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Labs and Co-creation Project Description

DT Lab

Participatory AI for Climate

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Executive Summary

The project *"Participatory AI for Climate"*, implemented within the FORTHEM framework, explored how artificial intelligence (AI) can be more effectively aligned with societal needs in addressing climate challenges through participatory and interdisciplinary approaches. Recognising that current AI applications in the climate domain are often expert-driven and insufficiently connected to local contexts, the project aimed to integrate stakeholder perspectives - particularly those of students - into the development of future teaching and research formats.

The project combined literature review, co-creation activities, and international collaboration among partner universities (Germany, Spain, Poland, Finland, and France). Two participatory student workshops were conducted, providing insights into students' knowledge, expectations, and interest in the intersection of AI and climate. These findings informed the development of innovative teaching formats, particularly Collaborative Online International Learning (COIL), with one concrete implementation planned for the winter semester 2026/2027.

The results demonstrate a strong demand for interdisciplinary, practice-oriented, and participatory learning opportunities in this field. The project also generated a structured overview of the emerging research landscape on Participatory AI for Climate and identified key gaps for future investigation.

A major outcome of the project is its transition from exploratory activities to a strategic European initiative. The project consortium is currently preparing a proposal for a Marie Skłodowska-Curie Doctoral Training Network (MSCA-DN) under the Horizon Europe RAISE 2026 call. This proposal builds directly on the project's findings and aims to establish a long-term, interdisciplinary research and training programme. In parallel, a joint paper has been developed for presentation at the IARIA 2026 conference, outlining a doctoral research agenda that conceptualises AI systems as participatory media infrastructures supporting collective sensemaking and climate action.

Overall, the project demonstrates how co-creation, interdisciplinary collaboration, and student engagement can serve as catalysts for innovative teaching formats and scalable European research initiatives. It contributes to building capacity for ethical, participatory, and socially robust AI development in the context of climate change and establishes a strong foundation for future collaboration within and beyond the FORTHEM network.

About the project

Description of the project

In a time when technologies such as artificial intelligence (AI) and climate change are both evolving at an accelerating pace - and increasingly influencing one another while shaping society across all domains - keeping up with these developments presents a significant challenge for both individuals and institutions, including universities. While the current generation is growing up within this rapidly changing landscape, rudimentary knowledge alone is insufficient to prepare them for future professional and societal demands. Although interest in the intersection of AI and climate is steadily increasing, dedicated academic programmes addressing both topics remain rare within university curricula. Expanding such offerings would provide long-term benefits for both students and institutions.

To initiate this effort, a meeting was held on 16 July 2025 at Johannes Gutenberg University Mainz (Germany) to plan the project. In addition to the German team - Petra Ahrweiler, Dario Brockschmidt, and Virginia Toy - representatives from partner universities participated: Marco Guglielmo (University of Valencia, Spain), Lauri Frank (University of Jyväskylä, Finland), Marta Maciejasz (University of Opole, Poland), and Fabrice Mariaudeau (University of Bourgogne, France).

The meeting agenda included the presentation of an initial project plan, discussions of current activities and future opportunities at each participating institution, and a joint brainstorming session to explore the present and future research landscape. Further discussions focused on the development of a joint teaching programme, the perspectives of student representatives, and the identification of next steps.

Planned activities were carried out until February 2026. These included a literature review, the organisation of two student workshops open to participants from all partner universities, and - based on the insights generated - the planning of Collaborative Online International Learning (COIL) formats.

Method/approach

Designing a teaching programme on participatory AI and climate requires an understanding of students' existing knowledge, their interests, and the extent of time they are willing to invest. In addition, an appropriate format needed to be selected and tested in order to define a suitable target group within an international and interdisciplinary context.

To address these needs, two exploratory and participatory student workshops were organised, open to students from all disciplines across the partner universities. These workshops aimed to gather insights into students' expectations, knowledge levels, and thematic interests.

In parallel, a preliminary review of the state of research was conducted to map existing work on participatory AI and climate. While the field remains fragmented and could be expanded through additional related concepts and terminology, this review established a foundational knowledge base and helped identify existing research gaps.

The collected publications were systematically organised into three categories in alphabetical order. Keywords were documented, along with citation counts and available online sources where possible. When accessible, texts were downloaded and stored in topic-specific folders.

Based on these findings, COIL formats were developed. One COIL will connect the course *"Artificial Intelligence for Assessment"* at Johannes Gutenberg University Mainz (Germany) with *"Public Finance"* at the University of Opole (Poland), starting in the winter semester 2026/2027. This format will enable students to collaboratively analyse climate-related public challenges across different national contexts and to design participatory, AI-supported assessment concepts for informing policy-making and public decision processes. A second COIL is being considered between the University of Valencia and the University of Jyväskylä.

Project team, partners and stakeholders

Project team:

- Petra Ahrweiler (Johannes Gutenberg University Mainz)
- Blanca Luque Capellas (Johannes Gutenberg University Mainz)
- Dario Brockschmidt (Johannes Gutenberg University Mainz)
- Virginia Toy (Johannes Gutenberg University Mainz)
- Rebecca Schell (Johannes Gutenberg University Mainz)
- Marco Guglielmo (University of Valencia)
- Oscar Barbera Areste (University of Valencia)
- Marta Maciejasz (University of Opole)
- Lauri Frank (University of Jyväskylä)

Collaborating universities:

- Johannes-Gutenberg University Mainz (Germany)
- University of Valencia (Spain)
- University of Opole (Poland)
- University of Jyväskylä (Finland)

Other contributors:

- FORTHEM
- Press office of the Johannes-Gutenberg-University Mainz
- Sociology student council and sociology student services office of the Johannes Gutenberg University Mainz

Timeline

July 2025

Kick-off meeting with PI, implementation of the first workshop with students.

August 2025

Follow-up for the student workshop.

September 2025

PI follow-up meeting.

October/ November 2025

Collection of expectations, ideas, and requirements from partner universities, clarification on topic and purpose of the project.

December 2025/ January 2026

Communication with partner universities, research on existing literature, and preparation for the second student workshop, planning and preparation of the first COIL for winter semester 2026/2027.

February 2026

Implementation of the second student workshop and follow-up.

March 2026

Drafting of the final report, finalising literature review.

Co-creation

This project originated from the aim of exploring how AI can contribute to addressing climate change in ways that directly affect society. However, for such contributions to become meaningful and sustainable, future generations require access to knowledge, as well as the skills necessary to develop, apply, and critically reflect on emerging technologies.

Universities play a central role in providing this foundation. Developing a teaching programme that addresses two of the most significant challenges of our time, AI and climate change, and their interconnections is therefore a logical and necessary step.

To ensure relevance and effectiveness, a needs analysis of a target group closely aligned with future learners was essential.

For this reason, both student workshops were designed as participatory formats, giving students - the primary stakeholders of future educational programmes - a voice in shaping the project. Their perspectives, needs, and ideas directly informed the development of an initial concept for a learning programme on participatory AI for climate, as well as the broader direction of the project's outcomes.

Dissemination

Communication with universities, in-university and with FORTHEM

Communication within the project took place across multiple channels, including email, Microsoft Teams, and both online and in-person meetings. Exchanges occurred within the project team, with FORTHEM, with partner universities, and with various offices at Johannes Gutenberg University Mainz.

In addition to the PI kick-off meeting and a follow-up meeting in September, most updates and coordination activities were conducted via email or targeted calls to address specific issues. Given the geographical distance between partners, the COIL formats were also designed with remote collaboration in mind.

The student workshops were promoted through internal communication channels, including email distribution lists, social media, newsletters, official university websites, and in-person announcements. Communication materials included a brief project description, registration links, and key information such as topic and date. No photographic documentation was produced; however, audio recordings and transcripts were created for internal use and will not be published. Following the second workshop, participation certificates were distributed via email.

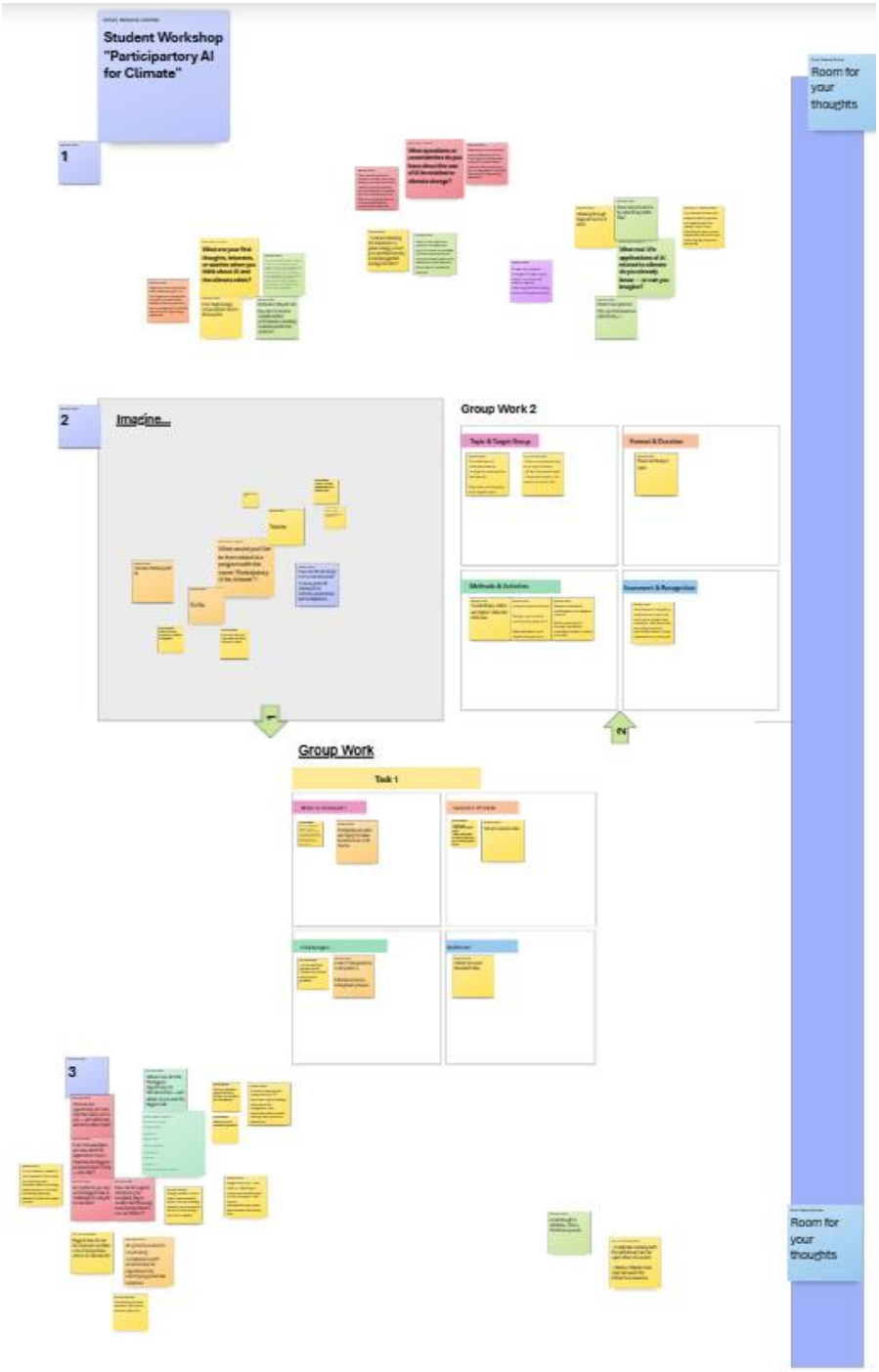
After ended project

Results and outputs – after ended project

The workshops and literature review generated a range of exploratory results based on the data collected during project activities. The literature review resulted in a structured reference list of relevant studies, research designs, and publications, providing an overview of the current research landscape.

The two student workshops served not only as pilot formats for potential joint teaching initiatives such as COIL but also provided valuable insights into student perspectives. Participants came from diverse academic backgrounds, and their contributions reflected disciplinary differences in knowledge, priorities, and approaches. While students demonstrated familiarity with either AI or climate-related topics, the intersection of both areas raised numerous questions and uncertainties.

A consistent outcome across discussions and feedback was the strong demand for further information and structured learning opportunities, particularly about societal and ethical implications. The workshops also highlighted the importance of interdisciplinary dialogue in addressing complex global challenges.



From an organisational perspective, there was significant interest in interactive, interdisciplinary formats involving hands-on group work, supporting the viability of approaches such as COIL and Blended Intensive Programmes.

Students expressed clear interest in future initiatives and in the development of a formal teaching programme, while also emphasising the need for concrete, practice-oriented examples rather than abstract concepts.

The workshops enabled the testing of a collaborative online learning format that can be further refined and reused. They also provided insights into technical opportunities and barriers to participation, which can inform future programme design. Overall, the project contributed valuable knowledge regarding the feasibility and challenges of implementing interdisciplinary, international teaching formats, and has already influenced the development of planned COIL activities.

A further key outcome of the project is the development of a joint follow-up initiative at the European level. Building on the collaboration established within the FORTHEM network, the project consortium is currently preparing a proposal for a Marie Skłodowska-Curie Doctoral Training Network (MSCA-DN) focusing on the topic *"Participatory AI for Climate."* This proposal is designed to respond to the Horizon Europe call *RAISE 2026*, thereby extending the scope of the project from exploratory teaching and research activities to a structured, long-term European training and research programme.

As part of this effort, the consortium has developed a conceptual and research-oriented framework, which is presented in a paper submitted for presentation at the IARIA 2026 conference. The paper outlines a doctoral training agenda that conceptualises AI systems as participatory media infrastructures mediating between climate science and society, and proposes interdisciplinary research directions including participatory data generation, AI governance and fairness, and socio-cultural adaptation of AI systems.

This follow-up initiative demonstrates the sustainability and scalability of the project outcomes. It translates the insights gained from workshops, literature review, and co-creation activities into a concrete European funding application and a structured research and training programme. In doing so, it significantly strengthens the long-term impact of the FORTHEM project by contributing to the development of a new generation of researchers trained in participatory, ethical, and socially embedded AI approaches for climate action.

Evaluation/reflection – after ended project

Participatory AI and climate research are both extensive fields; however, their intersection remains comparatively underexplored. Throughout the project, participants gained a deeper understanding of these emerging connections and the research opportunities they present. Both the literature review and the student workshops contributed to making these intersections more visible.

The participatory workshop format proved particularly valuable. When students were given space to articulate and reflect on their own knowledge, they contributed not only insights but also uncertainties, critical questions, and new perspectives. Engagement with diverse viewpoints—across disciplines and national contexts—enabled both students and project members to broaden and refine their understanding.

These interactions played a key role in shaping the project and clarifying the needs and expectations of future learners. As a result, the project has established a strong foundation for the development of future educational activities and programmes in the field of participatory AI for climate.

Beyond these immediate learning outcomes, the project also generated important strategic insights regarding the scalability and long-term development of the initiative. The collaboration between partner universities, initially focused on exploratory teaching formats and co-creation activities, has evolved into a more structured and research-oriented partnership. This is reflected in the planned joint preparation of a Marie Skłodowska-Curie Doctoral Training Network (MSCA-DN) proposal on *"Participatory AI for Climate"*, which aims to respond to the Horizon Europe RAISE 2026 call.

The development of this proposal will be directly informed by the findings of the project, including the identified research gaps, the strong student interest in interdisciplinary and participatory formats, and the need for structured training in this emerging field. In addition, the consortium has initialised its research agenda through the preparation of a paper for presentation at the IARIA 2026 conference, outlining a doctoral training programme that conceptualises AI systems as participatory media infrastructures and proposes concrete research directions.

This progression from exploratory project activities to a coordinated European funding initiative highlights the project's success in generating sustainable impact. It demonstrates how initial co-creation and teaching-focused approaches can serve as a catalyst for larger-scale research collaboration and capacity building. At the same time, it underlines the importance of interdisciplinary and participatory approaches in addressing complex societal challenges such as climate change.