



VALIDATED LOCAL RISK ACTIONABLE DATA FOR ADAPTATION

Valorada: exploring the climate value of data

Cristobal Reveco

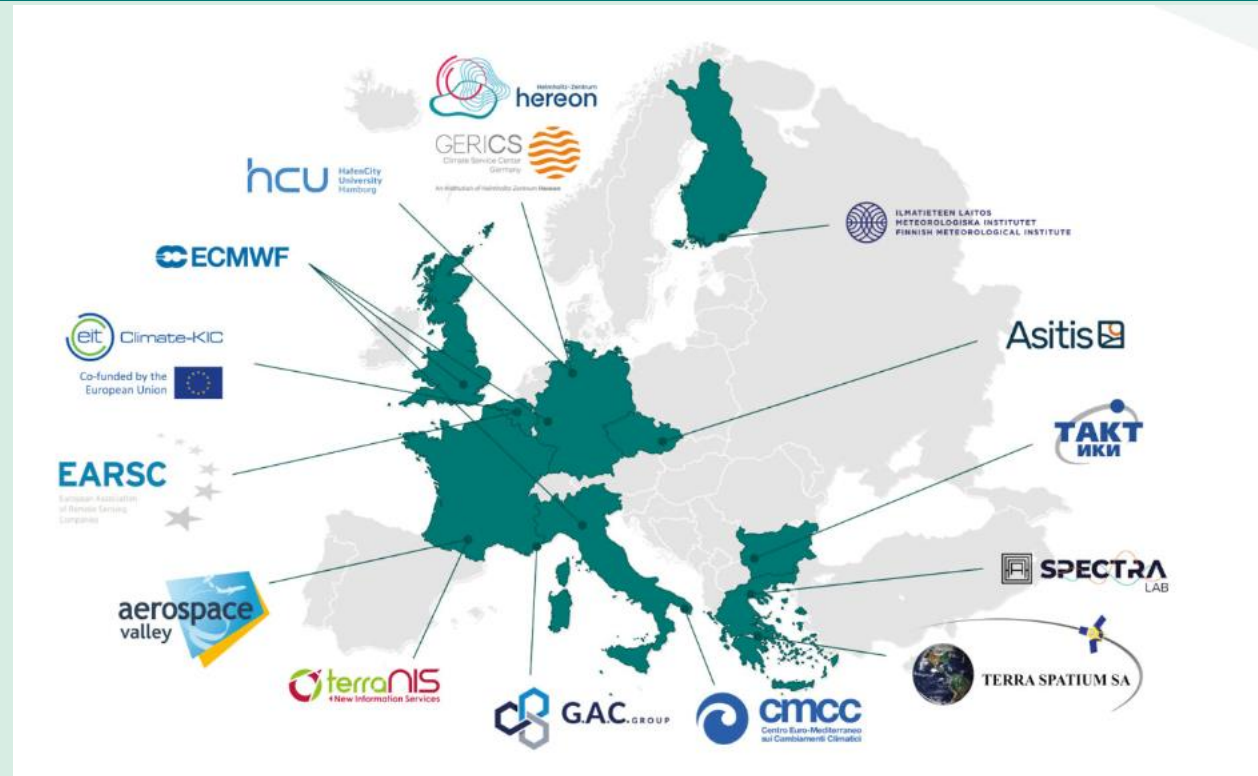
Climate Service Center Germany GERICS

Coordinator VALORADA



The project has received funding from the Horizon Europe Framework Programme under grant agreement No 101112837

Overview: The Valorada Project and Consortium



| | | | |
|--|---|---|---|
|  START DATE 01 June 2023 |  DURATION 36 months |  BUDGET 3M€ |  EUROPEAN PARTNERS 14 |
|--|---|---|---|



Climate risk and the value of data

- Climate change impacts are context-specific.
- Local authorities collect / access data and information that can help them reduce climate risks (socio-economic, demographic and land-use data).
- These datasets have a **potential climate value**
- However, **the climate value of these datasets is not fully clear** to municipal and regional stakeholders.



Different and changing climate risks

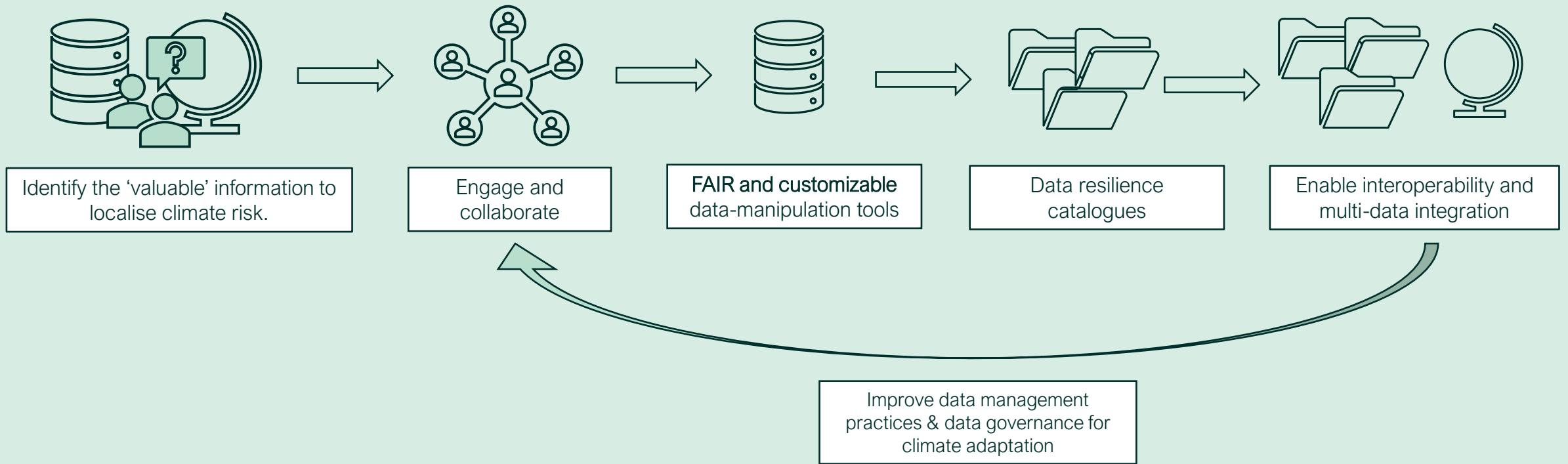
- Current data available?
- Current and future data needs?
- Future data applications?



1. Which data is needed to contextualise climate risk?

2. Which data is already available for this purpose?

3. What's needed to link locally-produced data and climate data and to produce usable knowledge to reduce climate risks?



Sourcing climate value from available datasets

1. Valuation: attribution of worth.

How do people assess the climate value of data?

- What are the calculation methods and metrics in place used for defining value? (how is value being defined?)
- From which point of view are things being assessed? (which assumptions count in the situational-value assessment)
- Under which criteria is value justified or made legitimate?



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2. Valorisation: activities that produce knowledge needed to reduce climate risk.

How do people derive climate value from existing data and information?

- Which factors hamper valorisation activities?
- To what extent are these factors related to the data, the organizational context or related to contextual conditions?
- How can local or regional authorities enhance knowledge valorisation activities?



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- x Lack of comprehension about the **possibilities** data offer to contextualise climate risk;
- x Lack of **cooperation** among heterogeneous stakeholders representing different sectors;
 - x **Silo** approach to data management;
 - x Poor data management **practices**;
- x Lack of **capacities** and limited administrative **competencies**.



Data for Climate-Risk Reduction: Valuation and Valorisation Framework

Data for Climate-Risk Reduction: Valuation and Valorisation Framework

Designed to support decision makers in local governments

Aims:

- (1) to reveal the climate value of data,
- (2) to improve data valorisation activities, and
- (3) to increase the uptake of data and information needed for reducing climate risk.

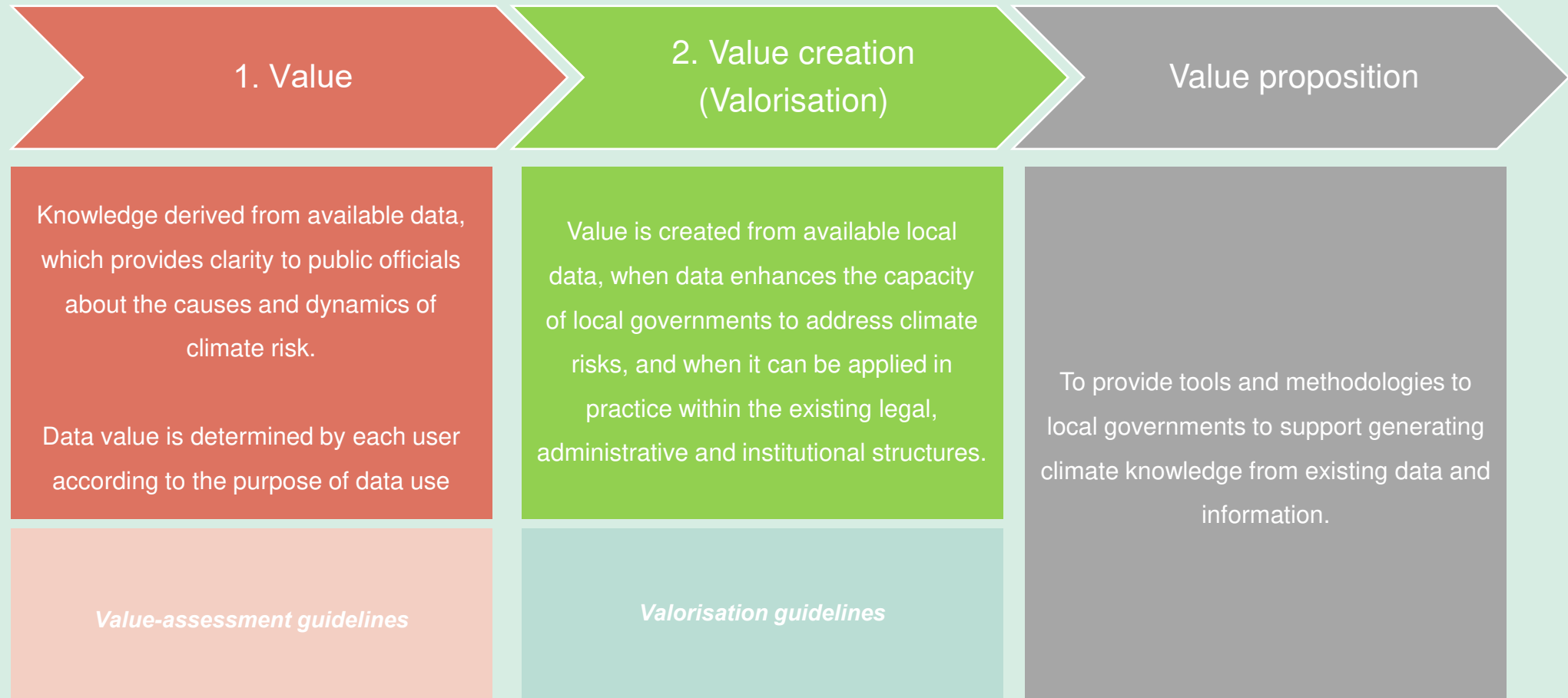
It provides a conceptual structure for assessing the climate value of existing datasets.

It offers a metric to appraise the climate value of data.

It outlines a method to orient the process of valorisation of data and information in the context of climate adaptation.



From the stance of **public-sector data management**, the framework focuses on the concepts of data **value**, and on the process of data **valuation** and data **valorisation**.



1. Value assessment guidelines

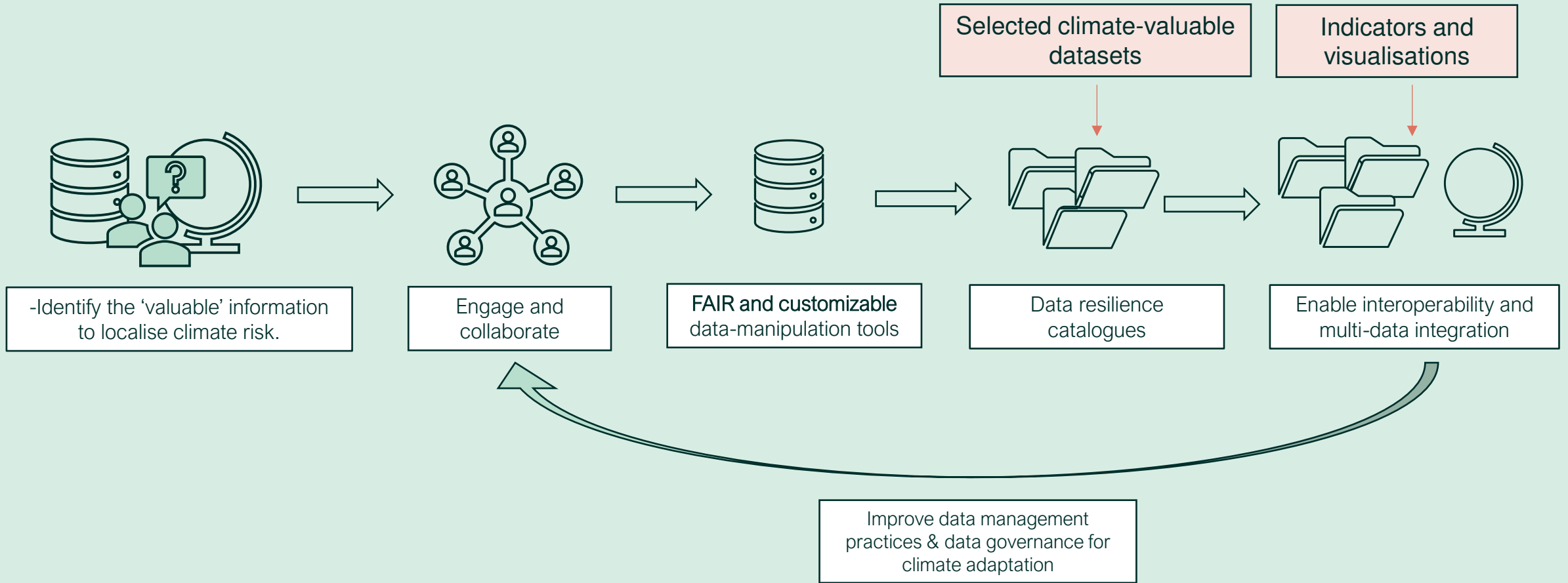
Valuation as a process of worth attribution involves three operations:

1. Defining the object of attention: **Proposed method: Climate Impact Chains**
2. Determine how available data contributes to characterise climate risks: **Proposed method: Climate Risk Indicators**
3. Determine criteria of evaluation to estimate the climate value of data and information: **Proposed method: Valuation metric**

| Value dimensions | Criteria |
|--|---|
| 1. Relevance (Contribution to knowledge generation) | Relevance to climate risk understanding |
| | Irreplaceability of the Dataset |
| | Performance value |
| 2. Strategic value | Contribution to Risk Management and Decision-Making Capacity |
| | Data support linking climate risk with municipal political or strategic agendas and goals |
| | Contribution to Connecting Regional and National Climate Policy |
| 3. Usability | Resource efficient |
| | Fit within Existing Administrative Competencies, Political Mandates, Operations and Workflows |
| | Ongoing Maintenance Requirements for Data |
| 4. Quality | Provenance of Data |
| | Precision and Accuracy of Data |
| | Completeness of Data |



Using climate-valuable data



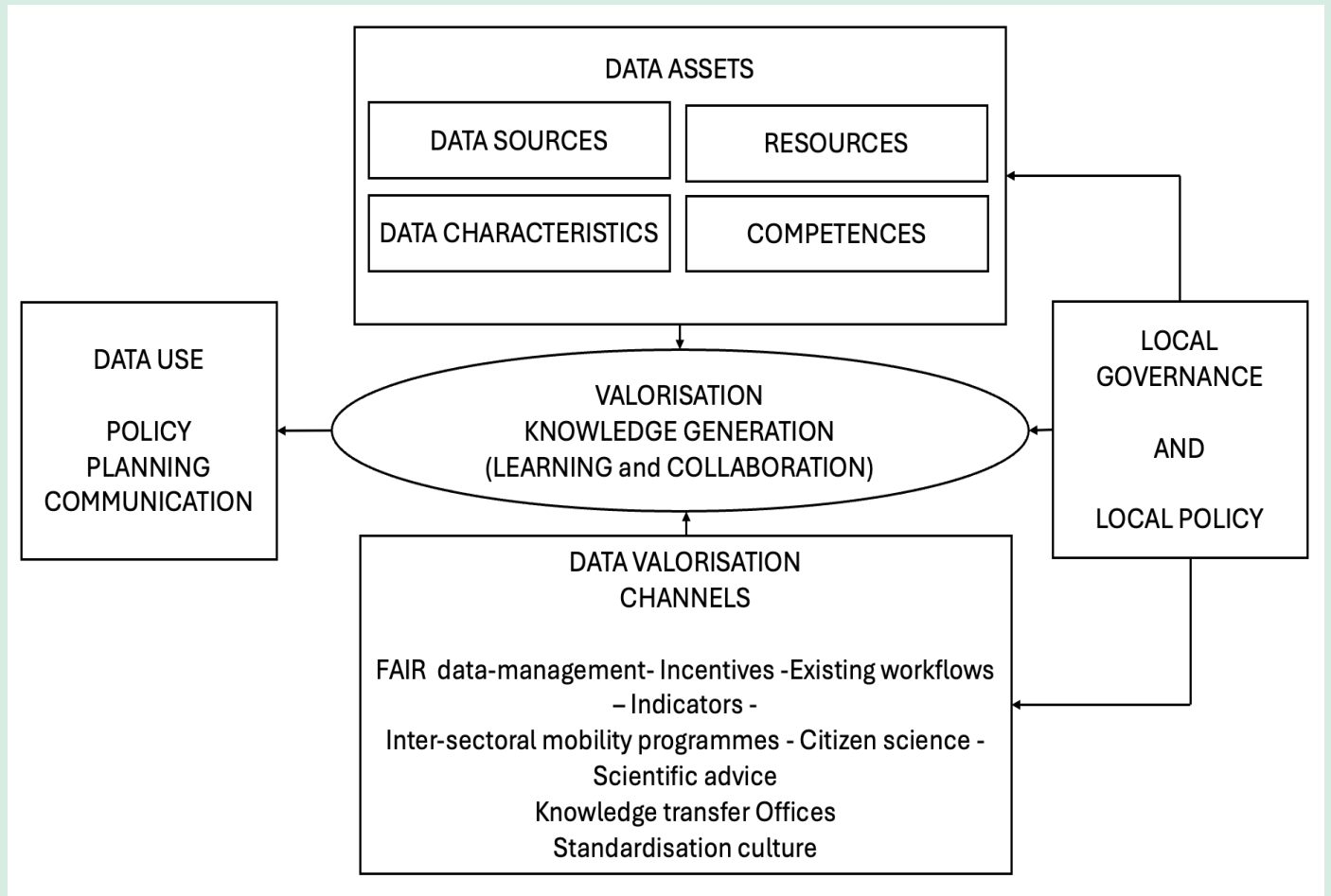
2. Valorisation guidelines: pathways and systems.

Increasing spaces for collaboration for improved data governance

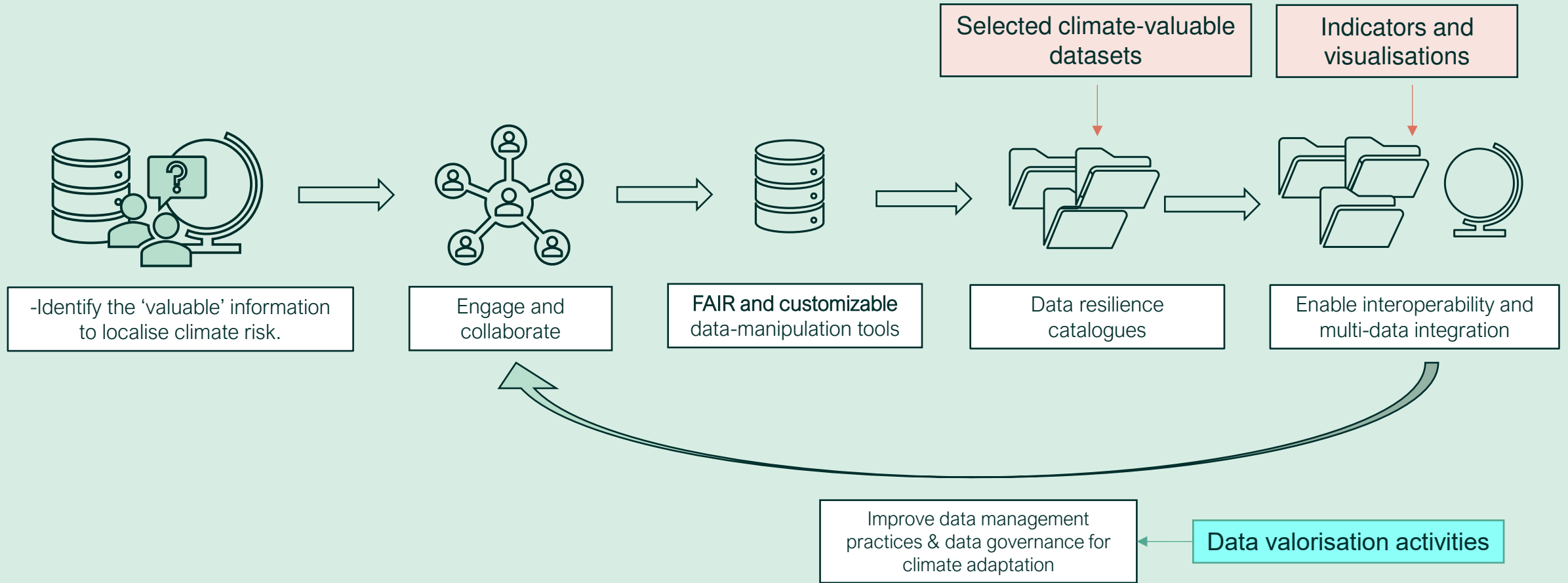
System of activities that connect actors, concepts and materials involved in a valorisation exercise.

- How do local stakeholders learn and collaborate to derive climate value from existing territorial and EO data and information?
- Which factors hamper valorisation?
- To what extent are these factors related to the data, the organizational context or related to contextual conditions?

Proposed methodology:
Data value-chain analysis



Using climate-valuable data and generating knowledge



Thanks a lot!

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Building Resilient Cities: Tackling Climate Change with HARMONIA

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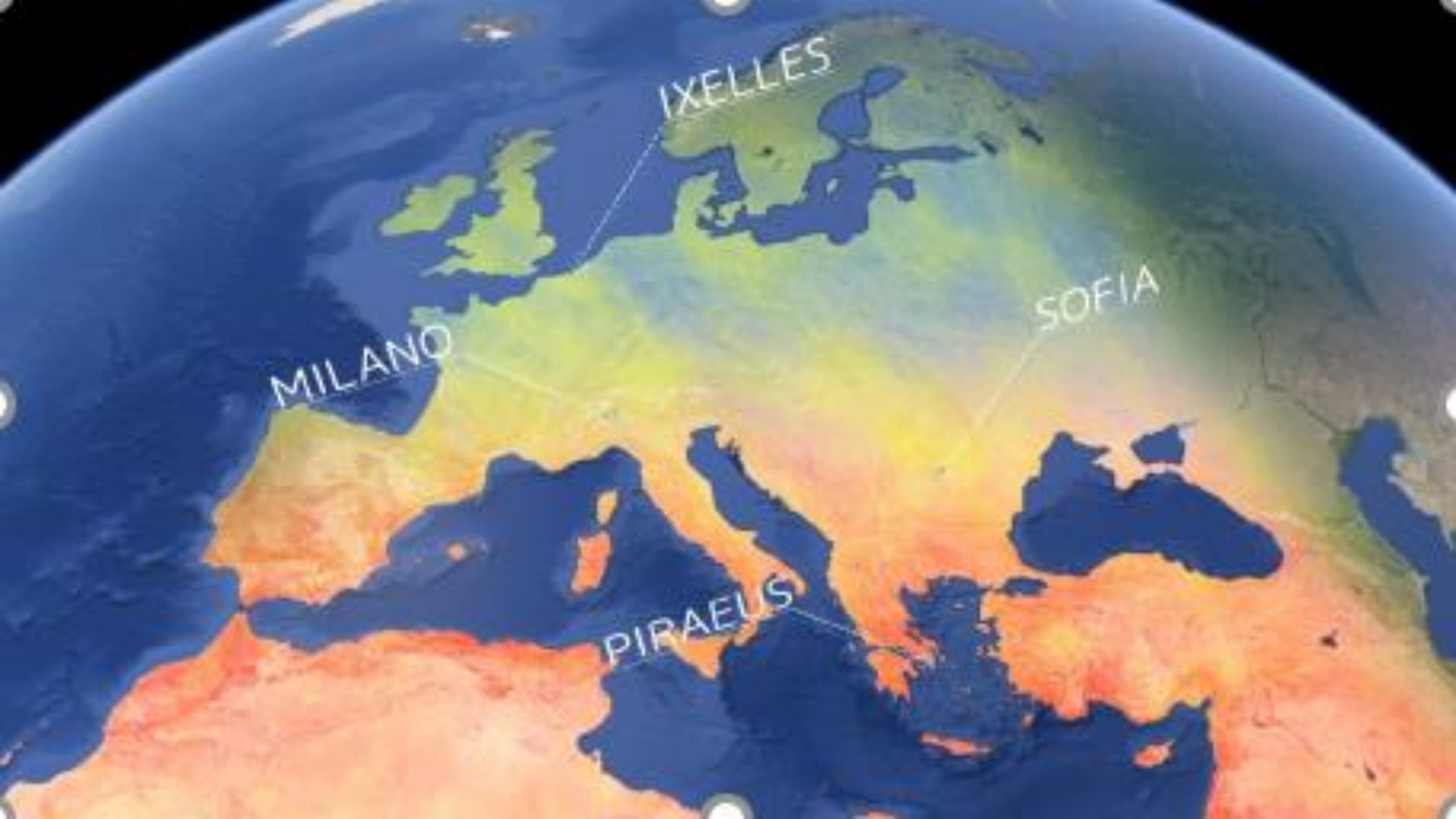
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The Harmonia project has received funding from the EU Horizon 2020 research and innovation programme under agreement No. 101003517



IXELLES

MILANO

SOFIA

PIRAEUS

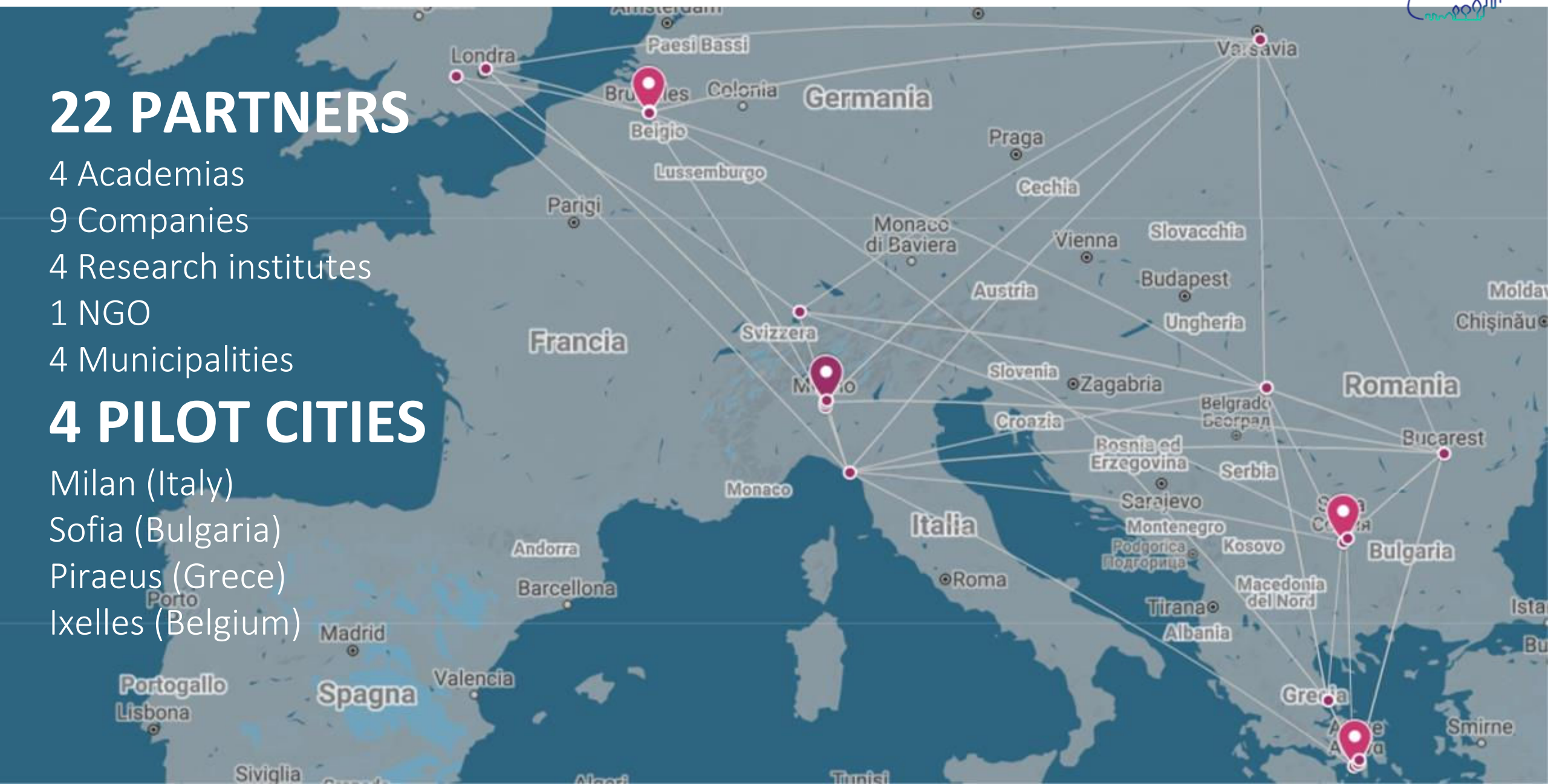
PARTNERS

22 PARTNERS

- 4 Academies
- 9 Companies
- 4 Research institutes
- 1 NGO
- 4 Municipalities

4 PILOT CITIES

- Milan (Italy)
- Sofia (Bulgaria)
- Piraeus (Grece)
- Ixelles (Belgium)



PILOT CITIES



MILAN

Focus:

- Air pollution
- Urban heat island
- Urban flooding – flash flooding
- Ground deformation / motion
- Urban greenness



SOFIA

Focus:

- Integration, interrelationships, interactions and mutual influences of ECOZONES.
- Urban flooding – flash flooding
- Landslide and geohazards



IXELLES

Focus:

- Relationship between traffic, air quality and weather variables.
- Impact of urban planning decisions on urban environmental degradation
- Urban mobility



600 m



PIRAEUS

Focus:

- Ground deformation / motion
- Air pollution
- Urban heat island
- Urban greenness



END-USERS & BENEFICIARIES



Municipalities, local administrators, urban planners and decision-makers

NEEDS: to receive support for better informed decision processes

SERVICE PROVIDED: Decision Support System (DSS) that will provide reliable feedback regarding any spatio-temporal changes and the impact of CC on the environment through a fully interactive Graphical User Interface (GUI)

NEEDS: to be informed on Climate Change hazards; to gain awareness on potential risks

SERVICE PROVIDED: basic visualization of information and data + service of early-warnings and recommendations about potential risks such as heat peaks or extreme rainfalls

Citizens and non-expert users



Researchers, academia and industries

NEEDS: to get raw data from the platform and use it as a tool for training and evaluating new ML models

SERVICE PROVIDED: use of the platform for research and training purposes

Community engagement



Municipalities, local administrators, urban planners and decision-makers

Work with pilot cities:

- Building on preidentified needs and challenges
- Identification of relevant departments, future users, updated priorities for the cities
- Validation activities and demonstration workshop

Work with external cities:

- Publicly open workshops
- Synergies with other projects

Citizen-As-Observatory (CAO)

- Involvement of local partners and citizens in CAO workshops
- Collection of citizen data

Raising awareness of climate change's impact on cities is vital; empowering citizens gives them agency to tackle these challenges together.

Citizens and non-expert users

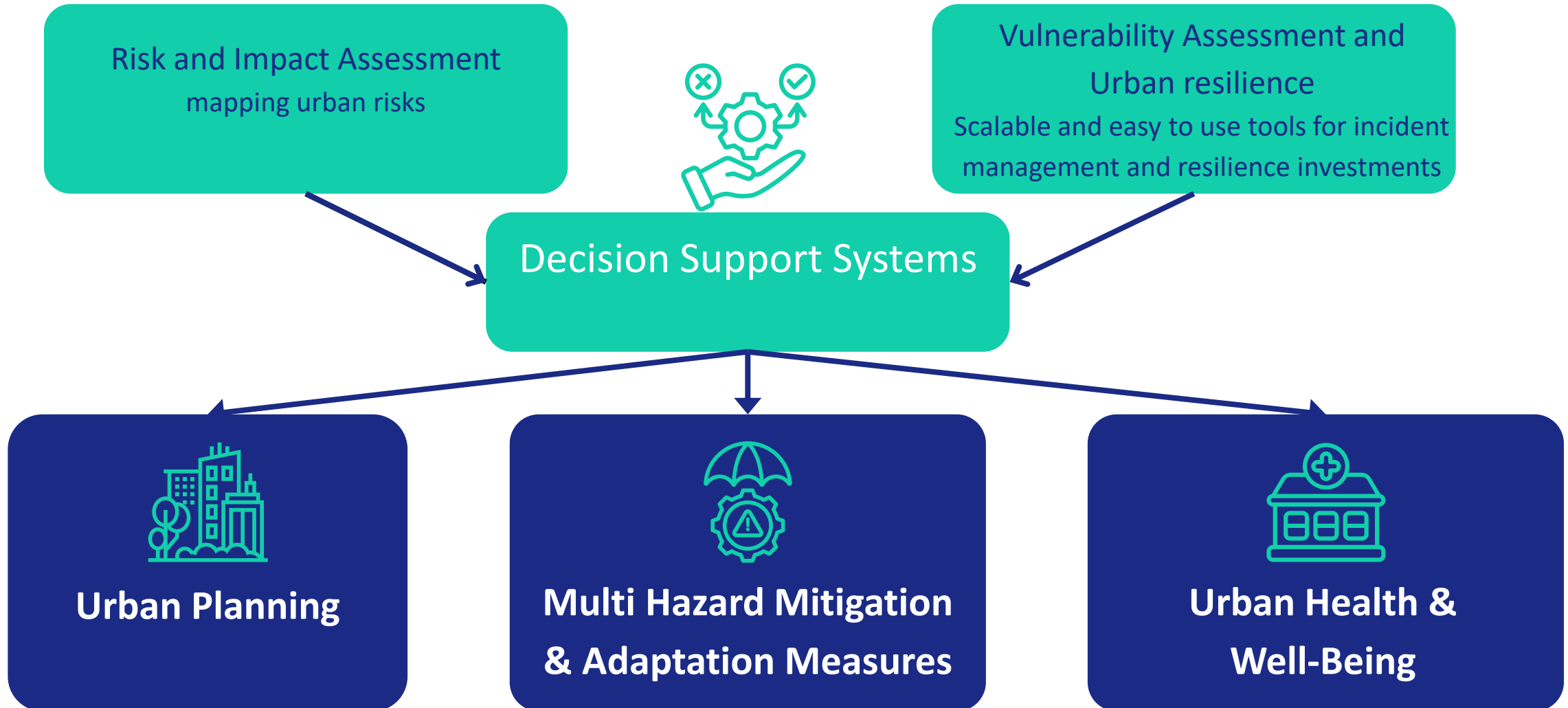


Researchers, academia and industries

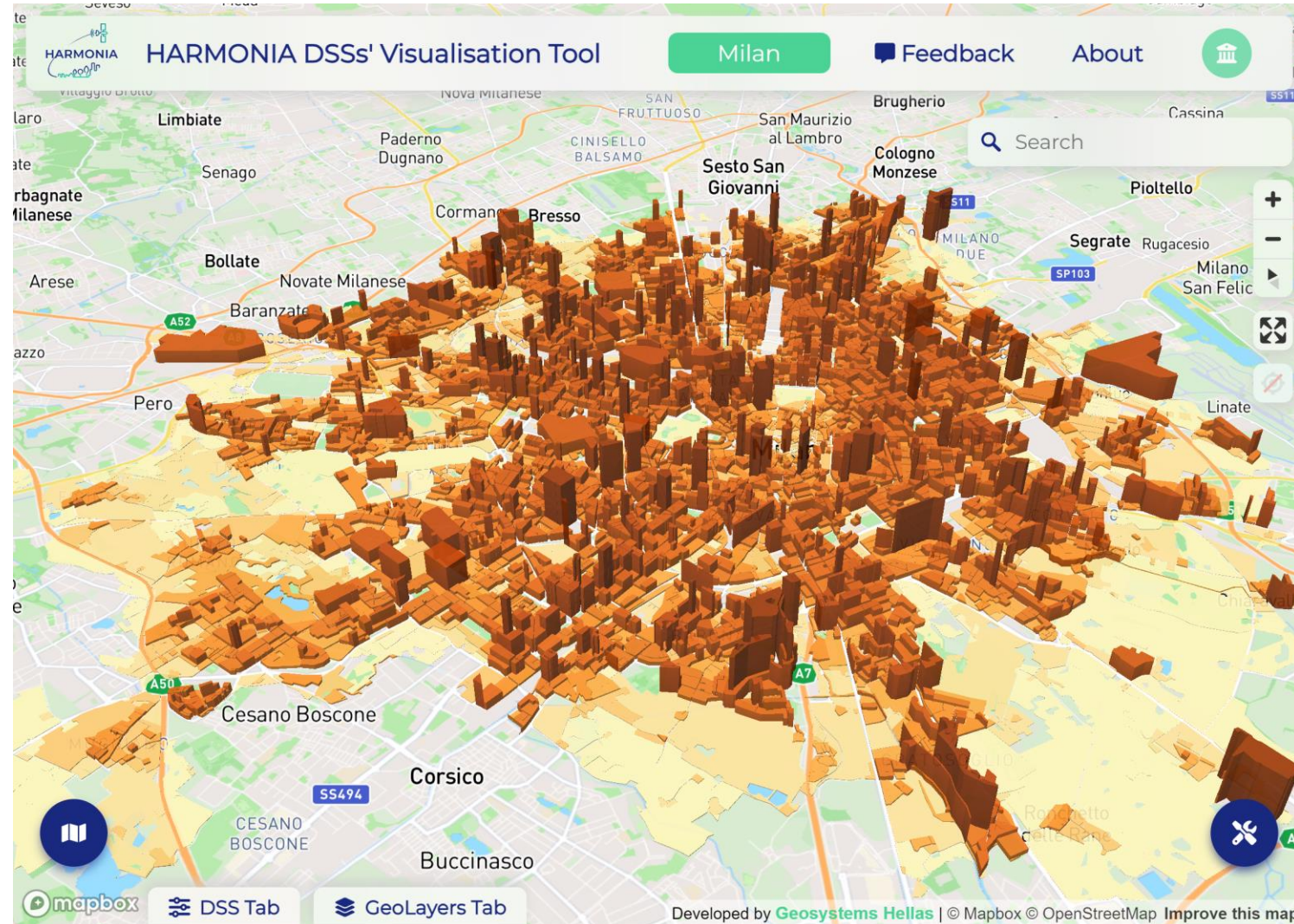
Close collaboration with GEO and EuroGEO community, local universities and research institutes through workshops and scientific publications.

Definition of different user profiles to access HARMONIA tools.

HARMONIA IRAP and DSS

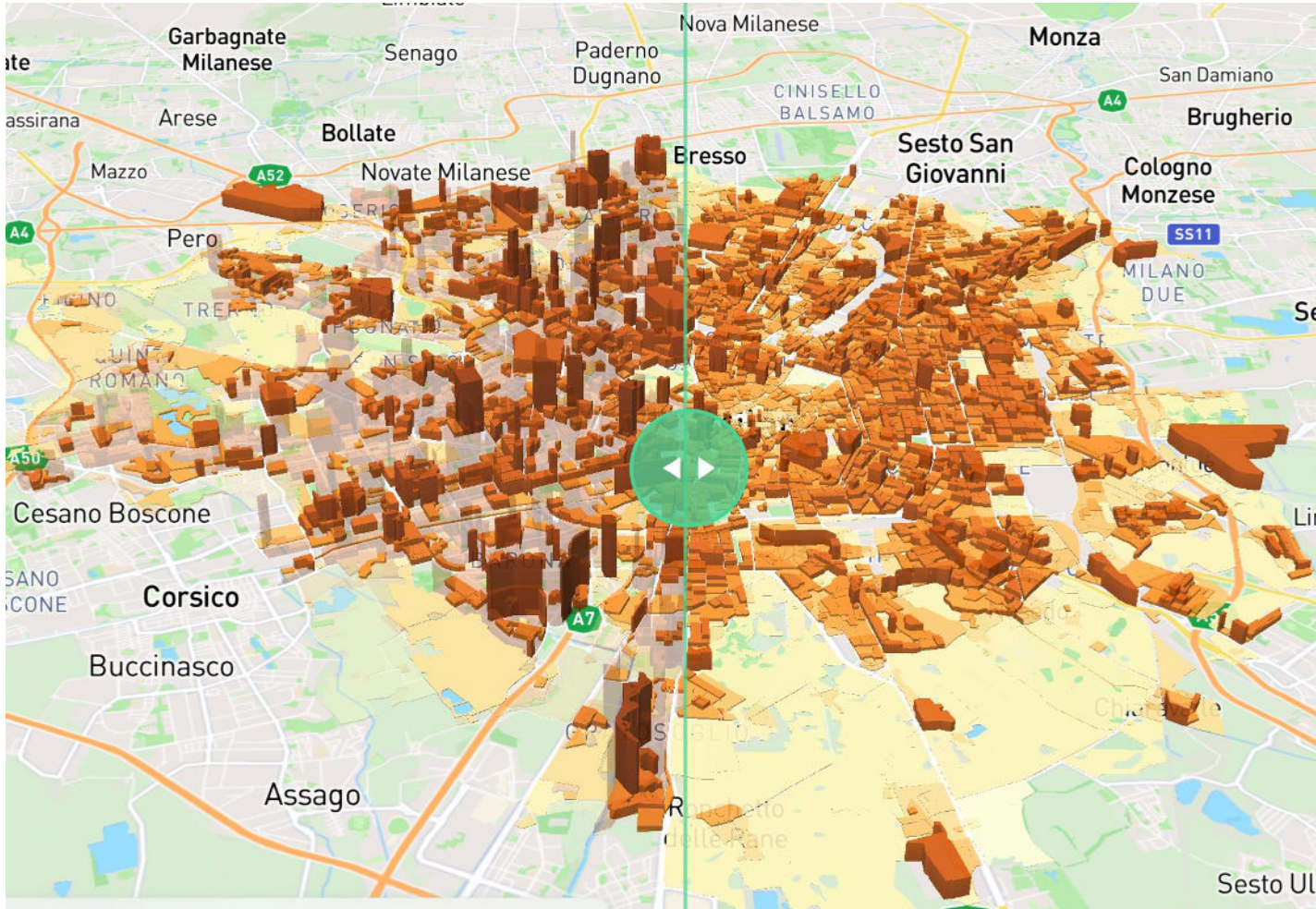


HARMONIA IRAP and DSS



Risk visualisation and analysis

HARMONIA IRAP and DSS



Scenario simulation and comparison

Urban Planning solutions

Roadside Green Belts

Solution: Roadside Green Belts

Categories: Green Infra

Susceptibility: Physical

Cities: Milan, Piraeus, Ixelles, Sofia

Area of Application: Road Network

Cost: 1/5

Performance:

- Area of Effect: 4/5
- Urban Heat Islands: 5/5
- Flash Floodings: 0/5
- Air Quality: 5/5
- Climate Index: 5/5
- Geohazards: 0/5


Description:

Roadside green belt is an important element of urban NBS targeting to block traffic-related pollutants.

Placing trees and shrubs near non-motorized lanes and sidewalks provided a favorable cooling effect, with the non-motorized areas temperature decreased by up to 1.05 celcius.

Co-Benefits:

- Cooling Effect
- Aesthetic Image
- Heat Reduction



Scan to register!



Final Event

HARMONIA Project



21st of January



Milan

Discover how HARMONIA tools enhance Risk Management and Urban Resilience in Ixelles, Milan, Sofia, and Piraeus



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Thank you! Questions?

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