CrossEU

The CROSSEU Decision Support System

Turning climate research into actionable information

Penny Boorman, Doug Fraser (WEMC) & Server Kasap (UKRI)

Presented by Alberto Troccoli (WEMC)

CROSSEU-ACCREU joint meeting, Brussels, 13 November 2026

Co-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.

UK participants in this project are co-funded by UK Research and Innovation (UKRI).

Co-funded by the European Union

UK Research and Innovation

CROSSEU DSS
From climate impacts to informed decisions

Integrating climate-impact knowledge.

Bringing together results from eight case studies, multiple climate hazards and socio-economic assessments.

Making results accessible and usable.

Combining interactive exploration with guided, stakeholder-informed narratives and policy information.

Building a reusable decision-support framework.

Connecting **Teal** visualisation with **DAFNI** data and computational capabilities to support future applications.

Climate research → Accessible evidence → Better-informed adaptation decisions

Designed for policymakers, regional planners, researchers and infrastructure operators.

CrossEU

CROSSEU DSS
Turning climate research into actionable information

The Decision Support System (DSS) provides an accessible interface to explore climate risks, socio-economic impacts and adaptation-related information across the CROSSEU case studies.

- **Explore**: Compare climate hazards, socio-economic indicators and future scenarios.
- **Understand**: Access guided narratives, contextual information and policy-relevant findings.
- **Interact**: Visualise results and, where authorised, launch computational workflows.
- **Use**: Download data, charts and customised PDF summaries to support further analysis and decision-making.

Powered by the **Teal visualisation framework** and **DAFNI computational infrastructure**.

CrossEU

What makes the CROSSEU DSS different?

Multihazard, cross-sectoral evidence

Results from **eight case studies** covering climate hazards, socio-economic vulnerabilities and impacts across different sectors.

Stakeholder-informed design

Developed through case-study **consultations and iterative feedback** to address practical information needs.

Science connected to policy

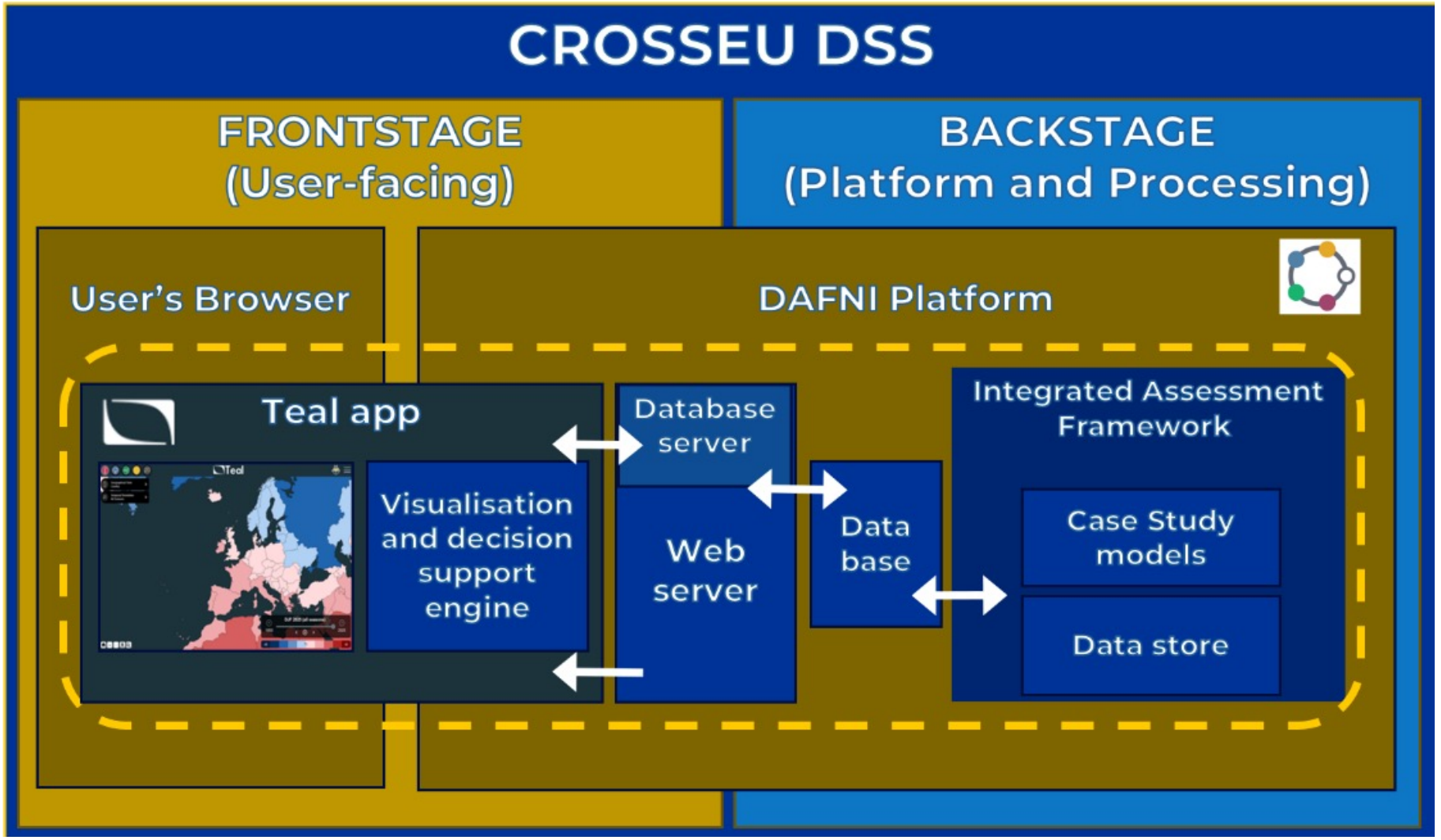
Interactive climate-impact information linked to European, national and regional **policy and governance knowledge**.

Established, reusable infrastructure

Teal visualisation combined with **DAFNI** data management and computational capabilities.

CrossEU

DSS Architecture



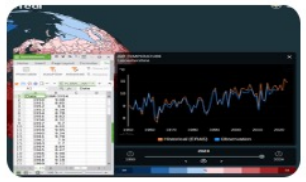
CrossEU

The DSS UI – The Teal framework

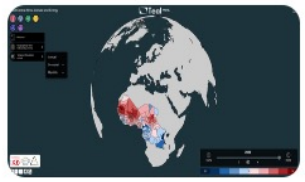
Teal framework underlies the CROSSEU DSS UI

Multiple public and bespoke versions





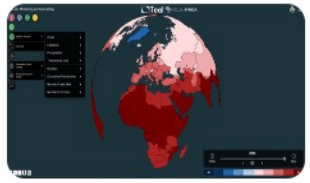
Public Teal



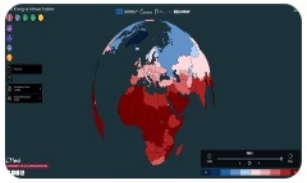
WCA Teal



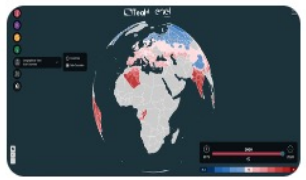
CDI Teal



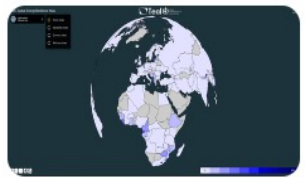
FA Teal



C3S Teal



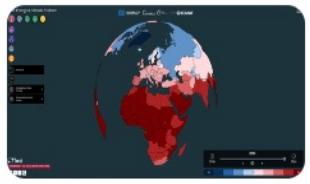
EF Teal



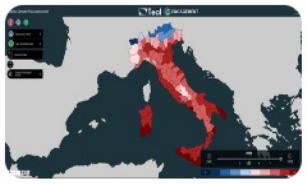
WMO Teal



ARPAV Teal



CROSSEU DSS Teal



ENGAGE Teal

https://tealtool.earth

CrossEU

The DSS UI – The Teal framework

Public Teal: Climate and emissions data

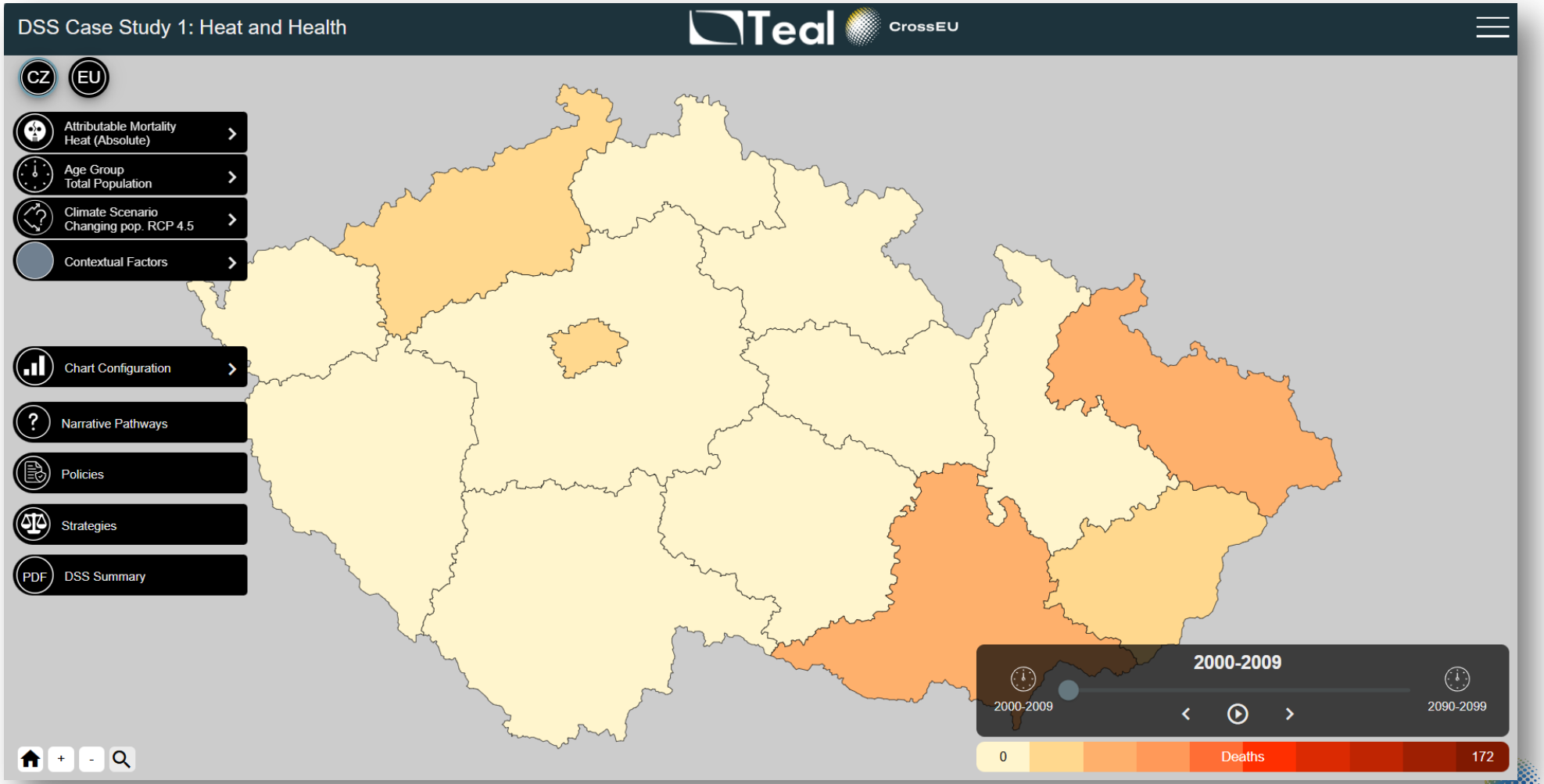
https://tealtool.earth

MOVIE

https://www.wemcouncil.org/TALKS/PublicTeal_Gao2024_20251124.mp4

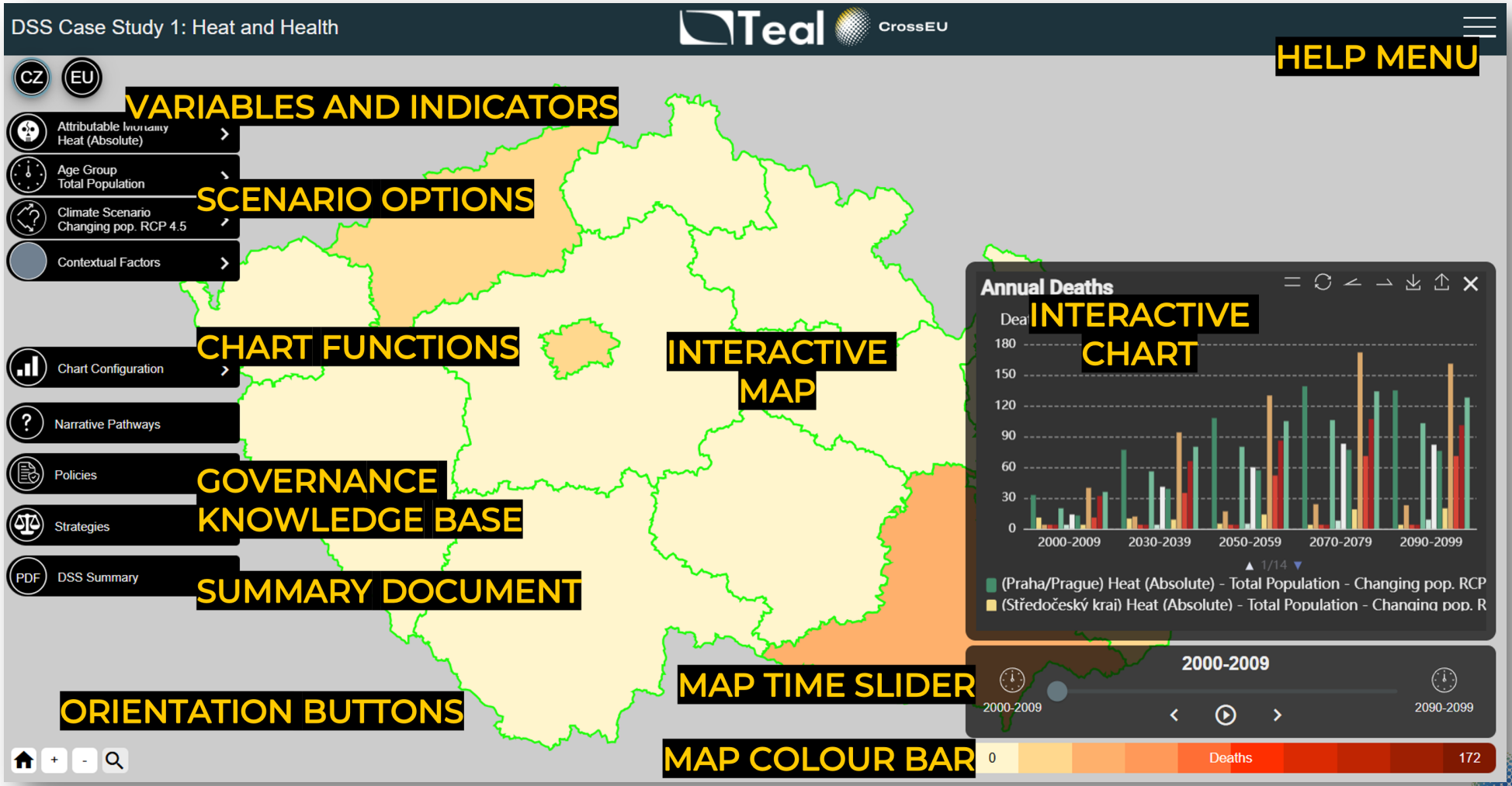
CrossEU

The DSS UI



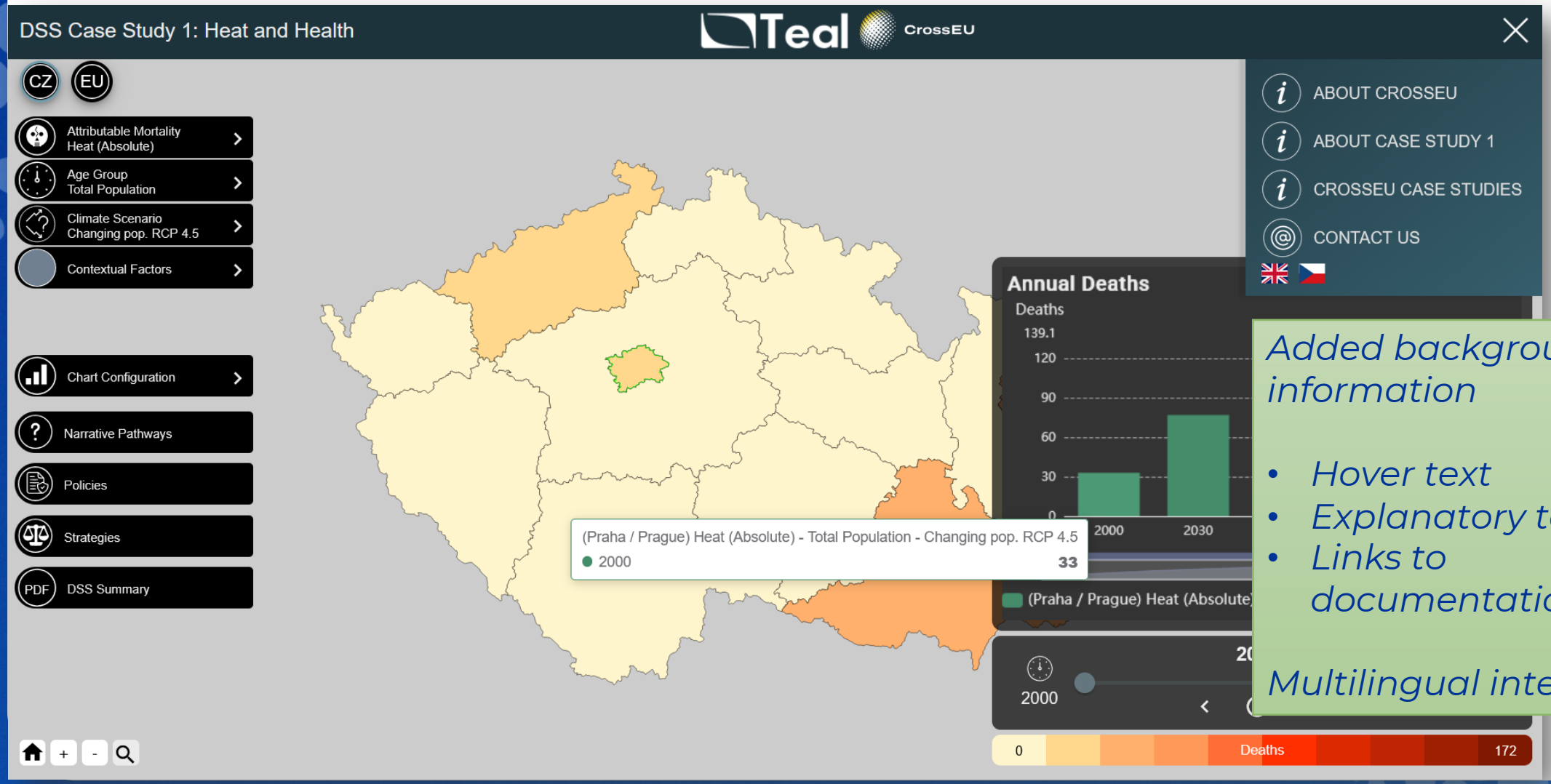
CrossEU

The DSS UI



CrossEU

The DSS UI - Exploratory pathway



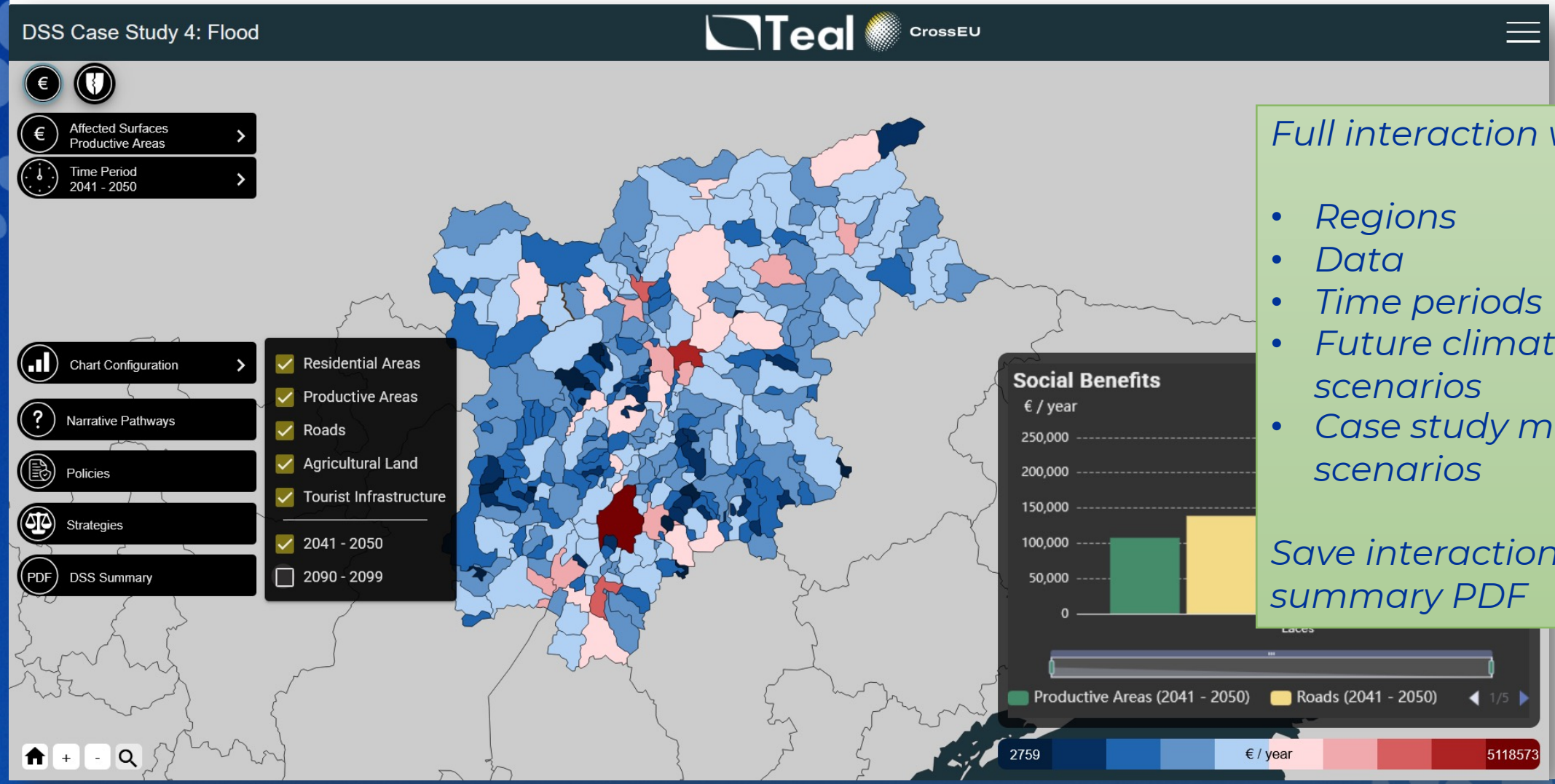
Added background information

- *Hover text*
- *Explanatory texts*
- *Links to documentation*

Multilingual interface

CrossEU

The DSS UI - Exploratory pathway



Full interaction with data

- *Regions*
- *Data*
- *Time periods*
- *Future climate scenarios*
- *Case study modelling scenarios*

Save interactions in summary PDF

CrossEU

The DSS UI - Exploratory pathway

For users who want to investigate

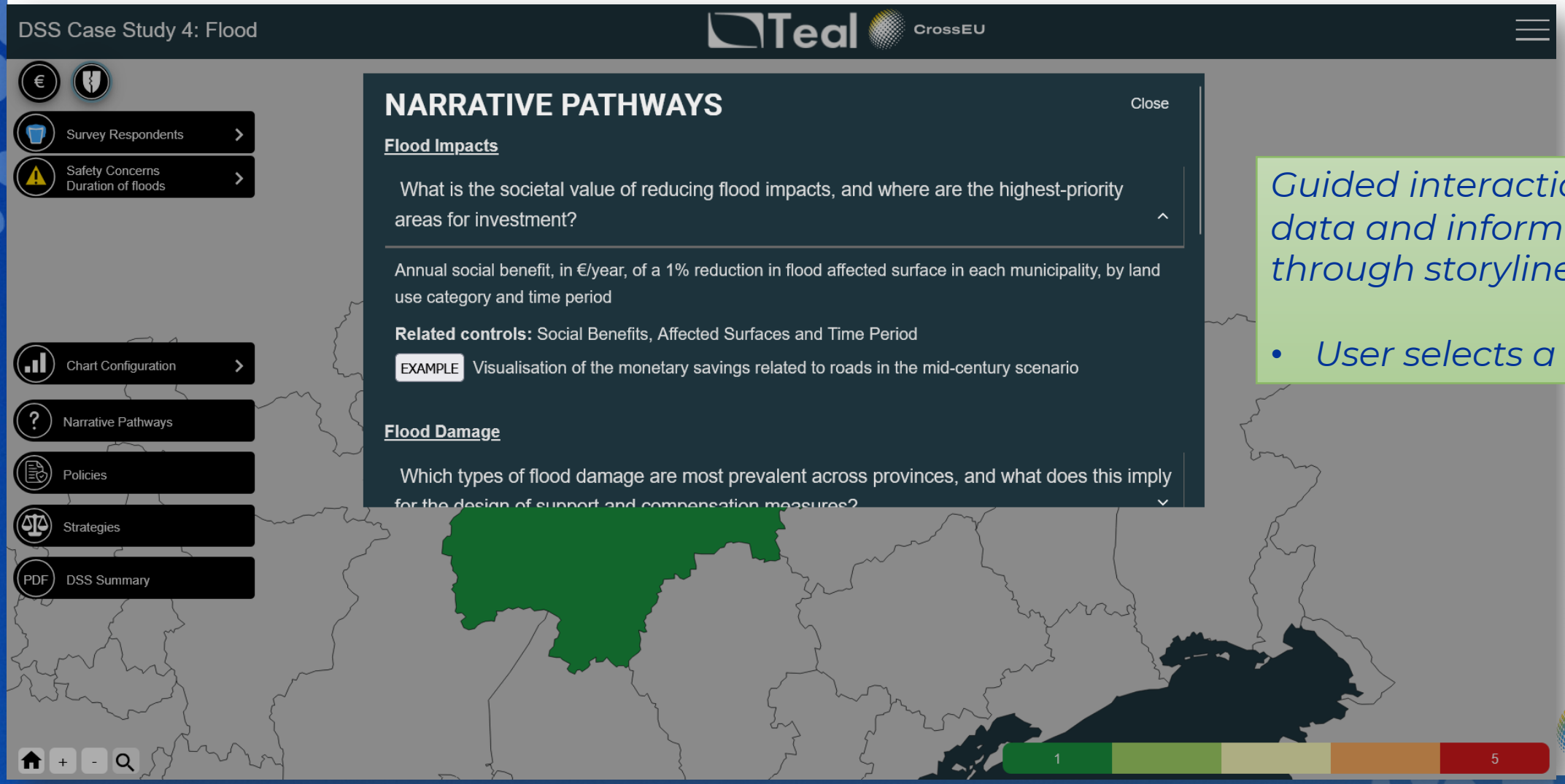
Select indicators, regions, scenarios and time periods; interact with maps and charts; compare results and download outputs.

MOVIE

https://www.wemcouncil.org/TALKS/DSS_exploratory_261110.mp4

CrossEU

The DSS UI - Narrative pathway

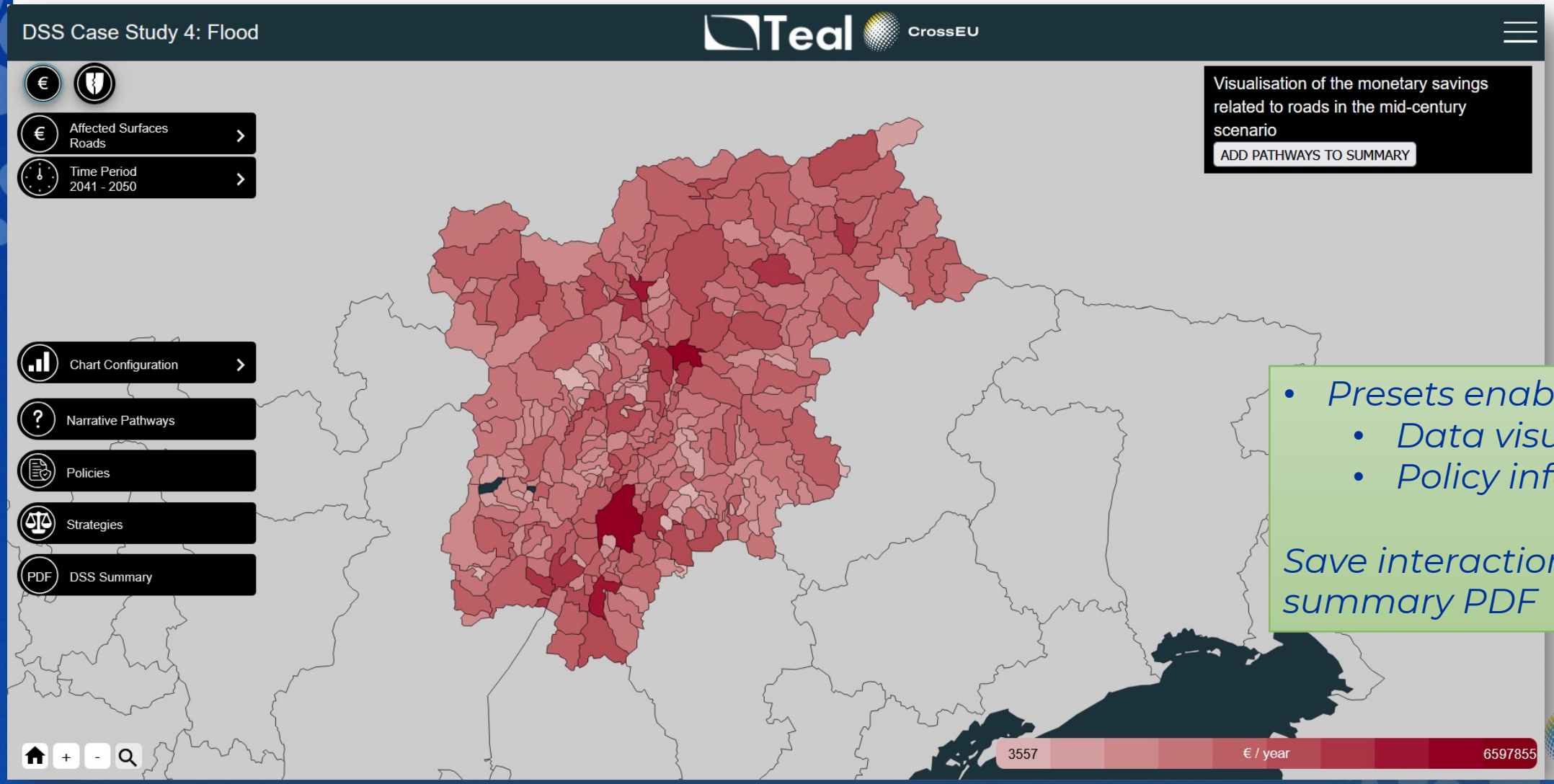


Guided interaction with data and information through storylines

- *User selects a storyline*

CrossEU

The DSS UI - Narrative pathway



- *Presets enabled for*
  - *Data visualisation*
  - *Policy information*

Save interactions in summary PDF

CrossEU

The DSS UI - Narrative pathway

For users who want guided insights

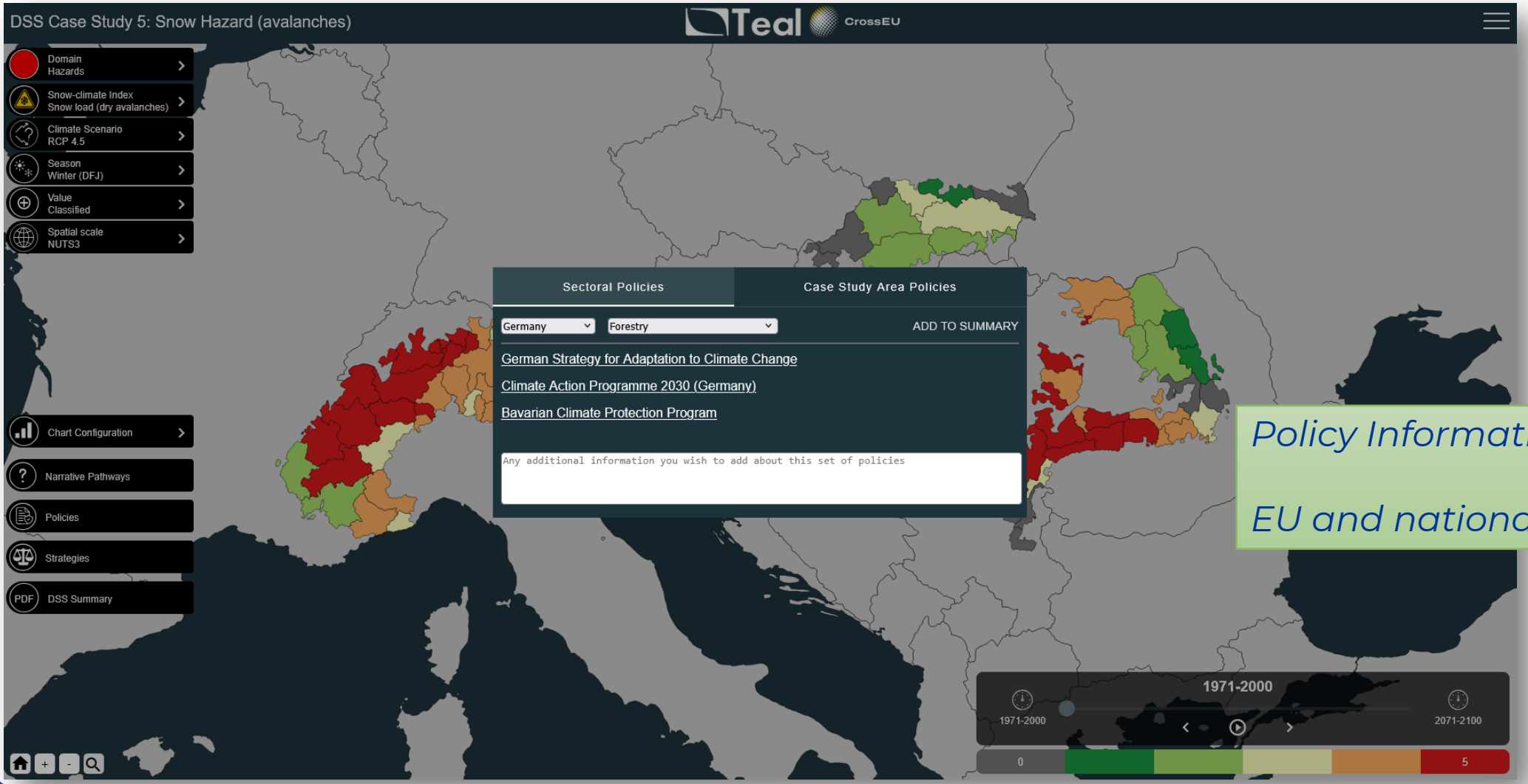
Follow stakeholder-informed questions and storylines, with relevant datasets and visualisations automatically selected.

MOVIE

https://www.wemcouncil.org/TALKS/DSS_narrative_261110.mp4

CrossEU

The DSS UI - Policy information

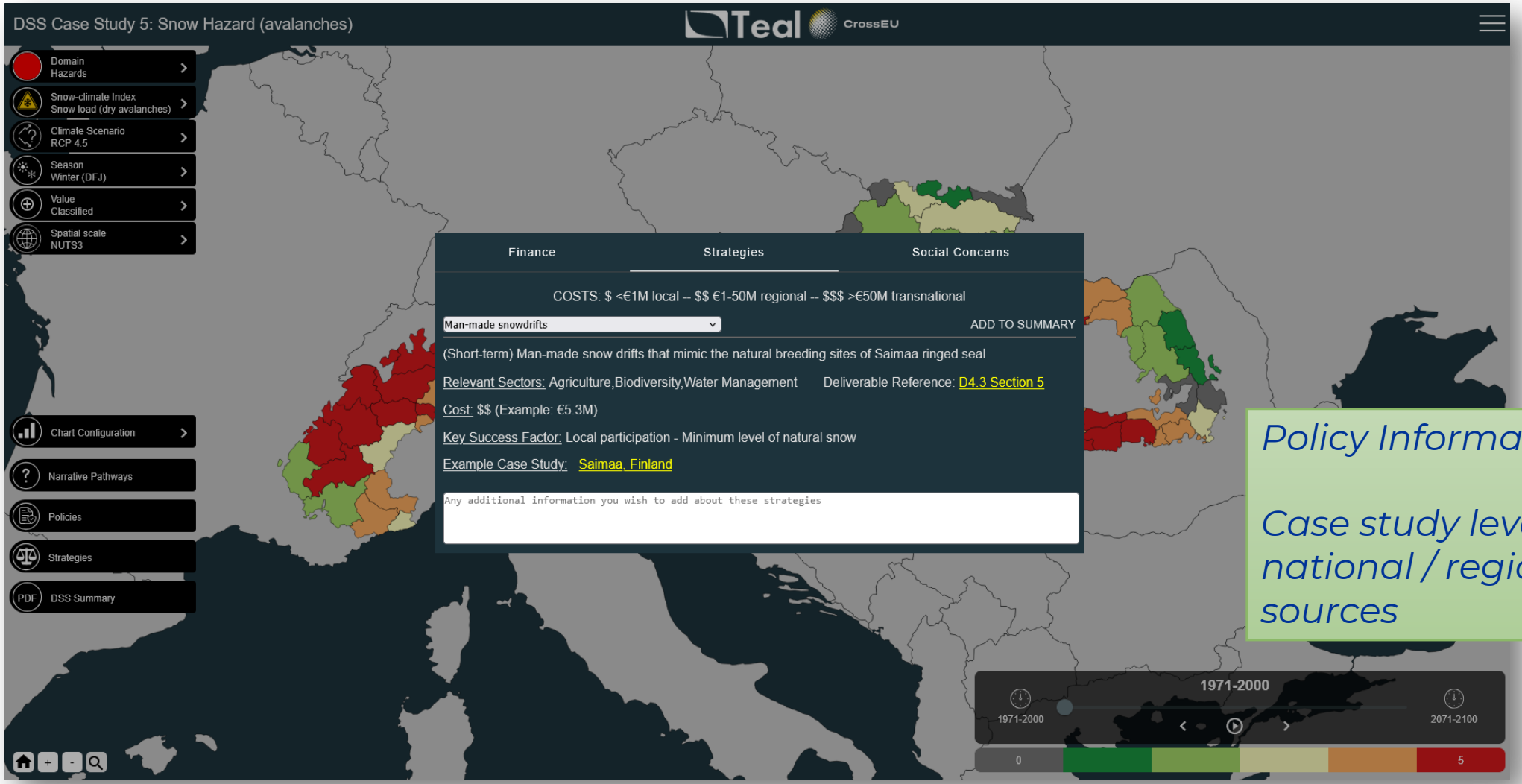


Policy Information

EU and national level

CrossEU

The DSS UI - Policy information



Policy Information

Case study level – national / regional / local sources

CrossEU

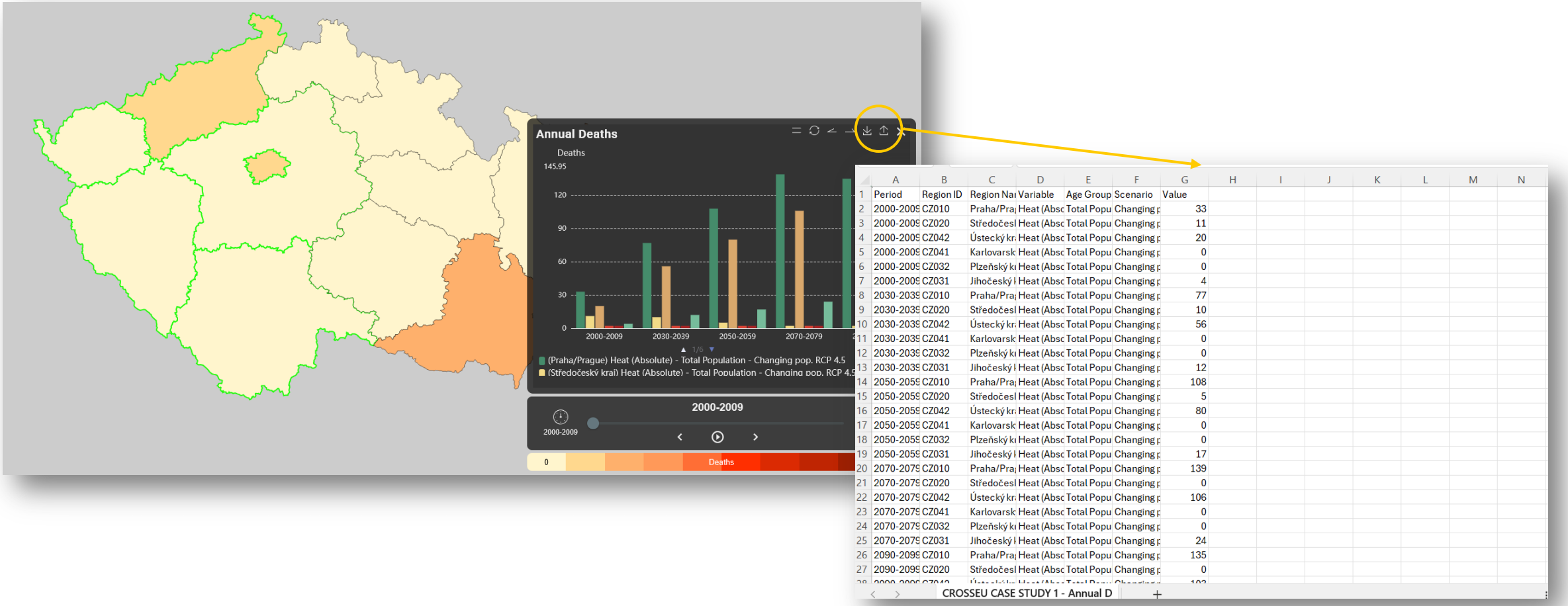
The DSS UI - Policy information

MOVIE

https://www.wemcouncil.org/TALKS/DSS_policy_261110.mp4

CrossEU

Information downloads – data

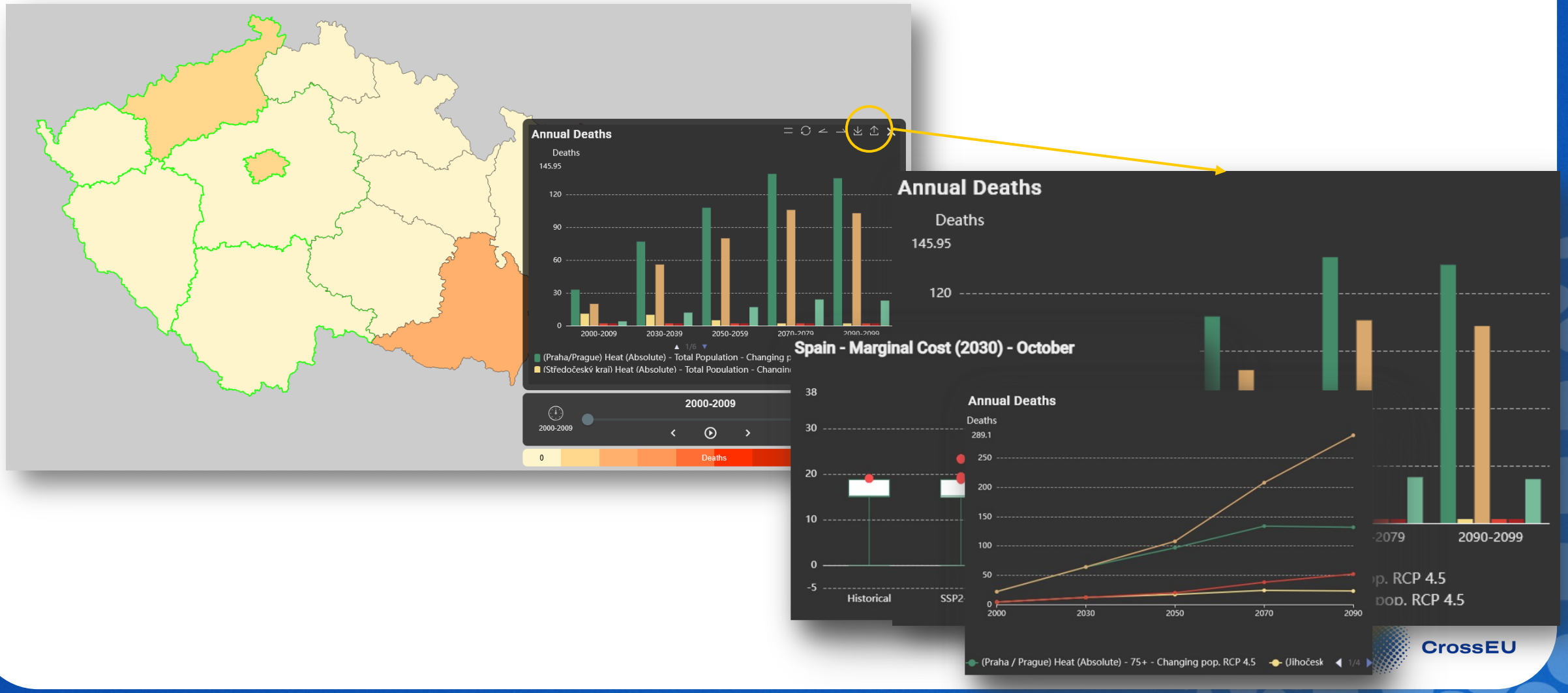


	A	B	C	D	E	F	G
1	Period	Region ID	Region Na	Variable	Age Group	Scenario	Value
2	2000-2009	CZ010	Praha/Pra	Heat (Absc	Total Popu	Changing p	33
3	2000-2009	CZ020	Středočesl	Heat (Absc	Total Popu	Changing p	11
4	2000-2009	CZ042	Ústecký kr	Heat (Absc	Total Popu	Changing p	20
5	2000-2009	CZ041	Karlovarsk	Heat (Absc	Total Popu	Changing p	0
6	2000-2009	CZ032	Plzeňský k	Heat (Absc	Total Popu	Changing p	0
7	2000-2009	CZ031	Jihočeský l	Heat (Absc	Total Popu	Changing p	4
8	2030-2039	CZ010	Praha/Pra	Heat (Absc	Total Popu	Changing p	77
9	2030-2039	CZ020	Středočesl	Heat (Absc	Total Popu	Changing p	10
10	2030-2039	CZ042	Ústecký kr	Heat (Absc	Total Popu	Changing p	56
11	2030-2039	CZ041	Karlovarsk	Heat (Absc	Total Popu	Changing p	0
12	2030-2039	CZ032	Plzeňský k	Heat (Absc	Total Popu	Changing p	0
13	2030-2039	CZ031	Jihočeský l	Heat (Absc	Total Popu	Changing p	12
14	2050-2059	CZ010	Praha/Pra	Heat (Absc	Total Popu	Changing p	108
15	2050-2059	CZ020	Středočesl	Heat (Absc	Total Popu	Changing p	5
16	2050-2059	CZ042	Ústecký kr	Heat (Absc	Total Popu	Changing p	80
17	2050-2059	CZ041	Karlovarsk	Heat (Absc	Total Popu	Changing p	0
18	2050-2059	CZ032	Plzeňský k	Heat (Absc	Total Popu	Changing p	0
19	2050-2059	CZ031	Jihočeský l	Heat (Absc	Total Popu	Changing p	17
20	2070-2079	CZ010	Praha/Pra	Heat (Absc	Total Popu	Changing p	139
21	2070-2079	CZ020	Středočesl	Heat (Absc	Total Popu	Changing p	0
22	2070-2079	CZ042	Ústecký kr	Heat (Absc	Total Popu	Changing p	106
23	2070-2079	CZ041	Karlovarsk	Heat (Absc	Total Popu	Changing p	0
24	2070-2079	CZ032	Plzeňský k	Heat (Absc	Total Popu	Changing p	0
25	2070-2079	CZ031	Jihočeský l	Heat (Absc	Total Popu	Changing p	24
26	2090-2099	CZ010	Praha/Pra	Heat (Absc	Total Popu	Changing p	135
27	2090-2099	CZ020	Středočesl	Heat (Absc	Total Popu	Changing p	0

CROSSEU CASE STUDY 1 - Annual D

CrossEU

Information downloads – charts



Information downloads – PDFs summaries

CrossEU DAFNI Teal

CROSSEU DSS CASE STUDY 4: FLOOD

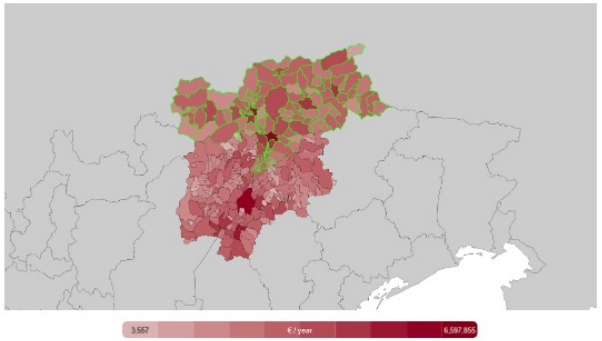
BACKGROUND: The Trentino-Alto Adige region in northeastern Italy is exposed to an increasing frequency of short-duration extreme precipitation events driven by climate change. The combination of steep orography, geomorphological fragility and high concentration of alluvial fans makes the region particularly susceptible to flash floods and debris flows. The storyline anchoring the case study is Storm Vaia (27-29 October 2018), which caused widespread flooding, landslides and 11 fatalities across the Eastern Italian Alps.

NARRATIVE PATHWAY

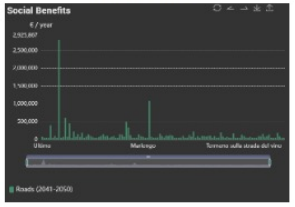
What is the societal value of reducing flood impacts, and where are the highest-priority areas for investment?

Annual social benefit, in €/year, of a 1% reduction in flood affected surface in each municipality, by land use category and time period

Visualisation of the monetary savings related to roads in the mid-century scenario



surfaces - roads



UK Research and Innovation

Generated by the CROSSEU DSS on 10/11/2026, 13:16:50 GMT

Page 1 of 2

Roads 2040s

SECTORAL POLICIES

Agriculture (IT)

National Plan for Adaptation to Climate Change – PNACC (Italy)	Ecological Transition Plan – PTE (Italy)

FINANCE

Emergency Interventions — Grant

Sectors: Finance
Target Sectors: Primary households
Advantages: Prioritizes low-income households
Disadvantages: None

Deliverable Reference: D4.7 Section 3.6

Acknowledgments

This tool has been developed as part of the Cross-sectoral Framework for Socio-Economic Resil... Europe (CROSSEU) project, funded by the European Union under the Horizon Europe programme (Grant Agreement No. 101081577). UK participants in this project are co-funded by UK Research and Innovation (UKRI).

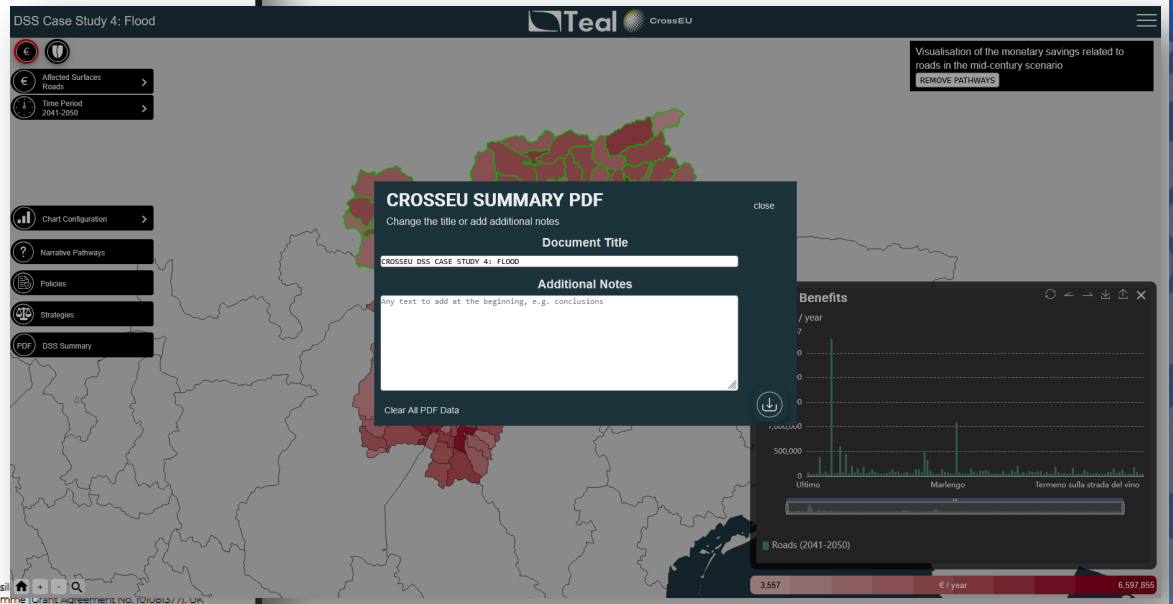
Disclaimer

The views and opinions expressed 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.

UK Research and Innovation

Generated by the CROSSEU DSS on 10/11/2026, 13:16:50 GMT

Page 2 of 2



CrossEU

User Resources

- **DSS page on CROSSEU website**
- **Video tutorials**
- **User Guide**
- **DAFNI DSS Landing page**
- **Scientific and policy Information linked from UI**

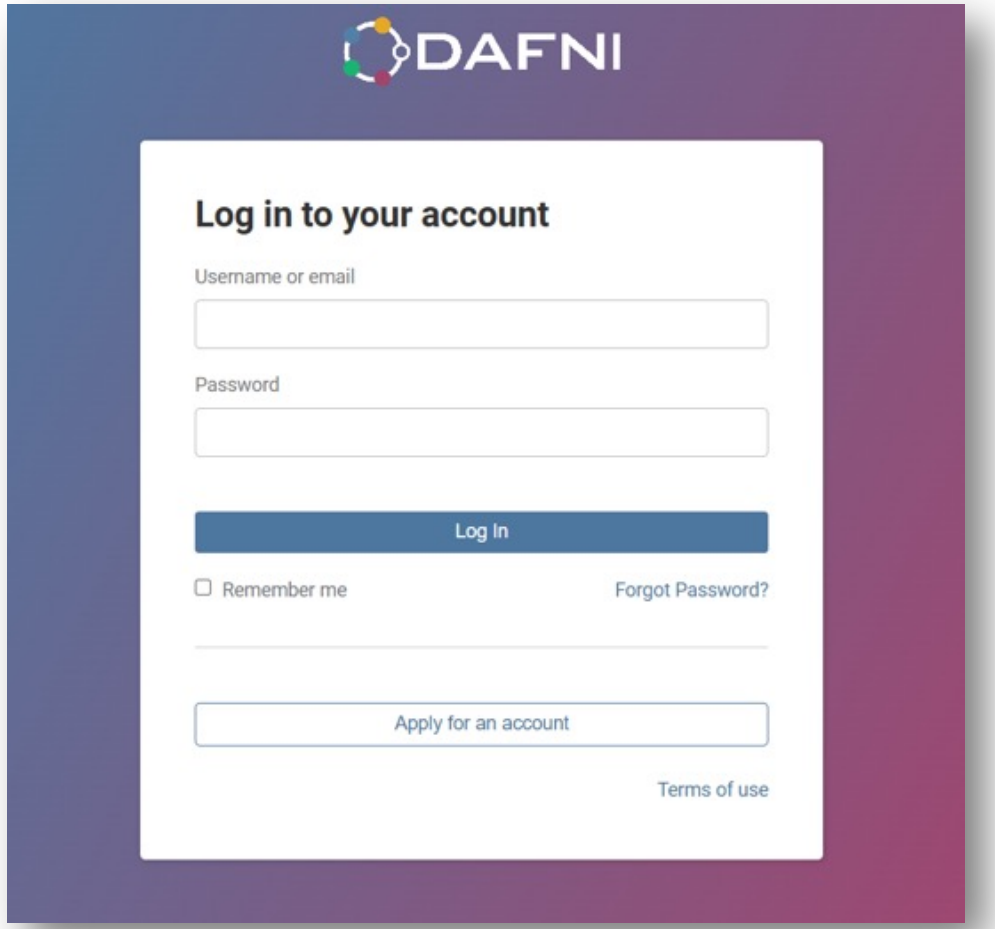


https://crosseu.eu/dss

Access

- **Registration on DAFNI**
- **Standard account gives instant access to DSS landing page and UIs**
- **Upgrade to ‘Expert’ account allows users to run workflows**

https://crosseu.eu/dss



CrossEU

From climate research to decision support – and beyond

What CROSSEU has delivered

- An accessible interface connecting climate-impact research with stakeholder information needs.
- Exploratory and guided pathways for accessing and interpreting results.
- Integration of visualisation, data access and computational workflows through **Teal** and **DAFNI**.
- A reusable foundation for future climate-risk and adaptation applications.

Beyond CROSSEU

- Extend the approach to additional regions, sectors and climate-risk indicators.
- Further connect climate-impact assessments with adaptation planning and policy processes.
- Continue to build on user feedback to improve accessibility, functionality and practical uptake.

The longer-term opportunity is to move from displaying climate-impact results towards supporting increasingly integrated, evidence-based adaptation decisions.

https://crosseu.eu/dss

CrossEU

Partners

Meteo Romania

DTU

UEA University of East Anglia | Norwich Business School

Tyndall Centre for Climate Change Research

BOKU

CZU

Università degli Studi di Padova

TESAF

UCL

University of Bucharest

Helmholtz-Zentrum hereon

eDF

LGi sustainable innovation

K&I Conoscenza e Innovazione

WEMC World Energy & Meteorology Council

World Meteorological Organization

Cross-sectoral Framework for Socio-Economic Resilience to Climate Change and Extreme Events in Europe (CROSSEU)
EU Horizon Europe Programme (Grant agreement No. 101081377)

CrossEU

Disclamer

Co-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.

UK participants in this project are co-funded by UK Research and Innovation (UKRI).



Co-funded by
the European Union



UK Research
and Innovation

CrossEU

CrossEU

contact@crosseu.eu

Follow us on our socials!

LinkedIn

X/Twitter

Co-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.

UK participants in this project are co-funded by UK Research and Innovation (UKRI).

Co-funded by the European Union

UK Research and Innovation