

# CLIMAAX

*CLIMate risk And vulnerability  
Assessment framework and toolbox*

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25 March 2025, Warsaw



POLAND25.EU



## EU Mission on Adaptation

Support 150 European regions in becoming climate resilient

Project duration 2023 – 2026:

- Development of Climate Risk Assessment (CRA) Toolbox and Framework
- Cascading fund to enable >60 climate risk assessments by EU regions

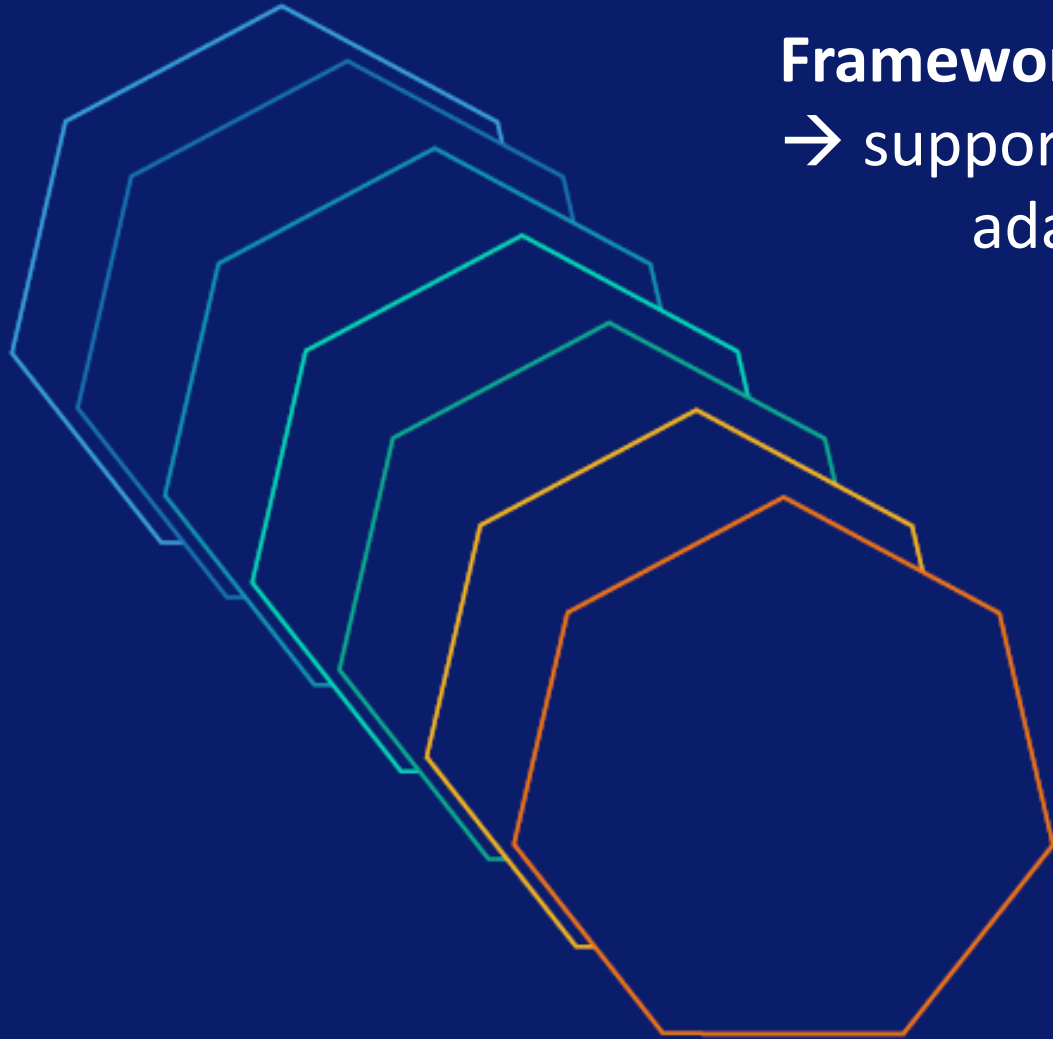
*Many regions*



*Many challenges*



# The three pillars of CLIMAAX



**Framework for regional CRA**

→ supporting civil protection and climate adaptation

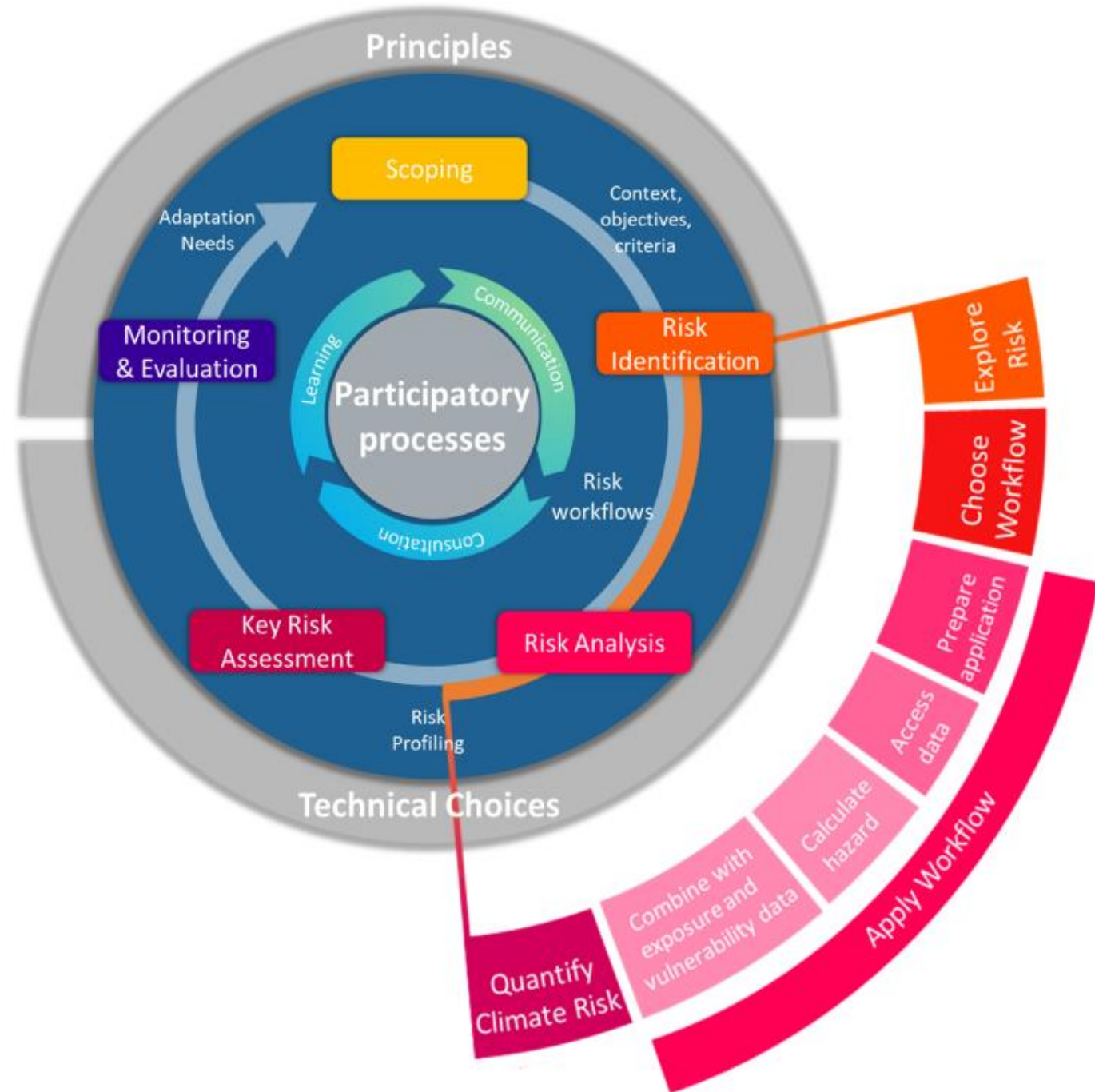
**CLIMAAX**

Climate ready regions

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# CLIMAAX CRA Framework

- Operational steps of *iterative* climate risk assessment
- Participatory approach – need for *local knowledge*
- Building upon EU RAST and others
- Framework steps connected to CLIMAAX CRA *Toolbox*







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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

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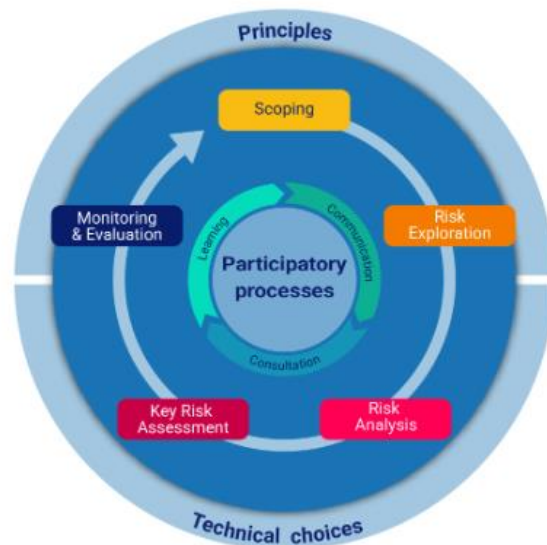


# What is the CLIMAAX Framework?

The CLIMAAX Framework is designed to empower regions to conduct inclusive and harmonised Climate Risk Assessments (CRAs). It translates the ambitions of the EU Mission on Adaptation towards transformational adaptation strategies that build resilience into practice by supporting the advancement and implementation of climate risk assessments.



The Framework proposes to adhere to key principles such as social justice and equity, puts participatory processes central to the process, and provides guidance on the selection of sound technical choices for conducting climate risk assessments. The Framework consists of a five-step process (see Fig. 1) which forms an iterative cycle. The goal of the CRA Framework is to inform Climate Risk Management (CRM) strategies.



<https://handbook.climaax.eu/>



# The pillars of CLIMAAX



## **Toolbox**

→ Implementing open source CRA tools

# **CLIMAAX**

Climate ready regions

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**ABOUT US**

- The CLIMAAX project
- Funding opportunities

**CRA Steps**

- What is the CLIMAAX Framework?
- Before you start
- Scoping
- Risk Identification
- Risk Analysis
- Risk workflows**
- How to use risk workflows
- FLOODS**
- River Flood damages**
- Hazard assessment**
- Risk assessment for river flooding
- Coastal Flood damages
- Working with vulnerability curves
- HEAVY RAINFALL
- HEATWAVES
- DROUGHTS
- FIRE
- SNOW
- WIND
- Key Risk Assessment
- Monitoring and Evaluation
- Connect CLIMAAX with Climate Risk Management
- Resources

```
# reproject ds_local to 3035
ds_local = ds_local.rio.reproject("EPSG:3035")

ds_local.rio.resolution()

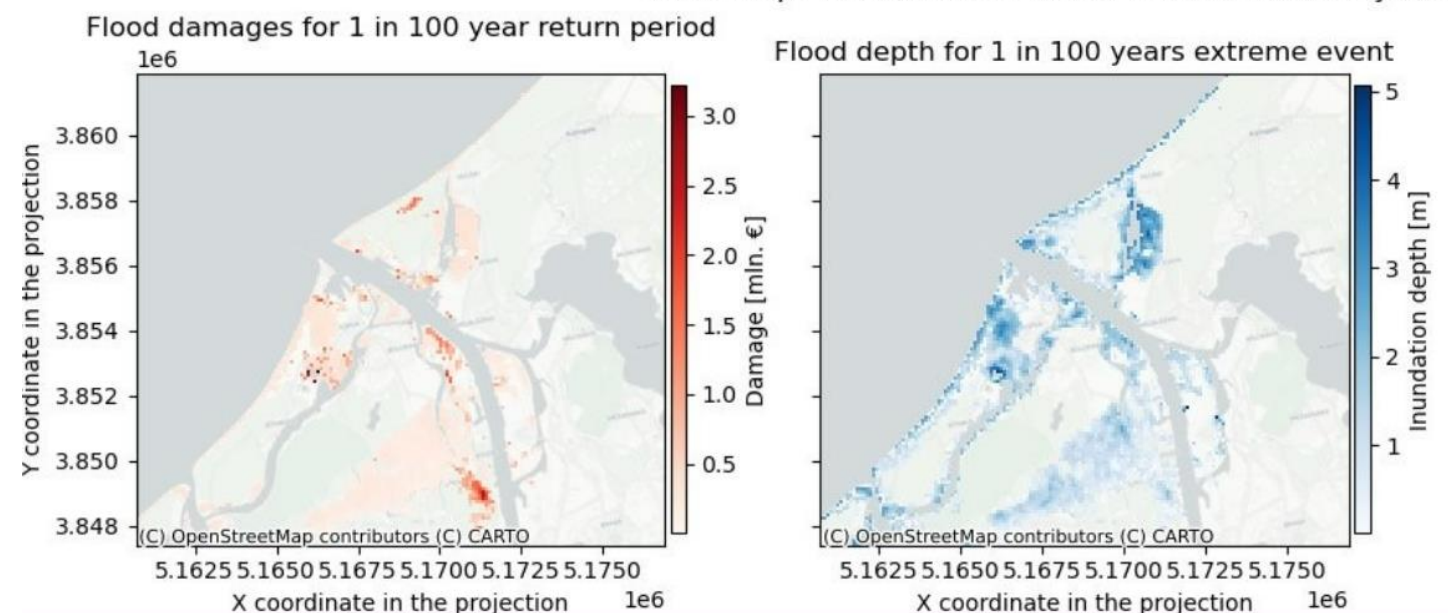
(78.11813570972268, -78.11813570972268)
```

We can now plot the dataset to view the flood map a return period. You can adjust the bounds of the colorbar by changing the *vmax* variable to another value (in meters).

```
fig, ax = plt.subplots(figsize=(7, 6))
bs=ds_local.where(ds_local > 0).plot(ax=ax, cmap='Blues', alpha=1, vmin=0, vmax=5, add_colorbar=False)
ctx.add_basemap(ax=ax, crs='EPSG:3035', source=ctx.providers.CartoDB.Positron, attribution_size=10)
plt.title(f'Example of a floodmap retrieved from JRC \n for the area of {areaname}', fontsize=12)
fig.colorbar(bs, ax=ax, orientation="vertical", label='Inundation depth [m]');
```

handbook.climaax.eu

### Flood maps for extreme sea water level scenarios in year 2050



# CLIMAAX Handbook

- Operational since September 2024
- All open source
- User can run and modify workflows to the regional needs
- Regularly updated based on user feedback
- Access to large set of climate datasets and indicators



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# Catalunya - Department of the Interior and Public Security

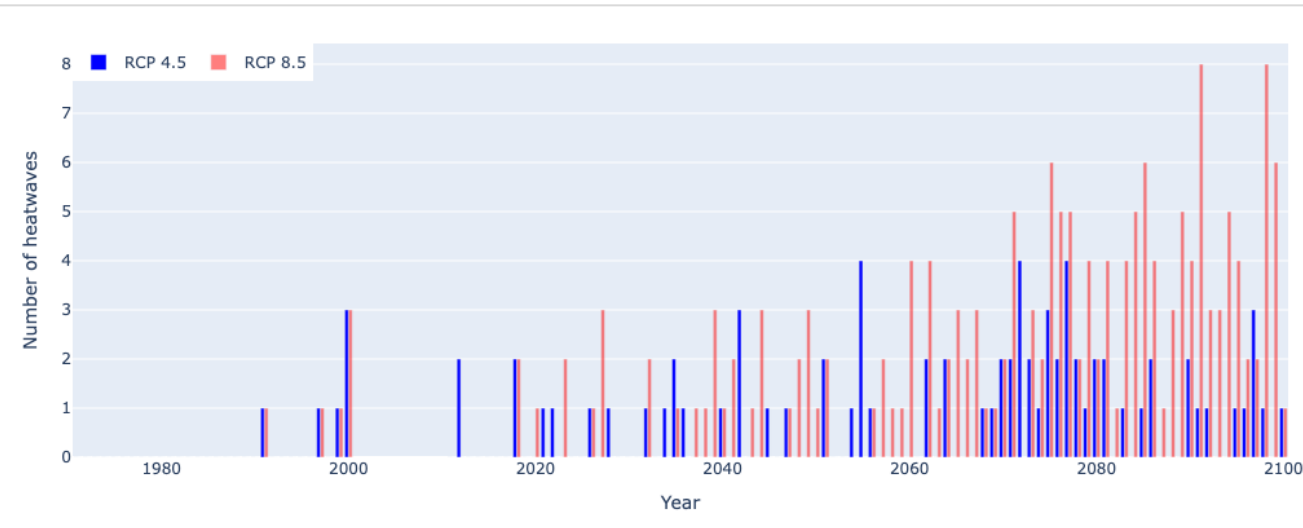
- Projections on how phenomena could potentially change (frequency, duration, intensity) to reinforce preparedness and response
- Preparing messages and relevant visuals of results together with stakeholders to facilitate disclosure and use of results.



# Catalonia pilot – study of wildfires

## Heatwaves

- Change in nr of heatwaves a year
- To be extended with duration



## Wildfires

- Susceptibility of roads to wildfires
- Projections possibly to mild



**Future scenario : 2061-2080 for RCP4.5**

- 1 - Very low
- 2
- 3
- 4
- 5
- 6 - Extreme



# The pillars of CLIMAAX



**Cascading fund**

→ Funding for regional CRAs

**CLIMAAX**

Climate ready regions

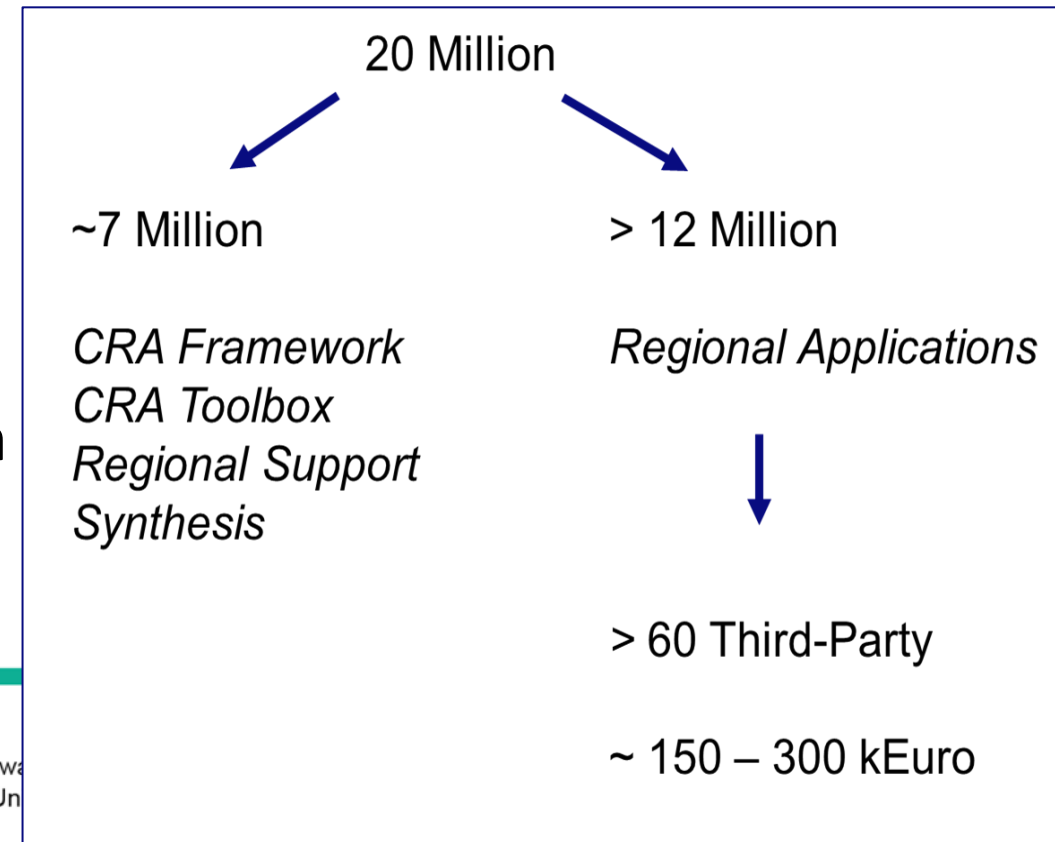
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# Cascading funding

- 2 Open calls for Applications
  - First open call : 32 projects started October 2024
  - Second open call : 37 projects starting March 2025
- Applicants: regions or NGO's
- Possibility to sub-contract technical service

! Applicants are responsible for implementation

Payment based on successful deliverables







## SELECTED REGIONS



The first Open Call selected 32 regions from 13 countries (10 EU and 3 AC) whereas the second Open Call selected 37 regions from 19 countries (14 EU and 5 AC).

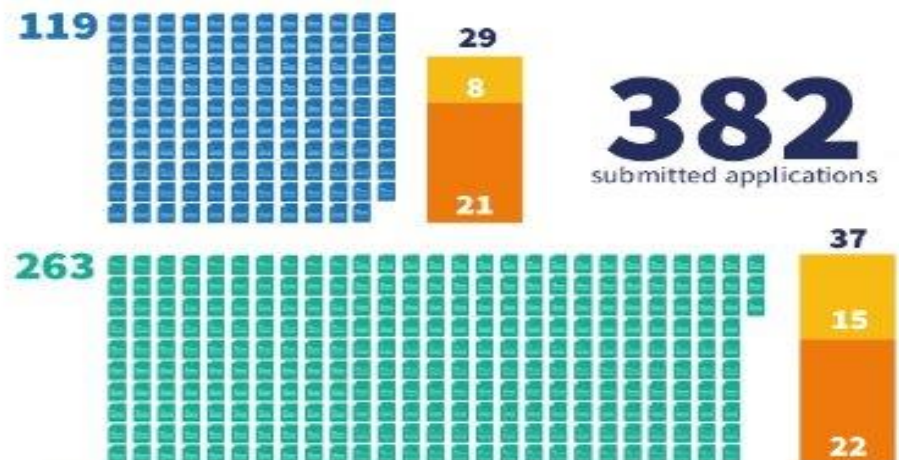


## FUNDING



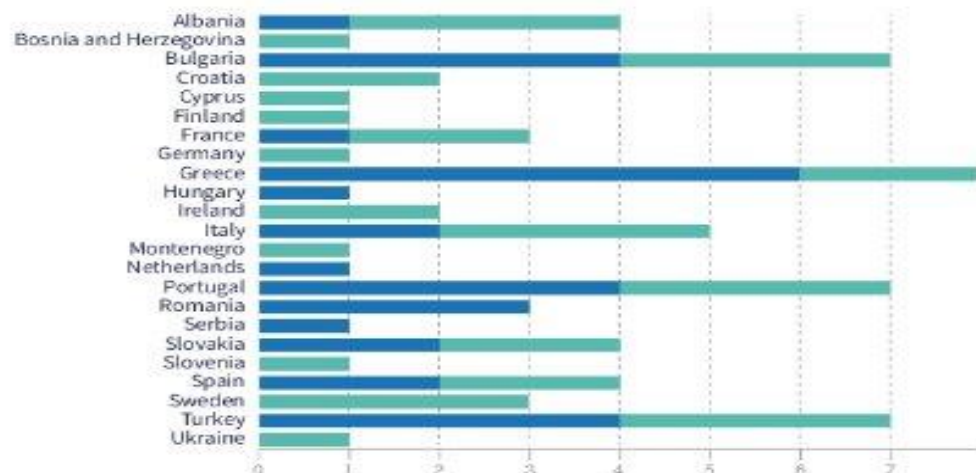
The 69 regions selected through the CLIMAAX Open Calls will receive more than EUR 12 million cumulated funding by the EU Mission on Adaptation to Climate Change.

## APPLICATIONS



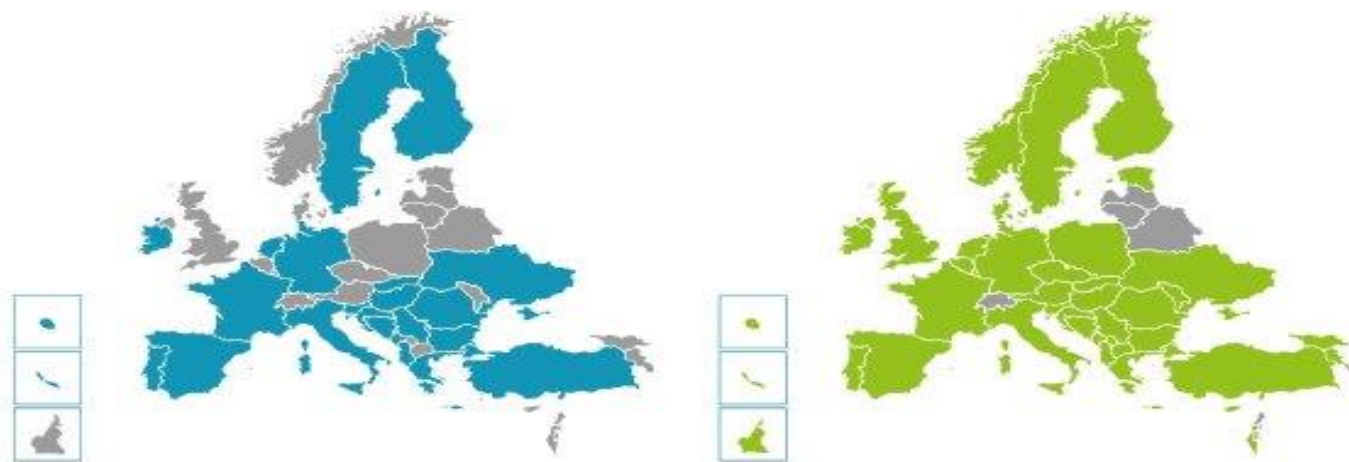
382 proposals, coming from 38 countries, were submitted through the two Open Calls. CLIMAAX consortium received applications from 23 member states of the European Union (EU) and 15 Associated Countries (AC).

## SELECTED REGIONS PER COUNTRY



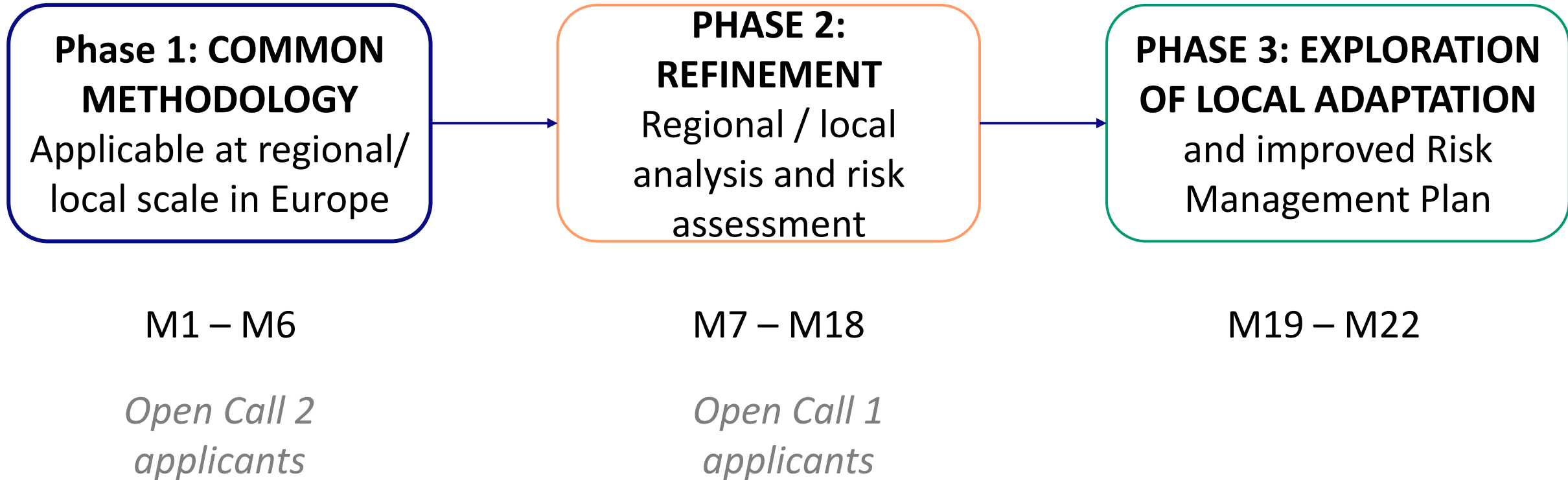
Considering both Open Calls, Greece counts the largest number of selected proposals (8), followed by Bulgaria, Portugal, and Türkiye (7).

## TWO CALL IN A GLANCE



Country distribution of the 69 selected Regions (left) and the 382 applications (right) of both Open Calls.

# Project phases



# Regional Support

- Access and support to the CRA toolbox
- Methodological support:
  - helpdesk, videos, webinars
- Advice on demand – drop-in sessions
- Access to outreach / engagement events



# Lessons learned

- Varying levels of experience – technical assistance is key
- Gap between scientific developments and regional needs – co-development
- CLIMAAX Toolbox operational at a very early stage
- Huge interest in open calls
- First succes factor of the cascading fund: Regions are responsible for their own CRA





# Contact info

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