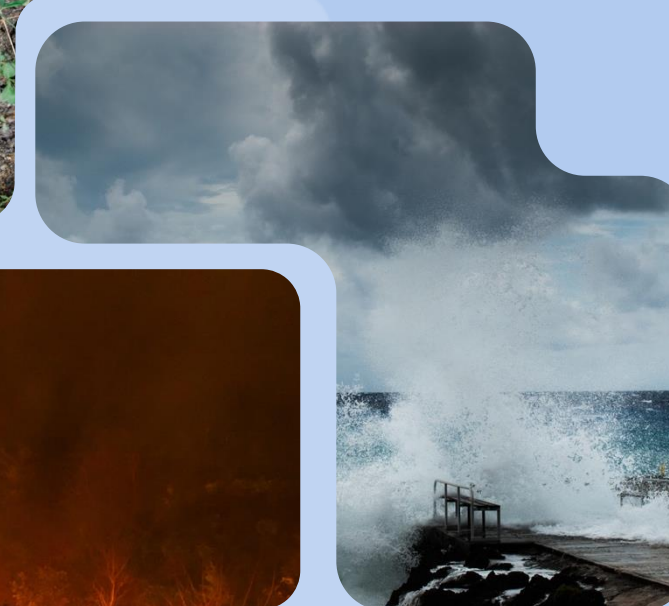




CONNECTING DISASTER RISK REDUCTION AND CLIMATE ADAPTATION

CLIMATE-RESILIENT REGIONS ON THE ROAD TO 2030

UNDRR DAY. 13 OCTOBER - 11:00 CEST



Funded by
the European Union

WELCOME!



Moderator

JAROSLAV MYSIK

Euro-Mediterranean Center on Climate Change

HOUSEKEEPING

THIS SESSION IS **RECORDED**



TYPE YOUR QUESTIONS INTO THE
Q&A BOX IN THE BOTTOM BAR



AGENDA

11:00-11:05 | Intro by
Jaroslav Mysiak, CMCC

11:05 - 11:15 | Reimund Schwarze,
Helmholtz Centre for Environmental
Research, E-STAG UNDRR

11:15 - 11:25 | Frederiek Sperna
Weiland, Deltares, CLIMAAX

11:25 - 11:35 | Eleni Toli,
Athena Research Centre,
CARMINE

11:35 - 12:00 | Q&A and panel
discussion



REIMUND SCHWARZE

Helmholtz Centre for Environmental Research,
E-STAG UNDRR

LOCAL CHALLENGES AFTER THE SCORCHING EU SUMMER 2026

The case of Leipzig | Heat • wildfire preparedness • nature-based solutions • economic equity



01 COOL THE CITY

HEAT & HEALTH

Street trees, green roofs and walls, waterbodies, shade and better-insulated homes. Prioritize older people and low-income households.



02 PREPARE FOR RISK

WILDFIRE & BUILDINGS

Assess future exposure; combine vegetation and fuel management, public preparedness, emergency planning and fire-resilient design.



03 MAKE THE CASE

COST, HOMES & EQUITY

Evaluate retrofit costs and benefits, indoor temperatures, cooling access and how green infrastructure may relate to property values.

Research priority: pair climate-risk reduction with cost–benefit evidence, equity and public acceptance.

THE CLIMAAX PROJECT



FREDERIEK SPERNA WEILAND

Deltares, CLIMAAX coordinator



CLIMAAX

CRA as a basis for CA and DRR

Frederiek Sperna Weiland
Deltares

13 October 2026



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CLIMAAX
climate ready regions

Why the CLIMAAX project?



Flagship project of the EU Mission on Adaptation to Climate Change aims to increase climate resilience for European Regions.

CLIMAAX main objectives:

- Co-design a harmonised Climate Risk Assessment (CRA) **methodological framework and toolbox**
- **Support implementation** of regional CRAs with the CLIMAAX framework and Toolbox in **> 60 EU Regions**

Project run time: Jan 2023 – Feb 2027

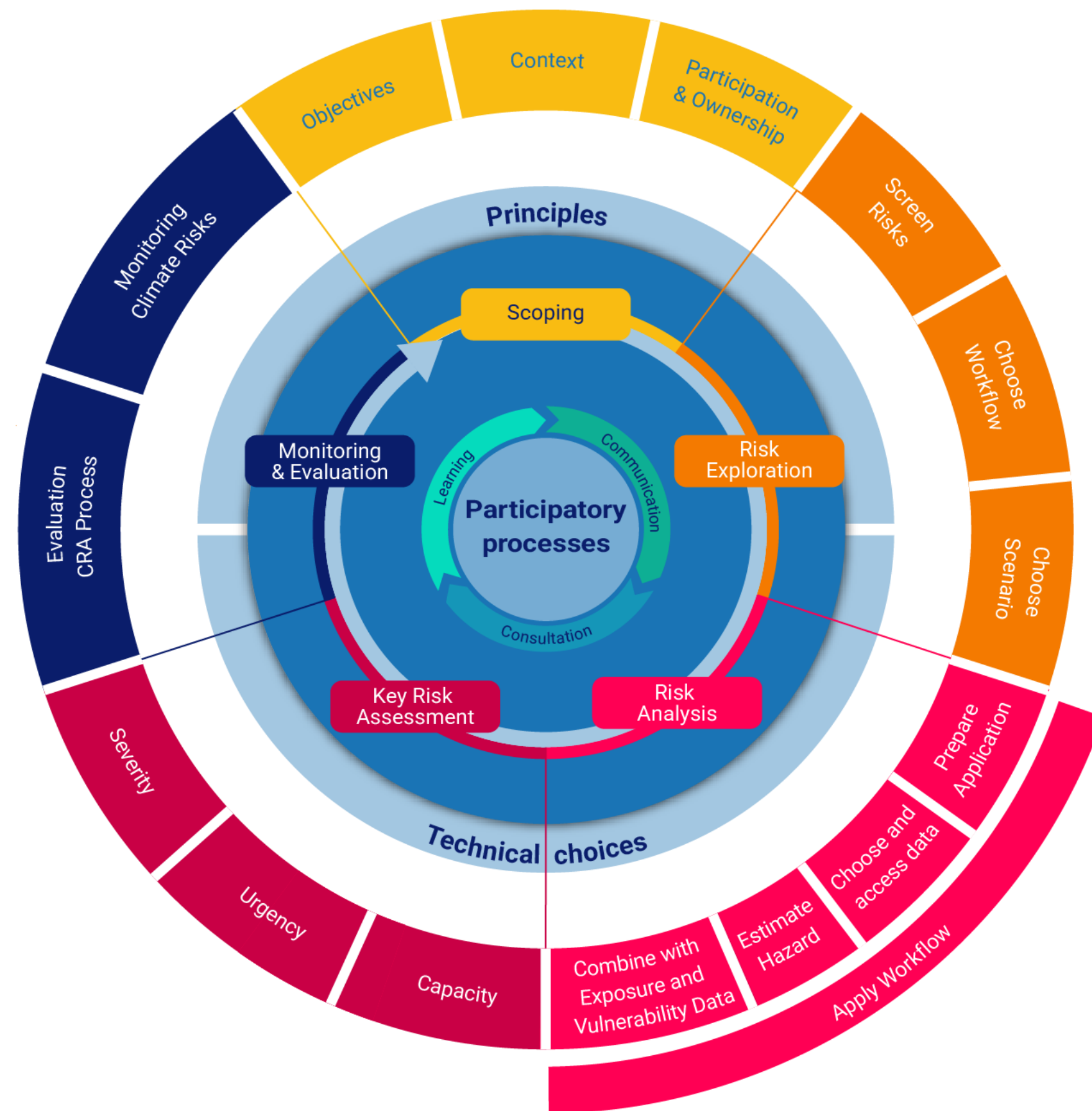


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CLIMAAX CRA Framework

- Support improved coherence across countries and regions
- Enhance practical implementation
- Allow for flexibility and scalability
- Building upon EU RAST and other existing frameworks



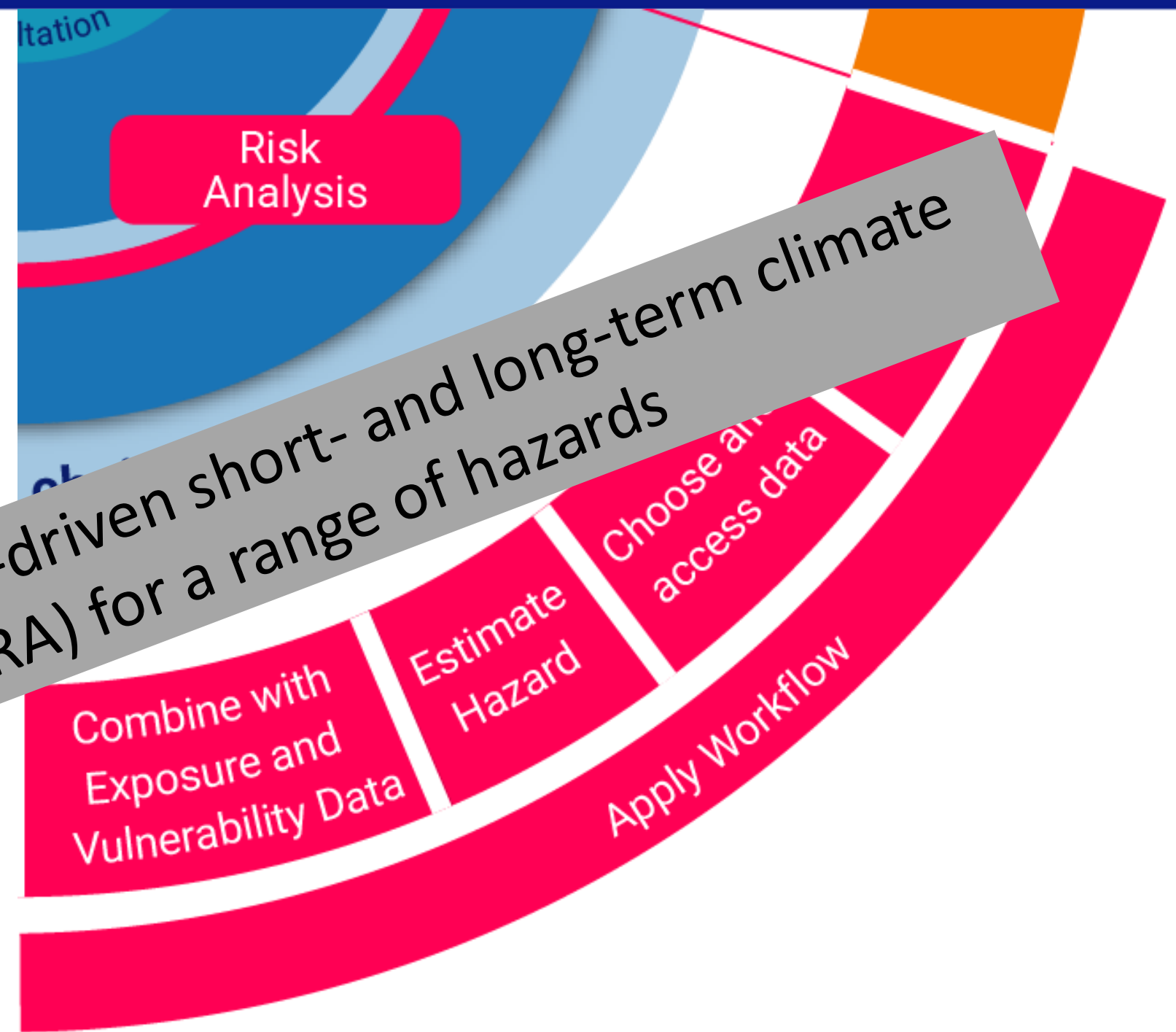
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Risk Assessment Workflows : handbook.climaax.eu

-  River floods (3)
-  Coastal floods
-  Extreme precipitation
-  Urban heatwaves (3)
-  Relative drought
-  Agricultural drought
-  Wildfire (3)
-  Heavy snow and blizzards
-  Windstorms

CLIMAAX provides tools for data-driven short- and long-term climate risk assessments (CRA) for a range of hazards



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Cascading fund

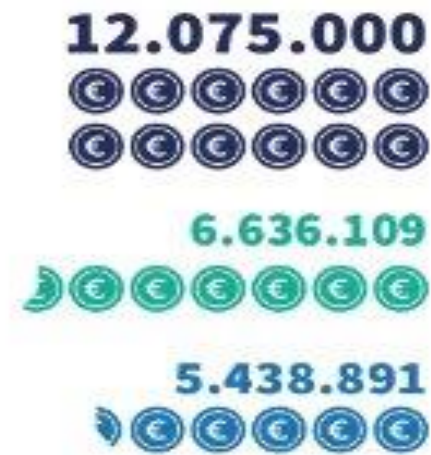
SELECTED REGIONS



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).

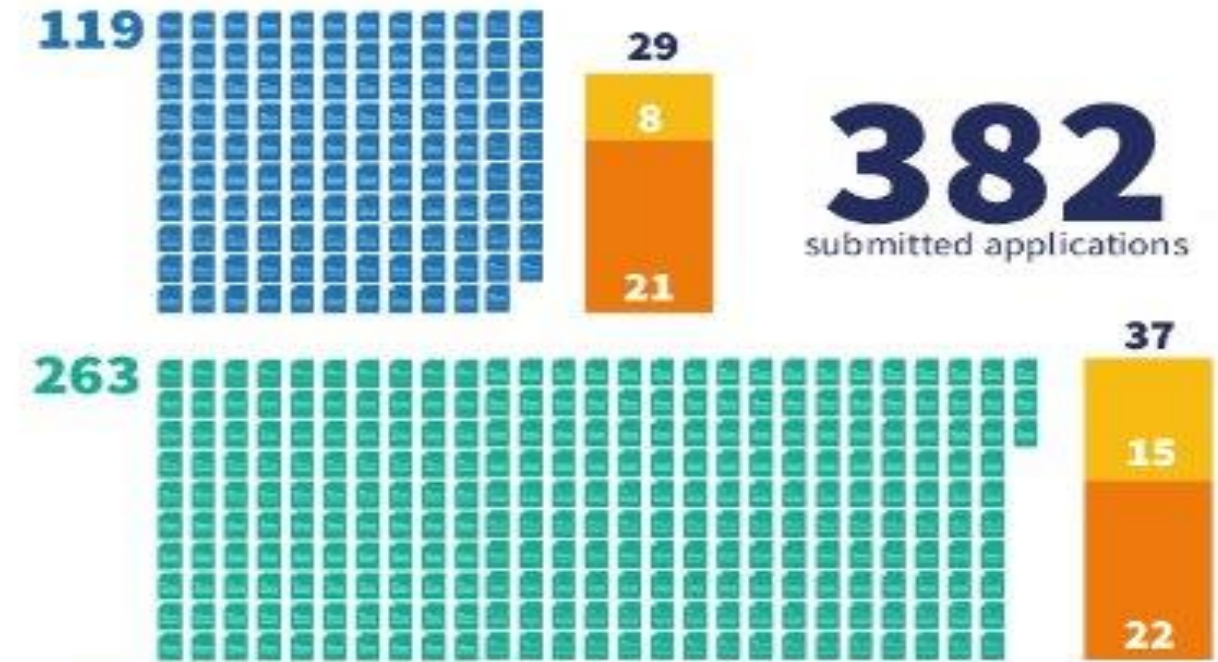


FUNDING



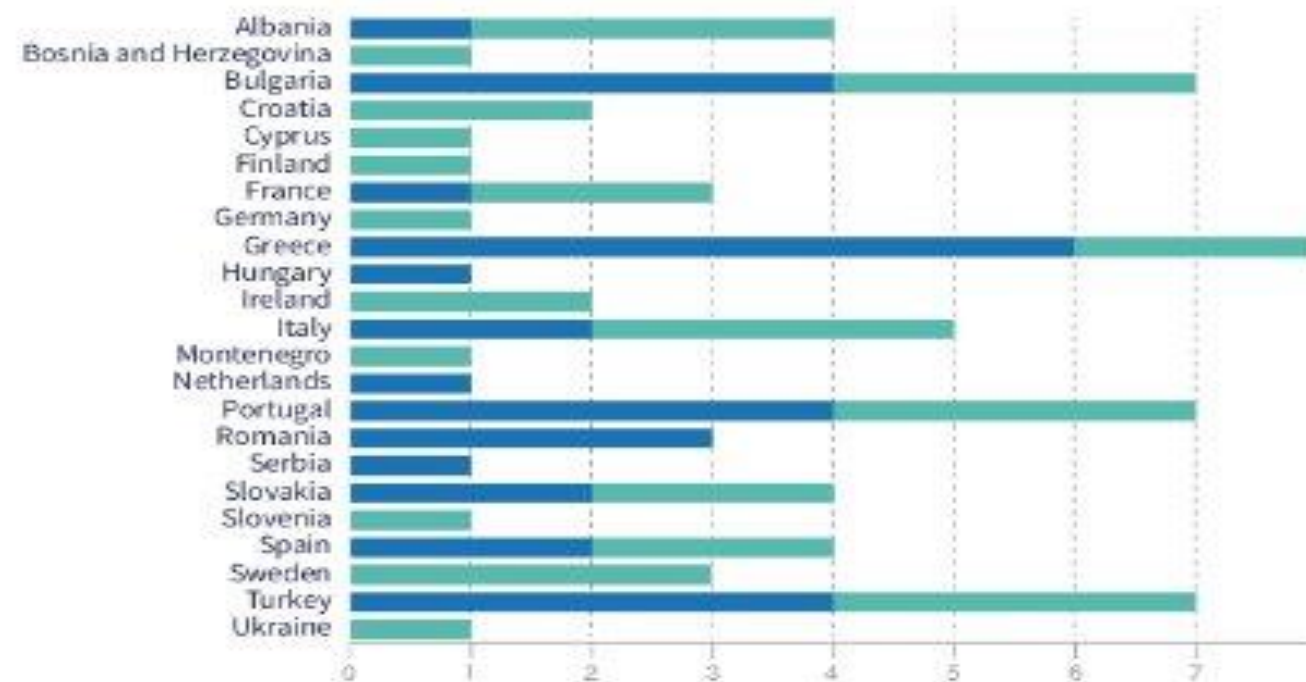
The 69 regions selected through the CLIMAX Open Calls will receive more than EUR 12 million cumulated funding by the EU Mission on Adaptation to Climate Change.

APPLICATIONS



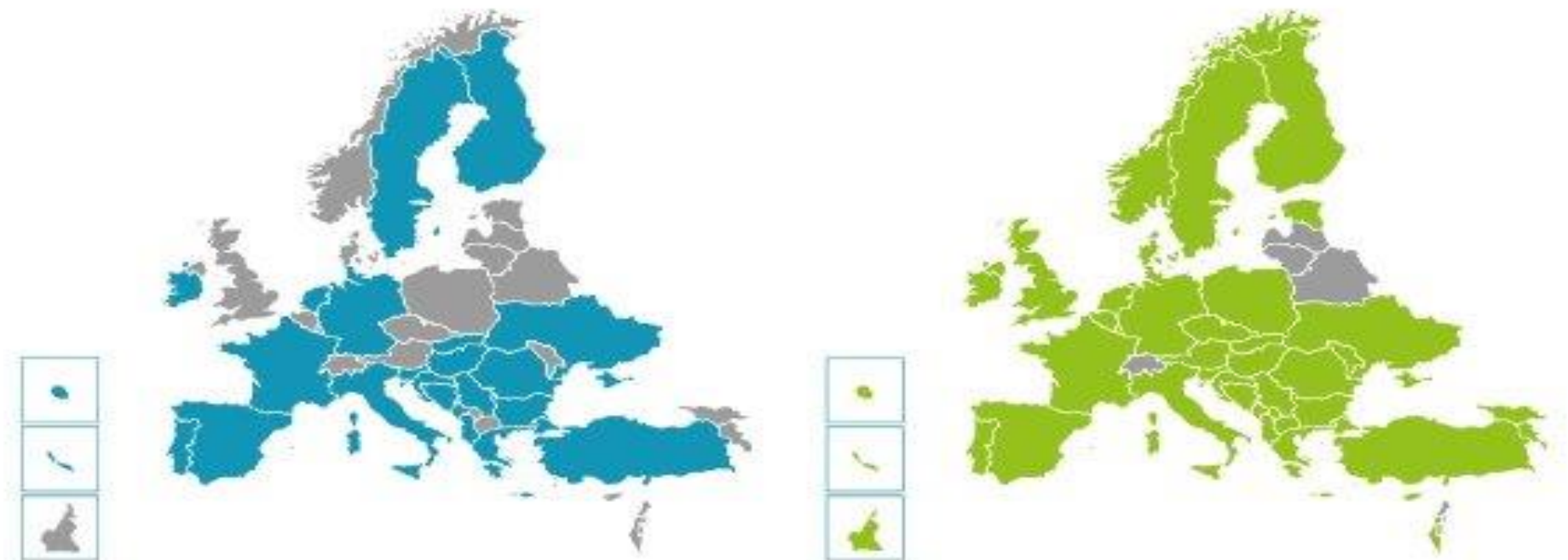
382 proposals, coming from 38 countries, were submitted through the two Open Calls. CLIMAX consortium received applications from 23 member states of the European Union (EU) and 15 Associated Countries (AC).

SELECTED REGIONS PER COUNTRY

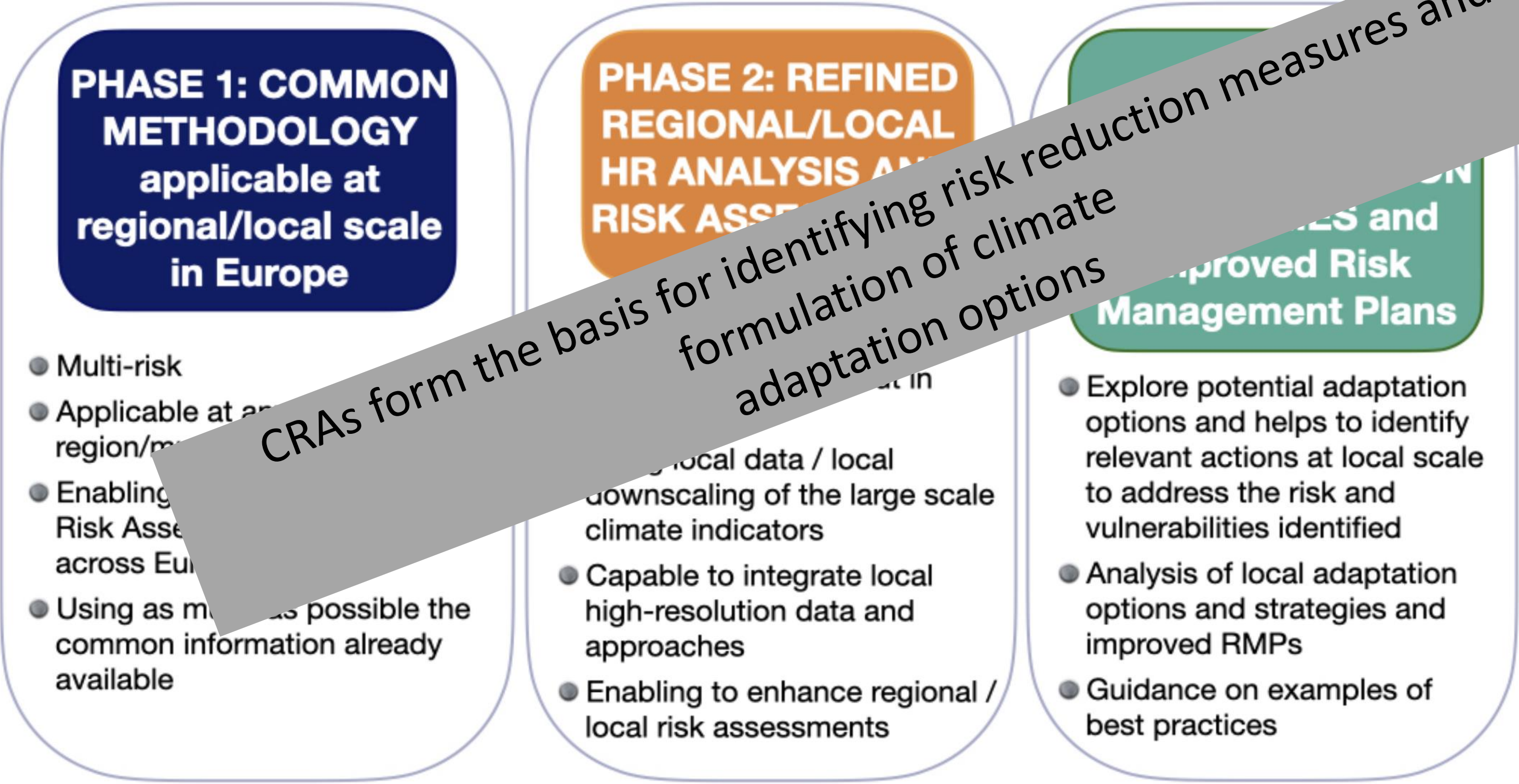


Considering both Open Calls, Greece counts the largest number of selected proposals (8), followed by Bulgaria, Portugal, and Türkiye (7).

TWO CALL IN A GLANCE



CLIMAAX applications



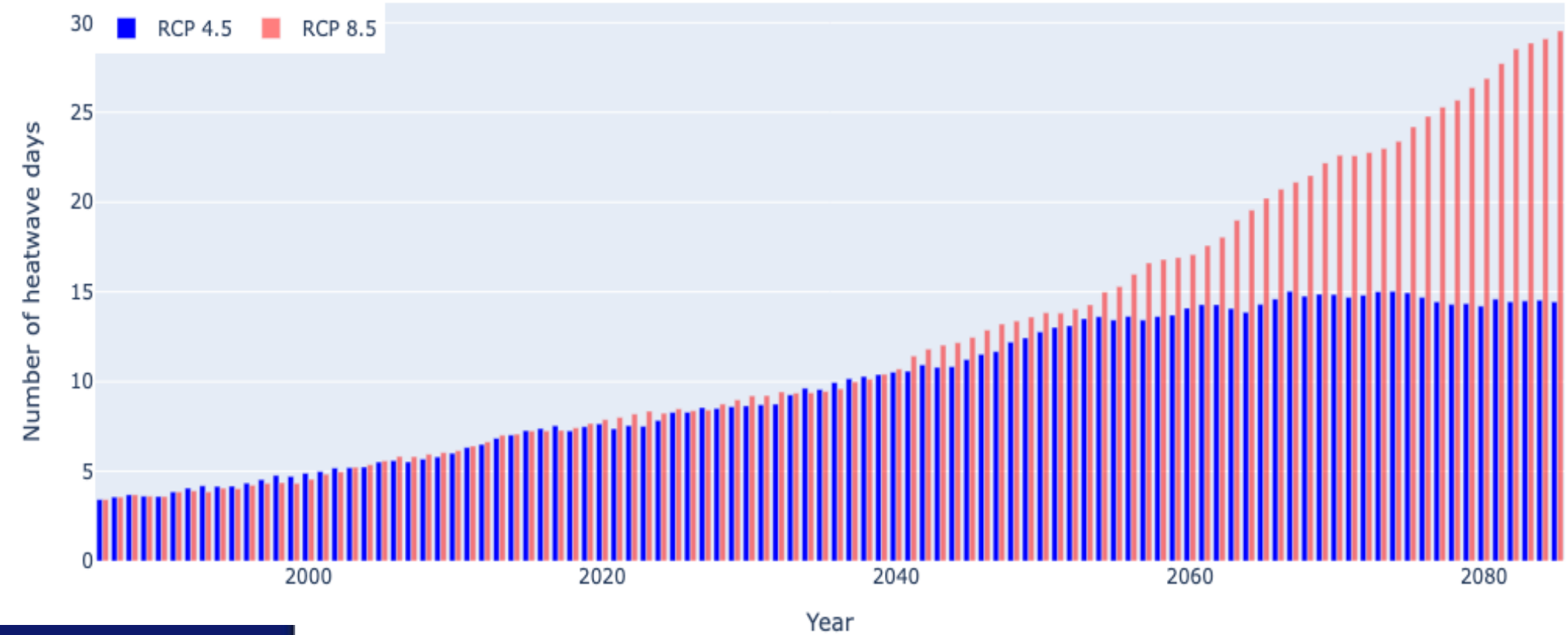
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Regional CRA implementations

HAZARD × EXPOSURE × VULNERABILITY = RISK

Heatwave occurrence per year under RCP4.5 and RCP8.5
using health-related EU-wide definition of a heatwave
Location: lat 49.22°, lon 18.74°

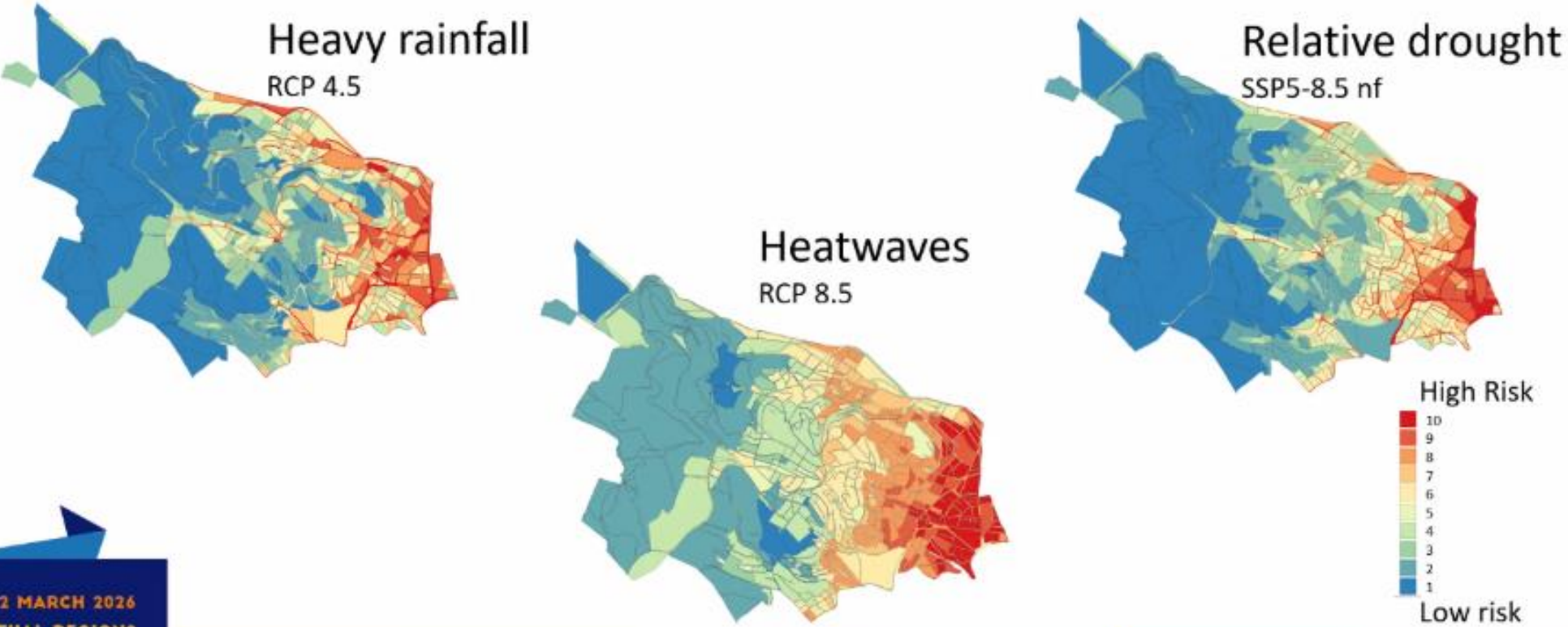


Source: EuroHEAT project data analysis based on EURO-CORDEX ensemble

Zilina

12th district of Budapest

Climate Risk Assessment - Results



Key risk assessment

- Prioritization of risks
- Interpretation in local / regional context
- Risk ownership

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



Local workshops

Crete



Romania

Türkiye

In-person multi-stakeholder workshops support local relevance and uptake of the CRA outcomes



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Identified climate adaptation / risk reducing measures – non-structural

- Update of emergency protocols: evacuation routes, risk thresholds and responsibilities
- CRA based Land use planning
- Decentralized resilience awareness programs
- Development of Regional Adaptation Strategies / Climate Action Plans / Civil Protection Plans



Identified climate adaptation / risk reducing measures - structural

- Improved drainage systems
- Implementation and raising of dikes
- Ecosystem restoration and nature based solutions
- Development of forecasting and monitoring systems



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Challenges

- Budgeting of measures not built in
- From single adaptation options to a full Adaptation Pathway



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Challenges



CARE-ROPutna Romania :

“Identifying measures that are ***technically effective, economically feasible, environmentally sustainable and socially acceptable*** required balancing ***multiple objectives*** and considering ***different stakeholder perspectives***.”



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Thank you for your attention!

<https://www.climaax.eu>

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handbook.climaax.eu



THE CARMINE PROJECT



ELENI TOLI

Athena Research Centre, CARMINE project



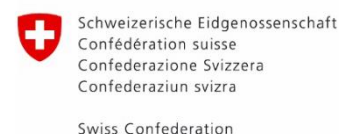
CARMINE

Climate-Resilient Development Pathways in Metropolitan Regions of Europe

Connecting disaster risk reduction and climate adaptation
CLIMAAX & CARMINE || 13 October 2026
Eleni Toli, Athena RC

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

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The work of the Meteomatics partner (Switzerland) has received funding from the Swiss State
Secretariat for Education, Research and Innovation (SERI).



**Funded by
the European Union**

About



Vision

To provide knowledge-based Climate Resilient Development Pathways in Metropolitan Regions of Europe, that bridges the local and regional scales by providing impact-based decision support services (IDSS) and multi-level climate governance supporting local adaptation, including both traditional and Nature-Based Solutions.

Budget: EU Contribution approx. €10,17M

32 Partners from 11 countries

Goal

CARMINE's overarching goal is to help the metropolitan communities become more climate resilient, by co-producing knowledge-based tools, strategies and plans for enhanced adaptation and mitigation actions addressing the Charter of the EU Mission on Adaptation to CC by 2030.

Duration of 48 months: Start date 1 Feb 2024 – End date 31 Jan 2028

Coordinated by ADMINISTRATIA NATIONALA DE METEOROLOGIE R.A. (MeteoRo)



CARMINE main aims and tools

Develop **local adaptation strategies**, including traditional methods and nature-based solutions.

Bolster the resilience of European metropolitan communities to climate change by offering **decision support services** and **implementing multi-level climate governance**.



Create **digital replicas of the climate and socio-economic characteristics** of eight selected case study areas.

Develop tools, strategies, and plans aimed at **enhancing adaptation and mitigation efforts** in accordance with the EU Mission on Adaptation to Climate Change by 2030.



Living
Labs



ATLAS of Climate
Resilience



Digital
Twins



Impact-Based
Decision Support
Service



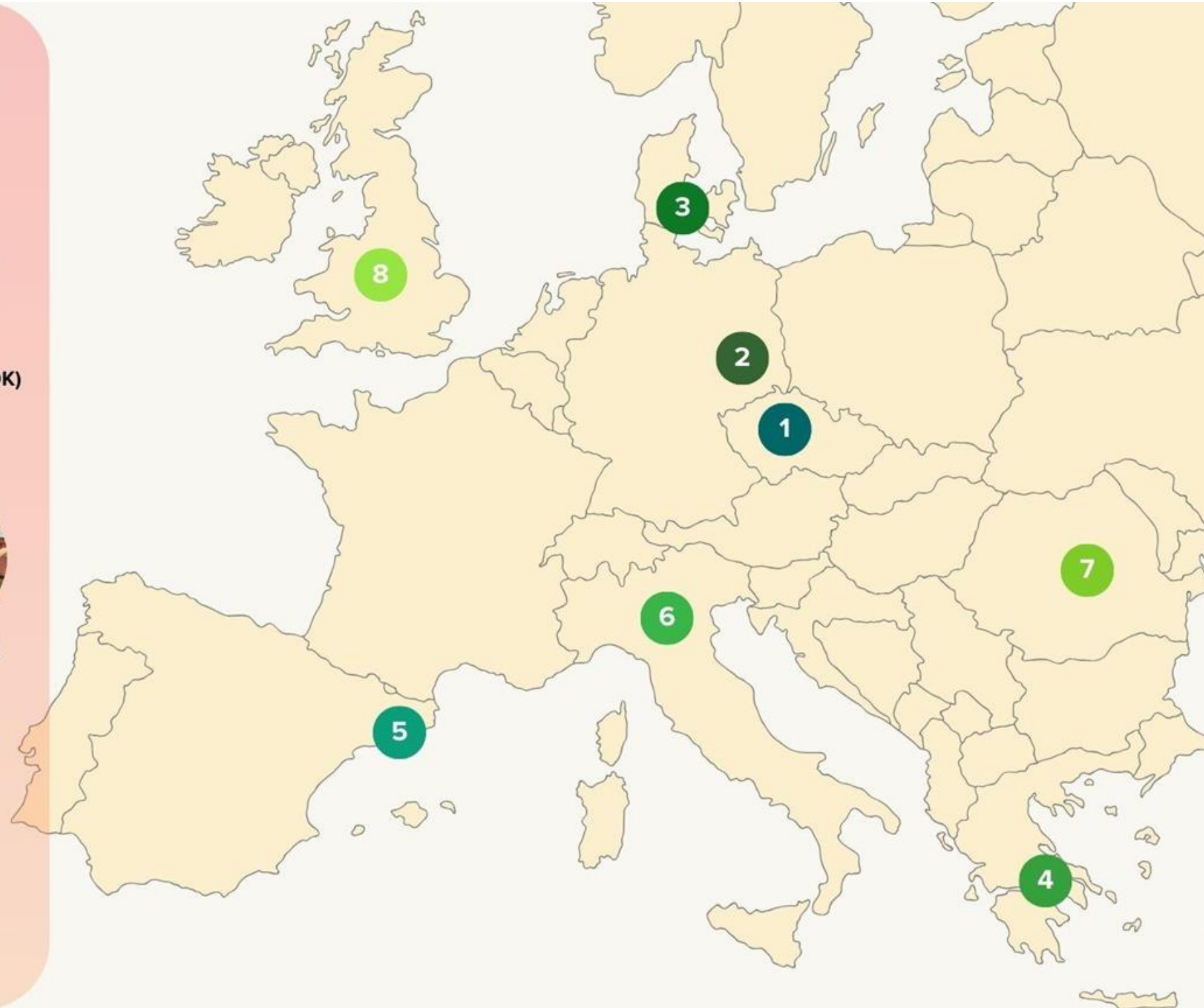
Policy
Pathways



Federated Data
Management
Solution

Case Study Areas

8 CASE STUDY AREAS



We establish Living Labs and analyse the climate risks and socio-economic vulnerabilities, to:

- co-develop sectoral Digital Twins use cases
- co-design decision-support tools
- propose climate-resilient development pathways (including NBS)

8 countries with diverse SE profiles, types of communities, vulnerabilities, climate impacts drivers and geographical distribution across Europe.

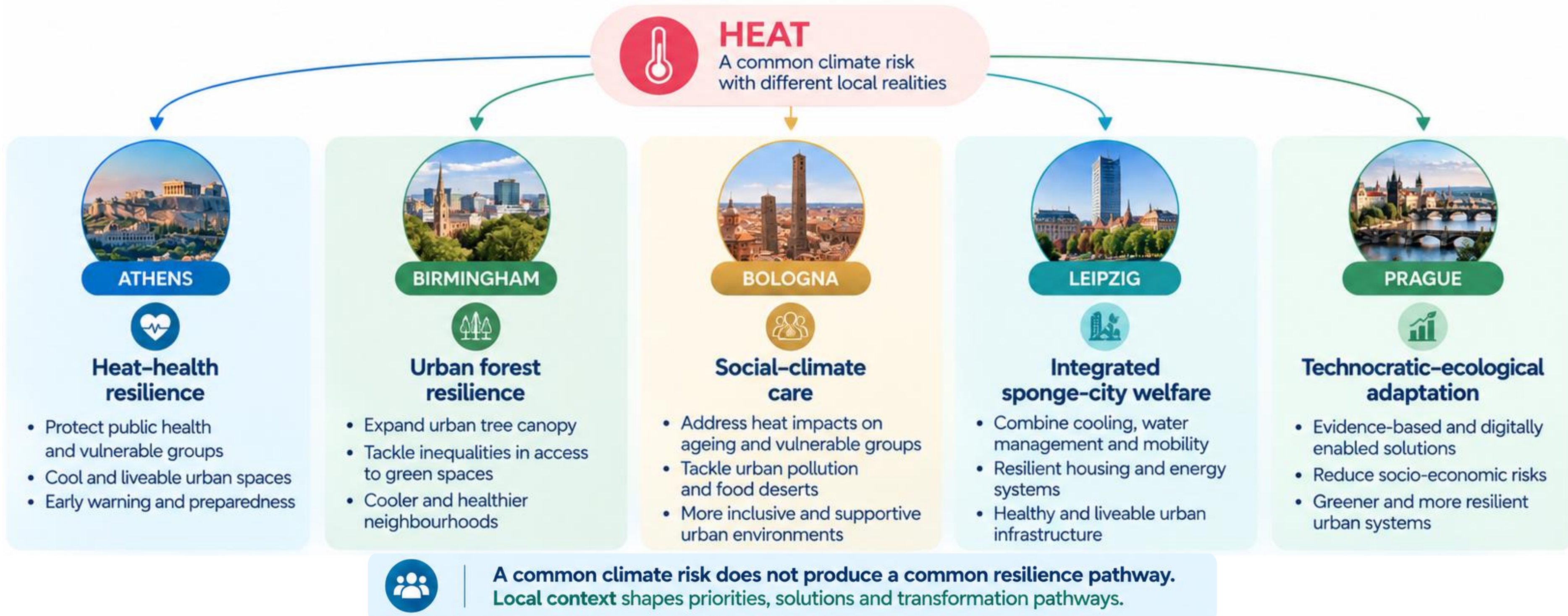
Different cities, different climate challenges

ATHENS	BARCELONA	BIRMINGHAM	BOLOGNA	BRAȘOV	LEIPZIG	PRAGUE
						
						
Urban heat and health risks	Wildfire risk	Extreme heat and flooding	Heat and social vulnerability	Water scarcity	Heatwaves	Extreme urban heat events
Extreme heat Mortality and health risks Vulnerable populations	Increasing wildfire risk under climate change in the Metropolitan Area of Barcelona	Extreme heat Surface water flooding Unequal access to green spaces	Heat waves Urban pollution Food deserts Loneliness and ageing	Droughts Pluvial and fluvial floods Water consumption in economic activities	Extreme heat Interconnected urban challenges (housing, mobility, energy, etc.)	Heat-related socioeconomic risks Vulnerable populations



Different contexts. A shared ambition: more resilient, inclusive and liveable cities.

Same climate risk, different priorities



CARMINE Digital Twins

Development, testing and cross-validation of 8 Digital Twins, or “Climate Replicas”, addressing climate challenges specific to each Case Study Areas, accessible through the **CARMINE DT dashboard**

Odense, Flood risk

Prague, Heat risk

Brasov, Water scarcity

Athens, Heat risk

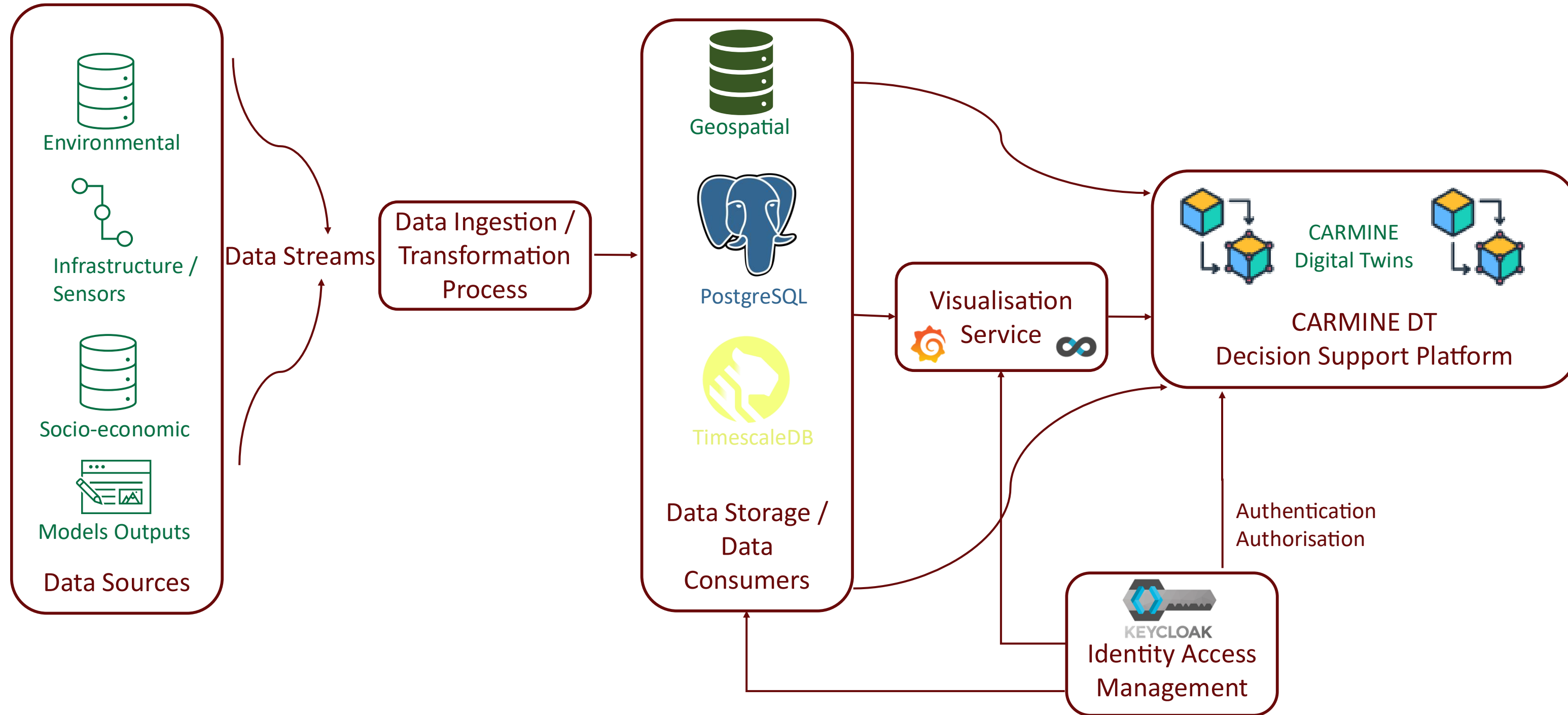
Birmingham, Tree cover

Leipzig, Well-being, heat

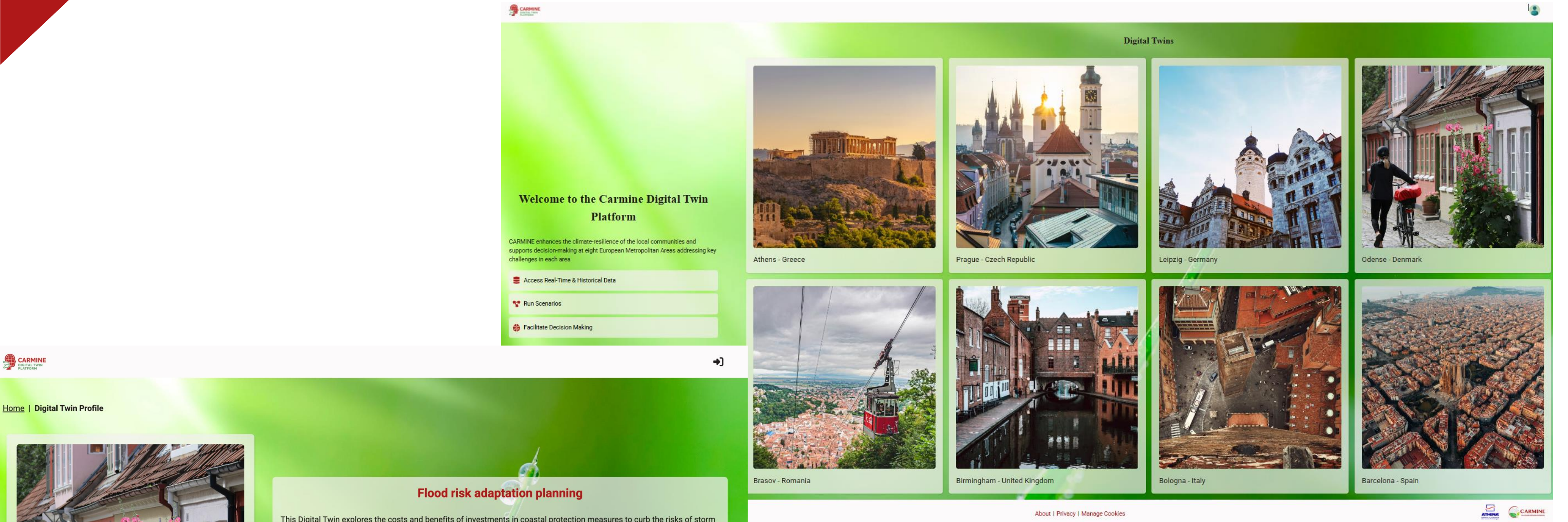
Barcelona, Wildfires risk

Bologna, Urban fragilities

CARMINE DT Platform Architecture



CARMINE DT Dashboard main page

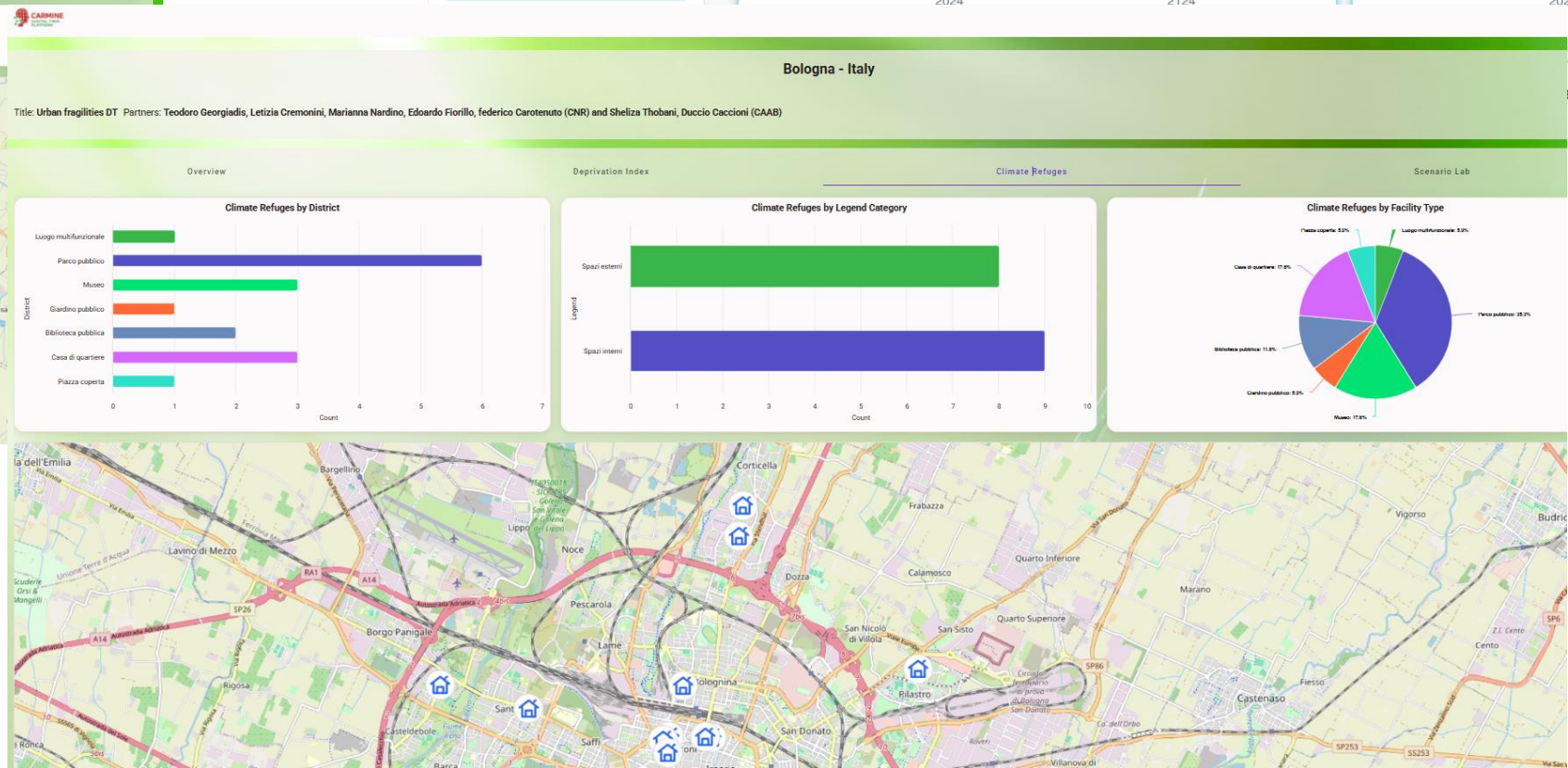
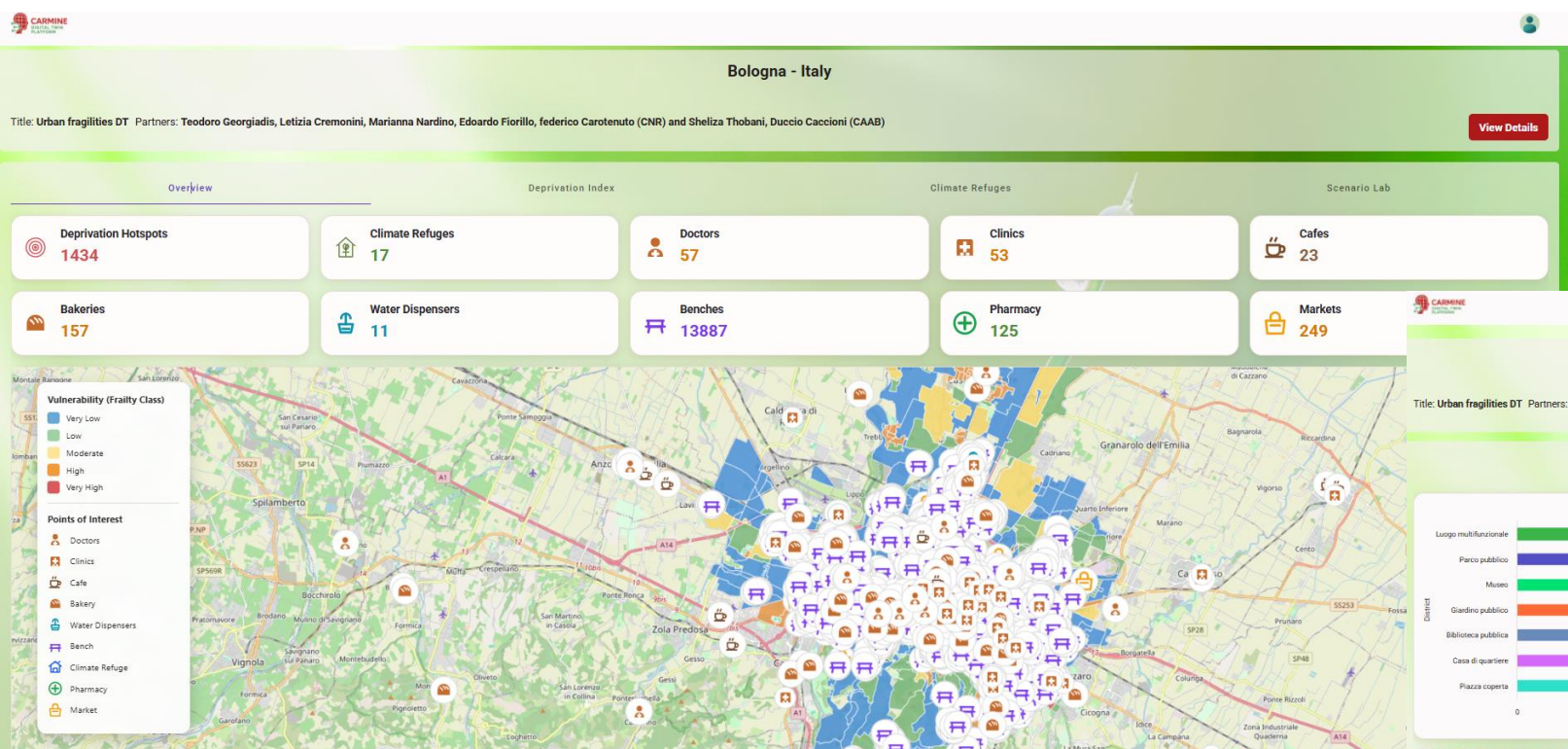
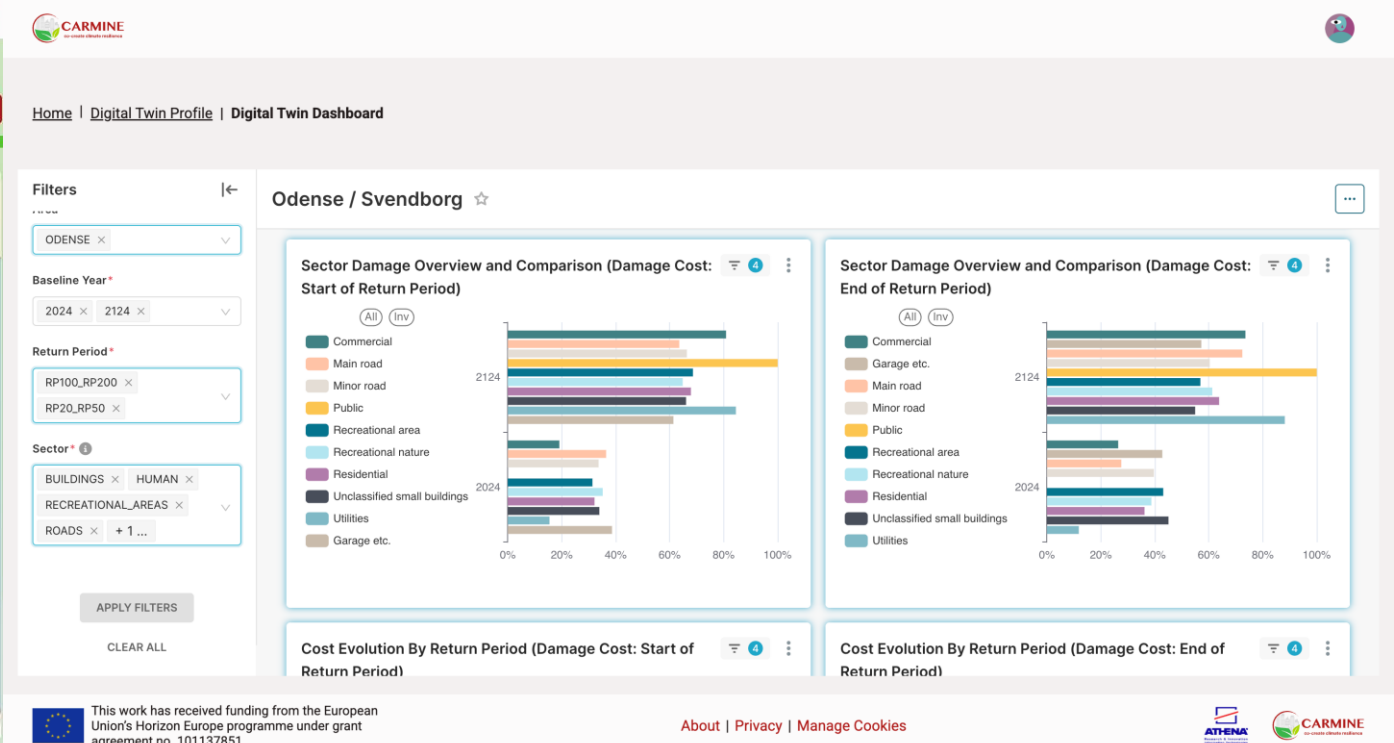
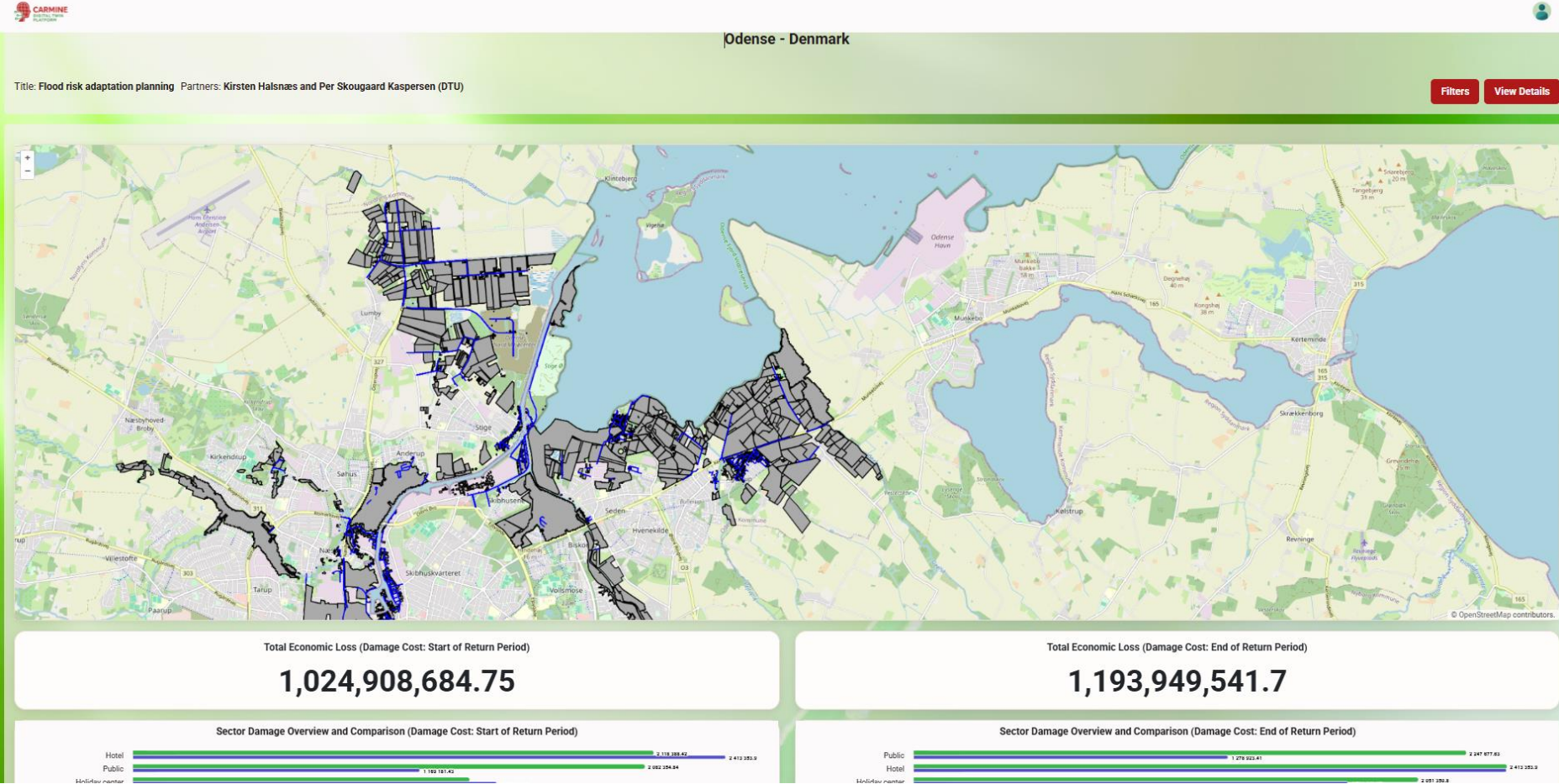


Flood risk adaptation planning

This Digital Twin explores the costs and benefits of investments in coastal protection measures to curb the risks of storm surges in metropolitan urban areas. A detailed spatial GIS system is applied to the mapping of vulnerable land use activities including houses, industrial buildings, transportation, population, recreational values, tourism, and business activities, and damage cost of flooding events are assessed and compared with the costs and benefits of adaptation options. The DT reflects how flood damage costs and adaptation decision making could be influenced by future land use planning, and by priorities in local city planning related to urban settlements, nature based solutions, liveable cities, and linked mitigation and adaptation.

Responsible partners: Kirsten Halsnæs and Per Skougaard Kaspersen (DTU)

[View Dashboard](#)



How can we further collaborate?

✓ Regions vs Metropolitan areas

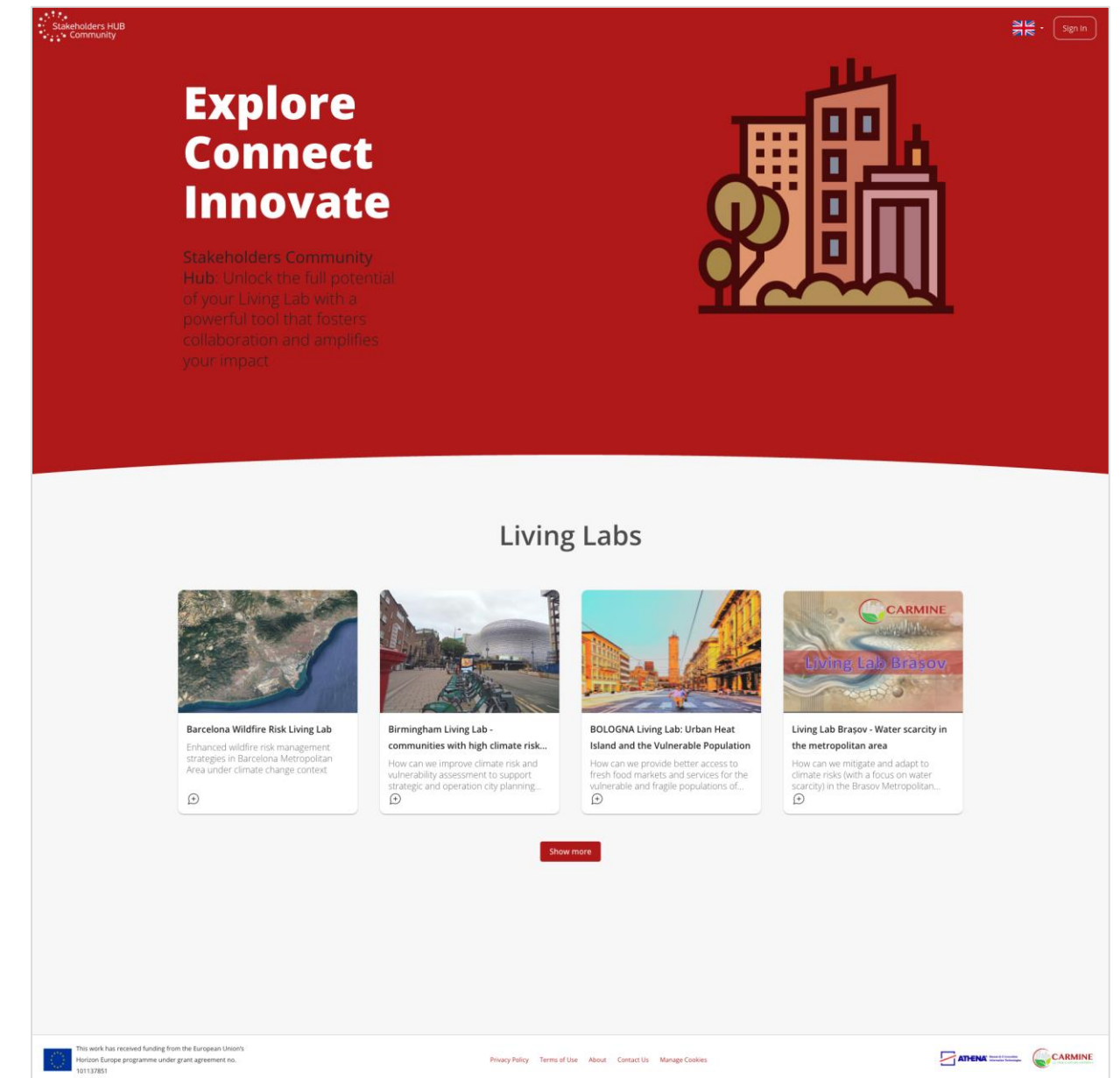
Discuss issues and solutions at various geographical levels, identify commonalities in challenges and solutions

✓ Risk management and adaptation

Covering the whole lifecycle from risk identification, to management, and decision support for adaptation and mitigation

✓ Community of Practice and Living Labs

Stakeholders at the forefront: collaboration, co-design and co-development



Stakeholder Community Hub — explore Living Labs and connect with CARMINE
schub.carmine-project.eu



Thank you for your attention

Any questions are welcome!



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Q&A AND PANEL DISCUSSION



REIMUND SCHWARZE

Helmholtz Centre for Environmental
Research, E-STAG UNDRR



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FREDERIEK SPERNA WEILAND

Deltares, CLIMAAX coordinator

THANK YOU!