

Steering Local Adaptation: Hands-On Lab on Measuring Climate Risks in Municipalities

The CLARITY Project

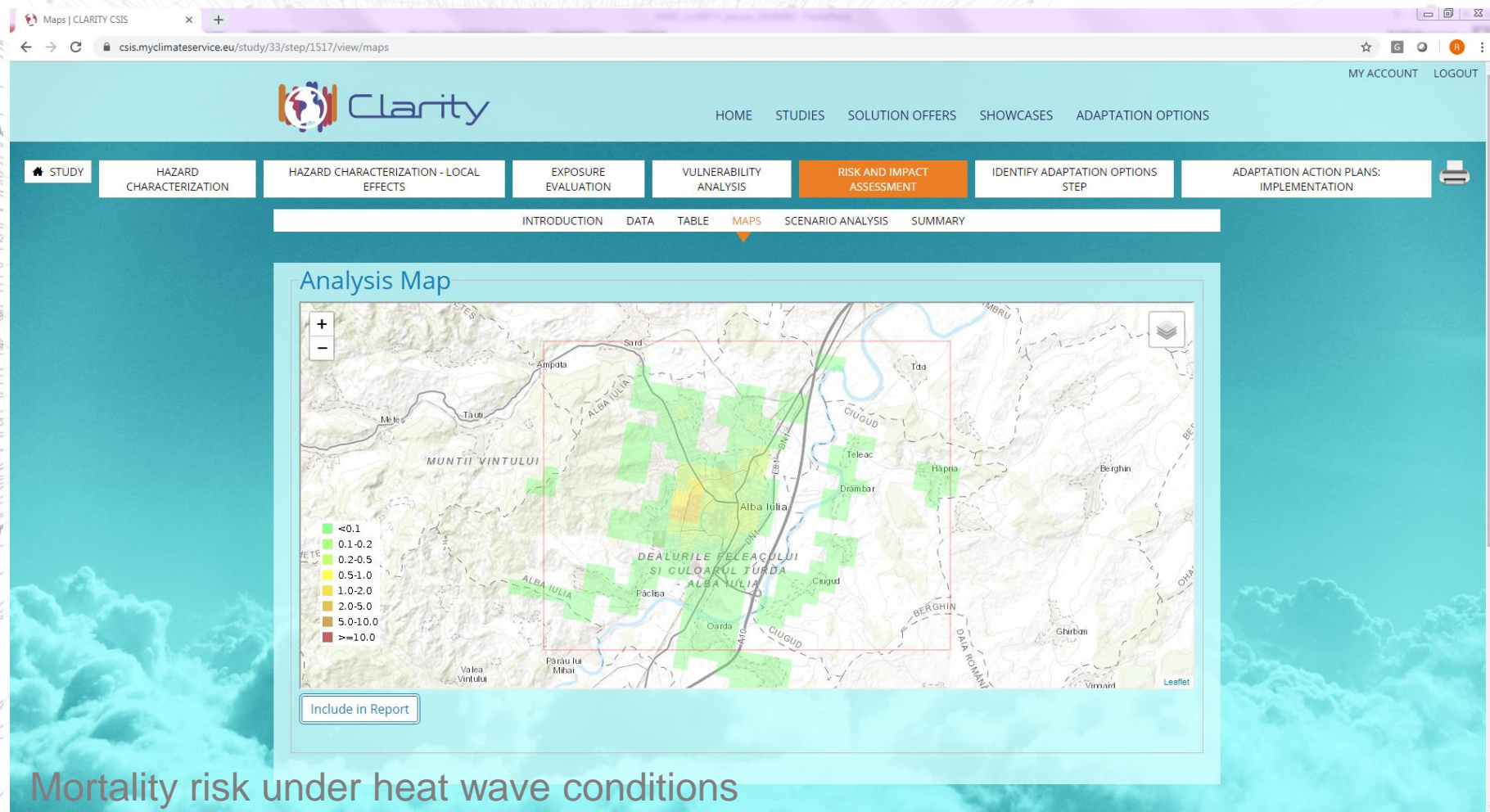
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CLARITY provides **actionable results** to support **infrastructure planning decisions**
→ Easy access to your local climate risks and adaptation information

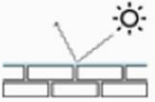


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Table | CLARITY CSIS

csis.myclimateservice.eu/study/33/step/1515/view/table

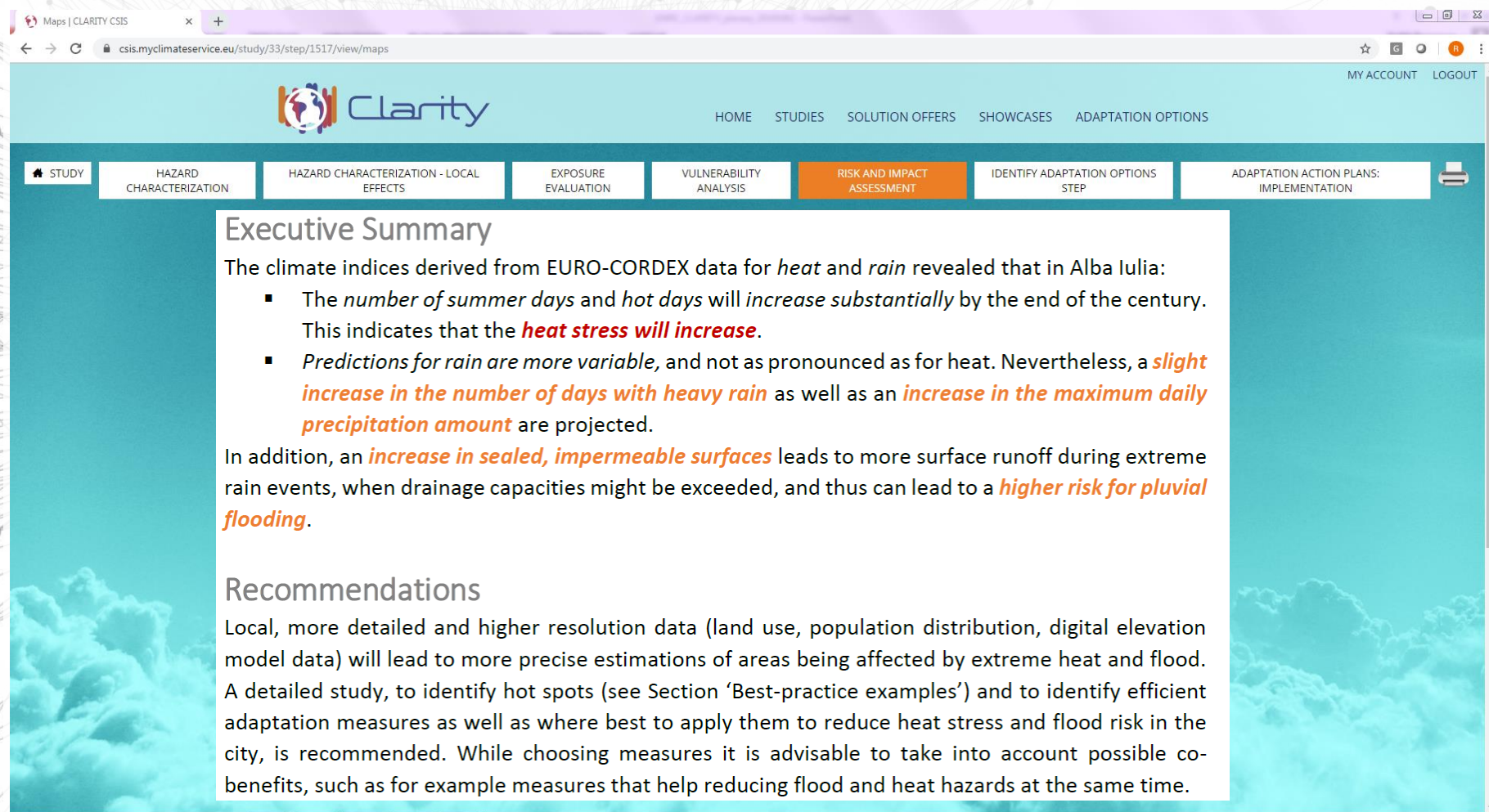
Included Adaptation Options

ADAPTATION OPTION	ACTION
<p>Cool paving and building materials</p> <p>Overview</p>  <p>Description:</p> <p>Cost estimate</p> <p>Cost for new development: €</p> <p>Cost for retrofitting: €</p> <p>Adaptation Option effects</p> <p>Applicable to: Built open spaces Roads</p> <p>Vulnerability change</p> <ul style="list-style-type: none"> extreme-heat / infrastructure : --- extreme-heat / buildings : --- <p>Local effects change</p> <ul style="list-style-type: none"> Albedo = 0.5 <p>Co-benefits</p> <ul style="list-style-type: none"> Multifunctional space usage: + Energy efficiency: + 	<p>Remove from Report</p>

Available Adaptation Options

ILLUSTRATION	ADAPTATION OPTION	ACTION
	Blinds	Include in Report
	Cool (reflective) roofs	Include in Report
	Green roofs	Include in Report
	Pergolas and canvas above streets	Include in Report

CLARITY provides **actionable results** to support **infrastructure planning decisions**
→ Summary report: foundation to expand and/or implement climate resilience plans



The screenshot shows the CLARITY CSIS web application interface. The browser address bar displays the URL: csis.myclimateservice.eu/study/33/step/1517/view/maps. The page features a navigation bar with the Clarity logo and links for HOME, STUDIES, SOLUTION OFFERS, SHOWCASES, and ADAPTATION OPTIONS. Below the navigation bar, a series of tabs represent different stages of a study: STUDY, HAZARD CHARACTERIZATION, HAZARD CHARACTERIZATION - LOCAL EFFECTS, EXPOSURE EVALUATION, VULNERABILITY ANALYSIS, **RISK AND IMPACT ASSESSMENT** (highlighted in orange), IDENTIFY ADAPTATION OPTIONS STEP, and ADAPTATION ACTION PLANS: IMPLEMENTATION. The main content area displays the 'Executive Summary' and 'Recommendations' sections.

Executive Summary

The climate indices derived from EURO-CORDEX data for *heat* and *rain* revealed that in Alba Iulia:

- The *number of summer days and hot days* will *increase substantially* by the end of the century. This indicates that the **heat stress will increase**.
- *Predictions for rain* are more variable, and not as pronounced as for heat. Nevertheless, a **slight increase in the number of days with heavy rain** as well as an **increase in the maximum daily precipitation amount** are projected.

In addition, an **increase in sealed, impermeable surfaces** leads to more surface runoff during extreme rain events, when drainage capacities might be exceeded, and thus can lead to a **higher risk for pluvial flooding**.

Recommendations

Local, more detailed and higher resolution data (land use, population distribution, digital elevation model data) will lead to more precise estimations of areas being affected by extreme heat and flood. A detailed study, to identify hot spots (see Section 'Best-practice examples') and to identify efficient adaptation measures as well as where best to apply them to reduce heat stress and flood risk in the city, is recommended. While choosing measures it is advisable to take into account possible co-benefits, such as for example measures that help reducing flood and heat hazards at the same time.



WHAT IS CLARITY ABOUT?

- Enhance climate change adaptation for (urban) infrastructure projects and investments

AMBITION

- Support decisions, provide “actionable” results also for users with lack of resources and climate knowledge – (smaller) cities, regions
- CLARITY makes climate-proofing of infrastructure easier and faster at lower cost of individual climate risk, impact and adaptation strategy studies



IDEA AND INSPIRATION

- Study encouraged by financial institutes produced the EU-GL method
- Digitize the method provides benefits
 - assessments and decisions data driven
 - learning from others
 - teaming up and access to innovative solutions, co-creation, innovation procurement



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
CLIMATE ACTION

Non-paper
Guidelines for Project Managers:
Making vulnerable investments climate resilient



For more details about the EU-GL method please check:
<http://climate-adapt.eea.europa.eu/metadata/guidances/non-paper-guidelines-for-project-managers-making-vulnerable-investments-climate-resilient/guidelines-for-project-managers.pdf>

DIGITIZED WORKFLOW

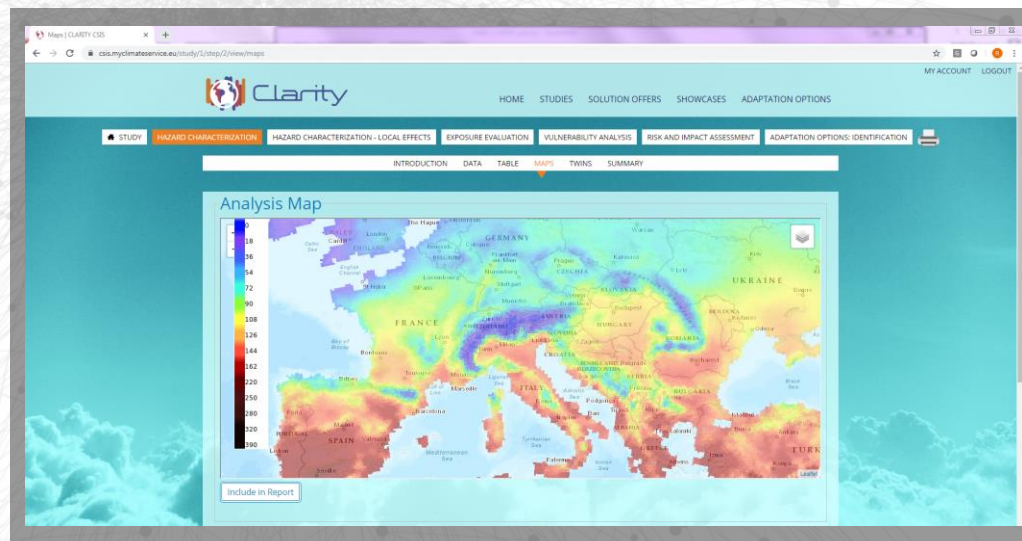
CLARITY will allow end-users to explore climate resilience of their projects through alternative planning and adaption scenarios considering:

1. variable **local context**
2. expert-based **climate intelligence**
3. customized **risk analysis**
4. flexible **adaption** and alternative options
5. integration of data and model results into **action plans**

Optimize the climate change adaptation planning process
(easier, faster, lower cost)

1. Initial **online screening** of the
climate impact and relevant
adaptations measures using the

CLARITY digitized general workflow

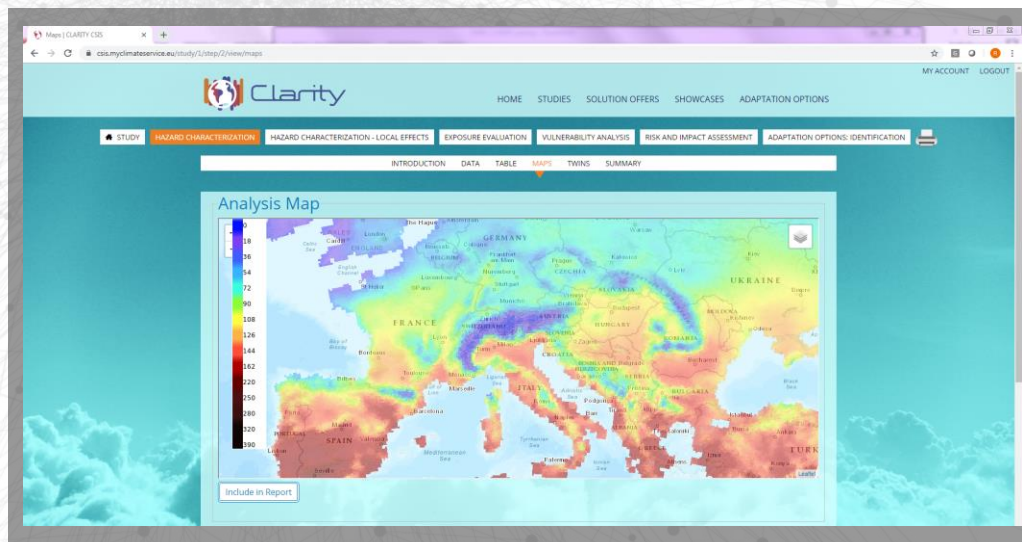


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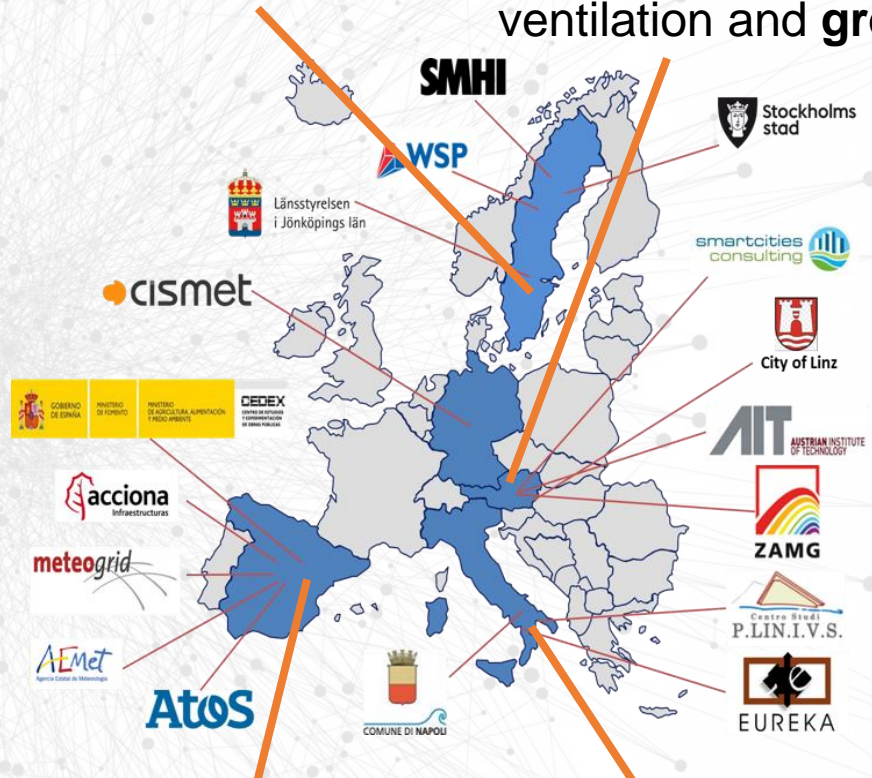
2. **Marketplace** where matchmaking
between the needs of the assessed
projects and the offers for expertise
and adaptation solutions takes place





Stockholm flood - future changes in **river runoff**

Linz heat waves require ventilation and **green spaces**



Spain The roads suffer from **oscillation in temperature**

Naples floods, droughts, heat waves



WHAT WILL CITIES/REGION GET?

- Geo-data based climate risk assessment with the conditions at the **individual location** of the project - no generic hazard assumptions!
- Knowledge about **successful adaptation projects** in peer cities (“Hazard twins”)
- For **practitioners** of various capacities – spatial planning, construction, engineering - You need not be a climate expert to start assessing your project on climate risks!
- Easy access and affordable (European open data, resolution ca.10x10 km)

WHY DO CITIES NEED CLIMATE DATA AND SERVICES?

- Develop and document particular city’s visions and strategies on sustainable development, e.g. **Green City Action Plan** (GCAP)
- Sustainable planning, appraisal and implementation of **infrastructure projects**
- Get access and better terms for **financing and insurance**
- **Enable** climate awareness and sustainability in **local ecosystems**