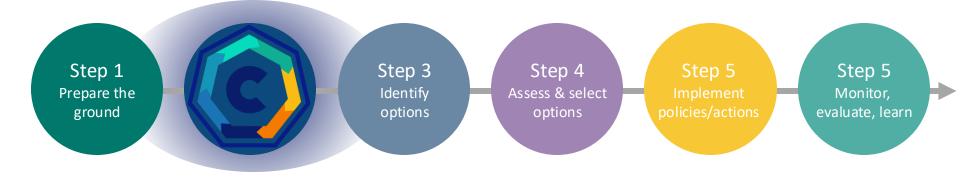


Source: Regional Adaptation Support Tool (EEA)





Towards Climate Resilience

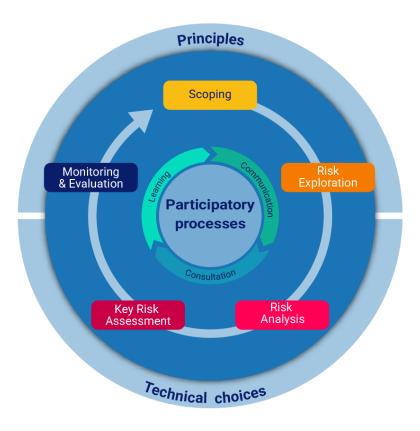


Source: Regional Adaptation Support Tool (EEA)





The Climate Risk Assessment Framework



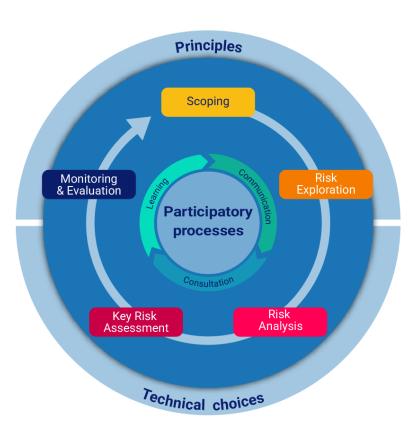




The Climate Risk Assessment Framework Conceptual background

Principles

- Social justice, equity, inclusivity (Just Resilience)
- Quality, rigour, and transparency
- Precautionary approach



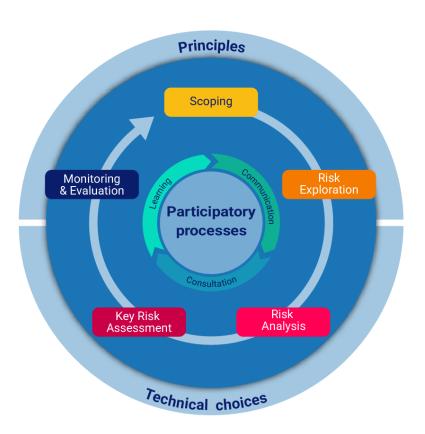




The Climate Risk Assessment Framework Conceptual background

Technical Choices

- Climate change scenarios
- Climate models
- Choice of time horizon
- Integration of local data



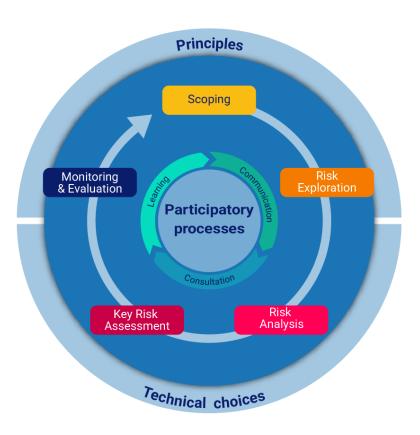




The Climate Risk Assessment Framework Conceptual background

Participatory Processes

- Learning, communication, consultation
- Stakeholders, experts, priority groups



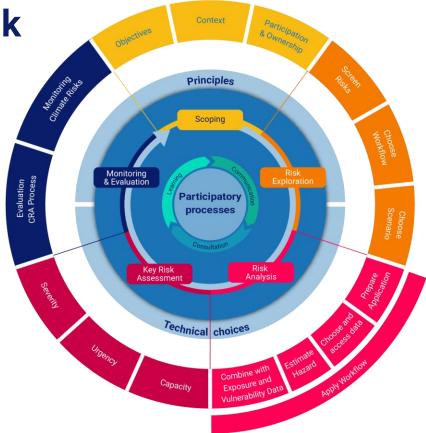


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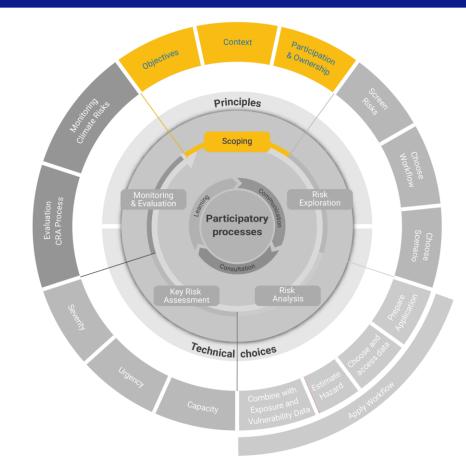
The Climate Risk Assessment Framework Operational steps







Scoping







Risk Exploration







Risk Analysis

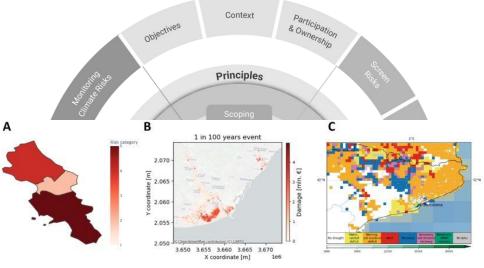
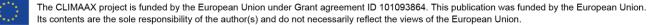


Fig. 7 Examples of the different outputs from the three risk assessment approaches with A drought risk indexing, B coastal flood damage, and C drought exposed population. Credit: CLIMAAX consortium. #







Key Risk Assessment

objectives	Context Principles	Participation & Ownership	Scient History	
Risk Workflow	Severity	Urgency	Capacity	Risk Priority
			Baseline CRM Opportunities	
River flooding				1
Coastal flooding				4
Heavyrainfall				1
Heatwaves				2
Drought				2
Fire				3
Snow				4
Wind				3
	Severity Critical Substantial Moderate Limited	Urgency Immediate More action Watching b No action n	rief Medium	





Monitoring	Funding opportunities			N 13
	How to start		a) Indicators for Climate Risk Monitoring	
Evaluation	CRA steps What is the CLIMAAX Framew	rork?	Workflow nonspecific indicators	
	Before you start Scoping	~	Frequency, intensity, spatial distribution, and duration of climate events; public awareness and engagement; institutional capacity.	
	Risk Exploration		Workflow specific indicators	
	Risk Analysis	~	1. B	

b) Indicators for the Evaluation of Climate Risk Assessment Process

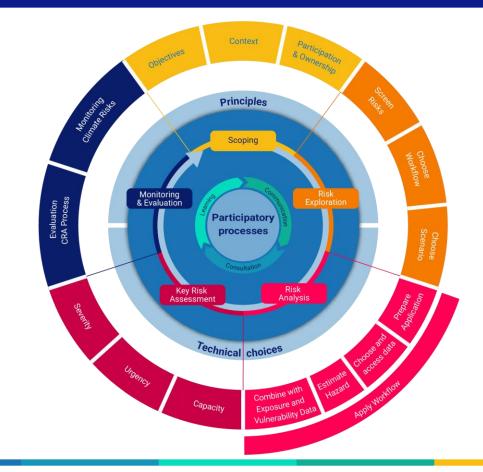
Performance Indicator	erformance Indicator Examples			ies, livestock, crops,	
Efficacy	Efficient use of re				
Usefulness	Raised awareness engagement, insti	ies, livestock, crops,			
Impact		y for Risk Assessment and CRM (number of times used, acceptance and stakeholder, translation of results into CRM)			
SNOW	~ ~	Drought Risk	 Losses and damages to agriculture (crops, livestock) Availability of tap water Extent of agricultural areas and people affected 		
Resources		Heatwave Risk	Health impacts (hospitalisations and fatalities)		



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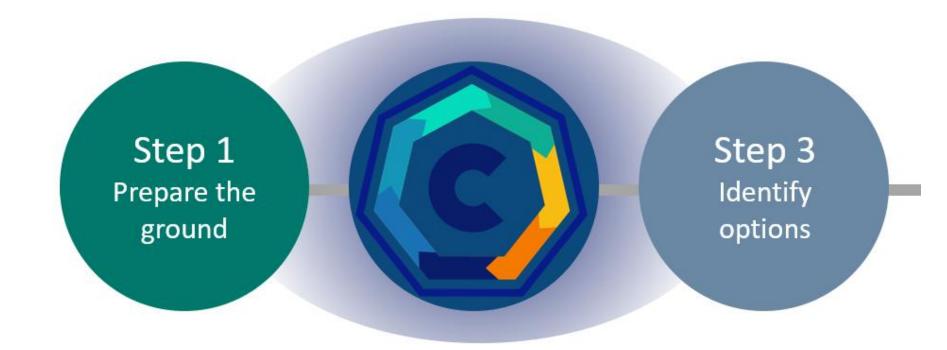


ar event, 500 year





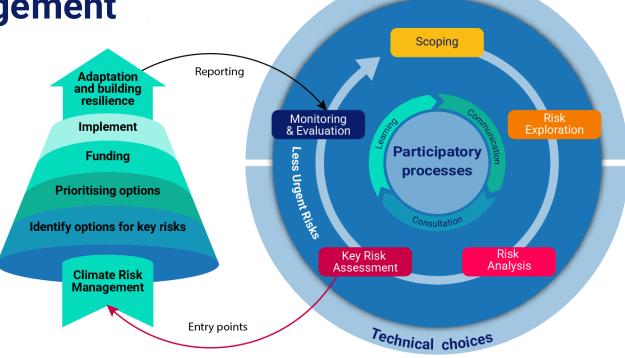








Towards Climate Risk Management



Principles





CLIMAAX Handbook

Christopher Polster, Fredrik Wetterhall ECMWF Handbook webinar 4 April 2025





handbook.climaax.eu



First stop for all CRA support

Open access!

- Framework ٠
- Workflows •
- Datasets ٠
- Support information ٠
- technical documentation ٠
- Links to external resources •



Risk Exploration starts with a broad screening of the risks (their underlying hazards, exposures and vulnerabilities) that are most apparent or of significant concern to key stakeholders and the wider public. A preliminary, rapid analysis of sectors (including activities, supply chains, processes, and infrastructure) and geographic areas at risk (such as ecosystems, landscapes, and communities) can be conducted based on insights from experts and stakeholders.



A deeper dive into the system aspects may highlight affected entities (key systems, elements, sectors, communities, social groups, sub-regions), functions or processes that hold significant value in the local context (e.g. stakeholder interests, community priorities or public agenda). This can reveal (transboundary) connections or dependencies which might be important for evaluating the respective risk outcome. The following subsections will now delve deeper into the screening of risks as well as the selection of workflows and climate econarios

• Tip

About us The CLIMAAX project Funding opportunities How to start CRA steps

Before you start Scoping Risk Exploration **Disk Analyzis** Key Risk Assessmer

Monitoring and Evaluation Integration in Climate Risk Management **Risk workflow** How to use risk workflows

HEAVY RAINFALL

Guiding questions and answers FAO Glossary

HEATWAVES

O DROUGHTS

FIRE

O SNOW

O WIND

Resources Support

Join the community

Community Of Practice C

Contribute to risk recipes

At this stage it's important to rely as much as possible on factual evidence regarding climate hazards, impacts and risks if available. The focus should especially lie on those hazards that are most likely to result in severe consequences for the region.



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O C I E Contents Screen Risks

Choose Workflow

Guiding question

selection?

· How is the scoping phase

applied? Which parts of the

the workflow and scenario

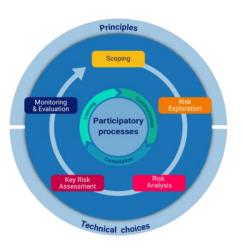
· How does the existing

scoping phase are relevant fo

stakeholder knowledge come into play?

CLIMAAX Framework and guiding questions

Step-by-step through the CLIMAAX Framework



Summary videos



Risk Exploration starts with a broad screening of the risks (their underlying hazards, exposures and

vulnerabilities) that are most apparent or of significant concern to key stakeholders and the wider public. A

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💡 Tip

insights from experts and stakeholders.

At this stage it's important to rely as much as possible on factual evidence regarding climate hazards, impacts and risks if available. The focus should especially lie on those hazards that are most likely to result in severe consequences for the region.

Guiding questions

into play?

 How is the scoping phase applied? Which parts of the scoping phase are relevant for the workflow and scenario selection?
 How does the existing stakeholder knowledge come

Supporting

information

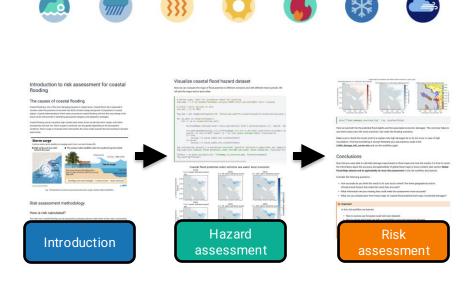
Guiding questions





CLIMAAX Workflows

- Framework step 3: Risk Analysis
- Handbook: best place to view workflows
- Minimal set of pages per workflow:
 - Introduction
 - Hazard assessment
 - Risk assessment
- Supplementary information on datasets in framework and resources sections
- Our approach: "standardized flexibility"

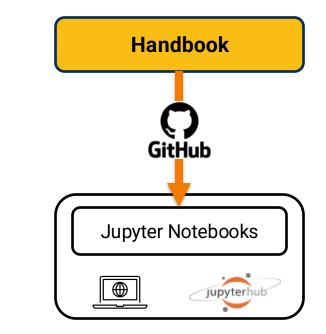






CLIMAAX Workflows: Handbook \rightarrow GitHub \rightarrow Jupyter

- Download workflows via GitHub
- Links in the Handbook:
 - A workflow from the CLIMAAX Handbook and DROUGHTS GitHub repository.
 - See our how to use risk workflows page for information on how to run this notebook.
- Interact with and execute notebooks in a Python/Jupyter environment
- Set-up instructions in the Handbook or use our JupyterHub







Ongoing Handbook development

- We continue to develop the Handbook
 and you are part of the process!
- Follow our development: release notes on GitHub
- Bug fixes
- Clarifications
- New developments based on feedback and user requirements
- Take up of your developments

⊙ Issues 🕅	Pull requests 🕟 Actions 🖽 Projects 🖽	Wiki 🛈 Security 🗠 Insights 🕸 Settings
Releases Tags		Draft a new release Q Find a release
weeks ago	v2025.03.1 (Latest)	<i>ℓ</i> ΰ
→ v2025.03.1 - 4725fd9	CLIMAAX CRA Handbook v2025.03.1	
Compare 👻		(2025.02.0 → v2025.03.1) te population rasterstack before summing and clip with bbox to ts of risk assessment (projected change).
	Update DROUGHTS workflows: <u>v2</u> o 01 relative drought: update haz	
	•	>=2 compatibility for nan_to_num in WASP calculation. time period explicitly when loading climate data in hazard notebook.
	Update SNOW workflows: v2024.1	
		fix pandas deprecation warning in resampling.

github.com/CLIMAAX/crabook/releases





Support Basics

We are here to support you! (and learn from you)

- Up-to-date information and links: support section of the Handbook
- Let us know who is working in your team!
- ECMWF account to access support functions:
 - Service Desk
 - JupyterHub

Resources		
Support	^	
Service desk		
JupyterHub information		
JupyterHub tips and troubleshooting		
Guiding questions and answers		
FAQ		
Glossary		
Dashboards and explorers		
Software		
Datasets	\sim	

Support

Support is offered by the CLIMAAX project for climate risk assessment the workflows in this Handbook.

9 Public and exclusive support

The Handbook with the Framework description, workflows, techni pages are **public** and open to everyone. You can reach out to us w Forum and GitHub, independent of your relationship with the CLIN

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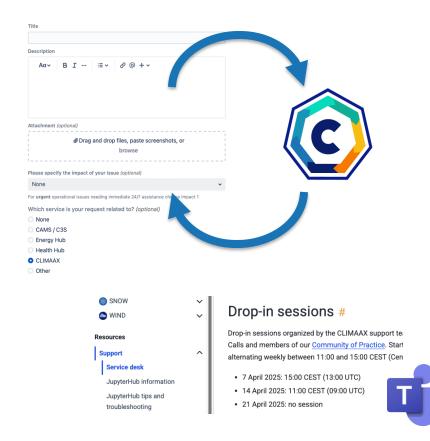




Service Desk

Questions? Problems? Access?

- Use our contact form at ECMWF (or open an issue on GitHub)
- Please don't contact Handbook authors directly
- First response in 3 working days
- **Drop-in sessions** every Monday: talk to us and other regions







CLIMAAX JupyterHub

- Run workflow notebooks on our infrastructure (if you want to)
- Preconfigured software environment
- Extra steps for access
 - 1. ECMWF account
 - 2. 2-factor authentication
 - 3. Service desk request
- See Jupyter pages in Handbook for details and help







CLIMAAX Community of practice

Fulvio Biddau CMCC

4th of April 2025





CLIMAAX Community of practice

- Space for collaboration and knowledge exchange between practitioners across regions and sectors interested in climate risk assessment (CRA).
- It aims to foster learning, co-design, review and improve the climate risk assessment (CRA) practice at local and regional levels.





Composition of the CLIMAAX CoP

Phase 1

- CLIMAAX scientific partners and pilot regions
- Eu institutions and bodies (JRC, EEA)
- Mission adaptation sister projects (e.g., Pathway2Resilience) and other experts

Phase 2

- Cascading funds receipients
- Regions interested in CLIMAAX CRA framework and tools
- Research and Thematic knowledge networks
- National adaptation networks
- Local and Regional Government Alliances
- Additional stakeholders and interested parties



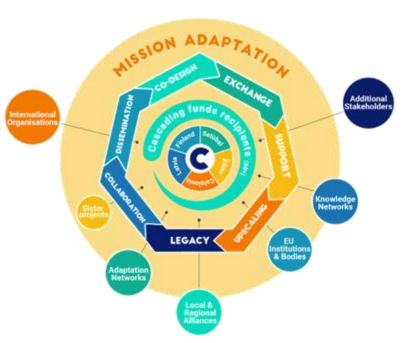


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Benefits of the CLIMAAX Cop

- Engage and connect with peers to share insights and learn from each other's experience
- Receive advice from fellow practitioners
- Share your knowledge contributing to the identification of best practices, bottlenecks etc.
- Contribute to inform CLIMAAX activities and shape its outcomes
- Collaborate with groups of peers in areas of shared interest and specific applications
- Participate in webinars, workshops, or other events that respond to your interests and needs





Survey on current practices of CRA



Survey on current practices of CRA (STILL OPEN)

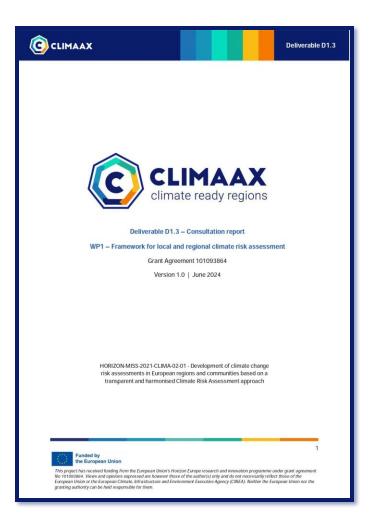
40% 20% 0% ransboundary challenges Lack of training in Ced Stateholder Participation Aulienbeteg Data Scarcity resources Lack or technical skills scenarios Produis leuginitieur esolution Political buy. Stakeholder buy. Financial, Future High

MAJOR CHALLENGES

Take part to our suRvey !! Scan this !!



- Survey on current practices of CRA
- Consultation for CRA framework



- Survey on current practices of CRA
- Consultation for CRA framework
- Survey on Investing in Climate Risk Assessments and Services

Take part to our suRvey !! Scan this !!



- Survey on current practices of CRA
- Consultation for CRA framework
- Survey on Investing in Climate Risk Assessments and Services
- Thematic webinars and workshops (available on YouTube!)

ONLINE EVENT Empowering regions for climate resilience

CLIMAAX climate ready region

CLIMAAX InfoDay

WEBINAR 4.7.24

HANDBOOK

OVERVIEW

10:00-11:00 CEST

C

Expansion activities

- 1. Thematic **webinars** and workshops promoting discussion among regions, scientific experts, and other stakeholders
- 2. Surveys and consultations on current practices, challenges, and refinements of CLIMAAX outcomes
- **3.** A dedicated **online space** for knowledge sharing and peer collaboration
- 4. Capacity building and peer-to-peer collaboration activities





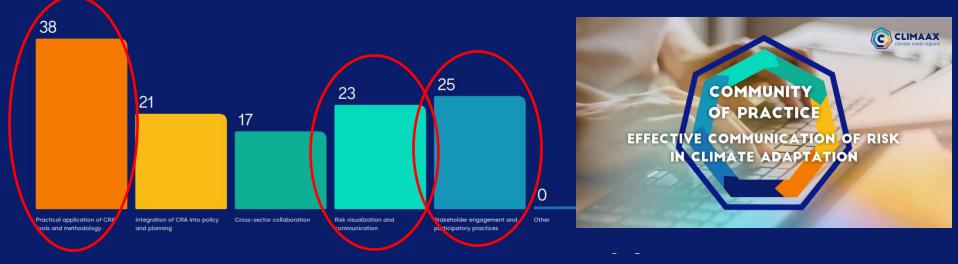
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CLIMAAX COMmunity of practice

 \bigcirc

Which topics should we focus on upcoming activities? (up to 3)



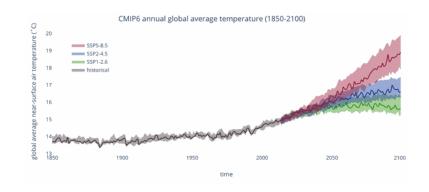
Upcoming event

Navigating future scenarios April 16th 10.30-12 am CET

Join us to explore:

- How climate scenarios are generated
- How to assess regional biases and uncertainties
- How to select the most suitable models, SSPs, or RCPs

..and contribute to the co-design of the CLIMAAX workflow!



!! Scan this !!





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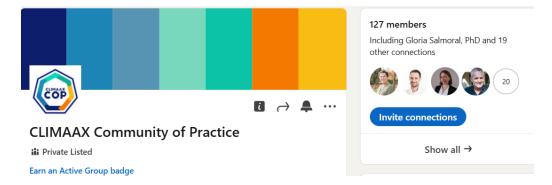
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How to engage in the Community of practice

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



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







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Q&A SESSION

4th of April 2025





10-11 June | 2025 CosmoCaixa **Science Museum** CLIMAAX Barcelona Workshop





www.climaax.eu

Thanks!

