



D8.6

Report on the communication and dissemination activities

Funding scheme	EU-H2020-Green Deal, H2020-LC-GD-2020-3		
Project	ECF4CLIM, European Competence Framework for a Low Carbon Economy and Sustainability through Education		
Project number	101036505		
Project Coordinator	CIEMAT, Centro de Investigaciones Energeticas, Medioambientales y Tecnologicas		
Start Date of the Project	01.10.2021	Duration of project	48 months
Contributing WP	WP8: Clustering, Outreach, and Dissemination Activities		
Tasks			
Dissemination Level	Public		
Due date	2025 November 30		
Submission date	2025 November 30		
Responsible partner	Meda Research		
Contributing organizations	CIEMAT, JYU, UAB,USE, IST, USE, ENLITIA, ISQ, QUE		
Authors:	Marian Constantin, Ana Prades, Yolanda Lechon, Anna Lehtonen, Hannu Heikkinen, Terhi Nokkala, Niina Mykrä, Anca Germizara Ciurduc-Todoran, Carmen-Cerasela Constantin, Tiago Faria, José A. Becerra, Ricardo Chacartegui, Carmen Lago, Lara Ramos, Joseph Espluga Trenc, Markku Lehtonen, Sally Chen, Stratis Antonis, Chara Zografou, Marina Barla, Chrysoula Skari		
Version	1.0		



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036505

WHO WE ARE

The ECF consortium consists of ten partners. The project is coordinated by Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas-CIEMAT.

Name	Country	Logo
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas – CIEMAT	ES	
Instituto Superior Técnico. University of Lisbon. IST	PT	
Universidad de Sevilla USE	ES	
University of Jyväskylä JYU	FI	
Universitat Autònoma de Barcelona UAB	ES	
Meda Research Ltd MedaResearch	RO	
Instituto de Soldadura e Qualidade ISQ	PT	
Trebag Szellemi Tulajdon Es Projektmenedzser Korlatolt Felelossegu Tarsasag TREBAG	HU	
Enlitia	PT	
Que Technologies Kefalaiouschiki Etaireia QUE	GR	

ABOUT THE PROJECT

Through a multidisciplinary, transdisciplinary and participatory process, ECF4CLIM develops, tests and validates a European Competence Framework (ECF) for transformational change, which will empower the educational community to take action against climate change and towards sustainable development.

Applying a novel hybrid participatory approach, rooted in participatory action research and citizen science, ECF4CLIM co-designs the ECF in selected schools and universities, by: 1) elaborating an initial ECF, supported by crowdsourcing of ideas and analysis of existing ECFs; 2) establishing the baseline of individual and collective competences, as well as environmental performance indicators; 3) implementing practical, replicable and context adapted technical, behavioural, and organisational interventions that foster the acquisition of competences; 4) evaluating the ability of the interventions to strengthen sustainability competences and environmental performance; and 5) validating the ECF.

The proposed ECF is unique in that it encompasses the interacting STEM (Science, Technology, Engineering, and Mathematics)-related, digital and social competences, and systematically explores individual, organisational and institutional factors that enable or constrain the desired change. The novel hybrid participatory approach provides the broad educational community with: an ECF adaptable to a range of settings; new ways of collaboration between public, private and third-sector bodies; and innovative organisational models of engagement and action for sustainability (Sustainability Competence Teams and Committees).

To encourage learning-by-doing, several novel tools will be co-designed with and made available to citizens, including a digital platform for crowdsourcing, IoT solutions for real-time monitoring of selected parameters, and a digital learning space. Participation of various SMEs in the consortium maximises the broad adoption and applicability of the ECF for the required transformational change towards sustainability.

LEGAL NOTICE

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the CINEA nor the European Commission is responsible for any use that may be made of the information contained therein.

All rights reserved; no part of this publication may be translated, reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher.

Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. The quotation of those designations in whatever way does not imply the conclusion that the use of those designations is legal without the content of the owner of the trademark.

TABLE OF CONTENTS

1	Executive Summary	7
2	Introduction	9
2.1	Purpose of the report	9
2.2	Relation with Communication Plan (D8.1) and Dissemination Plan (D8.3)	9
2.3	Links with Exploitation activities	10
3	Objectives of Communication and Dissemination	12
3.1	Primary and secondary objectives	12
3.2	Alignment with project goals and EU policy priorities	13
4	Methodology and Approach	15
4.1	Principles guiding communication and dissemination	15
4.2	Monitoring and reporting process	16
4.3	Integration with clustering and exploitation	18
5	Target Groups and Stakeholder Engagement	19
5.1	Scientific community	19
5.2	Educational communities (schools, universities, SCTs, SCCs)	20
5.3	Policymakers and authorities (local, regional, national, EU)	21
5.4	NGOs and civil society	23
5.5	General public	24
6	Channels and Activities	26
6.1	Project website	26
6.2	Digital Platform	35
6.3	Social Media (LinkedIn, Facebook, YouTube)	38
6.4	Publications, conferences, and external events	50
6.5	Communication with educational communities and local communities	52
6.6	Workshops and Webinars	63
6.7	Final Conference	71
6.8	Best Intervention Award	71

6.9	Newsletters	75
6.10	Blog.....	77
7	Communication materials	80
7.1	Awareness raising actions	80
7.2	Media coverage	81
7.3	Visual identity and branding	85
7.4	Success story	87
7.5	Digital factsheet and Brochure.....	89
8	Monitoring, KPIs, and Impact Assessment	93
8.1	KPIs achieved vs. planned in Communication.....	93
8.2	KPIs achieved vs. planned in Dissemination	96
8.3	Quantitative and qualitative results.....	98
8.4	Feedback from stakeholders	99
9	Challenges and Lessons Learned	101
9.1	Barriers encountered	101
9.2	Solutions and adaptations.....	102
10	Conclusions	104
11	References.....	106
12	Annexes	107
	Annex 1: List of publications	107
	Annex 2: List of blog posts.....	116
	Annex 3: ECF4CLIM, Final Conference, AGENDA	119
	Annex 4. Some KPIs reflecting the tendencies of website in the last 30 days.....	123
	Annex 5. Press Releases	128
	Annex 6. ECF4CLIM in GD Newsletter	132
	Annex 7. Abbreviations & Acronyms.....	133

1 EXECUTIVE SUMMARY

This report presents the communication and dissemination activities carried out within the ECF4CLIM project, funded under the Horizon 2020 Green Deal programme. The project aims to develop, validate, and promote a European Competence Framework (ECF) designed to empower educational communities—schools, universities, and their wider ecosystems—to drive transformational change toward climate neutrality and sustainability. Through a participatory and transdisciplinary methodology, ECF4CLIM brings together students, teachers, researchers, policymakers, and civil society actors to co-create solutions that enhance sustainability competences and improve environmental performance in educational settings.

Communication and dissemination activities have played a central role in supporting these objectives. Over the project's lifetime, communication and dissemination efforts focused on three overarching objectives: (1) Awareness and visibility – to ensure that the project's vision, activities, and results were accessible to diverse audiences across Europe, (2) Engagement and participation – to involve educational communities, policymakers, and stakeholders in co-design, testing, and discussion of results, (3) Knowledge transfer and impact – to promote the adoption, replication, and integration of project methods, tools, and knowledge beyond the Demonstration Sites (DSs).

Guided by the Communication Plan (D8.1) and Dissemination Plan (D8.3), the project implemented a coordinated and multi-channel strategy aimed at: raising awareness of the project's goals and progress; engaging diverse stakeholder groups in co-creation and reflective dialogue; and ensuring the visibility, accessibility, and uptake of the project's results at local, national, and European levels. These activities were closely aligned with exploitation actions to facilitate long-term sustainability and replication of the project's outcomes.

Dissemination activities targeted specific stakeholder groups, including: (1) Educational communities, engaged through pilots, workshops, webinars, and the involvement of SCTs and SCCs, (2) Policymakers and authorities, reached via Advisory Board participation, events, and tailored materials linking project results with European frameworks such as GreenComp and Education for Climate, (3) Scientific community, engaged through publications, conference presentations, and clustering with related projects, (4) Civil society and NGOs, connected via partnerships and collaborative initiatives.

Key communication and dissemination channels included the ECF4CLIM website, the Digital Platform, social media networks, newsletters, and the project blog, supported by events such as workshops, webinars, international conferences, and the Final Conference. These channels enabled both broad outreach and targeted engagement. The establishment and active functioning of Sustainability Competence Teams (SCTs)

and Sustainability Competence Committees (SCCs) strengthened communication pathways within educational communities and between schools/universities and their local stakeholders, fostering participatory decision-making and collective learning.

The project also achieved significant dissemination in academic and professional environments through presentations at international conferences and the publication of peer-reviewed articles, reports, and educational materials. This contributed to scientific advancement in the fields of sustainability education, participatory approaches, and institutional transformation.

Monitoring data and Key Performance Indicators (KPIs) demonstrate a strong and growing level of engagement across all major communication and dissemination activities, including substantial increases in website visits, social media followers, and participation in events. Feedback collected from educational communities and external stakeholders confirms the relevance, accessibility, and usability of the project's tools and approaches.

The lessons learned highlight the importance of: fostering local ownership; sustaining continuous dialogue across actors and levels; supporting capacity-building for educators; and ensuring adaptable, context-responsive communication methods. The report concludes that communication and dissemination activities significantly contributed to the visibility, impact, and adoption potential of the ECF4CLIM results and provides recommendations for maintaining and scaling these activities beyond the life of the project.

2 INTRODUCTION

2.1 Purpose of the report

The purpose of this report is to provide a detailed and comprehensive account of all communication and dissemination activities undertaken within the framework of the ECF4CLIM project. It aims to systematically document the strategies, methodologies, and tools that were employed to ensure that the project's objectives, progress, and results were effectively communicated to relevant stakeholders, target audiences, and the broader public. By doing so, the report highlights not only the outputs of these activities but also the rationale behind their design and implementation, providing a clear understanding of how communication and dissemination contributed to the overall success of the project.

This report serves multiple purposes. First, **it acts as a record** for internal and external stakeholders, including project partners, policy makers, and funding institutions demonstrating the effort invested in raising awareness and facilitating knowledge transfer. Second, **it offers an assessment of the effectiveness of the different approaches, channels, and materials used**, identifying what worked well and what could be improved in future initiatives. Third, **it contributes to transparency and accountability** by systematically presenting metrics, qualitative insights, and tangible outcomes that reflect the reach, engagement, and impact of the project's communication and dissemination efforts.

Moreover, the report **is intended to support the replication of successful strategies and the adoption of best practices** in similar projects, fostering a culture of knowledge sharing and continuous improvement. It also aims **to strengthen the project's long-term visibility and sustainability**, ensuring that its results continue to benefit stakeholders and the wider community even after the formal completion of project activities. By providing this consolidated and structured overview, the report not only informs stakeholders of past achievements but also lays the groundwork for enhancing the effectiveness and impact of future communication and dissemination initiatives.

2.2 Relation with Communication Plan (D8.1) and Dissemination Plan (D8.3)

This report is intrinsically linked to the Communication Plan [1] and the Dissemination Plan [2] of the ECF4CLIM project. These foundational documents outline the strategic frameworks and operational guidelines that have steered the ECF4CLIM project's outreach efforts, ensuring coherence and alignment with its overarching objectives.

Communication Plan:

The Communication Plan serves as the strategic cornerstone for all outreach activities within ECF4CLIM. It delineates the project's communication objectives, identifies key target audiences, and specifies the channels and tools to be employed. The plan emphasizes the importance of engaging various stakeholders, including educational institutions, policymakers, and the general public, to foster a shared understanding of sustainability and climate action. By adhering to the principles set forth in D8.1, the project has aimed to create a consistent and impactful narrative that resonates across diverse audiences.

Dissemination Plan:

Complementing the Communication Plan, the Dissemination Plan focuses on the systematic sharing of project results and outcomes. It outlines strategies for disseminating findings through academic publications, conferences, workshops, and digital platforms. The plan underscores the significance of making project outputs accessible and relevant to stakeholders, thereby enhancing the potential for uptake and application. D8.3 provides a roadmap for ensuring that the knowledge generated is effectively communicated to those who can benefit from it, facilitating the broader impact of the project's work.

Interconnection and Alignment:

This report synthesizes the activities and outcomes detailed in both the Communication and Dissemination Plans, offering a consolidated view of the project's outreach efforts. It assesses the execution of the strategies outlined in D8.1 and D8.3, evaluating their effectiveness and identifying areas for improvement. By doing so, the report not only reflects on past activities but also informs future initiatives, ensuring that subsequent communication and dissemination efforts are informed by lessons learned and best practices established throughout the project's duration.

2.3 Links with Exploitation activities

This report is closely aligned with the **Exploitation Plan** of the ECF4CLIM project. The deliverables D8.4 and D8.6 [3, 4] outline the strategies and actions for ensuring the sustainability and long-term impact of the project's results beyond its duration.

D8.4 – Plan for the Exploitation of ECF4CLIM Results and for Stimulating Synergies

Deliverable D8.4 provides a comprehensive framework for identifying and leveraging the project's key exploitable results (KERs). It outlines strategies for engaging stakeholders, fostering synergies with other initiatives, and ensuring that the project's outcomes are utilized effectively. The plan emphasizes the importance of collaboration with external partners and stakeholders to maximize the impact and uptake of the project's results.

D8.6 – Report on the synergies with other projects and on the exploitation of the results ECF4CLIM project

Building upon D8.4, deliverable D8.6 presents the current exploitation results, and the strategy beyond the duration of project, detailing how the identified KERs will be exploited in the future contexts. It includes exploitation plans for each exploitable result, outlining the roles and contributions of partners to the exploitation efforts. It also addresses sustainability considerations, ensuring that the project's results continue to provide value after the project's completion.

Integration of Exploitation with Communication and Dissemination Efforts

This report synthesizes the communication and dissemination activities planned in Deliverables D8.1 and D8.3, assessing their effectiveness in supporting the exploitation objectives outlined in D8.4 and D8.6. It highlights how the visibility and accessibility of the project's results have been enhanced through targeted communication and dissemination efforts, thereby facilitating their uptake and application by relevant stakeholders.

By aligning the communication, dissemination, and exploitation strategies, the ECF4CLIM project aims to ensure that its results are not only widely known but also effectively utilized, thereby contributing to the broader goal of fostering a low-carbon economy and sustainability through education.

3 OBJECTIVES OF COMMUNICATION AND DISSEMINATION

3.1 Primary and secondary objectives

The Communication and Dissemination activities of the ECF4CLIM project have been designed and implemented in line with the strategic orientations established in D8.1 (Communication Plan) and D8.3 (Dissemination Plan). Together, they pursue a dual purpose: to **raise awareness and engagement** around the urgent need for climate action through education, and to **share and transfer knowledge, results, and tools** in ways that maximize their impact and uptake by relevant stakeholders.

Primary Objectives

1. **Raise awareness of the need for change** in response to the multifaceted challenges posed by climate change, and promote both individual and collective strategies that can foster transformative and sustainable development.
2. **Empower the educational community** by demonstrating how participatory approaches can contribute to climate action, making this community an active driver of change.
3. **Leverage the European Competence Framework (ECF)** as a catalyst for transformation, positioning it not only as a tool for the educational community but also as a vector of communication that extends to families, institutions, and wider society.
4. **Identify and address barriers and facilitators of change** at individual, organisational, and institutional levels to ensure that the project's influence extends beyond the immediate ECF4CLIM pilot communities.
5. **Disseminate project outcomes, results, and tools** effectively through structured activities, thereby ensuring that the knowledge generated is both visible and accessible to relevant audiences.
6. **Enable knowledge transfer** by sharing research results, approaches, and tools with potential users, thereby contributing to the advancement of science, educational practices, and policy-making at local, national, and European levels.

Secondary Objectives

- **Target group and channel identification:** Ensure that appropriate stakeholders (educators, policymakers, researchers, civil society, industry) and communication/dissemination channels are selected to maximize reach and influence.

- **Implementation planning:** Define a structured approach for the roll-out of dissemination actions, supported by an indicative timetable to ensure timely delivery.
- **Capacity building for partners:** Provide project partners with guidance and support to implement communication and dissemination actions consistently and effectively.
- **Stakeholder engagement:** Create the conditions for the early and meaningful involvement of a wide range of stakeholders in dialogue and co-design processes, thereby strengthening project ownership and impact.
- **Internal coordination:** Foster effective collaboration and coordination across the partnership to guarantee alignment and coherence in the communication and dissemination process.
- **Monitoring and evaluation:** Establish and apply measurable Key Performance Indicators (KPIs) to assess the effectiveness and efficiency of activities, ensuring that lessons learned can inform continuous improvement.

Taken together, these primary and secondary objectives provide a comprehensive framework that integrates awareness-raising, knowledge transfer, stakeholder engagement, and long-term impact, paving the way for the effective exploitation of ECF4CLIM results as outlined in Deliverables D8.4 and D8.6.

3.2 Alignment with project goals and EU policy priorities

The communication and dissemination activities of the ECF4CLIM project are closely aligned with the project's overarching goals and with broader European Union policy priorities in the fields of climate action, sustainability, and education. By linking awareness-raising and knowledge-sharing efforts to these strategic objectives, the project ensures that its outcomes are not only relevant at the local and institutional levels but also contribute to advancing EU-wide agendas.

Alignment with Project Goals

The ECF4CLIM project aimed to design, validate, and promote a European Competence Framework Roadmap (The final result is the Roadmap for Sustainability Competences) that empowers the educational community to play a pivotal role in addressing climate change and driving the transition to a sustainable, low-carbon society. The communication and dissemination strategy supports these goals by:

- **Making the need for transformation visible,** highlighting the urgency of climate challenges and the role of education as a driver of change.

- **Engaging the educational community and wider stakeholders** in co-creation and validation processes, ensuring broad ownership of the framework.
- **Fostering knowledge exchange** across countries, institutions, and disciplines, thereby promoting collaborative innovation.
- **Strengthening the visibility and uptake of project results**, ensuring that the the Roadmap for Sustainability Competences is adopted and adapted by diverse audiences, from educators and students to policymakers and civil society.

Alignment with EU Policy Priorities

The project's communication and dissemination efforts are fully consistent with key EU policy frameworks and strategies, including:

- **The European Green Deal**, by fostering climate literacy, awareness, and competences that empower citizens to actively contribute to a sustainable and climate-neutral Europe.
- **The European Education Area (EEA) and the Council Recommendation on Learning for Environmental Sustainability**, by promoting sustainability competences as a core component of quality education and lifelong learning.
- **The EU Climate Adaptation Strategy**, by enhancing societal resilience and preparedness through knowledge dissemination, participatory approaches, and competence-building.
- **Horizon 2020 and Horizon Europe objectives**, particularly the emphasis on open science, stakeholder engagement, and the dissemination and exploitation of research results to maximize societal impact.

Through this alignment, the communication and dissemination activities ensure that ECF4CLIM not only meets its internal objectives but also contributes directly to the EU's broader ambition of transitioning towards a climate-neutral, sustainable, and inclusive society. By positioning education as a lever for systemic change, the project adds value to European policy priorities and reinforces the EU's leadership role in climate action and sustainable development.

4 METHODOLOGY AND APPROACH

4.1 Principles guiding communication and dissemination

The communication and dissemination strategy of the ECF4CLIM project is built upon a set of guiding principles designed to ensure coherence, inclusiveness, transparency, and impact. These principles reflect both the internal needs of the consortium and the external requirements of the European Commission's guidance on communication, dissemination, and exploitation of research results.

1. Clarity and Consistency of Messages

Messages are tailored to the needs of different audiences while remaining consistent with the project's vision and objectives. The Communication Plan stresses the importance of a **clear, specific, and measurable approach**, ensuring that information is accessible, accurate, and aligned with key project milestones

2. Inclusiveness and Stakeholder Engagement

The project follows a participatory approach, rooted in citizen science and co-creation. Communication and dissemination activities are designed to **actively involve the educational community, policymakers, NGOs, and the public**, ensuring that the Roadmap for Sustainability Competences is validated and owned by those who will use it

3. Transparency and Accountability

Both plans emphasize the principle of transparency in the flow of information, guaranteeing that stakeholders and beneficiaries can easily access project results and understand the processes behind them. Communication actions are systematically monitored and reported to ensure accountability

4. Accessibility and Openness

Dissemination activities adhere to the principles of **open science and open access**, making results broadly available to the scientific community, policymakers, and society at large. This includes the use of open platforms, scientific journals, and policy briefs

5. Coordination and Synergy

Strong internal communication and coordination among partners underpin the project's external communication efforts. WP8 ensures that partners harmonize their actions, avoid duplication, and contribute effectively to common objectives, while also promoting synergies with other EU-funded initiatives

6. Adaptability and Responsiveness

Communication and dissemination activities are continuously monitored against key performance indicators (KPIs) to evaluate effectiveness. Feedback loops allow for timely adjustments, ensuring that strategies remain relevant to evolving contexts and stakeholder needs

7. Long-term Impact and Sustainability

The guiding principles extend beyond the lifetime of the project. By embedding dissemination pathways and preparing for exploitation activities, communication efforts aim to **ensure that the results of ECF4CLIM remain visible, usable, and impactful** in the long term, supporting EU climate and education policy priorities.

4.2 Monitoring and reporting process

Monitoring and reporting are essential components of the ECF4CLIM communication and dissemination strategy. They ensure that activities are effectively implemented, objectives are met, and lessons are continuously integrated into the project's workflow. Both the Communication Plan (D8.1) and the Dissemination Plan (D8.3) highlight the importance of systematic tracking, evaluation, and reporting to guarantee transparency, efficiency, and alignment with EU requirements.

1. Continuous Monitoring of Activities

- All communication and dissemination actions are subject to continuous monitoring against predefined objectives and milestones.
- Monitoring focuses on both the **quantitative dimension** (e.g., number of publications, workshops, participants, website visits, social media engagement) and the **qualitative dimension** (e.g., relevance of messages, diversity of audiences reached, stakeholder feedback).
- Key performance indicators (KPIs) have been established for various actions, such as events, publications, digital platforms, and social media outreach

2. Partner Contributions and Internal Feedback Loops

- Partners provide feedback on planned activities, upcoming events, and results achieved. This input was semestrial collected and used to update the communication and dissemination strategies, ensuring responsiveness and adaptability
- A dedicated Publications Committee oversees scientific outputs, monitoring their quality and alignment with open-access principles.
- Each project partner is responsible for reporting on the communication and dissemination actions carried out at local, national, or thematic levels.

3. Reporting Procedures

- Reporting follows a structured process coordinated by WP8, ensuring consistency across partners and alignment with project-wide objectives. Dissemination and Communication forms were used for the reporting of partners to WP8.
- Regular reporting includes:
 - **Internal reporting:** through Dissemination and Communication forms, consortium meetings, progress updates,
 - **Periodic reports to the European Commission:** summarising communication and dissemination actions, outputs, and impacts as part of the formal project reporting cycle.
- Specific deliverable (e.g. D8.6 Report on the communication and dissemination activities) consolidates all monitoring data and provide a comprehensive assessment of achievements.

4. Tools and Channels for Monitoring

- **Digital analytics tools** (e.g., website traffic analysis, social media metrics) were used to track visibility and engagement.
- **Event evaluations** (participant numbers, feedback surveys, media coverage) provide evidence of outreach success.
- **Internal databases and reporting templates** facilitate the systematic collection of partner contributions.

5. Corrective and Adaptive Measures

- Results from monitoring were reviewed by the WP8 team to identify gaps or underperforming areas.
- Corrective measures, such as adjusting messaging, exploring new dissemination channels, or re-allocating resources, were applied to maximise impact.
- This adaptive approach ensures that strategies remain relevant in evolving policy, social, and educational contexts.

6. Transparency and Accountability

- Monitoring and reporting processes are designed to uphold transparency, enabling both internal stakeholders and external bodies (including the European Commission) to clearly track progress.

- Public deliverables and dissemination outputs are made available through the project's website and digital platform, reinforcing accountability and openness.

4.3 Integration with clustering and exploitation

The communication and dissemination activities of the ECF4CLIM project are not designed as standalone efforts but are fully integrated with its clustering and exploitation strategies. This integration ensures that the project's outputs are effectively shared, valorized, and **sustained beyond its lifetime, thereby maximizing their long-term societal, educational, and policy impact.**

Clustering activities focus on building synergies with other EU-funded projects, networks, and initiatives addressing climate change, sustainability, and education. A separate report [5] describes the activities on the duration of the project. Communication and dissemination played a vital role in this process by: (1) promoting ECF4CLIM's results and methodologies in joint events, workshops, and conferences, (2) engaging with the EU Green Deal community and other Horizon 2020 and Horizon Europe projects to exchange knowledge and best practices, (3) using the project's digital channels—including the website, platform, and social media—to enhance cross-project visibility. These collaborations have strengthened ECF4CLIM's impact, positioning it as part of a broader European ecosystem driving innovation in sustainability and education.

In parallel, the project's communication and dissemination activities were closely aligned with its exploitation strategy, which aims to ensure that project results are used by partners, stakeholders, and external actors to create tangible value in education, policy-making, and related fields. The reporting of the exploitation activities may be consulted on [4].

Awareness-raising campaigns have helped promote the ECF Roadmap for Sustainability Competences and increase its recognition as a relevant and practical tool. By ensuring open access to project results, including the methods and tools developed for the education for sustainability, ECF4CLIM facilitates their uptake by educators, researchers, and policymakers.

Moreover, the communication strategy supports partners in identifying and promoting KERs to potential users in education, policy, and industry, complementing the strategies outlined in [3] and [4].

5 TARGET GROUPS AND STAKEHOLDER ENGAGEMENT

This section outlines the **key target groups** addressed by the ECF4CLIM project and the strategies adopted to ensure their active involvement throughout the project's lifecycle. Based on the participatory philosophy of ECF4CLIM, stakeholder engagement was not limited to information sharing, but extended to **co-design, co-implementation, and co-evaluation** of activities.

The project brought together a diverse community of actors—**students, teachers, school administrators, researchers, policymakers, parents, NGOs, and local authorities**—to collaboratively foster sustainability competences and climate action within educational environments. By integrating their perspectives and expertise, ECF4CLIM ensured that communication, dissemination, and capacity-building activities were **relevant, inclusive, and impactful**.

5.1 Scientific community

The scientific community represents one of the primary target groups for the communication and dissemination activities of the ECF4CLIM project. This group includes **researchers, academics, and experts** working in fields related to **education, sustainability, climate science, and social sciences**.

Their engagement is essential to ensure the **scientific robustness of the Roadmap** for Sustainability Competences and to foster knowledge exchange that contributes to both academic progress and practical application.

The scientific community plays a high role in the ECF4CLIM project by **providing critical feedback and validation of its methodologies, tools, and results**. Researchers contribute to the co-design and evaluation of the Roadmap for Sustainability Competences through participation in workshops, joint publications, and collaborative networks.

They act as **multipliers of impact by disseminating findings** through academic publications, conferences, and professional associations, ensuring that the project's outcomes reach a broad scientific audience. Moreover, their involvement strengthens the **link between scientific excellence and policy-making**, guaranteeing that project outputs are both evidence-based and credible.

To effectively engage the scientific community, ECF4CLIM implemented several targeted strategies. Project partners published findings in **peer-reviewed, open-access journals to ensure high visibility and accessibility**. They also actively participated in **national and international conferences, workshops, and symposia** to share results, exchange

knowledge, and establish collaborative relationships with other experts in sustainability and education.

The ECF4CLIM **digital platform and blog** provided **interactive spaces for dialogue, reflection, and knowledge exchange** between the project team and external researchers. Furthermore, the project fostered **collaboration through participation in Horizon 2020 and Horizon Europe networks and other Green Deal initiatives**, promoting clustering, cross-fertilisation of ideas, and joint dissemination activities.

These engagement efforts have led to significant outcomes. **Awareness of ECF4CLIM methodologies and results** has increased within the scientific community, encouraging the uptake and application of the ECF and its related tools in academic and educational practices. The project has contributed to **strengthening the scientific foundation of sustainability and climate action competences in education** while supporting the advancement of open science and the EU's broader policy agenda.

By actively involving the scientific community, ECF4CLIM ensures the credibility, robustness, and long-term impact of its work while simultaneously advancing the state of research and innovation in education for sustainability.

5.2 Educational communities (schools, universities, SCTs, SCCs)

Educational communities are at the heart of the ECF4CLIM project, both as **co-creators** and as **direct beneficiaries** of its outcomes.

This group includes **schools, universities, teachers, students, administrative staff, parents**, and the innovative organisational structures developed within the project — **Sustainability Competence Teams (SCTs)** and **Sustainability Competence Committees (SCCs)**. Their engagement ensures that the Roadmap for Sustainability Competences is firmly grounded in real educational settings and can be effectively implemented and sustained.

Educational communities play a central role in the ECF4CLIM project, acting as **living laboratories for testing and validating the Roadmap for Sustainability Competences** through participatory and context-specific interventions. They **foster transformational change in behaviours, practices, and institutional cultures**, becoming role models for other educational environments. By transferring sustainability competences and practices beyond schools and universities, these communities serve as **multipliers of impact, reaching families, local communities, and professional networks**.

Moreover, their active involvement strengthens the project's participatory dimension by shaping interventions, identifying barriers and enablers, and co-producing innovative solutions.

The engagement of educational communities was ensured through several complementary strategies. Schools and universities were **directly involved in the co-creation and validation of the Roadmap for Sustainability Competences**, guaranteeing that the framework addressed their real needs and institutional contexts.

Illustrative interventions allowed them to test technical, behavioural, and organisational measures designed to enhance sustainability competences while providing evidence of their effectiveness and potential for replication.

The establishment of SCTs and SCCs fostered structured participation and institutional commitment, empowering educators, students, and stakeholders to act collectively for sustainability.

Access to the ECF4CLIM digital platform, IoT tools, and learning spaces supported active participation, knowledge sharing, and continuous capacity building, while training activities, webinars, workshops, and conferences created opportunities to exchange best practices and strengthen networks.

The expected outcomes of these efforts include enhanced individual and collective competences in sustainability and climate action across all levels of education—from primary schools to universities—and the creation of replicable models of institutional change through the SCTs and SCCs.

These models inspire wider adoption of participatory governance for sustainability and increase the visibility of educational communities as key drivers of systemic transformation toward climate neutrality.

ECF4CLIM empowered students and teachers to become **long-term ambassadors of sustainability**, extending the project's influence into households, workplaces, and civic life. By positioning educational communities at the heart of its communication and dissemination strategy, ECF4CLIM ensures that the framework is not only scientifically robust but also **socially relevant, practical, and transformative**.

5.3 Policymakers and authorities (local, regional, national, EU)

Policymakers and public authorities were a crucial audience for ECF4CLIM, as their involvement ensures that the project's results contribute directly to evidence-based

policymaking and to the **integration of sustainability competences into educational systems at multiple governance levels.**

This group included **representatives of municipal, regional, and national education and environment authorities**, as well as **actors engaged in EU-level networks and initiatives** related to the European Green Deal, GreenComp, and sustainable education policies.

The spectrum of the stakeholders engaged with ECF4CLIM activities is exemplified in the following list: Spanish Service for the Internationalisation of Education (under Ministry of Universities), GD of Innovation and Training Programs, General Directorate of Bilingualism and Quality of Teaching Education, Universities, Sciences and Spokesperson Office, National Parks Autonomous Agency (OAPN), National Centre for Environmental Education (CENEAM), Programme for the Recovery and Educational Use of Abandoned Villages (PRUEPA), Higher Institute for Educational Innovation in Madrid, Territorial Center for Innovation and Training Madrid East (Educa Madrid), GD with the State and EU. SGD with the State and EU and Foreign Actions (Presidency, Justice and Interior Office), Spanish Office for Climate Change (OECC), Territorial Center for Innovation and Training Madrid South (Educa Madrid), Central Finland Centre for Economic Development, Transport and the Environment, National Agency for Environmental Protection (Romania), Ministry of Education (Romania), Agency for Environmental Protection Arges County (Romania), Institute of Government and Public Policy (IGOP), University of Galati (Romania), Higher Institute of Educational Innovation (ISMIE Madrid), Sercaia municipality (Romania), Dragasani municipality (Romania), Mioveni municipality (Romania), Pitesti municipality (Romania), Higher Institute for Educational Innovation (Madrid), Comillas Pontifical University (Spain), Unidad Programas Educativos (Comunidad Madrid), Centro de Educación Ambiental Ciudad Escolar (Spain), Local Council Sercaia (Romania), Finnish National Agency for Education (Finland), Centre for Economic Development, Transport and Environment (ELY-Centre, Finland), Municipality of Kauniainen (Finland), City of Tampere, National Parks Autonomous Agency (OAPN), Central Finland Centre for Economic Development, Transport and the Environment (ELY-Centre, Finland), ADENE (Agência para a Energia, Portugal), Sociedade Ponto Verde (Portugal), Câmara Municipal de Loures, Junta de Freguesia de Camarate.

Their role was twofold: first, **to provide policy insight and contextual feedback** supporting the co-design and adaptation of the European Competence Framework (ECF) for Sustainability; and second, **to facilitate the translation of project outcomes into practice** through alignment with existing or emerging policy frameworks. Policymakers also supported the dissemination and replication of good practices developed within the Demonstration Sites (DSs), ensuring continuity and upscaling beyond the project's lifetime.

Engagement was achieved through direct participation in SCCs, regular consultations, policy-oriented workshops and webinars, and inclusion in national and international dissemination events, including the ECF4CLIM Final Conference. Project results and policy briefs were shared with relevant authorities to inform local and national strategies on climate education and sustainability in schools and universities.

The collaboration produced tangible outcomes, including **stronger connections between educational innovation and policy priorities**, a **growing interest in using the Roadmap for Sustainability Competences** as a reference tool for national sustainability curricula, and an increased awareness among authorities of the importance of empowering educational communities as drivers of systemic change. This engagement laid the **foundation for continued dialogue between research, practice, and policy**, ensuring that ECF4CLIM's legacy will extend into future European educational and sustainability initiatives.

5.4 NGOs and civil society

Non-governmental organizations (NGOs) and civil society actors represented an important target group within the ECF4CLIM project, bridging the gap between educational institutions and the wider community. Their involvement strengthened the participatory dimension of the project and ensured that sustainability education extended beyond formal schooling into community action, awareness-raising, and behavioral change.

This audience included environmental and educational NGOs, youth associations, cultural organizations, and citizen groups working on sustainability, climate action, and social innovation.

Some examples of NGOs engaged with ECF4CLIM project are presented in the following list: Spanish organization responsible of recycling and eco-design of packaging (Ecoembes), ODS Certificates CIFAL Málaga Association/ UNITAR-ONU, Biodiversity Foundation, Finnish Association of Nature and Environment Schools, Prepare for Education (Romania), ARIN (Romania), Fundación Vida Sostenible (Spain), World Vision (Romania), Impreuna pentru educatie (Romania), Grupul pentru dezvoltare locala Mioveni (Romania), Fundacion Descubre (Spain), Sociedad Andaluza para la Divulgación de la Ciencia (Spain), L'Ortiga (civil entity specialized in agroecology and environmental education) (Spain), El Pa Sencer (civil entity specialized in the food field) (Spain), Espai Ambiental (entity specialized in promoting environmental awareness) (Spain), Restarters BCN (entity specialized in the reuse and repair of electronic devices) (Spain), Observatori del Deute en la Globalització (civil entity specializing in environmental

conflicts and international cooperation) (Spain), Comissió Catalana d'Acció pel Refugi (civil entity specialized in care of migrants and refugees) (Spain).

Their role was to capture relevant feedback on the sustainability at local level, needs of the civil society, to support local engagement, amplify communication efforts, and exchange expertise in the development and implementation of illustrative interventions at the DSs.

NGOs also played an important part in creating discussion about a coherent collaboration between schools, universities, and local stakeholders—turning educational institutions into hubs of sustainability-oriented community dialogue.

Engagement strategies included joint events, participation in workshops and webinars, local campaigns, and, in some cases, participation in SCCs. These participatory structures provided a platform for NGOs and community representatives to exchange ideas, co-create interventions, and promote sustainable practices within their local contexts.

As an outcome, the collaboration with NGOs and civil society led to greater community ownership of sustainability initiatives, enhanced local visibility of ECF4CLIM activities, and a stronger link between formal and informal education. It also helped develop grassroots advocacy for climate education, encouraging communities to adopt and replicate successful interventions.

5.5 General public

The **general public** constituted one of the broadest and most essential target groups of the ECF4CLIM project. As the ultimate beneficiaries of climate action and sustainability education, citizens across all age groups were addressed through the project's communication, dissemination, and awareness-raising activities. The goal was to **foster a deeper understanding of sustainability issues**, promote behavioral change, and inspire individuals to participate—directly or indirectly—in the transformation toward a more sustainable society.

The role of this audience was primarily to **receive, reflect upon, and respond to the project's messages** about sustainability competences, climate responsibility, and the role of education in driving change. By engaging citizens, ECF4CLIM aimed to expand the impact of its interventions beyond schools and universities, encouraging families and local communities to adopt more sustainable practices and mindsets.

Engagement strategies included **public dissemination via ECF4CLIM channels, media outreach, interactive social media campaigns**, and **access to open educational resources** through the ECF4CLIM website and digital platform. The **blog** and **newsletter**

served as tools for continuous dialogue, inviting citizens to share reflections and experiences related to climate action and sustainability in everyday life. Additionally, **videos, infographics, and success stories** were used to communicate complex topics in accessible and relatable ways.

The outcomes of this engagement were evident in the **increased visibility and recognition of the project** across Europe, the growing number of **followers and interactions on social media**, and the participation of citizens in local sustainability initiatives inspired by the project. By raising awareness and fostering collective responsibility, ECF4CLIM contributed to a **culture of environmental consciousness and civic participation**, reinforcing the idea that sustainable transformation begins with informed and empowered individuals.

6 CHANNELS AND ACTIVITIES

This chapter presents the **main channels and activities** used throughout the ECF4CLIM project to communicate and disseminate its results. The project's communication strategy combined **digital tools, social engagement, and participatory approaches** to ensure wide visibility, active involvement, and long-term impact among educational communities and stakeholders.

Section **6.1** introduces the **project website**, the central hub for public information, resources, and updates. Section **6.2** focuses on the **Digital Platform**, a collaborative space integrating the project's tools, learning resources, and data-driven applications. Section **6.3** details the use of **social media channels** (LinkedIn, Facebook, Instagram, X, YouTube) to expand outreach, foster interaction, and amplify the project's messages.

The following sections highlight the project's engagement through **academic and professional dissemination (6.4)**, as well as direct **communication with educational and local communities (6.5)**. The organization of **workshops and webinars (6.6)** and the **Final Conference (6.7)** demonstrate how the project built bridges between research, practice, and policy.

Sections **6.8–6.10** summarize additional outreach activities and materials, including the **Best Intervention Award** competition, the **series of Newsletters**, and the **interactive Blog**, all designed to sustain dialogue, reflection, and collaboration around education for sustainability.

Together, these channels and activities illustrate how ECF4CLIM's communication strategy has supported both the **visibility** and **replicability** of its results, empowering schools, universities, and communities to act for climate and sustainability.

6.1 Project website

The first version of the ECF4CLIM website (www.ecf4clim.net) was launched in October 2021, and its development was based on WiX web technology. In 2024, a new version (www.ecf4clim.eu) was developed (based on **WordPress**) and released in December 2024. This version was designed to adapt to the user needs, incorporating their feedback, and to **ensure the long-term preservation of project results**, including resources supporting their exploitation.

The structure of the new version is summarized below (Table 6.1.1) followed by a short description of the main pages.

Table 6.1.1 The structure of pages in ECF4CLIM web site

Page	Sub-page
Home	
About the project	Consortium and network
	Work packages
	Methodology
The Roadmap	
Digital Platform	
Outcomes	Project highlights
	Project reports
	Illustrative interventions
	Best intervention awards
	Dissemination materials
	Materials from Demonstration Sites
	Scientific publications
Blog	
News & Events	News
	Events
Stay connected	

Homepage

The **homepage** presents the core mission of the ECF4CLIM project — to empower educational communities, including schools and universities, to become active agents of systemic change toward sustainability and climate action. It highlights the project’s participatory and interdisciplinary approach, emphasizing collaboration among educators, students, and researchers through co-design processes and illustrative interventions.

The page also outlines the main phases of project development: the co-creation of the European Competence Framework, its implementation in demonstration sites, and the evaluation of resulting interventions. Clear navigation links guide visitors directly to key project components such as the **Roadmap for Sustainability Competences**, **video presentation**, **methodological framework**, **Digital Platform**, and **Consortium** overview, allowing readers to quickly access the topics of greatest relevance to them.

About the project

The page provides a clear and well-structured overview of the initiative, helping visitors easily access key information about the project's participants, organization, and methodological framework. It is divided into three main sub-pages — **Consortium and Network**, **Work Packages**, and **Methodology** — each focusing on a specific dimension of the project.

The **Consortium and Network** sub-page introduces the organizations involved in ECF4CLIM, including project partners, associated partners, and members of the Advisory Board. It also presents the **Demonstration Sites (DSs)** forming the project's educational network, highlighting their roles in piloting and testing innovative approaches to sustainability education.

The **Work Packages** sub-page provides a concise yet comprehensive summary of the project's eight work packages, outlining their objectives, main activities, and interconnections. This structure allows readers to understand how ECF4CLIM progresses from conceptual development to implementation, testing, and dissemination of results.

Finally, the **Methodology** sub-page presents the core approaches and tools that underpin the project's research and interventions. These include the **hybrid participatory method**, the creation and functioning of **Sustainability Competence Teams (SCTs)** and **Sustainability Competence Committees (SCCs)**, **crowdsourcing** methods, **citizen science** approaches, and various instruments for **sustainability performance assessment**. The section also introduces a set of digital tools and educational resources designed to integrate sustainability competences into teaching and learning processes.

Together, these sub-pages provide an accessible and coherent picture of how ECF4CLIM operates — from its collaborative structure to its methodological innovation — and how it contributes to advancing education for sustainability across Europe.

Roadmap

The page presents the **Roadmap for Sustainability Competences** as a practical tool for integrating and operationalizing the sustainability competences defined in **GreenComp** within educational settings. It serves as both a conceptual and action-oriented guide, outlining the key **individual, collective and technical-material competences**, as well as the **enablers and constraints** that influence the environmental performance of educational institutions.

The Roadmap is structured around **four progressive steps—Engagement, Connections, Change, and Action**—which together guide schools and universities through the process of fostering sustainability competences and implementing systemic change.

For long-term accessibility and wider use, the complete version of the Roadmap for Sustainability Competences is hosted on the **MAPPA.fi** platform (<https://mappa.fi/en/greencomp-roadmap/>), where users can explore all details, resources, and supporting materials. The link to redirect the reader to the mappa.fi is provided above.

Digital platform

The page serves as the **main access point to the ECF4CLIM Digital Platform**, hosted at <https://ecf4clim.smartwatt.net/>. Developed within the framework of the project, the Digital Platform aims to **enhance environmental awareness** and **encourage active participation** of educational communities in adopting behaviours that contribute to greater sustainability. It provides a **secure and collaborative space** where students, teachers, and other stakeholders can interact, share knowledge, and co-create solutions for climate action in education.

The page outlines the **structure of the platform** and provides **direct links** to its four main modules:

1. [Crowdsourcing Processes](#) – enabling participatory engagement and idea exchange,
2. [Tools for Environmental Assessment](#) – offering practical instruments for evaluating environmental performance,
3. [Monitoring & Data Tools](#) – integrating IoT-based solutions for real-time tracking of sustainability indicators,
4. [Learning Space](#) – a digital hub for educational resources, interactive activities, and capacity-building materials.

Outcomes

The **Outcome** page presents the main results and achievements of the ECF4CLIM project and is structured into seven dedicated sub-sections: **Project Highlights, Project Reports, Illustrative Interventions, Best Intervention Awards, Dissemination Materials, Materials from Demonstration Sites, and Scientific Publications**.

The **Project Highlights** section serves as an entry point to concise presentations of the project's key outputs, including the general project overview and the video

presentation, both designed to communicate the project's vision and accomplishments to a broad audience.

The **Project Reports** sub-page provides direct access to all public deliverables produced during the project. With the exception of a few management-related documents, nearly all reports are publicly available, ensuring transparency and knowledge sharing.

The **Illustrative Interventions** section showcases the most representative interventions implemented in schools and universities. A total of **22 exemplary interventions** were carefully selected by the demonstration sites in close collaboration with the research team. These serve as practical examples of how educational communities can lead climate action and foster sustainability competences. The interventions were chosen based on four main criteria:

- **Impact** on the educational community;
- **Replicability** in diverse contexts;
- **Coverage** of the four dimensions of the Roadmap for Sustainability Competences – *Engagement, Connections, Change, and Action*;
- **Representation** across the three spheres of the ECF4CLIM Analytical Framework – *individual, collective, and technical-material competences*. Together, these examples illustrate how systemic and sustainable change can be initiated and scaled across educational institutions.

The **Best Intervention Awards (BIA)** section presents the competition held among demonstration sites, highlighting innovative initiatives and recognizing outstanding achievements in sustainability education. Details on BIA are presented in a separate section of this chapter.

The **Dissemination Materials** section gathers a comprehensive collection of outreach resources, including presentations, posters, videos, and documents such as the *Project Factsheet, Project Presentation, Video Presentation, Baseline Reports on Competences and Environmental Performance*, and both the full and short versions of the initial **ECF4CLIM Roadmap**, and before end of the ECF4CLIM project, also the **final Roadmap for Sustainability Competences**. A set of video materials in support of Roadmap presentation are included, together with the Newsletters produced by the project.

The **Materials from Demonstration Sites** sub-page offers educational resources developed by the participating schools and universities, supported by the ECF4CLIM consortium, to promote the integration of sustainability competences into teaching and learning practices.

Finally, the **Scientific Publications** section lists the peer-reviewed articles, conference papers, and other scholarly works authored by project partners, reflecting the project's strong academic contribution to sustainability education research. Details on publications are presented in a separate section of this chapter.

Blog

The **Blog** page hosts all posts published through this interactive communication channel, designed to foster dialogue, reflection, and engagement on topics related to climate education, sustainability competences, and behavioural change. A detailed presentation of the blog's content and role is provided in a separate section of this chapter.

News & Events

The **News & Events** page is organized into two sub-sections: **News**, which features updates and articles related to education for sustainability, climate change, and related topics; and **Events**, which highlights ECF4CLIM events and activities, as well as other relevant initiatives connected to the project's mission.

Stay connected

The **Stay Connected** page serves as a gateway to the project's social media channels and provides visitors with the option to subscribe to the **ECF4CLIM Newsletter** and other informational materials. It is designed to keep audiences updated on the project's latest activities, results, and opportunities for engagement.

Related to the **audience of the website**, the WiX version reported **visitors from 95 countries across the world** (countries colored in blue on the map, Fig. 6.1.1).

A list of the ten countries with the highest number of visitors is presented in Table 6.1.2.

In terms of the accessing locations (see Fig. 6.1.2 for Europe) it may be observe some clusters of accessing in relation with the schools and universities acting as DSs.



Fig. 6.1.1 Geographic distribution of visitors accessing the ECF4CLIM web site

Table 6.1.2 Top ten countries for the number of visitors (version 1, WiX)

Country	Page views	Site sessions	Unique visitors
Spain	7.431	3.102	1.504
Romania	5.094	1.676	848
Portugal	2.111	941	352
Finland	1.825	892	399
Greece	541	248	81
Italy	557	242	133
Germany	368	236	120
Belgium	533	229	117
US	281	220	210
UK	370	170	95

Analyzing the visitors of the two versions of the website, notable changes occurred in the geographical distribution. Table 6.1.3 illustrates the top ten countries of origin for both website versions. While in the **Wix version** (December 2021 – December 2024) the top ten visitors were predominantly from **EU countries**, with the **project countries occupying the first five positions**, the **WordPress version** (January 2024 – October 2025)

shows a more **international profile**, with **Singapore ranking second, China fourth, and Brazil fifth.**



Fig. 6.1.2 Clusters of accessing by location in EU (Wix version)

Table 6.1.3 Top ten countries for the number of visitors for the two versions (WiX and WordPress)

	WiX version	WordPress version
1	Spain	Spain
2	Romania	Singapore
3	Portugal	Romania
4	Finland	China
5	Greece	Brasil
6	Italy	Netherland
7	Germany	US
8	Belgium	UK
9	US	Finland
10	UK	Ireland

As of **14 October 2025**, the website had recorded a **total of 13,131 visitors**. The distribution of visitors for the **first version** of the website is shown in **Figure 6.1.3**, while data for the **second version** are presented in **Figure 6.1.4**.

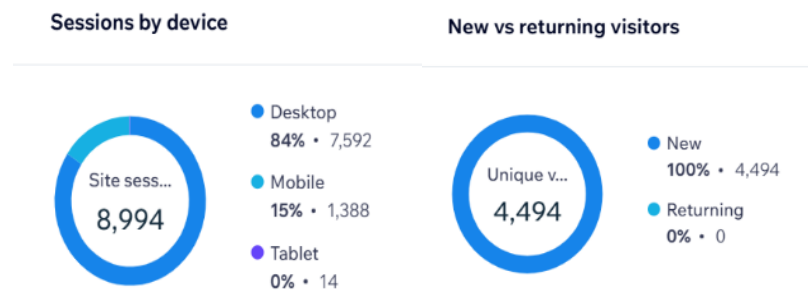


Fig. 6.1.3 Distribution of visitors (new vs returning, and by device) for version 1 (Wix)

All Time Stats

👁 Total Page Views	4,187
👤 Total Sessions	2,183
📝 Number of Posts	85
📄 Number of Pages	29
💬 Number of Comments	794

Fig. 6.1.4 Data about visitors of second version (WordPress)

The website is continuously evolving, with a positive trend in new users; in the last 30 days, nearly 1,000 new users have joined, and its geographic reach has expanded. More detailed data can be found in **Appendix 4**. In Fig.4.1.5 the geographic distribution of new users is presented.



Fig.6.1.5 The geographic distribution of new users (last 30 days) and the main countries of accessing

6.2 Digital Platform

The Digital Platform was developed **to strengthen environmental awareness and to stimulate the participation of the educational communities towards behavioural changes contributing to higher levels of sustainability**. It is aimed to act as a safe space for interaction among the various ECF4CLIM actors. The concept for the **digital platform** was defined through dialogues with stakeholders and by desk research.

A [separate page](#) of ECF4CLIM website was dedicated to be the entry point for the digital platform, hosted by a separate web server.

The **ECF4CLIM Digital Platform** serves as a central collaborative hub designed to connect, empower, and engage educational communities. Developed as an interactive online environment, the platform integrates the tools, educational materials, and applications produced throughout the project, transforming research outcomes into practical resources for teachers, students, and decision-makers.

Purpose and Vision

The platform was conceived as both a **repository of resources** and a **space for collaboration**. It enables users from schools and universities to explore, test, and implement sustainability competences through digital tools that encourage participation, reflection, and learning. By connecting diverse actors—educators, students, administrators, and external stakeholders—the platform extends the ECF4CLIM impact beyond demonstration sites, promoting an open, inclusive approach to climate education.

Main Components of the Platform

The digital platform is structured into four main interactive spaces, each serving a distinct yet complementary purpose (Fig. 6.2.1): Crowdsourcing, Simulator space, IoT Ecosystem, Learning space. A detailed description is presented in [6].

1. Crowdsourcing Space

This section was the entry point to harness the power of collective intelligence by facilitating digital participation through *Discussion Workshops* and *Online eDELPHI dialogues*. Users—educators, students, and researchers—exchange insights, experiences, and ideas on sustainability competences, thus co-creating shared knowledge and identifying common challenges and opportunities for transformation in schools and universities.

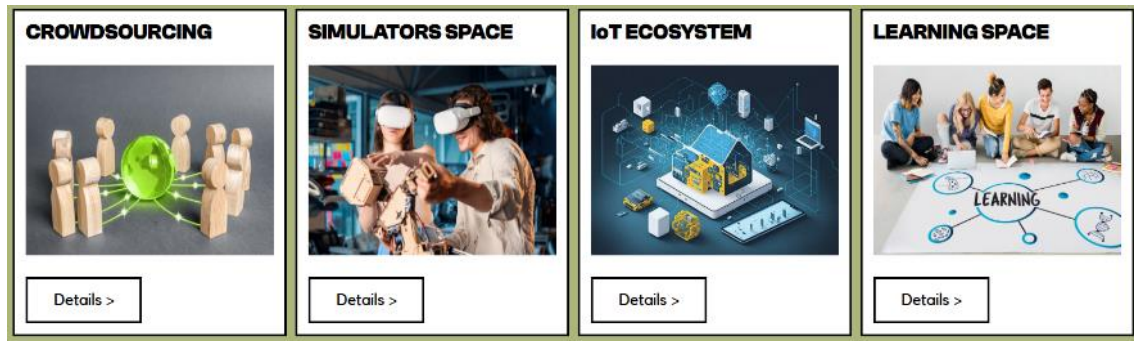


Fig. 6.2.1 Main components of the Digital Platform

2. Simulators Space

Acting as a gateway for hands-on exploration, this area **hosts several interactive tools** that help users **assess and enhance environmental sustainability within educational settings**. Key applications include:

- **Environmental Footprint Calculator** – allowing users to evaluate the environmental impact of their activities and identify improvement opportunities through self-assessment and visualization of results.
- **Retrofitting Toolkit (versions 1 and 2)** – enabling the simulation of various environmental variables (temperature, humidity, solar radiation, wind speed) across cities and timeframes to explore strategies for improving energy efficiency and indoor environmental quality.
- **Sustainability Interventions Evaluation Tool** – supporting schools in monitoring and assessing the outcomes of sustainability actions implemented within the ECF4CLIM framework.

3. IoT Ecosystem Space

The IoT Ecosystem **integrates real-time data from sensors installed in educational buildings**, offering a data-driven perspective on sustainability. Through visual dashboards—tables, charts, and graphs—users can track **Key Performance Indicators (KPIs)** related to *air quality* and *energy efficiency*.

Data are securely collected via a dedicated REST API [7] developed by QUE. The system presents information such as temperature, humidity, VOC and PM2.5 concentrations, CO₂ levels, and energy usage.

Specific KPIs include:

- **Thermal Comfort KPI, Ventilation KPI, Pollutant KPI, and Indoor Air Quality KPI**, based on WHO and national standards;

- **Energy KPIs** such as *energy consumption per student* and *energy consumption per area*. This component engages students, teachers, and administrators in real-time environmental monitoring, fostering awareness and behavioral change.

4. Learning Space

Designed as an open educational resource area, the Learning Space provides **access to structured materials, lesson plans, interactive activities, and serious games**. Content is tailored for both teachers and students, supporting the integration of sustainability education into curricula. The Learning Space promotes reflective and experiential learning, encouraging users to develop competences for climate resilience and sustainable decision-making.

Applications and Integration

The **Applications Area** brings together all major tools developed within ECF4CLIM, highlighting their interconnection and contribution to the European Competence Framework. Each tool is user-friendly, interactive, and pedagogically aligned, ensuring that learners can engage directly with sustainability challenges in meaningful ways.

The integration of data visualization, simulations, and participatory components allows educational communities to transform theory into practice, making sustainability measurable, visible, and actionable.

Impact and Dissemination

Beyond its technical structure, the Digital Platform has played a crucial role in the **dissemination and exploitation** of project results. It functions as a **living laboratory for innovation—supporting replication, inspiring new initiatives, and extending collaboration beyond the consortium**. The platform embodies the ECF4CLIM vision of **connecting digital transformation with sustainability education**, ensuring that knowledge generated within the project continues to support climate action and capacity building across Europe.

The ECF4CLIM Digital Platform has also functioned as a **key communication and visibility tool**, directly linked to the project's website and social media channels. Through these connections, news, updates, and interactive content have reached a wide audience of educators, students, policymakers, and sustainability practitioners across Europe. Analytics from the website indicate steady growth in visits and user engagement, reflecting the increasing interest in the tools and learning resources. The platform has thus become not only a repository of project results but also a vibrant community space—enhancing dialogue, fostering collaboration, and ensuring the long-term accessibility and visibility of ECF4CLIM's outcomes.

6.3 Social Media (LinkedIn, Facebook, YouTube)

Social media channels have played a pivotal role in the ECF4CLIM project's communication and dissemination strategy, serving as dynamic platforms for dialogue, awareness raising, and community engagement. They have functioned both as **effective communication tools with school communities** and as **powerful amplifiers** for sharing information, project updates, and results with other educational communities, wider European and international audience.

From the beginning, ECF4CLIM's communication plan envisioned social media as more than just promotional outlets — they were designed as **interactive bridges** connecting researchers, educators, students, policymakers, and citizens. The project's digital ecosystem was built around **three central ECF4CLIM channels** — Facebook, LinkedIn, and YouTube — complemented by **national social media pages** managed in Portugal, Finland, and Romania, ensuring accessibility in local languages and cultural contexts. Instagram and X channels were used to test the possibility to enlarge the audience. In Spain, no national social media page was created; however, a series of posts were published in the communication section of the CIEMAT website to disseminate information to professionals and traditional audiences. Some of these posts can be consulted here: ([La Oficina de Apoyo a los proyectos del Pacto Verde Europeo distingue como caso de éxito ECF4CLIM liderado por el CIEMAT](#), [Yolanda Lechón y Ana Prades participan en la asamblea del proyecto ECF4CLIM, celebrada en Finlandia](#), [Segunda Reunión del Comité Directivo y Asamblea General del proyecto europeo ECF4CLIM](#)).

Stay connected!



Fig. 6.3.1 Access to all ECF4CLIM social media channels from the website

In Fig. 6.3.1 The entry point for the social media channels is presented. It is placed at the bottom of each page/sub-page of the website.

Objectives and Approach

The main objectives of the ECF4CLIM social media strategy were to:

1. Increase public awareness of the project and its progress.
2. Build a broader and more diverse audience across Europe.
3. Strengthen connections within and between educational communities.
4. Encourage knowledge exchange, reflection, and collective learning on sustainability.
5. Support the dissemination of project results, events, and educational resources.

Social networks were recognized as vital tools to **foster two-way communication**, encourage the participation of educators and students, and stimulate discussions on sustainability competences and educational innovation.

European and National Channels

To ensure wide coverage and contextual engagement, ECF4CLIM implemented both **centralized** and **localized** communication strategies:

- **Central Facebook Page** (set up in December 2021)– Managed by *MedaResearch* in English, this page served as an important communication hub with the educational communities, partners, and public. It fostered an open, interactive environment for sharing project news, event announcements, and results, while encouraging contributions and dialogue among users. Posts of broader relevance were shared or translated for use on national pages. The cover photo is presented in Fig. 6.3.2.



Fig.6.3.2 ECF4CLIM Facebook page

- **LinkedIn Page** (initiated in January 2022) – designed to reach a professional and academic audience, the ECF4CLIM LinkedIn page shared updates on research results, publications, and conference presentations, helping to connect with policymakers, educators, and sustainability experts. This channel also strengthened the project's visibility in the European research and policy landscape. The cover page is presented in Fig. 6.3.3.



Fig.6.3.3 ECF4CLIM LinkedIn page

- **YouTube Channel** (set up on January 2022) – As part of ECF4CLIM’s visual outreach, a dedicated YouTube channel showcased interviews, webinars, and audiovisual materials highlighting the project’s activities and outcomes. The channel leveraged the advantages of video communication — accessibility, shareability, and engagement — to reach educators, students, and the wider public. The cover page is presented in Fig. 6.3.4.

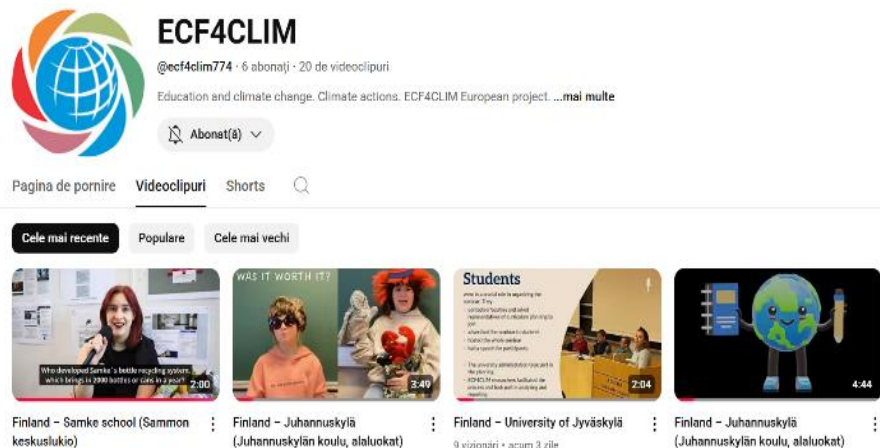


Fig.6.3.4 ECF4CLIM YouTube page

- **Instagram pages** (set up on March 2022) – It was used to share stories of sustainability education and climate action across the project’s DSs. Through engaging photos and infographics, it highlighted student initiatives, creative workshops, and international meetings, bringing visibility to real-world interventions. Using hashtags like #ECF4CLIM and #EducationForSustainability, the page connected with broader conversations while engaging younger audiences. It complemented other social media channels by promoting

awareness, inspiring participation, and strengthening the sense of community within the ECF4CLIM network. The cover page is presented in Fig. 6.3.5.



Fig.6.3.5 ECF4CLIM Instagram page

- **X page** (set up on November 2022) was served as a fast and effective channel for sharing project updates, event announcements, and key messages on sustainability education. By using hashtags such as **#ECF4CLIM**, **#ClimateEducation**, and **#SustainabilityCompetences** the page intended to connect educators, researchers, policymakers, and partner institutions through short, timely posts encouraging engagement in activities targeting sustainability improvements. The cover page is presented in Fig. 6.3.6.



Fig.6.3.6 ECF4CLIM X page

- **National Social Media Pages** (since February 2022) – Each of the four countries with demonstration sites (Spain, Portugal, Finland, Romania) managed their own social media pages in local languages. These pages, coordinated respectively by CIEMAT, IST, the University of Jyväskylä, and MedaResearch, focused on engaging national audiences, promoting local events, and sharing updates from

their demonstration schools and universities. The Facebook cover page of ECF4CLIM Finland is presented in Fig. 6.3.7.



Fig.6.3.7 ECF4CLIM Finland, Fb cover page

Engagement and Community Building

Social media served as a **continuous dialogue space** between ECF4CLIM and its educational communities. Social media managers acted as “influencers” to stimulate online discussions, encourage peer-to-peer learning, and strengthen ownership of sustainability actions at the DSs level.

The project’s posts covered a wide variety of topics, from sustainability interventions and workshops to news about the Roadmap to partnerships with other initiatives. Special emphasis was placed on **disseminating real-time information** from events, webinars, and conferences — highlighting ECF4CLIM’s contributions to the development of the **European Competence Framework for Sustainability**.

In addition, cross-linking between the **project website, blog, and social media channels** ensured consistent messaging and visibility, enhancing discoverability and maximizing impact.

In Table 6.3.1 the social media channels used by ECF4CLIM project are presented from the point of view of key activities and main audiences.

Table 6.3.1 Key activities and main audience of the ECF4CLIM social media channels

	Social media channel	Key Activities	Main audience
1	Facebook	Sharing project updates, photos, events, and interventions;	General public, DSs, students, teachers

		fostering engagement through comments and discussions.	
2	LinkedIn	Disseminating scientific outputs, reports, publications, conference participation, and fostering collaboration among experts and institutions.	Professionals, researchers, stakeholders, policymakers
3	You Tube	Storage of videos to be accessed via website and other channels	Broad audience, visual learners
4	X	Broadcasting quick news, live updates from events, and key project milestones with hashtags to enhance visibility.	Wider public, educational networks, NGOs
5	Instagram	Promoting sustainability messages and visual campaigns; showcasing activities and interventions through engaging imagery	Youth audiences, schools, and students

Results and Impact

By the end of the project, the ECF4CLIM social media network had developed into an active online community. Regular posts, visual materials, and shared reflections reached a steadily growing audience, particularly through the LinkedIn and Facebook networks. These channels not only increased awareness but also encouraged direct engagement from teachers, students, and policymakers — turning ECF4CLIM’s online presence into a **platform for exchange, inspiration, and collective climate action**.

Evolution of the number of followers

Throughout the duration of the ECF4CLIM project, the growth in the number of followers across all social media channels (Facebook, LinkedIn, and YouTube) has been a strong indicator of the increasing public interest and engagement with the project’s activities. The cumulative evolution of followers, as illustrated in Figure 7.3.8, shows a steady upward trend reflecting the successful implementation of the communication strategy and the progressive visibility of ECF4CLIM at both national and European levels.

The most significant increases in follower numbers were observed during periods of major dissemination activities, such as the launch of illustrative interventions, publication of the initial ECF4CLIM Roadmap, and organization of international events like the General Assembly in Tampere and the Best Intervention Award Ceremony. Regular posting, the active involvement of demonstration sites (DSs), and the dissemination of blog content through social media channels also contributed to sustained engagement.

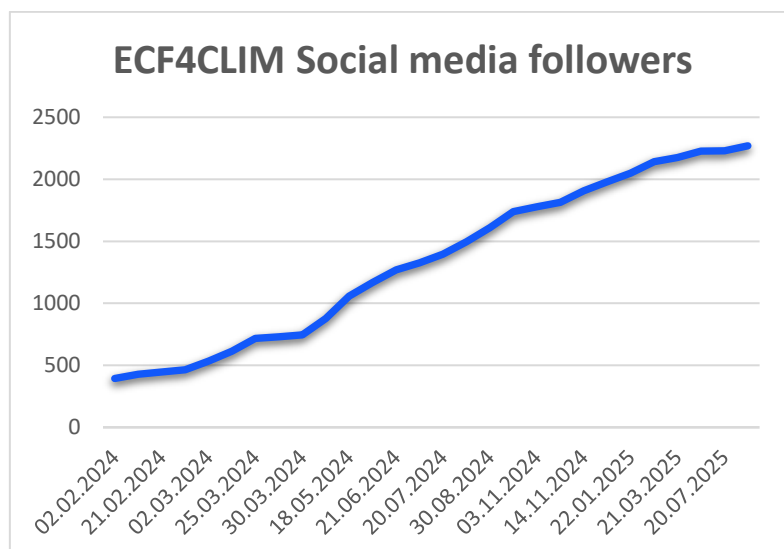


Fig. 6.3.8 The evolution of the total number of followers of ECF4CLIM social media pages

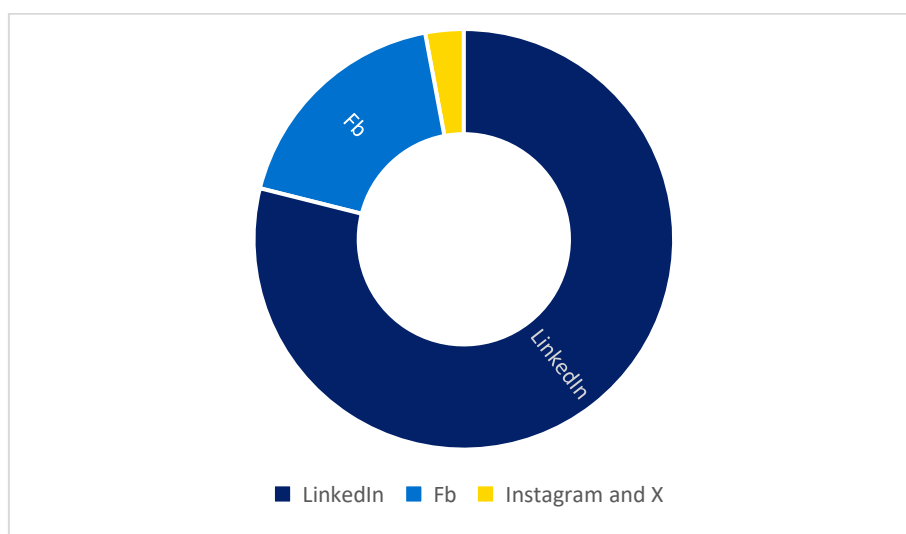


Fig. 6.3.9 The structure of followers by channel (2025 September 30)

The social media audience of ECF4CLIM represents an active, diverse community of educators, researchers, policymakers, and students, demonstrating the project's success in building an active network committed to advancing sustainability competences in education. The structure of total followers by channel at 2025 September 30 is presented in Fig. 6.3.9.

Related to the targeted KPIs for the total number of followers (>500), the objective proposed by the Communication Plan was reached in March 2024. Additional information can be found in the section focusing on KPIs.

To broaden the outreach and visibility of the results disseminated via Facebook, several public partner pages were engaged for collaborative dissemination (see Fig. 6.3.10).

Some illustrative posts used for social-media are presented in:

- Fig 6.3.11 - social media messages promoting ECF4CLIM outcomes,
- Fig 6.3.12 - social media posts spreading messages on the education for sustainability,
- Fig 6.3.13 - social media posts spreading feelings in connection with the sustainability values,
- Fig 6.3.14 - social media posts on the illustrative interventions.

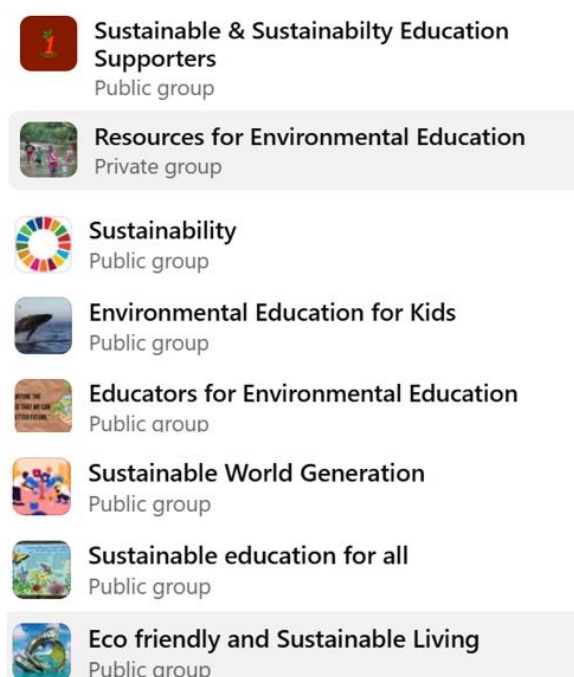


Fig. 6.3.10 Facebook groups used to spread the ECF4CLIM messages

The examples of **Facebook posts** illustrate the wide range of activities, milestones, and reflections that defined the ECF4CLIM project. They highlight key achievements—such as illustrative interventions in schools and universities, dissemination events, workshops, and the release of major outputs like the Roadmap for Sustainability Competences and Digital Platform—while also sharing inspiring messages about sustainability education and community engagement.

Beyond reporting progress, the posts invite followers to **reflect on their own roles in promoting sustainability**, encouraging dialogue, participation, and the exchange of good practices across countries. Through visuals, videos, and interactive content, the Facebook channel became both a communication tool and a space for fostering awareness and collective learning.



Fig. 6.3.11 Examples of social media messages promoting some ECF4CLIM outcomes

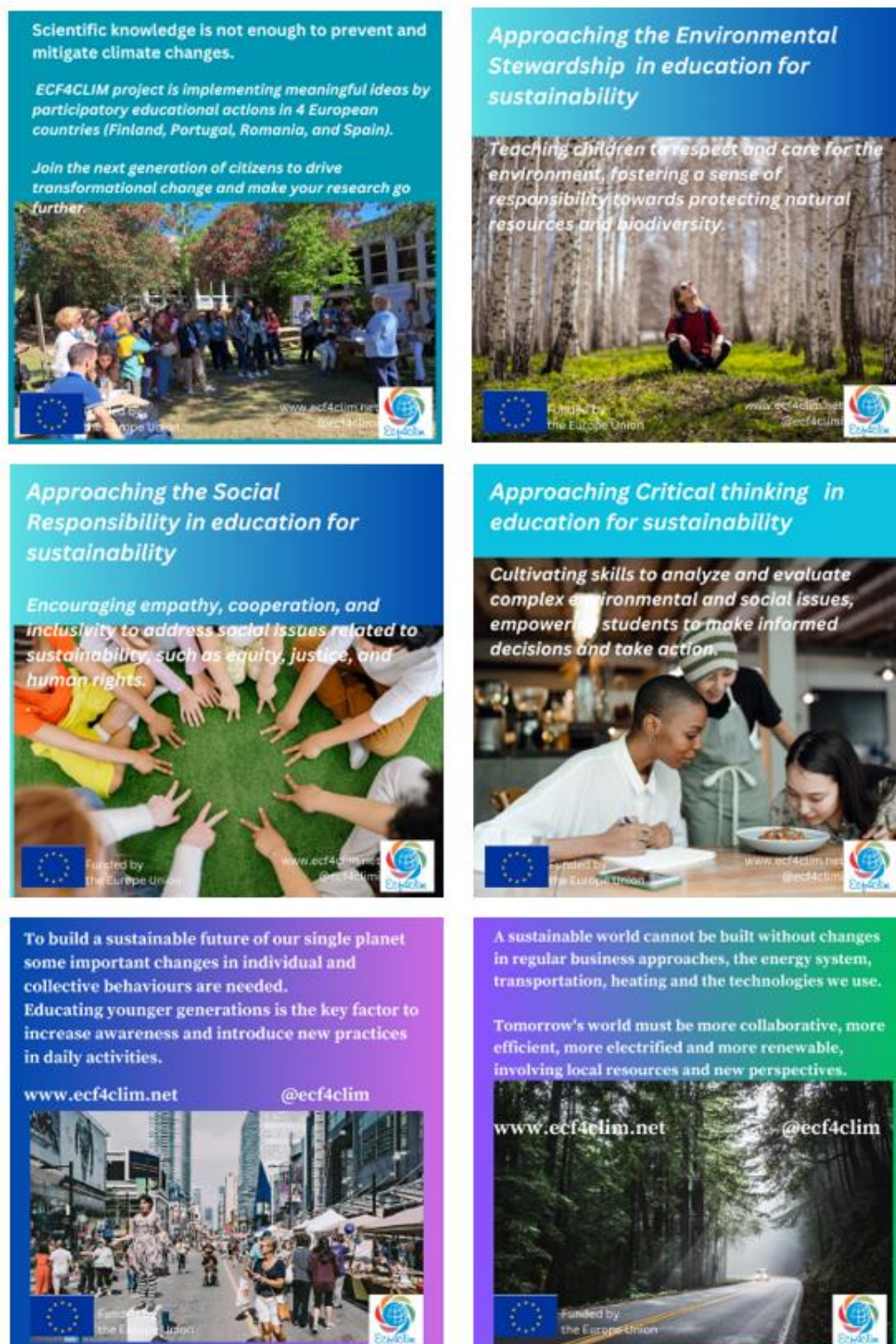


Fig. 6.3.12 Examples of social media posts spreading messages on the education for sustainability



Fig. 6.3.13 Examples of social media posts spreading feelings in connection with the sustainability values



Fig. 6.3.14 Examples of social media posts on the illustrative interventions

6.4 Publications, conferences, and external events

The dissemination of scientific knowledge has been a central component of the ECF4CLIM project's communication strategy. Partners actively contributed to advancing research on sustainability competences, climate education, and the integration of the European GreenComp framework into practice. The project's scientific output demonstrates both **theoretical innovation** and **practical relevance**, covering methodological development, case studies, and institutional transformation across educational levels.

Over the project's duration, **ECF4CLIM produced more than 50 scientific and academic publications**, including peer-reviewed journal articles, book chapters, conference papers, and professional contributions. These outputs collectively reflect the project's interdisciplinary character and its commitment to bridging research, education, and policy in sustainability transitions. A [List of publications](#) is presented in **Annex 1**.

Scientific Journal Articles

Several peer-reviewed publications have emerged from the project's research activities, addressing diverse aspects of sustainability education and environmental performance in schools and universities.

Key examples include:

- **Nokkala et al. (2024)**, *Collective sustainability competences of universities as a nested institutional space*. Higher Education Quarterly. <https://doi.org/10.1111/hequ.12552>.
- **Díaz et al. (2024)**, in *Advances in Building Engineering Research*, presenting the *diagnosis of sustainability performance in schools* and development of educational tools to enhance competences.
- **Serrano-Jiménez et al. (2023)**, *Sustainable Cities and Society*, introducing a *multi-criteria assessment model* for decision-making in schoolyards using GIS and remote sensing.
- **Díaz-López et al. (2023)**, *Environmental Development*, and **Serrano-Jiménez et al. (2023)**, *Energy and Buildings*, contributing evidence on *environmental education* and *energy retrofitting* as means to support sustainability competences.
- **Serrano-Jiménez, A. et al. (2023)**, *Providing a feasible energy retrofitting technique based on polyurethane foam injection to improve windows performance in the building stock*. *Energy and Buildings* 278 - 112595. DOI: 10.1016/j.enbuild.2022.112595

These publications have strengthened ECF4CLIM's scientific visibility in high-impact, peer-reviewed outlets that connect environmental sciences, education, and sustainability transitions.

Scientific Conferences

The ECF4CLIM consortium has been highly active in the international academic community, presenting findings at major conferences such as **CHER 2023 (*Higher Education Institutions as Change Agents in Society: Perspectives on Adaptation and Impact*, Vienna)**, **ESA 2024 (*Tension, Trust and Transformation*, Porto)**, and **SEED 2024 (*International Conference on Sustainable Energy Education Improving professional practice through regional cooperation*, Valencia)**.

Notable presentations include:

- *Collective sustainability competences in universities* (Nokkala et al.), CHER 2023;
- *The elusive educational competencies for sustainability in universities* (Espluga et al.), ESA 2024;
- *Changing individuals, institutions, and environmental conditions: an innovative hybrid participatory approach for sustainability in education* (Prades et al.), SEED 2024;
- *The ECF4CLIM Ecological Footprint Calculator as an awareness tool to promote sustainable behaviours in educational centres* (Gamarra et al.), SEED 2024.

These contributions disseminated the project's methodological advances—particularly the hybrid participatory approach, digital tools, and competence-based frameworks—to global audiences, encouraging replication and academic dialogue.

Academic and Professional Publications

In addition to journal articles, partners authored several **book chapters and academic essays** that place ECF4CLIM's insights within the broader European sustainability discourse. Highlights include:

- *Education for Planetary Well-being* (Aaltonen et al., Routledge, 2024), linking education and planetary health.
- *International Collaboration Helps to Broaden Sustainability Visions* (Mykrä & Lehtonen, in press), exploring the value of transnational cooperation.
- *Kestävyysosaaminen lukion opetussuunnitelmassa* (Mykrä, Suojoki-Saarinen & Lehtonen, 2024), demonstrating the integration of sustainability competences in Finnish high school curricula.

These works, published by **Routledge**, **Franz Steiner Verlag**, and the **Finnish National Agency for Education**, underline ECF4CLIM's contribution to educational reform and teacher development for sustainability.

National and International Conference Engagement

ECF4CLIM researchers participated in numerous Finnish and European conferences, ensuring both scientific rigors and local relevance. Topics ranged from *planetary citizenship* and *curriculum reform* to *pedagogical innovation* and *policy integration*. Presentations at venues such as **Pedaforum**, **Kasvatustieteen Päivät**, **ECER**, **SDEWES**, and **CONAMA 2022** showcased project tools, participatory models, and evidence from demonstration sites.

Non-Academic and Outreach Publications

To reach practitioners and the wider public, ECF4CLIM partners published articles in professional and educational journals such as *Ympäristökasvatus* and *Lukioiden kestävyystiekartasto*. These texts translated scientific concepts into practical guidance for educators, policymakers, and sustainability officers, thus broadening the project's societal impact.

Overall Impact

Through its diverse publication portfolio, ECF4CLIM has contributed to:

- Advancing theoretical understanding of sustainability competences in education;
- Providing empirical evidence and validated tools for institutional and behavioural change;
- Strengthening cross-sectoral collaboration between education, environment, and energy research communities;
- Enhancing Europe's scientific and policy leadership in climate and sustainability education.

The project's dissemination through high-impact journals, international conferences, and educational outlets ensures that its findings will continue to inform both academic research and practical implementation long after the project's conclusion.

6.5 Communication with educational communities and local communities

Communication with educational and local communities has been a cornerstone of the ECF4CLIM project, ensuring that the project's vision, activities, and outcomes are both co-created and widely disseminated. The project adopted a participatory and multi-level communication approach, designed to engage schools, universities, local authorities, and citizens in dialogue and joint action for sustainability and climate education.

A schematic overview of the ECF4CLIM project's communication strategy with educational, scientific, and local communities is presented in Figure 6.5.1.

At the **educational level**, communication channels were built within each DS to connect teachers, students, administrative staff, and parents. Regular meetings, workshops, and internal communication helped to maintain an active exchange of information about project interventions, tools, and learning materials. Through these activities, the ECF4CLIM message—*that education can be a driver of climate action and systemic change*—was continuously reinforced.

At the local community level, schools and universities served as **active hubs for sustainability**, promoting collaboration with municipalities, local NGOs, and businesses. Through diverse activities—such as parent meetings, open days, social media campaigns, and municipal events—the DSs effectively **disseminated ECF4CLIM messages** to a wider audience, including other educational institutions, civil society organizations, local authorities, industry representatives, and the general public.

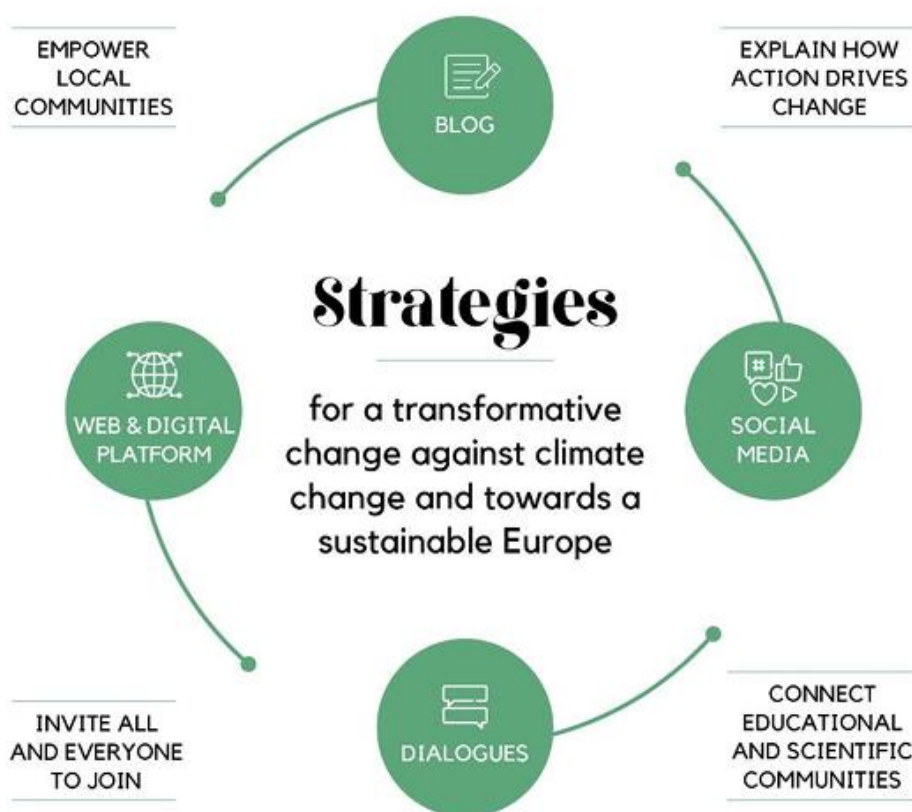


Fig. 6.5.1 Overview of communication strategy

The main messages conveyed to **educational and local communities** throughout the ECF4CLIM project can be summarized as follows:

1. **“Act now”** – Emphasizing the urgency of climate action and the critical importance of individual participation, where every contribution matters.
2. **“Act together”** – Highlighting the strength of collective action across Europe, the value of coordinated priorities, and the efficient use of shared resources.
3. **“Be transformative”** – Encouraging long-term change in attitudes and behaviors that extend beyond the project’s timeframe.
4. **“Educate to empower”** – Underlining education as a driving force for empowerment, enabling initiatives to grow and inspire other countries and communities.
5. **“Learn by doing and from others”** – Promoting mutual learning and the creation of a European community of practice and advocacy.
6. **“Think, discuss, act, measure”** – Advocating a reflective, evidence-based approach where deliberation, decision-making, and participation lead to meaningful action.
7. **“ECF4CLIM is our community”** – Presenting the project and digital platform as an open, collaborative, and inclusive space for sharing experiences, learning collectively, and amplifying impact.

A central element of the communication with the educational communities was the establishment and functioning of **Sustainability Competence Teams (SCTs)** and **Sustainability Competence Committees (SCCs)** [8].

- **SCTs**, (three per DS) created with students, and separately with teachers, and administrative staff, assisted by researchers, operated as the *core communicative and reflective groups* within each educational institution. They were responsible for facilitating participatory discussions, collecting feedback, and ensuring that all members of the educational community were informed and involved in the project activities. SCTs also contributed to identifying enablers and constraints for sustainability, transforming dialogue into concrete actions. More than **150 sessions** of the SCTs provided an open and constructive forum for dialogue, serving as a **neutral and inclusive space** that fostered effective communication, collaboration, and shared learning among participants.
- **SCCs**, (one per DS) composed by representatives of students, teachers and administrative staff, and including, from case to case, representatives from local authorities, parents, and external stakeholders, functioned as *bridging bodies* at the level of a certain educational unit and **between educational institutions and their broader communities**. Their role was to distill the messages at the level of educational unit, create coherence and expand communication beyond school boundaries, create synergies with local initiatives, and ensure that the lessons learned from ECF4CLIM interventions could be transferred and scaled up in other

contexts. More than **50 sessions** of SCCs contributed to the communication process.

Together, the SCTs and SCCs helped to establish a *culture of communication and co-creation* across all levels of the project.

Key aspects of the project's **communication strategy**—including its principles, core messages, tools, and methods—were presented to schools during **General Assembly meetings**, with the active involvement of **DSs representatives**. Additional discussions focused on **communication and dissemination** within the context of **illustrative interventions** were held during **SCTs and SCCs meetings**. These continuous exchanges fostered a **shared understanding, coherence, and alignment** among all participating educational communities. They acted not only as channels for information dissemination but also as platforms for participatory decision-making, reflection, and shared learning. This structure ensured that the outcomes of ECF4CLIM were not limited to institutional boundaries but resonated across communities—strengthening the project's long-term impact and sustainability.

Different **communication strategies** were tailored within each **educational community** and for each **illustrative intervention**, designed collaboratively by **working teams** that included researchers, teachers, students, and administrative staff.

An illustrative example comes from the **Romanian DSs**, where targeted communication accompanied the **structural sustainability interventions**—such as the installation of **solar panels for electricity** at *Nicolae Bălcescu* and *Șercaia* schools, and the **installation of water sensors** at *Iulia Zamfirescu* school. To raise awareness and promote engagement, a series of **informative posters** were created and strategically displayed within the schools.

For instance, posters related to the **water sensor intervention** were placed both **inside the school toilets**, to directly influence students' daily habits and reinforce sustainability-minded behavior, and **at the school entrances**, to inform and involve **parents and visitors**, thereby extending the communication beyond the school community. Some of the posters are presented in Fig 6.5.2.

Figure 6.5.3 showcases several **posters designed to communicate the implementation of solar panel installations** for electricity generation. These visual materials were created to raise awareness among students, teachers, and visitors about the school's commitment to renewable energy and sustainability and on the possibility to replicate such intervention at home level. The posters served both **an educational and promotional purpose**, highlighting the benefits of solar energy, its contribution to reducing the school's carbon footprint, and its alignment with the broader goals of the **ECF4CLIM project**.



Fig. 6.5.2 Some posters used for communication of water sensors intervention



Fig. 6.5.3 Some posters used for communication on solar energy measures

Special attention was devoted to enhancing communication among the DSs participating in the project. This collaboration aimed to strengthen their collective knowledge on sustainability and sustainability education, while also facilitating the exchange of good practices, experiences, and practical solutions. Through these interactions, schools were able to gain confidence in implementing sustainability measures tailored to their specific contexts and constraints — including budget, time, and human resources — thereby fostering mutual learning and trust across the ECF4CLIM network.

The **project meetings**, particularly the **GAs gatherings**, actively involved the DSs in the project's communication and dissemination activities. Discussions focused on the work of the SCTs and SCCs, the selection and implementation of interventions, and the

presentation of final outcomes. These meetings provided valuable opportunities for **cross-exchange among DSs**, reflecting the rich diversity of cultural and educational contexts, local needs, and types of implemented actions.

Several **posters created collaboratively by schools and the project team**, illustrating these interventions and communication efforts, are presented in Figure 6.5.4.



Fig. 6.5.4 Some posters used for communication among the DSs

In relation to communication among the DSs, each GA and annual review meeting included **on-site visits to local schools** in the host country. These visits provided valuable opportunities for **knowledge exchange, experience sharing, and discussion of educational and sustainability practices**. For instance, participants visited **Bobadela**

School in Lisbon (2023), Matei Basarab High School in Bucharest (2024), Samke School and Juhannuskylä School in Tampere (2025). Below some illustrative examples.

In 2022, a series of dedicated activities were organized to **strengthen the connection between the research teams and the DSs** through experiential learning in nature. One of the most symbolic events took place in **Umbralejo**, a small, uninhabited village in Spain that has been preserved as an educational space for sustainability and rural heritage.

During the visit, participants engaged in **field-based reflection and collaborative exercises** designed to explore the relationships between environment, community, and education. The experience in Umbralejo—often referred to as “the village without inhabitants”—offered a powerful setting to **discuss sustainability beyond the classroom**, highlighting how learning in and from nature can inspire collective awareness and responsibility toward environmental stewardship.

This activity not only fostered stronger links between researchers and educators but also served as a **living example of the transformative potential of reconnecting education with natural and cultural heritage** (Fig. 6.5.5).

During the **Final Conference in Madrid** (December 10–12, 2025), the first day is dedicated to a **visit to Mozart School**, including presentations of its interventions and classroom demonstrations. In all these instances, **dedicated sessions were allocated to facilitate direct communication among DSs**, fostering collaboration, reflection, and the transfer of successful sustainability practices.

On May 12th, 2024, the ECF4CLIM partners and representatives of DSs met in **Sintra (Portugal)** for a creative and team-building day aimed at strengthening collaboration and reflecting on sustainability education through **experiential learning**. The symbolic **climb to the Sintra mountain** represented the joint effort of educators and researchers to advance sustainability competences and foster climate action in education.

Throughout the day, participants engaged in **interactive and creative exercises**, working in pairs and small interdisciplinary groups and communicating the meaningful ideas by email and social media. Discussions focused on the **ECF4CLIM Roadmap**, the implementation of **illustrative interventions** in schools and universities, and lessons learned from **transdisciplinary collaboration**. The activities followed the four steps of the Roadmap—**Engagement, Connections, Visions, and Action**—encouraging reflection on values, systemic thinking, and practical solutions for sustainability in education.



Fig. 6.5.5 Team building in Umbralejo

The groups also used the **Carbon Footprint Calculator** to estimate emissions generated by travel to the meeting (approximately **30 tonnes of CO₂**), prompting awareness and collective commitments to mitigation actions such as tree planting and improved energy efficiency in schools.

This day in Sintra not only strengthened the **cohesion and motivation** of the ECF4CLIM community but also embodied the project's principles—**learning by doing, reflecting collectively, and acting responsibly**—demonstrating how sustainability can be lived and practiced within the project itself. Some illustrative photos are presented in Fig. 6.5.6.

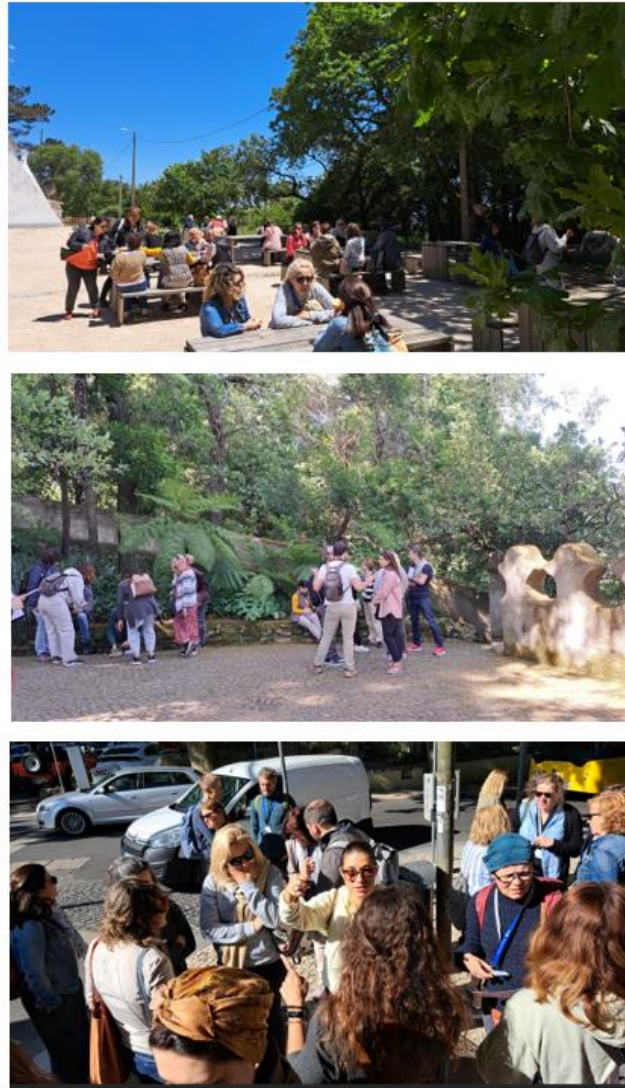


Fig. 6.5.6 Team building in Sintra

The **ECF4CLIM General Assembly and 6th Steering Committee Meeting** took place in **Bucharest on 9–10 May 2024**, bringing together researchers, teachers, and representatives from **Finland, Portugal, Spain, and Romania**. The event focused on **illustrative interventions** in schools and universities, enabling a **real exchange of experiences and good practices** among participants. It also offered **training sessions** on using ECF4CLIM's sustainability assessment tools to improve knowledge and implementation capacity.

A creative day was organized in the **Herăstrău area**, including a visit to the **National Village Museum "Dimitrie Gusti."** Participants reflected on **sustainability lessons from traditional Romanian households**, exploring how practices such as reuse and resource efficiency could inspire modern sustainable living. In small groups, participants

developed ideas for the **Roadmap for Sustainability Competences**, combining diverse perspectives from educators and researchers. The activity fostered **collaboration, reflection, and creativity**, showing how cultural experiences and shared dialogue can strengthen the integration of sustainability competences in education. Some illustrative photos are presented in Fig. 6.5.7.



Fig. 6.5.7 Team building in Bucharest

In **Tampere (Finland)** the representatives of DSs and researchers joined a **walking tour inspired by the ECF4CLIM Roadmap** and visited the **demonstration schools Juhannuskylä and Samke**. At Juhannuskylä, they observed multidisciplinary lessons

promoting practical sustainability skills, while at Samke, they discussed the **sustainability of school meals**, one of the site's key interventions.

Working sessions at **Aito Toimintakeskus** focused on **project evaluation, sustainability competences, and the final Roadmap**, while teachers shared their experiences and lessons from interventions. Some illustrative photos are presented in Fig. 6.5.8.



Fig. 6.5.7 Team building in Tampere

The event also highlighted **Finnish culture**, with a **traditional lakeside sauna** and **local cuisine** around a campfire. The meeting concluded with **Santa Claus's visit**, reminding participants that, like a good sauna, meaningful collaboration thrives on **shared stories and good company**.

6.6 Workshops and Webinars

The **Workshops and Webinars** organized within the ECF4CLIM project played a central role in fostering dialogue, knowledge exchange, and co-creation among researchers, teachers, students, and other stakeholders. These interactive events provided key opportunities to present project tools—such as the ECF4CLIM Roadmap—and to **collect feedback from educational communities** across Europe. They also served as platforms for training, collaboration, and reflection on sustainability education practices.

Through thematic workshops, including those based on the crowdsourcing method, and dedicated webinars for educational communities and transdisciplinary collaboration, participants were encouraged to share experiences, explore challenges, and identify enablers for integrating sustainability competences into education. Together, these activities strengthened the participatory and transformative approach that defines the ECF4CLIM project.

Workshops organized for crowdsourcing in support of the ECF4CLIM Roadmap construction

As part of the ECF4CLIM project's participatory approach, a series of **webinars were organized in spring 2022 to support the crowdsourcing process** that laid the foundation for the initial version of the ECF4CLIM Roadmap. These webinars brought together a diverse and international audience of students, teachers, school leaders, parents, and education experts to collectively reflect on how to advance sustainability education. National webinars were organized in Finland, Portugal, Romania, and Spain by each national working team inviting a diversity of teachers and stakeholders in education from each country. Figure 6.6.1 presents the promotional poster shared on social media and through relevant national educational networks in Romania.



Fig. 6.6.1 Poster used to invite a large audience to crowdsourcing workshops (in Romanian)

The webinars introduced and facilitated two complementary crowdsourcing methods: the **“Dream and Nightmare School of Sustainability” workshops** and the **online eDelphi discussions**. Participants in the first method explored enablers and constraints of sustainability education through the **Method of Empathy-Based Stories (MEBS)**, generating over **1,700 individual reflections** across **31 workshops** in four countries for more than 500 participants. These sessions served as the starting point for structured international dialogue conducted through the **eDelphi webinars**, which deepened the analysis of key issues and gathered additional insights from **68 active participants**.

Together, these webinars provided a dynamic space for **collective meaning-making and transnational exchange**, ensuring that the voices of diverse educational actors were embedded in the creation of the ECF4CLIM Roadmap. The outcomes of this process directly informed the ECF Roadmap’s conceptual framework and guided the design of subsequent illustrative interventions in schools and universities. Details are presented in [9].

1st ECF4CLIM Roadmap Workshop – “Roadmap Towards Sustainable Education”

On 14 December 2022, the **first ECF4CLIM dissemination workshop** titled *“Roadmap Towards Sustainable Education”* was organized online, bringing together participants from the **four demonstration countries**—Finland, Portugal, Spain, and Romania. The event aimed to **introduce and discuss the use of the ECF4CLIM Roadmap** as a practical tool for integrating sustainability competences into education.

The seminar gathered **teachers, researchers, and representatives from demonstration sites**, as well as other interested educators. The two-hour program included:

- An **introduction to the ECF4CLIM Roadmap**, its structure, and its role in supporting education for sustainability.
- **Small group discussions** where participants explored how the Roadmap could be applied in their schools and universities, exchanging perspectives, ideas, and challenges.
- A **wrap-up session** focused on identifying next steps for implementation and future collaboration across participating institutions.

The event was actively promoted through **social media channels** — Facebook and Twitter pages managed by the Finnish team — and shared on the **international ECF4CLIM social media platforms** to maximize participation (Fig. 6.6.2).

The **seminar succeeded in connecting demonstration sites and educators across Europe**, fostering a collaborative dialogue on how to operationalize the Roadmap in diverse educational contexts. It also marked an important milestone in the **project’s**

dissemination strategy, setting the stage for continuous peer learning and exchange throughout the ECF4CLIM network.

Fig. 6.6.3 illustrates the audience of the first ECF Roadmap workshop.

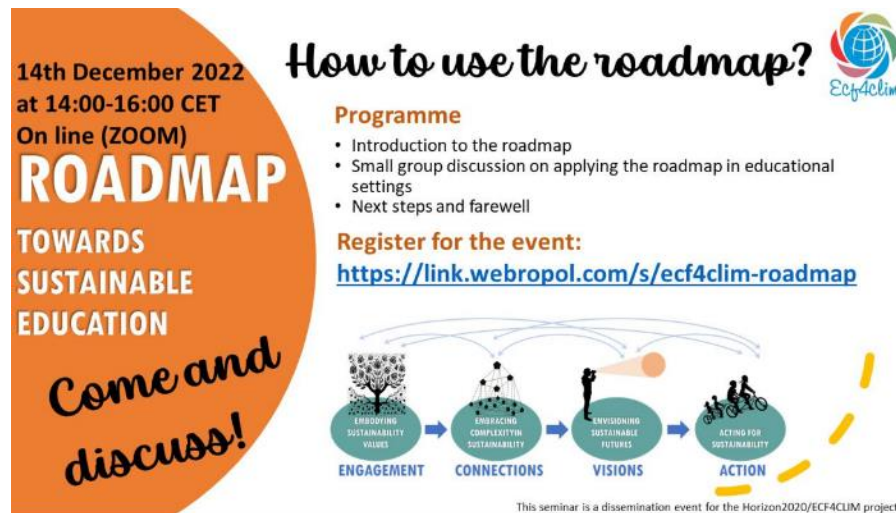


Fig. 6.6.2 The poster announcing the 1st ECF Roadmap workshop

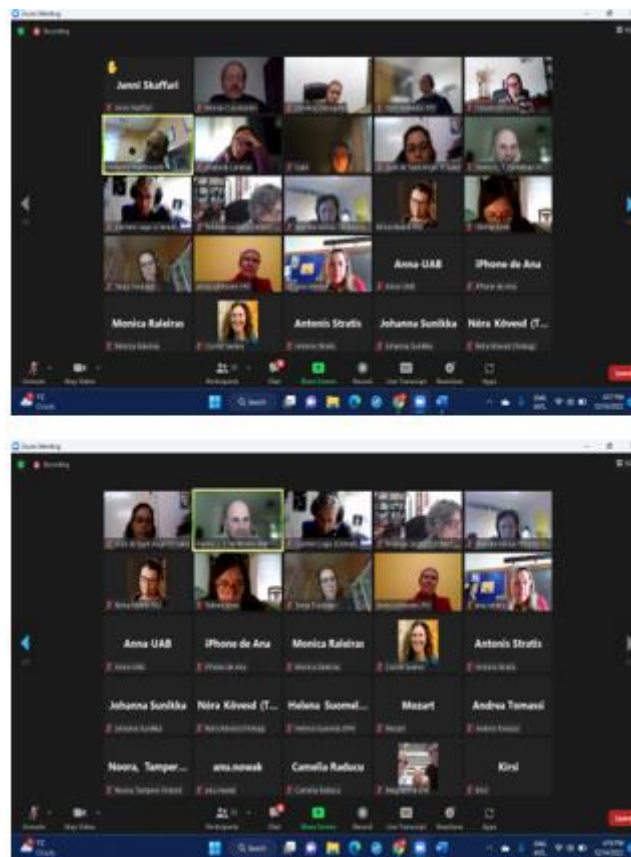


Fig. 6.6.3 Participants in the 1st ECF Roadmap workshop

2nd ECF4CLIM Roadmap Workshop – “Roadmap Towards Sustainable Education”

The **2nd ECF4CLIM Roadmap Workshop** was held at *Aito Toimintakeskus* in Tampere, Finland, alongside the project’s GA meeting. The event provided an excellent opportunity to combine strategic discussion with collaborative reflection among partners and demonstration site representatives.

Working groups focused on the further development of the ECF Roadmap were organized in two interactive sessions on **May 21** (from 9:00–10:45 and 16:15–17:30), followed by a **final synthesis session on May 22** (from 9:00–10:00). The discussions centered on refining the ECF Roadmap towards its final version, with particular attention to integrating insights from diverse **national contexts** and **good practices in sustainability education**.

Participants shared experiences from schools and universities across the four project countries, addressing both enablers and challenges in implementing sustainability competences. The workshop successfully gathered valuable feedback that informed the final adjustments of the ECF Roadmap, ensuring its **relevance, adaptability, and practical usability** in different educational settings.



Fig. 6.6.4 Participants in the 2nd ECF Roadmap workshop

Webinars for transdisciplinary strategy (TDS)

To foster interdisciplinary dialogue and identify gaps in understanding sustainability within educational contexts, a **participatory deliberation process** on transdisciplinary was designed and implemented through two dedicated webinars. These sessions brought together **22 experts** from diverse disciplines — including environmental sciences, education, engineering, sociology, economics, and philosophy — to exchange perspectives on sustainability competences, institutional enablers and constraints, and the translation of theory into educational practice.

The **first webinar** focused on reflecting upon the challenges and opportunities of **inter- and trans-disciplinarity**, engaging 13 sustainability experts from academia and policy. The **second webinar**, attended by 9 specialists from the educational community, explored the **practical implementation** of sustainability competences in schools and universities, addressing potential barriers, needed resources, and strategies for fostering systemic change. Together, these events helped shape a shared conceptual foundation for the ECF4CLIM project's interdisciplinary and practice-oriented approach.

Participants were not required to complete any preparatory work or offered financial compensation; however, they were encouraged to reflect beforehand on key discussion points. For the **first webinar**, attendees were asked to consider common **misunderstandings and divergent interpretations of sustainable development**, major **challenges to inter- and transdisciplinary collaboration**, as well as **opportunities and practical ways** to strengthen cooperation across disciplines and between academia and society.

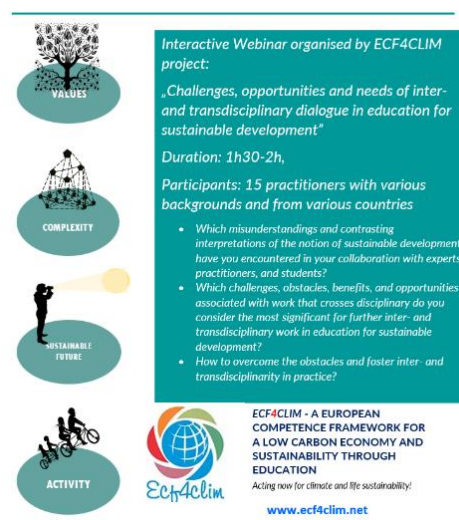


Fig. 6.6.5 Poster inviting the engagement in 1st webinar

For the **second webinar**, participants focused on **translating sustainability competences into educational practice**, reflecting on barriers and enablers within the education sector and identifying strategies to effectively integrate sustainability principles into teaching and institutional frameworks. Both sessions were recorded to support subsequent analysis and synthesis of insights.

The results of the discussions are detailed presented in [10]. In Fig. 6.6.5 the poster used to announce the 1st webinar is presented.

First webinar of the educational communities

The first ECF4CLIM webinar for educational communities, held on 29 October 2023, was dedicated to analyzing the **progress of illustrative interventions** implemented across the project's DSs.

The event brought together representatives from all DSs and members of the research teams to collaboratively review the state of implementation, identify key challenges, and exchange solutions to enhance the effectiveness of sustainability interventions.

The session, titled *"Workshop on Challenges and Solutions of Our Interventions to Promote Sustainability Competences"*, ran from 10:00 to 12:30 and followed a structured format combining plenary discussions with country-based group work (Finland, Portugal, Romania, Spain). A total of 32 participants took part in this workshop. There were 7 participants in the Finnish group, 5 in Portugal, 8 in Romania and 12 in Spain. In all groups there was representation from demonstration sites, research team members and Advisory Board.

The agenda included an introductory session outlining the project's progress, analytical framework, and group dynamics, followed by focused discussions in smaller groups to identify the challenges encountered and propose solutions. The outcomes of these sessions were later shared in a joint plenary discussion, fostering a shared understanding of effective practices and next steps.

This interactive format enabled a rich exchange of experiences among teachers, researchers, and project coordinators, helping to align strategies for improving sustainability competences and ensuring coherence across different educational and cultural contexts.

Second webinar of the educational communities

The second webinar with the educational communities, held on 28 October 2024 (10:00–12:30 CET), focused on the theme *"The Way Forward with the ECF4CLIM Roadmap."* The session aimed to reflect on the **progress made in construction of the**

ECF Roadmap and collecting relevant feedback from DSs to collectively refine its structure and practical relevance for educational contexts.

The event brought together 20 representatives from the DSs (teachers and school principals), alongside 4 external stakeholders, ensuring a balanced mix of on-the-ground educational experience and external perspectives.

The workshop combined plenary sessions and country-based group discussions (Finland, Portugal, Romania, and Spain). After an opening introduction, participants worked in smaller groups to explore how the Roadmap could be further developed and adapted to different national and institutional contexts. The final plenary session synthesized the insights from all groups and identified key next steps for enhancing the usability and long-term impact of the ECF4CLIM Roadmap within schools and universities.

Schools for Climate

In Spain, and in collaboration with the Regional Government of the Autonomous Community of Madrid — specifically the Department of Education and Youth (CTIF Sur) — two training workshops have been delivered for teachers in early childhood, primary, and secondary education.

The first workshop, held in 2022 and entitled *Schools for Climate*, used an active and participatory methodology to explore its content. It pursued six main objectives:

1. To provide teachers with methodological strategies, resources, and activities that integrate climate-related topics into the primary and secondary education curricula.
2. To deepen teachers' understanding of climate change and sustainability from multiple disciplinary perspectives.
3. To offer knowledge and resources on the efficient use of materials, energy efficiency, and energy saving within an educational context.
4. To provide tools and resources that foster innovation in teaching, learning, and assessment.
5. To introduce key concepts and actions related to climate change mitigation and adaptation.
6. To strengthen connections between the scientific community, the education sector, and the wider public, thereby promoting environmental awareness and informed, responsible decision-making.

The second workshop, held in 2024 and entitled *Schools for Climate: European Framework of Competences in Sustainability in Education*, focused on disseminating the

ECF4CLIM experience. It introduced teachers to the participatory sustainability education methodologies implemented in the project, as well as the EU's GreenComp framework. The course also showcased the awareness-raising and learning tools developed within ECF4CLIM, including the Environmental Footprint Calculator and the Retrofitting Toolkit. In addition, the workshop addressed education for sustainable development with special emphasis on SDG 13: Climate Action, and examined strategies for climate change mitigation and adaptation.

Both workshops were designed to equip teachers with essential sustainability competencies and to support the integration of sustainability education in alignment with Spain's new LOMLOE legislation. Incorporating participatory methodologies — such as those developed and tested within ECF4CLIM — enriches learning for both students and teachers. This approach fosters shared progress, encourages commitment and reflection, promotes co-design of learning activities aimed at building sustainability competences, and supports the implementation of the ECF4CLIM roadmap.

Several teachers have expressed interest in collaborating with CIEMAT to teach their students how to use the ECF4CLIM tools.

On the other hand, ECF4CLIM has been invited to participate in various workshops and webinars organised by external institutions. Below are two examples illustrating the project's involvement in national workshops held in Spain.

Eco-Schools Workshops and 4ºESO+EMPRESA Programme

CIEMAT participated in two editions (2024 and 2025) of the annual Eco-Schools workshops in the Community of Madrid. On both occasions, the ECF4CLIM project was presented, together with an ECF4CLIM intervention titled "*CO₂ and Water Market*." This activity promotes reductions in CO₂ emissions and water consumption through the exchange of reused T-shirts, helping schools improve their overall sustainability performance. Several primary and secondary school teachers have shown interest in replicating the initiative, which has also been adopted by various schools as part of their Sustainability Week activities.

The *CO₂ and Water Market* activity was also introduced in the 4ºESO+EMPRESA Programme, organised by the Community of Madrid's Department of Education. This programme gives secondary school students an opportunity to experience the world of work for the first time and encourages interest in research, innovation, and sustainability-related challenges.

Environmental Education for Sustainability Action Plan (PAEAS)

The Ministry for Ecological Transition and the Demographic Challenge has invited CIEMAT to include the ECF4CLIM project in the *Environmental Education for*

Sustainability Action Plan (PAEAS) as part of the contributions from public administrations to the PAEAS Work Programme for 2023, 2024, and 2025. The PAEAS defines the strategic framework for environmental education in Spain for the period 2021–2025 and sets out 61 actions organised into six operational axes or strategic areas. The Ministry has recognised that the ECF4CLIM project makes a significant contribution to achieving the objectives of the PAEAS in Spain.

6.7 Final Conference

The **ECF4CLIM Final Conference**, scheduled for **December 2025 in Madrid**, marks the culmination of four years of collaborative research, co-design, and educational innovation. The event will bring together **project partners, Advisory Board members, representatives of the Demonstration Sites (DSs), policymakers, educators, and other stakeholders** engaged in sustainability and climate education across Europe.

The main objectives of the conference are to **present and discuss the project's final results**, including the *Roadmap for Sustainability Competences*, validated *methods and tools*, and evidence from *illustrative interventions*; to **showcase success stories and good practices** developed by schools and universities; and to **reflect on lessons learned** regarding the integration of sustainability competences in education. The event will also serve as a **platform for dialogue and networking**, exploring pathways for the **long-term exploitation and transferability** of ECF4CLIM outputs to other educational communities and policy frameworks.

By gathering researchers, practitioners, and decision-makers in one place, the Final Conference aims to **bridge research and practice**, reinforce synergies with European initiatives such as *GreenComp* and *Education for Climate*, and lay the groundwork for **future collaborations and funding opportunities** that will continue advancing sustainability competences beyond the lifetime of the project.

The Agenda of the Final Conference is presented in Annex 3.

6.8 Best Intervention Award

To celebrate creativity, collaboration, and the tangible outcomes achieved through the ECF4CLIM Demonstration Sites (DSs), the consortium organized the **Best Intervention Award (BIA)**. BIA was announced in 2024 to all DSs via SCTs and SCCs. The competition aimed to identify and reward the most impactful sustainability interventions implemented in schools and universities, while enhancing engagement and communication through creative storytelling.

Objectives of the BIA included:

- Recognizing the most significant sustainability interventions designed and implemented within the project's DSs.
- Encouraging active participation of students and teachers in documenting their initiatives.
- Fostering awareness of sustainability and climate action through short, creative videos produced by the educational communities.

The competition was open across four categories — *Primary Education, Lower Secondary, Upper Secondary, and Higher Education*.

Each school participating in the implementation of the interventions was invited to prepare a **short application package** presenting its sustainability intervention. The application included a **written summary** (maximum two pages) and a **two-minute video**, both designed to illustrate the project's objectives, implementation process, and results. Specifically, schools were asked to describe the **main goals** of their intervention, the **activities carried out**, the **participants involved** (students, teachers, and administrative staff), and the **measurable outcomes** achieved in terms of environmental performance, behavioural change, and learning impact. Additionally, applicants were encouraged to reflect on how their actions contributed to the **ECF4CLIM Roadmap dimensions** — *Engagement, Connections, Change, and Action* — and how they could be **replicated** or **scaled up** in other educational communities. The accompanying video complemented the written report by providing a **visual narrative** of the intervention, highlighting the enthusiasm, creativity, and collaboration within the educational community.

Ten DSs applied for participation (Table 6.8.1), each submitting an application and a video (approximately two-minute size).

Table 6.8.1 The list of DSs participating in BIA

Primary School Category:	Finland - Juhannuskylä, Spain - CEIP Mozart
Lower Secondary School Category:	Finland – Juhannuskylä, Romania – Nicolae Balcescu School Dragasani, Romania – Sercaia School
Upper Secondary School Category:	Finland – Samke school, Romania – Iulia Zamfirescu High School Mioveni, Spain – Ithaca Secondary School
University Category:	Finland – University of Jyväskylä, Romania – UNSTPB- CUPIT, Pitesti University

The applications submitted for the BIA reflected a remarkable diversity of themes, creativity, and depth of engagement across all participating educational levels. Schools demonstrated strong commitment to sustainability through hands-on initiatives

addressing energy efficiency, waste reduction, biodiversity, mobility, and community awareness. The quality of the submissions showed both **scientific understanding** and **pedagogical innovation**, with many interventions integrating environmental audits, IoT monitoring, and participatory approaches developed in ECF4CLIM.

The videos vividly captured the enthusiasm of students and teachers, translating complex sustainability concepts into inspiring, practical actions. Overall, the applications confirmed that the ECF4CLIM framework and tools effectively supported schools in moving from theory to practice, fostering collaboration, empowerment, and long-term behavioural change within educational communities.

Each entry was evaluated by a **jury of project partners** (Ana Prades, Yolanda Lechón, Joseph Espluga, Marian Constantin, Lara Ramos, Marta Almeida, Hannu Heikkinen, Terhi Nokkala, and José Antonio) using four equally weighted criteria:

(C1) Implementation and impact (25%): effective change (compared to the original situation in the beginning)

(C2) Participation level (25%): How many people or % the organization were involved?

(C3) Ambition (25%): Level of aimed impact compared with the current sustainability performances

(C4) Contribution to Roadmap (25%): the contribution (by intervention) to individual, collective competences and environmental performance and issues mentioned in the analytical framework.

A scale 1 to 5 (1 =Very low, 2= Low, 3=Medium, 4=High, 5=Very high) was used to appreciate each intervention by each evaluator.

The **Best Intervention Award Ceremony** took place during the **GA in Tampere**, serving as both a festive event and a reflective moment on the progress achieved by the ECF4CLIM community. Awards were presented for each education level, along with two special recognitions — the Student Empowerment Award and the Prize for Innovation in Sustainability Education.

The **Grand Prize (The Best Intervention Award)** was decided, after the presentations of all 10 videos, by the votes of all participants in the GA (researchers from the partners, DSs' representatives, AB members) using **Slido** application.

The winning DSs are:

- **Primary School Category:** *Spain – CEIP Mozart*
- **Lower Secondary School Category:** *Finland – Juhannuskylä*
- **Upper Secondary School Category:** *Spain – Ithaca*

- **University Category:** *Finland – University of Jyväskylä*
- **Student Empowerment Award:** *Finland – Juhannuskylä Primary School*
- **Prize for Innovation in Climate Education:** *Romania – Nicolae Bălcescu School Drăgășani*
- **Grand Prize (Best Intervention Award):** *Spain – CEIP Mozart*

Each participating team received diplomas (Fig. 6.8.1) of recognition, and the winners were additionally awarded a symbolic tree to be planted in their local context in collaboration with ECF4CLIM partners — a living representation of their contribution to sustainability education. A ceremony to plant the tree at CEIP Mozart, was organized in the context of Final Conference.

The videos were uploaded on [YT ECF4CLIM channel](#). Also, a dedicated sub-page on the website was produced to disseminate the [award's results](#).



Fig. 6.8.1 Format of Diploma for BIA

6.9 Newsletters

Throughout the project's duration, ECF4CLIM published a series of newsletters designed to inform stakeholders, educational communities, and the general public about project progress, achievements, and upcoming activities. Each newsletter was distributed via the project website, social media channels (Facebook, LinkedIn, and X), and through partner networks to ensure wide dissemination and engagement across Europe.

Newsletter 1 (June 2022) introduced the project's vision, mission, and structure, highlighting its multidisciplinary and participatory approach to developing the *European Competence Framework (ECF) for sustainability and climate action*. It presented the early stages of the **crowdsourcing process** conducted in Finland, Portugal, Romania, and Spain, and reported on the **policy framework analysis** and **environmental performance audits** at demonstration sites. The newsletter also described initial **clustering and synergy-building activities** with other Green Deal projects and European initiatives, positioning ECF4CLIM within the broader landscape of sustainability research and education.

Newsletter 2 (July 2023) focused on the **development of the ECF4CLIM Roadmap**, an operational model translating sustainability competences into practical educational actions. It introduced the **ECF4CLIM Digital Platform**, which integrates innovative tools such as the *Environmental Footprint Calculator*, *Retrofitting Toolkit*, and *IoT Ecosystem for Monitoring*. The issue also presented the **Hybrid Participatory Approach**, including the formation of *Sustainability Competence Teams (SCTs)* and *Sustainability Competence Committees (SCCs)* across demonstration sites. Furthermore, it explored the outcomes of the **transdisciplinary dialogue webinars**, where experts and educators debated the meaning and implementation of sustainability and sustainable development in education. The newsletter concluded with highlights from the **General Assembly in Sintra, Portugal**, emphasizing the project's commitment to practicing sustainability in its own operations.

Newsletter 3 (June 2024) showcased the progress of the project's *illustrative interventions* carried out across the four Demonstration Sites (DSs) in Finland, Portugal, Romania, and Spain. Several **illustrative interventions** implemented across the DSs were presented:

- **Finland:** Improving the quality and sustainability of school meals through targeted actions at *Juhannuskylä Comprehensive School* and *Samke High School*, promoting sustainable consumption and waste reduction.
- **Spain:** Participation in environmental training programmes and dynamic sustainability awareness activities that fostered a whole-school approach to environmental responsibility.

- **Romania:** Two technological and behavioural interventions—*Harvesting solar energy to improve the carbon footprint* and *Using water sensors to reduce water waste*—demonstrated how innovation and co-design can lead to measurable environmental improvements.
- **Portugal:** The project *Revitalizing Quinta do Charco* at *Escola Básica de Camarate* integrated ecological restoration with sustainability education, transforming the schoolyard into a living laboratory for climate learning.



Fig. 6.9.1 Cover pages of the Newsletters

The issue approached the translating the ECF4CLIM methods and tools into concrete educational actions, highlighting the participatory engagement of students, teachers, and administrative staff in co-designing and testing sustainability practices. A central theme of Newsletter 3 was the activities of the **third cycle of Sustainability Competence Teams (SCT3)** and **Sustainability Competence Committees (SCC3)**, which played a pivotal role in coordinating local initiatives and ensuring that interventions aligned with the ECF4CLIM Roadmap. These structures strengthened collaboration within educational communities and enhanced the visibility of sustainability competences in everyday educational practice.

Additionally, the newsletter highlighted the **development and testing of digital tools and games**, designed to enhance sustainability competences through interactive learning experiences. The **Creative Day in Bucharest** was presented as an example of how arts, storytelling, and participatory creativity can engage students and educators in reflecting on sustainability values and actions.

[Newsletter 4](#) (August 2025) documented the project's final phase and preparation of the **Final ECF4CLIM Roadmap** named *Roadmap for Sustainability Competences*, which connects *GreenComp* competences with real-world educational actions. It described the activities of **SCT5 and SCT6**, which focused on evaluating interventions, identifying lessons learned, and distinguishing between success factors and barriers. The issue also reported on the identification of **22 good practices** among the 61 interventions carried out across 13 institutions in the four demonstration countries, highlighting their replicability and educational impact. Furthermore, it covered the **General Assembly in Tampere (Finland)**, where partners, advisory board members, and teachers reviewed project achievements and shaped the final outputs. A special section was dedicated to the **Best Intervention Award Ceremony (May 2025)**, which celebrated creativity, collaboration, and innovation in sustainability education. Ten demonstration sites participated, presenting their interventions and videos, evaluated by an international jury based on impact, participation, ambition, and contribution to the Roadmap for Sustainability Competences.

Together, these newsletters have served as key communication tools for sharing progress, promoting collaboration, and enhancing visibility. They have also reinforced the participatory and educational philosophy of ECF4CLIM, bridging project developments with the broader European community engaged in sustainability and climate action.

6.10 Blog

The ECF4CLIM Blog was conceived as an interactive communication channel to promote dialogue, reflection, and engagement around climate education, sustainability competences, and behavioural change. The Blog is hosted as a dedicated section of the ECF4CLIM [website](#), and it has been continuously active throughout the duration of the

project, complementing other dissemination and outreach tools such as newsletters, webinars, and social media posts.

The main objectives of the blog were to:

- Foster reflection on key topics related to climate change, sustainability, education for climate, and responsible everyday behaviour,
- Stimulate discussion among educational communities, researchers, policymakers, and citizens,
- Strengthen the link between the ECF4CLIM website and its social media platforms by sharing and cross-promoting posts,
- Contribute to building a broader European community of practice engaged in sustainability education and climate action.

Each blog post was designed to be **accessible, reflective, and discussion-oriented**, inviting both partners and educational communities to contribute their views, experiences, and stories. Posts were published in **reverse chronological order**, ensuring that the most recent reflections appeared at the top of the page. The inclusion of **hashtags** facilitated visibility and indexing across search engines and social media, increasing accessibility and outreach.

The **frequency of publication** was approximately **monthly**, depending on the level of engagement of the educational communities and the project's activity cycle. The blog leveraged its flexible, low-cost, and interactive nature to reach diverse audiences while encouraging contributions from DSs. Teachers, students, and administrative staff involved in interventions were invited to discuss on the existing posts and, also, to transform their personal reflections, diary entries, and creative ideas into blog posts. This participatory approach supported the integration of real voices from the field into the wider European conversation on sustainability competences.

Over the project's duration, the blog evolved into a **dynamic storytelling space**, reflecting both the scientific progress and the human dimension of ECF4CLIM. Posts addressed a wide range of topics—from global environmental issues and local school initiatives to reflections on pedagogy, behaviour change, and the societal implications of sustainability transitions.

Examples include thought-provoking titles such as:

- *From Results to Real Impact: How ECF4CLIM is Powering Change in Sustainability Education.*
- *The Little Things That Make Sustainability Attractive*
- *Climate change-phobia vs a stepwise approach?*

- *Sustainability Competences through Agroecology: A Practical ECF4CLIM Collaboration in Barcelona*
- *By Train from Finland to a Project Meeting in Romania*
- *AI in Education for Sustainability: Friend, Coach, or Trap?*
- *Schools as Living Labs: What We Learned from ECF4CLIM Interventions*

In total, **over 45 posts** were published between **November 2021 and October 2025**, authored by project partners, educators, and students from demonstration sites across Finland, Portugal, Romania, and Spain. A list of the blog posts is presented in Annex 2, together with the number of views. The diversity of voices and perspectives captured in these posts has been instrumental in showcasing the participatory ethos of ECF4CLIM, emphasizing how sustainability competences are lived, taught, and enacted in real educational contexts.

In Fig. 6.10.1 the format of the Blog page is presented.

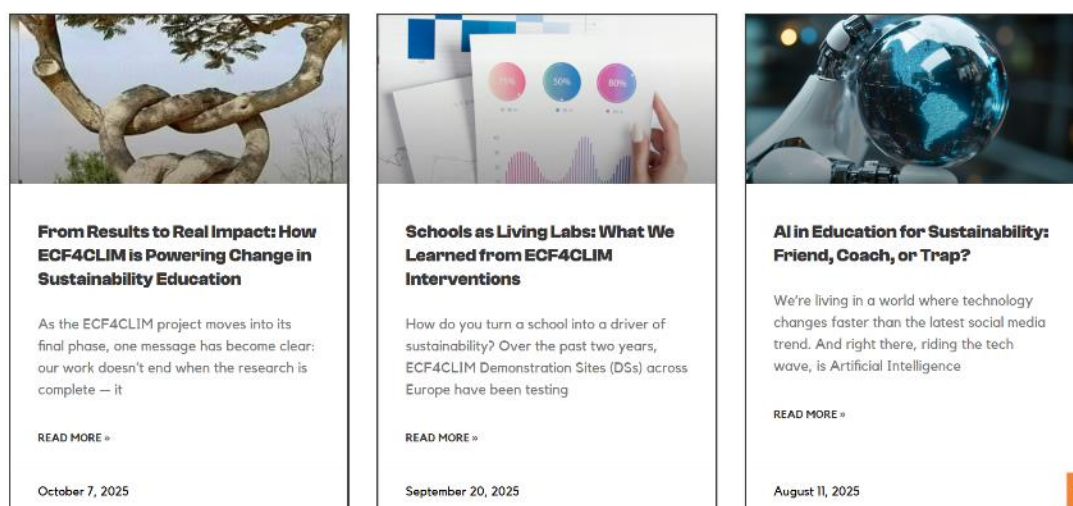


Fig. 6.10.1 Format of the entries for the posts on the Blog page

The blog also acted as a bridge between **research and public engagement**, offering insights into ongoing interventions, pilot results, and the lived experiences of those transforming education for sustainability. By connecting personal stories to broader educational and policy frameworks, the ECF4CLIM blog helped cultivate a sense of shared ownership, awareness, and motivation among readers and contributors alike.

In conclusion, the ECF4CLIM Blog has been an essential instrument for disseminating knowledge, amplifying community voices, and deepening the impact of the project's communication strategy. It stands as a lasting online resource where the legacy of ECF4CLIM—its reflections, practices, and transformative vision for sustainability education—remains accessible to a wide and evolving audience.

7 COMMUNICATION MATERIALS

This section presents the main materials produced within the ECF4CLIM project to enhance visibility, engagement, and impact across educational, scientific, and local communities. The communication actions were designed to promote the project's mission—empowering educational communities to act on climate change and sustainability—through a mix of visual, digital, and participatory tools.

The associated activities detailed below illustrate how the project translated its research outputs into accessible, attractive, and practical communication formats such as video materials, digital factsheets, newsletters, and press releases. In addition, strong emphasis was placed on maintaining a coherent and recognisable visual identity across all channels, from the website and digital platform to printed and online dissemination tools.

Through these coordinated efforts, ECF4CLIM has succeeded in building an active and expanding community of educators, researchers, and institutions dedicated to sustainability education and contributing directly to the European Green Deal's goals.

7.1 Awareness raising actions

A series of awareness-raising actions were undertaken throughout the project to promote ECF4CLIM's mission and outcomes to both educational and wider audiences. These actions aimed to foster understanding of the project's objectives, encourage active engagement, and strengthen the visibility of sustainability education as a driver for change.

A key element was the **ECF4CLIM video presentation**, available on the project's YouTube channel and website, which provides an accessible introduction to the project's goals, structure, and achievements. The video emphasizes the transformative potential of education in addressing climate change and highlights the participatory approach underpinning the **Roadmap for Sustainability Competences**. Through dynamic visuals and concise narration, it showcases the project's four-step approach—**Engagement, Connections, Change, and Action**—as well as its reach: 13 demonstration sites across four countries, more than 3,000 participants, and around 75 tailored sustainability interventions.

Beyond this flagship video, a **series of 20 short videos** was developed to communicate project results and community stories. These covered key themes such as Roadmap development, illustrative interventions, participatory workshops, and reflections from students and educators. Together, they formed a comprehensive visual narrative illustrating how ECF4CLIM contributes to building competence-based, participatory sustainability education across Europe.

Additional awareness-raising measures included the creation of posters, factsheets, and infographics distributed through schools, events, and online channels. These materials

communicated the project's key messages—**“Act now, act together, and be transformative”**—in a clear and visually engaging manner. They were complemented by the project's active presence on **social media platforms (Facebook, LinkedIn, Instagram, X, YouTube)**, which amplified outreach and dialogue with diverse audiences.

Through these initiatives, ECF4CLIM significantly increased awareness and understanding of how education can lead the transition toward sustainability, establishing itself as a reference point for participatory climate education in Europe.

7.2 Media coverage

ECF4CLIM Project Video Presentation

The **ECF4CLIM video presentation**, available on the project's [YouTube channel](#), serves as a dynamic and accessible introduction to the project's mission and achievements. It highlights how education can take an active role in combating climate change and advancing sustainability through empowerment, participation, and innovation.



Fig. 7.2.1 ECF4CLIM video presenting the team

The video introduces the ECF4CLIM as a participatory initiative designed to support educational communities—from primary schools to universities—in embedding sustainability into their daily structures and practices. At its core lies the **Roadmap for Sustainability Competences**, a practical guide built through interdisciplinary and transdisciplinary collaboration. The roadmap is structured around four key steps:

Engagement, Connections, Change, and Action, illustrating the process of transforming values and knowledge into meaningful initiatives.

Through vivid narration and visuals, the video presents the project's extensive scope:

- **13 demonstration sites** across **four European countries** (Finland, Portugal, Romania, and Spain);
- **Over 3,000 participants** involved in **around 75 sustainability interventions**;
- Focus on developing **individual, collective, and technical-material competences** within educational communities.

The video also showcases the **ECF4CLIM Digital Platform**, which offers open access to educational resources such as interactive tools, environmental footprint calculators, flipbooks, and serious games. These resources are designed to encourage global use and adaptation, supporting educators and learners in promoting sustainability competences.

Closing with the message *"ECF4CLIM is redefining what education can achieve"*, the video positions the project as a **replicable model for participatory, competence-based sustainability education** that generates tangible, long-lasting impact in schools and universities across Europe.

Other videos

A total of **20 videos** were produced and published on the **ECF4CLIM YouTube channel**, serving as key communication and dissemination materials. Additionally, on **ECF4CLIM Finland YouTube-channel** (@ECF4CLIMfinland) there are **26 videos** related to the project, and used in different phases of the project, in different events, for communication and dissemination. These videos showcase the project's activities, outcomes, and community engagement, and can be grouped into the following categories:

1. **Presentation of the ECF Roadmap** – four videos available in English, Romanian, Portuguese, and Spanish.
2. **Showcasing illustrative interventions** – ten videos highlighting sustainability initiatives implemented across schools and universities.
3. **Project activities** – two videos documenting participatory events such as the World Café sessions.
4. **Messages from students** – three short videos capturing young participants' reflections and motivations.

5. **General project overview** – one video providing a concise introduction to ECF4CLIM’s mission and achievements.

Together, these videos form a dynamic visual narrative of ECF4CLIM’s work to advance sustainability education across Europe.

Press Releases

Three official press releases were planned as part of the communication and dissemination strategy. Their purpose is to provide clear, accessible, and impactful updates on the project’s progress and achievements to a wide public, including educational stakeholders, policymakers, and the general media. At consortium level, it was agreed that the press releases would be strategically timed to coincide with key project milestones:

1. **Release of the ECF4CLIM Roadmap** – This press release will announce the availability of the project’s main output, presenting the Roadmap as a practical and participatory tool for developing sustainability competences in schools and universities. The communication will emphasize its accessibility, adaptability to diverse educational contexts, and relevance to European policy priorities.
2. **Announcement of the Final Conference (December 2025)** – This press release will announce the upcoming international final conference, outlining its objectives, key themes, expected participants, and programme highlights. It will present the event as the culmination of four years of European collaboration and will emphasise the importance of the discussions, demonstrations and exchanges that will take place. The release will also introduce the Demonstration Sites and partner institutions involved, highlighting the practical examples and insights they will showcase during the conference.
3. **Project Completion** – Issued at the official end of the project, this press release will synthesize the overall achievements, results, and expected post-project pathways. It will underline how the project’s resources—such as the Roadmap, Digital Platform, assessment tools, and illustrative interventions—remain available for continued use and replication, while acknowledging ongoing efforts to sustain and expand the network formed during ECF4CLIM.

The prepared press releases for the ECF4CLIM Roadmap and Final Conference are presented in Annex 5. The Spanish version released on November 28th is also included.

On the other hand, some activities to communicate in the media were achieved at national level. For example, in HR Portugal (SAPO), <https://hrportugal.sapo.pt/isq-integra-projecto-europeu-para-formar-geracoes-capazes-de-enfrentar-os-desafios-climaticos/>, an article published on **6 February 2025** highlights ISQ’s commitment to

preparing future generations for environmental challenges through its participation in ECF4CLIM. The article also notes the involvement of partners from Portugal, Finland, Romania, and Spain, and that the tools are already being tested in schools in these countries.

Another presence, <https://jornaleconomico.sapo.pt/noticias/isq-integra-projeto-europeu-de-formacao-para-o-desenvolvimento-sustentavel/>, on February 2025, Jornal Económico reported on ISQ's participation in this Horizon 2020 project. The article emphasizes the €4.9M funding, the mission to educate school communities, and the alignment with the GreenComp framework. It outlines the key tools developed: ecological footprint calculator, retrofit kit, and the multi-criteria sustainability assessment system.

The publication Empreendedor (<https://www.empreendedor.com/isq-desenvolve-plataforma-digital-para-promover-competencias-em-sustentabilidade/>), February 2025, presented digital platform as a tool designed to foster green competences and sustainable behaviour in schools. The article stresses that the platform supports behavioural change, not just theoretical knowledge, and that digital tools play a central role in achieving this shift.

On March 2025, APEMETA publication (<https://www.apemeta.pt/pt/noticia/isq-cria-plataforma-digital-para-promover-competencias-educativas-sobre-o-desenvolvimento-sustentavel/>) featured ISQ's announcement, highlighting the importance of sustainability education and competence development.

These press releases were focused on:

Educational innovation: The development of the educational game and flipbooks shows a modern, interactive approach relevant across all education levels—from primary school to higher education.

Measurement and accountability: The environmental assessment tools (footprint calculator, retrofit kit, performance indicators) enable not only awareness but also measurable progress, essential for planning and continuous improvement in school communities.

International cooperation: The participation of four different countries (Portugal, Finland, Romania, Spain) strengthens the European dimension of the project and encourages the exchange of best practices between diverse educational systems.

High potential impact: If widely adopted, the platform could significantly contribute to developing “green competences” in young people and to building a culture of sustainability across Europe.

7.3 Visual identity and branding

The visual identity of the ECF4CLIM project was carefully crafted to reflect its core mission—empowering educational communities to drive climate-action and sustainability. According to the project’s Communication Plan, the creation of the project logo was a foundational step in consolidating a cohesive visual representation that could be consistently deployed across all media and materials.

Key Elements

- **Logo & Brand Mark:** The logo (Fig. 7.3.1) serves as the primary visual identifier of ECF4CLIM and appears on the website, social-media assets, newsletters, presentations and printed materials. It unifies the project’s components under one symbol.
- **Colour Palette:** The branding makes use of a defined set of colours that evoke themes of sustainability, education and low-carbon action. Consistent use of these colours across digital and print materials reinforces recognition and coherence of the project’s identity.
- **Typography & Graphic Style:** The chosen font styles and graphic elements maintain clarity and accessibility, while aligning with the project’s tone of innovation, collaboration and inclusivity.
- **Applications & assets:** The visual identity is applied broadly: on flyers, posters, presentation slides, the project website, social media banners, and the digital platform interface—ensuring that every touch-point with the project carries a consistent look and feel.



Fig. 7.3.1 ECF4CLIM Logo

Purpose & Impact

The branding strategy of ECF4CLIM is designed to achieve several objectives:

1. **Recognition** – By using a unified visual identity, the project becomes easily identifiable across different channels, countries and audiences.
2. **Credibility & professionalism** – A well-designed brand fosters trust among educators, policymakers, demonstration-sites and external stakeholders.
3. **Engagement** – The visual identity helps to attract and retain the attention of diverse audiences—students, teachers, community members—especially when used on promotional and informational items.
4. **Alignment with project values** – The visual elements reflect the project’s emphasis on sustainability, innovation and education; they communicate these values before any text is read.

Ensuring Consistency

To preserve the integrity of the brand, the project has put in place guidelines for how the logo, colors and typography should be used—ensuring that all partners, demonstration-sites and external stakeholders apply them correctly. The monitoring of branding across media and materials helps maintain a unified and professional presence of the project until its conclusion and beyond.

Dissemination and communication materials were produced in accordance with the visual identity and branding approach of ECF4CLIM project. In Fig. 7.3.2 some ECF Roadmap materials used in the communication with DSs and stakeholders in GA Tampere are presented.



Fig. 7.3.2 ECF Roadmap materials used in the communication with DSs and stakeholders in GA Tampere

7.4 Success story

ECF4CLIM was selected as a 'success story' by the Green Deal Support Office and published (Fig. 7.4.1) on their website under the title ['Co-designing sustainability solutions in the education sector'](#).

The success story presents the ECF4CLIM project as an inspiring example of how education can become an active driver of sustainability and climate action. Funded under the European Green Deal call, the project was designed to empower schools and universities to co-create and implement sustainability solutions adapted to their specific contexts. ECF4CLIM brings together partners from Finland, Portugal, Romania, and Spain, working with 13 demonstration sites that include both schools and higher-education institutions.

At the core of the success story is the co-design of the European Competence Framework (ECF) for Sustainability Education, developed through participatory research and real-life interventions. The framework is operationalized through the ECF4CLIM Roadmap, a practical guide that helps educational institutions to embed sustainability competences into their daily operations and curricula. Structured around four steps – Engagement, Connections, Visions, and Action – the ECFRoadmap enables schools and universities to reflect, plan, act, and assess their sustainability practices in a coherent, participatory way.

Co-designing sustainability solutions in the education sector



Fig. 7.4.1 ECF4CLIM success story published by GD Office

The story highlights how ECF4CLIM succeeded in creating SCTs and SCCs in each demonstration site. These groups, composed of teachers, students, administrators, and local stakeholders, became the key engines of change. Through these participatory

structures, educational communities implemented more than 75 sustainability interventions, ranging from improving energy efficiency and air quality to revising school curricula, redesigning spaces, and encouraging behavioural change among students and staff.

The success story also underlines the innovative hybrid participatory methodology adopted by ECF4CLIM, combining citizen science, crowdsourcing, and co-design approaches. By engaging teachers, researchers, and local authorities in shared learning processes, the project demonstrated how sustainability education can move from theory to action. This participatory model has proven flexible and transferable, offering practical value to other institutions seeking to strengthen sustainability competences in education.

Beyond the institutional level, the project's open Digital Platform and Roadmap website make its tools, materials, and interventions accessible to a wide international audience. This ensures the long-term visibility, replicability, and scalability of ECF4CLIM's results across Europe and beyond.

The success story concludes that ECF4CLIM has shown how education can become a catalyst for systemic transformation. By fostering collaboration between researchers and practitioners, empowering local communities, and promoting reflective and practical learning, the project contributes directly to the European Green Deal's objectives and to the broader mission of building a climate-literate, sustainability-oriented Europe.

The key aspects of the ECF4CLIM success story are:

- **Community-driven approach:** The project's success stems from a participatory model that involves the entire educational community in designing sustainability solutions tailored to local needs.
- **European Competence Framework (ECF):** ECF4CLIM developed an ECF to create a structured and adaptable framework for sustainability education across different European contexts. This framework includes a "Roadmap for Sustainability Education" that guides participants through a four-step process.
- **Tangible actions:** Participants co-created 159 local sustainability interventions. These included practical environmental improvements, integrating sustainability into curricula, and implementing competence-building campaigns.
- **Empowering youth:** The project equips young people with the skills and confidence to address real-world sustainability challenges, reinforcing their role as proactive leaders.
- **Focus on meta-skills:** The project recognizes the importance of developing meta-skills for sustainability to create future-ready citizens who can adapt to rapid technological advancements.

- **Demonstration sites:** The project uses "Demonstration Sites" in Finland, Portugal, Romania, and Spain to test and refine new approaches to sustainability education.

At the same time the success story mentioned how ECF4CLIM contributes to the Green Deal:

- **Education as a Green Deal pillar:** The success of ECF4CLIM highlights the crucial role of education and training in achieving the Green Deal's objectives, which include equipping citizens with the knowledge and skills for a green transition.
- **Circular economy and energy efficiency:** The project's work aligns with other Green Deal initiatives, such as the [Circular Economy Action Plan](#), by promoting skills and awareness needed for sustainable practices. Its methodology includes developing tools for energy efficiency calculations in buildings, contributing to a more climate-neutral future.
- **Scalability:** The adaptable nature of the ECF and the project's practical tools provide a model that can be scaled and applied to other educational institutions and initiatives across Europe.

ECF4CLIM activity was mentioned in the November issue of **GD Newsletter (Annex 6)**.

7.5 Digital factsheet and Brochure

Digital Factsheet

A digital factsheet (Fig. 7.5.1) was also developed with the support of a professional designer.

The **ECF4CLIM Factsheet** serves as a concise visual summary of the project's core vision, structure, and outcomes, providing stakeholders with an accessible overview of its main objectives and methodologies. It presents **ECF4CLIM** as a project that empowers educational communities—students, teachers, and administrators—to take collective and individual action toward sustainability.

The factsheet introduces the **multilayer perspective** that underpins the project, emphasizing the interconnection between **social, organizational, and cultural contexts** as enablers of sustainable education. It explains how ECF4CLIM integrates research and participatory processes to both analyze and foster sustainability competences within schools and universities.

A central section highlights the **ECF4CLIM Roadmap**, structured around **four interconnected steps** that operationalize sustainability competences:

1. **Engagement** – Reflecting on the values of sustainability through inclusive dialogue.

2. **Connections** – Identifying systemic links between daily practices and sustainability challenges.
3. **Visions** – Envisioning desirable futures and mapping pathways for change.
4. **Action** – Implementing and evaluating strategies that turn sustainability values into tangible outcomes.

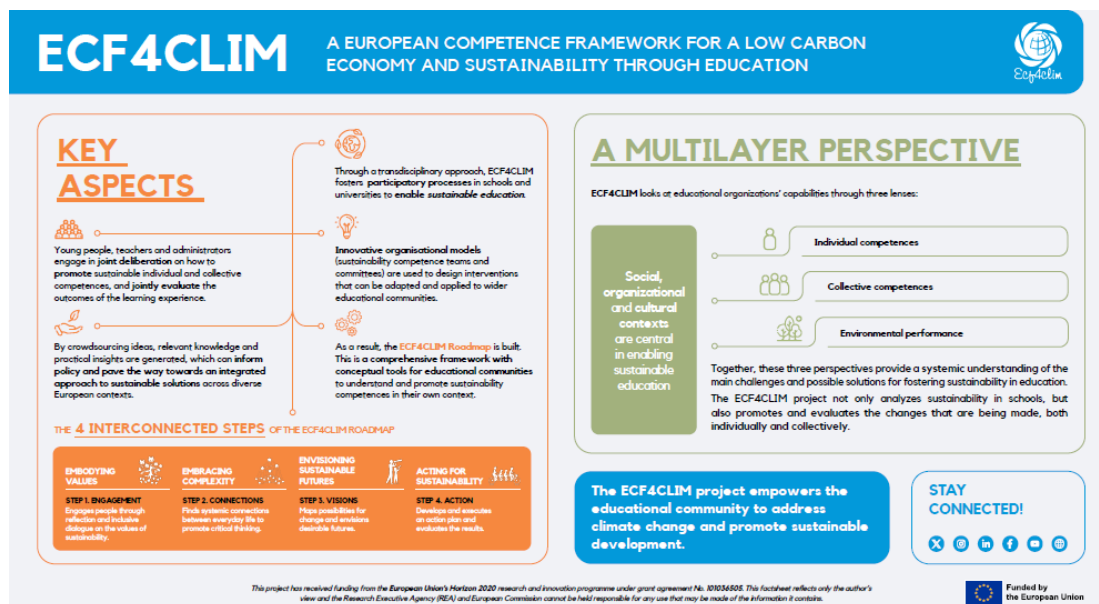


Fig. 7.5.1 ECF4CLIM Factsheet

The factsheet also underscores the **participatory approach** of the project—crowdsourcing, collaborative interventions, and transdisciplinary learning—implemented through **SCTs and SCCs**. These models encourage educational communities to co-create, adapt, and scale sustainability interventions across Europe.

Finally, the factsheet includes links to **ECF4CLIM's digital and social media channels** (Facebook, Instagram, Twitter, YouTube, LinkedIn) and the project's website, inviting educators and stakeholders to stay connected and contribute to the growing community around sustainability education.

Brochure

The brochure (Fig. 7.5.2) **"A European Competence Framework for a Low Carbon Economy and Sustainability through Education"** of the **ECF4CLIM project** offers a comprehensive and visually engaging presentation of the initiative's vision, objectives, and accomplishments. Designed to communicate clearly and accessibly, it highlights how ECF4CLIM empowers educational communities—schools and universities alike—to take meaningful, evidence-based action against climate change through sustainability

education. The document underscores the project's role in integrating climate awareness, environmental responsibility, and sustainability competences into everyday educational practices.

A central focus of the brochure is the **Hybrid Participatory Approach**, which lies at the heart of the project. This approach connects theory and practice by engaging all members of the educational community in shared learning and collaborative action. It is built around **Sustainability Competence Teams (SCTs)** and **Sustainability Competence Committees (SCCs)**—interdisciplinary groups that bring together students, teachers, researchers, administrative staff, parents, and local stakeholders. These teams co-design, implement, and evaluate sustainability interventions tailored to each institutional context. Active in **13 Demonstration Sites** across **Finland, Portugal, Romania, and Spain**, they foster creativity, dialogue, empowerment, and long-term institutional transformation toward sustainability.

The brochure also provides an accessible overview of the **European Competence Framework (ECF)** developed by the project. Conceived as a dynamic **Roadmap**, the ECF operationalizes the sustainability competences defined in **GreenComp**, the European Commission's reference framework for sustainability learning. The ECF4CLIM Roadmap guides schools and universities in identifying and nurturing the **three core dimensions of competence**—individual, collective, and technical-material—while helping them map enablers, recognize barriers, and design effective pathways to sustainable change.

In addition, the publication introduces the **analytical framework** and the **four iterative phases** that structure the project's participatory process:

1. **Baseline assessment** of sustainability competences and environmental performance;
2. **Co-design of interventions** tailored to local needs and institutional contexts;
3. **Participatory implementation** of sustainability actions; and
4. **Reflexive evaluation**, ensuring continuous learning and improvement.

A dedicated section presents the **Digital Platform** (<https://ecf4clim.smartwatt.net>), an open and interactive online environment that supports collaboration, learning, and behavioural change. The platform includes four key modules—**Crowdsourcing**, **Simulators Space**, **IoT Ecosystem**, and **Learning Space**—each designed to strengthen knowledge sharing and empower educational communities to act sustainably.

The brochure concludes with references and direct links to all major **ECF4CLIM online resources**, including the official website, social media channels, and open-access materials. It invites educators, researchers, students, and institutions across Europe to join the growing **ECF4CLIM network**, reinforcing the shared mission of advancing sustainability competences in education and building a resilient, low-carbon future.

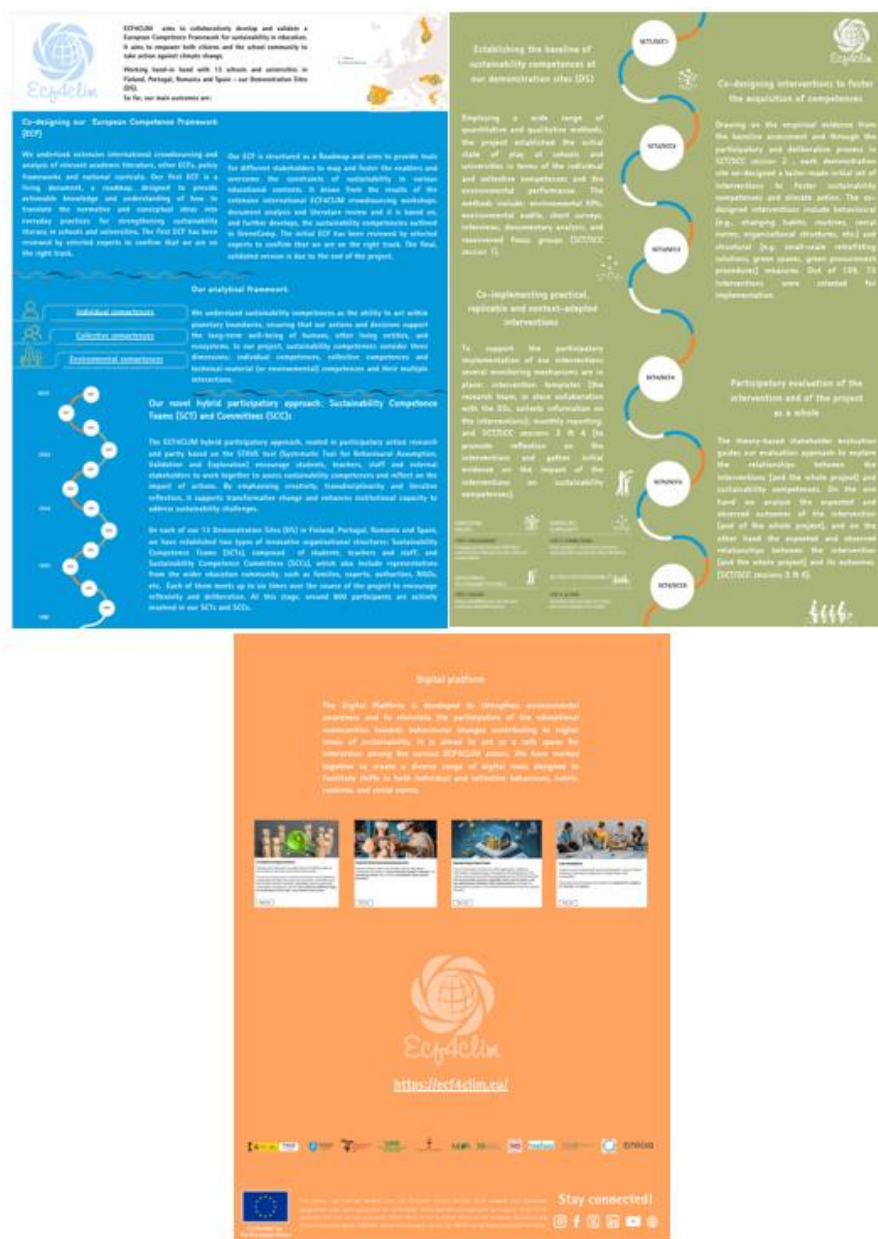


Fig. 7.5.2 ECF4CLIM Brochure

Regarding **other communication materials**, CIEMAT and UAB are preparing a **guide for the Hybrid participatory method**, to be used in the exploitation process [4]. Additionally, a short version in the form a brochure will be released, as part of the communication.

On the other hand, a **policy brief** was produced and presented in D6.5 [11].

8 MONITORING, KPIs, AND IMPACT ASSESSMENT

Based on the Key Performance Indicators (KPIs) defined in the *Communication Plan* and in the *Dissemination Plan*, the current section analyses and quantifies the impact of the ECF4CLIM project's communication and dissemination activities. The evaluation focuses on the effectiveness, reach, and engagement generated by the various channels and actions implemented throughout the project's duration.

The analysis examines both **quantitative indicators**—such as website traffic, social media engagement, newsletter subscriptions, events' attendance, and downloads of project materials—and **qualitative indicators**, including stakeholder feedback, participation in SCTs and SCCs, and evidence of collaboration and knowledge transfer within educational and local communities.

By correlating these indicators with the project's strategic communication objectives, this section provides an evidence-based overview of the visibility, awareness, and behavioral impact achieved by ECF4CLIM. The assessment also identifies the most effective dissemination tools and highlights lessons learned to support the sustainability and long-term exploitation of project results beyond its completion.

8.1 KPIs achieved vs. planned in Communication

The monitoring and evaluation of ECF4CLIM's communication and dissemination activities aimed to assess the quality, effectiveness, and overall impact of the project's outreach strategy. While the project included an integrated evaluation framework to ensure the quality of all activities and results, a dedicated assessment of communication actions was essential—given their key role in achieving real-world engagement and amplifying the project's societal and educational impact.

This evaluation **was conducted continuously throughout the project** to verify the effectiveness of the implemented actions, identify areas for improvement, and, when necessary, introduce corrective measures or adapt the communication strategy in response to evolving objectives, target audiences, and available resources.

The analysis focused on ensuring the **quality and relevance of communication activities** through careful alignment with project goals, tailored messaging for diverse audiences, and the use of effective tools and innovative dissemination methods.

A comprehensive set of KPIs was applied to measure the outcomes of communication and dissemination efforts. These KPIs (with target and achieved values) are presented in Table 8.1.1 and serves as the basis for evaluating performance across different communication channels, assessing outreach success, and quantifying the overall impact of the ECF4CLIM project.

Table 8.1.1 KPIs and measures to maximize the impact of communication

Action	Measures to maximize the impact	KPI	Target (planned)	Achieved
Website	Be the hub for communication activities; present the key findings; support project visibility, inform and engage the community; support the visibility	No of key page views per year and project related posts	2000/y	3282/y Total (2025 Oct 1): 13131, Additionally, 1560 visits on MAPPA platform (hosting the Roadmap on long-term)
Blog	Be the hub for transfer of outcomes and reflections related to the project	Minimum number of contributions per year. Readers per contribution	7 50	12 75 (averaged)
Workshops	Inform and engage the community; present key findings; gather intelligence and feedback from stake-holders	No of participants per workshop	25	15-100 32 (averaged)
Webinars	Knowledge transfer	No of participants per webinar	15	28 (averaged)
Newsletters	Provide an interested audience from all target groups with the latest news	No of contributions to newsletters of consortium members and demonstration sites Open Rate (OR) Click through rate (CTR)	20 35% 15%	28 39% 18%
Explanatory videos	Disseminate via social media and project at webinars and events	Total views Watch time Likes	200 >15% 20	326 25% 22

D8.6, Report on the communication and dissemination activities

Final Conference	Ensure a good visibility of the main results for the targeted stakeholders	No of contributions No of attendees	20 50	21 >50
Participation in external events	Ensure good visibility in the relevant community	No of contributions to 3rd party events	20	24
Social media	Boost visibility; spread knowledge on the digital platform	Final followers (among all channels) No. of interactions (shares, likes, retweets, comments, etc) per year among all channels (X-Twitter, LinkedIn and Instagram).	>500 1500	>2000 1650
Publications	Project reports, conference proceedings, peer-reviewed publications if any	No. of publications Publications in high quality journals	30 25%	54 29%
Press release	Ensure visibility especially regarding civil society	No of articles following the dissemination of press releases No. of distributed copies or Visitors per year	3 >500 >5000	3 (planned for December)
Digital platform	Be the hub for transfer of the tools and products to the market, and also the instrument for participatory learning and practicing activities	No of the customers of the tools/applications No of participants in participatory learning	200 500	>500 >500

Following the completion of the ECF4CLIM project, the long-term accessibility and sustainability of its digital resources have been ensured through a structured

maintenance plan. The **project website** will remain active and regularly updated for a minimum period of **five years**, serving as a central repository for project outcomes, impact updates, and future developments in sustainability education.

The **digital platform**—a key instrument for educational engagement and data-driven climate action—will continue to operate as long as it remains functional and valuable for the intended purposes. Data collected during the project, including technical parameters that document the effects of behavioural changes in schools, will be securely stored and curated for long-term use. These datasets are expected to support **future research, comparative studies, and follow-up initiatives** in the field of sustainability education.

The overall responsibility for the **preservation, curation, and management** of the project's digital assets lies with **CIEMAT**, in its role as project coordinator, ensuring the continued visibility, accessibility, and scientific relevance of ECF4CLIM outcomes beyond the project's formal duration.

8.2 KPIs achieved vs. planned in Dissemination

A comprehensive set of KPIs was defined to evaluate the effectiveness and reach of the project's dissemination activities. These KPIs were designed to measure both quantitative and qualitative aspects of impact, ensuring that the project's messages, tools, and results effectively reached their intended audiences and supported behavioural and institutional change.

For each action, specific indicators, target values, and impact-enhancing measures were established to monitor progress and guide adaptive management throughout the project's implementation. The outcomes of this monitoring process are presented in Table 8.2.1, providing an overview of the project's performance in achieving its dissemination objectives and in maximizing the visibility and influence of ECF4CLIM at local, national, and European levels.

Table 8.2.1. Key performance indicators and measures to maximize impact of dissemination

Action	Measures to maximize the impact	KPI	Target	Achieved
Workshops	Inform and engage the community; present key findings; gather intelligence and feedback from stake-holders	No of participants	100	>1000
		No of workshops	2	35

D8.6, Report on the communication and dissemination activities

Webinars	Knowledge transfer	No of participants	100	150
		No of webinars	2	8
SCT meetings		No of participants	900	>1200
		No of meetings	84	154
SCC meetings		No of participants	400	>600
		No of meetings	34	51
Final Conference	Ensure a good visibility of the main results for the targeted stakeholders	No of contributions	20	21
		No of participants	80	tbm
Participation in external events	Ensure good visibility in the relevant community	No of contributions to 3rd party events	20	24
Publications	conference proceedings, peer-reviewed publications	No of publications	20	39
Deliverables	project deliverables	No of accessing	200	>500
		No of public deliverables	44	44
Tools	Tools developed by the project and hosted on the digital platform	No of accessing	400	>400
		No of tools	7	7

The following table presents the estimated planned number of persons to be reached by ECF4CLIM dissemination activities. These numbers reflect per year the number of new persons to be reached per category – scientific community, authorities in education, authorities in environmental protection/climate actions, educational communities, etc.

Table 8.2.2. Estimated number of persons reached by ECF4CLIM dissemination process, per category and year

Target group	Target	Achieved
Scientific community	100	>300
Authorities in education and environmental protection/climate actions (national and regional)	48	>50
Educational communities	1500	>2000
NGOs and other organizations	40	>100
Local communities	700	>1000
General public	200	>2500

8.3 Quantitative and qualitative results

Based on the KPIs defined in the Communication and Dissemination Plan, this section analyses the measurable outcomes and qualitative impacts achieved through ECF4CLIM's communication and dissemination activities. The monitoring process covered all major communication channels — including the project website, digital platform, social media, newsletters, blog, and public events — as well as the engagement of educational communities, stakeholders, and the general public.

From a **quantitative perspective**, ECF4CLIM demonstrated a strong and growing outreach. The project website recorded over **13,000 visitors** from more than **70 countries**, showing the global resonance of the initiative. The social media channels (Facebook, LinkedIn, YouTube, X, and Instagram) collectively attracted thousands of followers and interactions, facilitating two-way communication and sustained engagement throughout the project. Over **20 videos** were produced and published on the YouTube channel, while **four newsletters**, **dozens of blog posts**, and **numerous public presentations** helped expand visibility and awareness.

In addition, the project organised more than **40 workshops and webinars**, involving **hundreds of participants** from schools, universities, and local communities across Finland, Portugal, Spain, and Romania. The **SCTs** and **SCCs** played a pivotal role in ensuring active dialogue and participatory communication within and beyond the DSs.

From a **qualitative standpoint**, ECF4CLIM's communication efforts succeeded in creating a shared understanding of sustainability education and fostering behavioural

change. The feedback collected through events, surveys, and online interactions indicates a significant increase in awareness, motivation, and collaboration among educators, students, and stakeholders. Communication materials such as the Roadmap, factsheets, videos, and infographics were widely appreciated for their clarity, accessibility, and practical relevance.

Overall, the combined quantitative and qualitative evidence confirms that ECF4CLIM achieved a **high level of visibility, engagement, and credibility**, positioning the project as a reference initiative in the field of education for sustainability and climate action in Europe.

8.4 Feedback from stakeholders

Based on the communication and dissemination activities carried out throughout the project, valuable feedback was collected from a broad spectrum of stakeholders — including teachers, students, school principals, researchers, policy-makers, and representatives of local communities. This feedback provided key insights into the relevance, clarity, and perceived impact of ECF4CLIM's messages, tools, and results.

Overall, the responses highlighted **a strong appreciation for the participatory and inclusive communication approach** adopted by the project. Stakeholders emphasized that the project succeeded in making complex topics — such as sustainability competences, climate action, and behavioural change — accessible and meaningful for diverse audiences. Teachers and school leaders underlined that the materials and tools (such as the ECF Roadmap, the Digital Platform, and the educational resources) were not only informative but also **practically useful for integrating sustainability into daily educational activities**.

Participants in the workshops and webinars valued the opportunities for dialogue and exchange provided by the project's **transdisciplinary and international structure**. Many expressed that the direct interaction with peers from other countries and the sharing of experiences helped them better understand different contexts, constraints, and good practices in sustainability education.

Feedback from external stakeholders — such as municipal authorities, NGOs, and educational networks — acknowledged the **visibility and credibility** of ECF4CLIM's communication materials and events. The project was perceived as a **model of collaboration between research and education**, capable of bridging the gap between policy, practice, and community action.

Some participants also provided constructive feedback, pointing to the need for **continued communication beyond the project's duration** and suggesting that the **Digital Platform and Roadmap** should remain active and updated to support future educational initiatives.



In summary, stakeholder feedback confirms that ECF4CLIM's communication and dissemination efforts effectively built awareness, inspired participation, and generated trust among all target groups — reinforcing the project's long-term impact and sustainability.

9 CHALLENGES AND LESSONS LEARNED

9.1 Barriers encountered

Throughout the implementation of the ECF4CLIM communication and dissemination strategy, several **barriers and challenges** were identified that influenced the pace, reach, and effectiveness of certain activities. These barriers arose from both **contextual factors** in the participating countries and **operational limitations** linked to the project's complexity and scope.

One of the main barriers encountered was **time and workload constraints**. Teachers and school staff involved in demonstration sites had to balance their participation in communication activities with regular educational duties. As a result, the implementation of certain dissemination actions (such as event reporting, video production, or local press engagement) occasionally required rescheduling or simplified formats.

Another key challenge was the **language and cultural diversity** among partners and audiences. Although multilingual communication (in English, Spanish, Portuguese, Finnish, and Romanian) increased accessibility, it also required additional coordination efforts to ensure accuracy and coherence across platforms and materials. Differences in educational systems and institutional structures further complicated the harmonization of messages and dissemination formats.

On the other hand, a barrier was the **uneven digital infrastructure and communication capacity** across demonstration sites and educational communities. While some schools and universities had strong online engagement and media outreach, others faced limited access to digital tools, restricted IT support, or low familiarity with social media-based communication. This occasionally hindered consistent visibility and participation, especially during the early stages of the project.

External factors, such as **global events impacting travel and public gatherings**, also affected planned face-to-face dissemination events during the first part of the project. Although the team successfully shifted many of these activities to online formats, the reduced physical interaction temporarily limited community engagement and the visibility of some interventions.

Finally, the **sustainability of communication tools beyond the project's lifetime** presented a structural challenge. Ensuring **long-term maintenance of the website, digital platform, and social media pages requires continued commitment and resource allocation** from partners after the project's closure.

Despite these challenges, the ECF4CLIM consortium demonstrated strong adaptability and collaboration. Many barriers were effectively mitigated through **flexible planning**,

local coordination, and the use of digital tools, ensuring that the communication and dissemination goals were successfully achieved.

9.2 Solutions and adaptations

In response to the challenges encountered during the implementation of the communication and dissemination strategy, the ECF4CLIM consortium adopted a series of **adaptive measures and practical solutions** to ensure that project objectives were fully achieved. These actions reflected the project's participatory and reflexive approach, emphasizing flexibility, collaboration, and continuous improvement.

In response to **time and workload constraints** within schools, dissemination activities were integrated into existing teaching and administrative routines. For example, teachers involved in the Sustainability Competence Teams (SCTs) incorporated communication tasks—such as preparing posters, blog entries, or short videos—into classroom activities. This approach enhanced engagement while reducing the burden of additional tasks.

To overcome **language and cultural barriers**, communication materials were translated and adapted to national contexts, ensuring that messages resonated with local audiences. Each partner coordinated the development of **national social media pages** in local languages (Spanish, Portuguese, Finnish, Romanian), while the central ECF4CLIM channels (Facebook, LinkedIn, YouTube) provided unified, English-language content. This multi-level structure allowed consistent messaging while maintaining cultural relevance and accessibility.

To address differences in **digital capacity and access** among demonstration sites (DSs), partners provided targeted technical assistance and shared practical guidance for using communication tools, such as social media management, video editing, and digital event hosting. The **Digital Platform** also served as a unifying tool, offering a safe and inclusive space for collaboration and exchange among schools and universities regardless of their digital readiness.

When **physical events and international meetings** were limited, the consortium shifted to hybrid and online formats. The use of platforms like Zoom, Teams, and eDelphi enabled wide participation in webinars, workshops, and co-design sessions. These digital solutions not only maintained continuity during restrictions but also expanded the project's reach to broader audiences across Europe and beyond.

To ensure **long-term sustainability**, partners agreed on clear responsibilities for maintaining project outputs after completion. CIEMAT, as the coordinator, committed to preserving and updating the project's website and digital platform, while other

partners continue managing national-level communication channels. This guarantees that resources, outcomes, and tools remain accessible and impactful beyond the project's lifetime.

Overall, the **adaptive strategies implemented throughout ECF4CLIM** proved highly effective in transforming potential challenges into opportunities for innovation. The experience demonstrated that flexibility, collaboration, and continuous feedback are key enablers of successful communication and dissemination in complex, multi-country projects.

10 CONCLUSIONS

The communication and dissemination strategy of the **ECF4CLIM project** has played a fundamental role in ensuring that its scientific, educational, and societal objectives were effectively achieved and widely shared. Based on a structured and participatory approach, the project has successfully demonstrated how education can act as a catalyst for climate action and sustainability across Europe. Through a coherent set of activities—ranging from the design of the **ECF Roadmap** to the engagement of schools, universities, policymakers, and communities—the project created an inclusive ecosystem of learning, collaboration, and transformation.

The communication and dissemination actions were guided by the principles established in the **Communication and Dissemination Plan**, continuously monitored through defined **Key Performance Indicators**. These actions ensured visibility, engagement, and tangible impact. The combination of traditional tools—such as publications, workshops, and conferences—with innovative digital communication channels—such as the **Digital Platform**, social media presence, newsletters, and the blog—enabled the project to reach diverse audiences effectively. The ECF4CLIM website and social media pages (Facebook, LinkedIn, YouTube, X, Instagram) provided dynamic interfaces for promoting dialogue, sharing best practices, and amplifying results.

At the heart of ECF4CLIM's success lies the active participation of its **Demonstration Sites**, which acted as living laboratories for co-designing, testing, and evaluating sustainability interventions. The **Sustainability Competence Teams** and **Sustainability Competence Committees** fostered bottom-up engagement, connecting students, teachers, administrators, and local communities. Their work not only validated the ECF in practice but also generated replicable models of institutional transformation and community empowerment. The strong collaboration between research teams and educational communities ensured that project outcomes were both scientifically sound and socially relevant.

In terms of dissemination and visibility, ECF4CLIM achieved significant reach across Europe and beyond. The **Digital Platform** (<https://ecf4clim.smartwatt.net>) provided an innovative, open-access environment for learning, collaboration, and data-driven sustainability monitoring, while the **Roadmap** for Sustainability Competences and associated resources (available at <https://ecf4clim.eu>) offered practical guidance for educators and institutions. The project's outputs—including its publications, factsheets, videos, newsletters, and presentations—contributed to a robust knowledge base

supporting the EU's Green Deal, the European Education Area, and the Council Recommendation on Learning for Environmental Sustainability.

Despite the challenges encountered—such as differences in educational systems, language diversity, and the constraints imposed in the early stages of the project—the consortium successfully adapted its communication strategies through hybrid formats, flexible digital tools, and strong coordination between partners and Demonstration Sites. These adaptations ensured continuity of activities while reinforcing the inclusiveness and resilience of the collaborative process.

Looking forward, the project's potential impact extends beyond its formal completion. The ECF Roadmap and associated digital resources form a solid foundation for continued application in schools, universities, and community learning environments. However, the consortium is aware that sustained implementation will depend on factors such as the availability of institutional resources, evolving priorities in education systems, staff turnover, and broader policy shifts that may influence how sustainability education is embedded.

Even with these uncertainties, there is a strong commitment among the partners and Demonstration Sites to continue promoting the use of the Roadmap and maintaining the collaborative networks formed during the project. The project website and digital platform will remain accessible for at least five years, providing long-term access to tools, materials, and good practices. In addition, the clustering and exploitation activities carried out during the project strengthen its integration within broader EU initiatives, increasing the likelihood that its outcomes will continue to inform research, policymaking, and educational practice across Europe.

11 REFERENCES

- [1] M.Constantin et al, “Communication Plan”, ECF4CLIM project, D8.1, December 2021, <https://ecf4clim.eu/wp-content/uploads/2024/10/D8.1-Communication-Plan.pdf>
- [2] M.Constantin et al, “Plan for the Dissemination of ECF4CLIM results”, ECF4CLIM project, D8.3, March 2022, <https://ecf4clim.eu/wp-content/uploads/2024/10/D8.3-Rev-1.pdf>
- [3] M.Constantin et al, “Plan for the Exploitation of ECF4CLIM Results and for Stimulating Synergies”, ECF4CLIM project, D8.4, March 2022, <https://ecf4clim.eu/wp-content/uploads/2024/10/D8.4-Rev-1.pdf>
- [4] M.Constantin et al, “Report on the synergies with other projects and on the exploitation of the results ECF4CLIM project”, D8.6, November 2025
- [5] Y.Lechon et al, “Report on clustering activities and participation of educational communities in European Climate Pact”, ECF4CLIM project, D8.8, November 2025
- [6] I.Prato et al, “ECF4CLIM Digital Platform Integration/ Validated”, ECF4CLIM project, D7.15, January 2024, <https://ecf4clim.eu/wp-content/uploads/2024/10/D7.15.pdf>
- [7] A. Panagiotis et al, “ECF4CLIM IoT Platform v.2”, ECF4CLIM project, D7.12, October 2023, <https://ecf4clim.eu/wp-content/uploads/2024/10/D7.12.pdf>
- [8] A.Prades et al, Baseline Assessment of individual competences, ECF4CLIM project, Deliverable D4.2, 2023, <https://ecf4clim.eu/wp-content/uploads/2024/10/D4.2-Baseline-Assessment-of-individual-competences.pdf>
- [9] H. Heikkinen et al, Participatory will-formation by crowdsourcing, D3.1, 2022, <https://ecf4clim.eu/wp-content/uploads/2024/10/D3.1-Participatory-Will-formation-by-Crowdsourcing.pdf>
- [10] J.Espluga et al, “Transdisciplinary Dialogue Strategy”, ECF4CLIM project, D8.5, March 2023, https://ecf4clim.eu/wp-content/uploads/2024/10/D8.5-TDS_VF_Final.pdf
- [11] Y.Lechon et al, “Proposal and recommendations for the validated ECF”, ECF4CLIM project, D6.5, November 2025

12 ANNEXES

Annex 1: List of publications

Scientific Journals

In Press / 2025

1. Vaño Agulló, C., Prades, A., Espluga, J. & Lehtonen, M. (in press). *Transdisciplinarity from principles to practice: insights from EU Horizon research projects on sustainability*. Sustainable Development.

2024

2. Mykrä, N. & Lehtonen, A. (2024). *International Collaboration Helps to Broaden Sustainability Visions*. Internationalisation of Higher Education – Policy and Practice. Franz Steiner Academic Publishers.
3. Nokkala, T., Lehtonen, M., Lehtonen, A., Espluga Trenc, J., Mykrä, N., Heikkinen, H., & Prades López, A. (2024). *Collective sustainability competences of universities as a nested institutional space*. Higher Education Quarterly. <https://doi.org/10.1111/hequ.12552>
4. Díaz, J. A., Soutullo, S., Giancola, E., Sánchez, M. N., Gamarra, A. R., Lago, C., Lechón, Y., Marqués, I., Chacartegui, R., & Becerra, J. A. (2024). *Diagnosis of the sustainability of school performance and development of tools to increase the competences of the educational community*. In *Advances in Building Engineering Research* (Dykinson, S.L.), pp. 255–278. <https://doi.org/10.2307/jj.13286047.21>
5. Aaltonen, V. A., Hiljanen, M., Layne, H., Lehtonen, A., Löyttyniemi, M., Mykrä, N., Virtanen, A. S., & Heikkinen, H. L. (2024). *Education for planetary well-being*. In *Interdisciplinary Perspectives on Planetary Well-Being*, Routledge, pp. 246–258. <https://doi.org/10.4324/9781003334002-24>

2023

6. Serrano-Jiménez, A. et al. (2023). *Multi-criteria assessment model on environmental ergonomics for decision-making in schoolyards based on remote-sensing and GIS resources*. Sustainable Cities and Society, 92, 104481. <https://doi.org/10.1016/j.scs.2023.104481>

7. Díaz-López, C. et al. (2023). *Sensitivity analysis of trends in environmental education in schools and its implications in the built environment*. Environmental Development, 45, 100795. <https://doi.org/10.1016/j.envdev.2022.100795>
8. Serrano-Jiménez, A. et al. (2023). *Providing a feasible energy retrofitting technique based on polyurethane foam injection to improve window performance in the building stock*. Energy and Buildings, 278, 112595. <https://doi.org/10.1016/j.enbuild.2022.112595>
9. Hytönen, J., Baumeister, S., El Geneidy, S., Heikkinen, H. L. T., Heinilä, A., Ketola, T., Kortetmäki, T., Kuusiahho, V., Mykrä, N., Mäkelä, M., Onkila, T., Paloviita, A., Pecoraro, M., Savolainen, K., Silonsaari, J., & Uusitalo, O. (2023). *Täsmäratkaisuja kestävään tulevaisuuteen*. Wisdom Letters, 2023(1). <http://urn.fi/URN:NBN:fi:ju-202303062027>
10. Mykrä, N., Lehtonen, A., Nokkala, T., & Heikkinen, H. L. T. (2023). *Ekspansiivinen oppiminen kohtaa kestävyysosaamisen*. Kasvatus, 54(3), 271–276. <https://doi.org/10.33348/kvt.131358>

Manuscripts Submitted

11. Lehtonen, A., Mykrä, N., Nokkala, T. & Heikkinen, H. (manuscript). *What Makes a School Fail or Succeed in Sustainability Education? Archetypes of “Nightmare Schools” and “Dream Schools”*. Submitted to Journal of Environmental Education Research.
12. Mykrä, N., Tynjälä, P., Kallio, E. K., Virolainen, M., Virtanen, A. S. & Heikkinen, H. L. T. (manuscript). *Sustainability Competences and Dimensions of Wisdom*. Submitted to Environmental Education Research.

International Conferences

2025

1. Mykrä, N., Lehtonen, A., Nokkala, T. & Heikkinen, H. L. T. (2025). *Sustainability Competences in Educational Practice. The Roadmap for Sustainability Competences*. ECER Conference, 10.9.2025, Belgrade.
2. Heikkinen, H. & Lehtonen, A. (2025). *How to implement GreenComp in practice? Lessons from participatory processes in ECF4CLIM*. International Symposium on Sustainability Education, University of Ljubljana, 26.9.2025.

3. Lehtonen, A. (2025). *Sustainability education as a positive force*. SDG Seminar, Panel on Leadership, University of Jyväskylä, 11.11.2025.
4. Mykrä, N., Nokkala, T., Lehtonen, A. & Heikkinen, H. L. T. (2025). *The Transformative Capacity of Universities in Sustainability Transitions*. CHER Conference, 4.9.2025, Poznań.
5. Lehtonen, A., Mykrä, N., Nokkala, T. & Heikkinen, H. L. T. (2025). *Enablers and constraints of developing sustainability education in Finnish schools*. NERA Conference, Helsinki.
6. Lehtonen, A., Mykrä, N., Nokkala, T. & Heikkinen, H. (2025). *Kestävyyskasvatuksen johtamisen haasteet ja mahdollisuudet*. FERA Conference, Rovaniemi, 6.11.2025.
7. T. Faria et al. (2025). *Environmental Assessment in Schools: Insights from the ECF4CLIM Multi-Criteria Framework*. Healthy Buildings 2025, Iceland.
8. J. Lage et al. (2025). *Enhancing Sustainability and Low-Carbon Economy in the Educational Sector through an Innovative European Competence Framework*. Healthy Buildings 2025, Iceland.
9. T. Faria et al. (2025). *PM2.5 in European Classrooms: A Comparative Study*. European Aerosol Conference (EAC 2025), Lecce.
10. S.M. Almeida et al. (2025). *Citizen Science and Nature-Based Solutions to Reduce Particulate Matter Exposure in Schools*. European Aerosol Conference (EAC 2025), Lecce.

2024

11. Heikkinen, H. (2024). *Education for Planetary Well-being*. Keynote, UNESCO Chair opening seminar, University of Ljubljana, 24.9.2024.
12. Heikkinen, H. (2024). *Planetaarinen sivistys*. UNESCO Seminar, Opetushallitus, Helsinki, 5.9.2024.
13. Prades, A. et al. (2024). *Promoting urban sustainability through transdisciplinarity*. AScUS (un)Conference, Troyes, 20–22.3.2024.
14. Lehtonen, A., Mykrä, N., Nokkala, T. & Heikkinen, H. L.T. (2024). *“Stop and say ‘no’ to the study factory” – Subjectification as a challenge for sustainability education*. 16th Nordic Youth Research Symposium, Tampere, 13.6.2024.
15. Lehtonen, A. et al. (2024). *Subjectification as a challenge for sustainability education and participatory*

action, research. 7th European Congress of Qualitative Inquiry, 11.11.2024, Helsinki.

16. Mykrä, N., Lehtonen, A., Karvinen, M. & Jaakkola, N. (2024). *Opetussuunnitelmat ja kurssit edistämässä kestävyysosaamista korkeakouluissa.* Pedaforum 2024, HAMK, Hämeenlinna.
17. Espluga Trenc, J. et al. (2024). *The elusive educational competences for sustainability in universities.* ESA Conference, Porto, 27–30.8.2024.
18. Prades, A. et al. (2024). *Changing individuals, institutions and environmental conditions: hybrid participatory approach for sustainability in education.* SEED 2024, Valencia.
19. Gamarra, A.R. et al. (2024). *The ECF4CLIM Ecological Footprint Calculator as an awareness tool.* SEED 2024, Valencia.
20. Espluga Trenc, J. et al. (2024). *Los métodos de implicación ciudadana y sus límites.* XV Congreso Español de Sociología, Sevilla.
21. Díaz, J.A. et al. (2024). *Digital educational tool on energy-efficient retrofitting of buildings.* SEED 2024, Valencia.

2023

22. Nokkala, T. et al. (2023). *Collective sustainability competences in universities as nested institutional space.* CHER 2023, Vienna.
23. Lago, C. et al. (2023). *Talleres de Crowdsourcing de ideas...* IV Jornadas de Educación Ambiental para la Sostenibilidad.
24. Lechón, Y. et al. (2023). *Marco europeo de competencias en sostenibilidad...* IV Jornadas de Educación Ambiental para la Sostenibilidad.
25. Díaz J.A. et al. (2023). *Diagnóstico de sostenibilidad del rendimiento de centros educativos...* CITE 2023, Madrid.
26. Serrano-Jiménez, A. et al. (2023). *Revegetación en patios escolares...* CIDICO 2023, Sevilla.
27. Márqués-Valderrama, I. et al. (2023). *Hacia la sociedad del conocimiento...* CIDICO 2023, Sevilla.
28. Serrano-Jiménez, A. et al. (2023). *Revegetation patterns in schoolyards...* SDEWES 2023, Dubrovnik.

29. Díaz-López, C. et al. (2023). *Evaluation of education for sustainable development in schools*. SDEWES 2023, Dubrovnik.
30. Marqués-Valderrama, I. et al. (2023). *Tool for development of sustainability competences and carbon footprint reduction*. ECOS 2023, Gran Canaria.

2022

31. Díaz J.A. et al. (2022). *Fortalecimiento del marco competencial europeo...* CIES 2022, Universitat de les Illes Balears.
32. Lago, C. et al. (2022). *Diseño y validación de un Marco Europeo de Competencias en Cambio Climático y Sostenibilidad...* CONAMA 2022, Madrid.
33. Lehtonen, A. et al. (2022). *Mapping the enablers and constraints of sustainability education...* ECER 2022, Glasgow.
34. Lehtonen, A. et al. (2022). *Towards a European Competence Framework for Sustainability through Crowdsourcing*. ECER Plus 2022.
35. Lehtonen, A. et al. (2022). *Unelma kestävästä koulusta*. Kasvatustieteen päivät 2022.

Academic publications

Manuscripts Submitted

1. Lehtonen, A., Mykrä, N., Nokkala, T., & Heikkinen, H. L. T. (manuscript). *What Makes a School Fail or Succeed in Sustainability Education? Archetypes of “Nightmare Schools” and “Dream Schools”*. Submitted to Journal of Environmental Education Research.
2. Mykrä, N., Tynjälä, P., Kallio, E. K., Virolainen, M., Virtanen, A. S., & Heikkinen, H. L. T. (manuscript). *Sustainability Competences and Dimensions of Wisdom*. Submitted to Environmental Education Research.

Published Academic Works

3. Mykrä, N., & Lehtonen, A. (2024). *International collaboration helps to broaden sustainability visions*. Internationalisation of Higher Education, 2024(2), Article 3. <https://www.handbook-internationalisation.com/en/handbuch/gliederung/#/Beitragsdetailansicht/924/3899/International-collaboration-helps-to-broaden-sustainability-visions>

4. Aaltonen, V. A., Hiljanen, M., Layne, H., Lehtonen, A., Löyttyniemi, M., Mykrä, N., Virtanen, A. S., & Heikkinen, H. L. T. (2024). *Education for planetary well-being*. In *Interdisciplinary Perspectives on Planetary Well-Being* (pp. 246–258). Routledge. <https://doi.org/10.4324/9781003334002-24>
5. Hytönen, J., Baumeister, S., El Geneidy, S., Heikkinen, H. L. T., Heinilä, A., Ketola, T., ... & Uusitalo, O. (2023). *Täsmäratkaisuja kestävään tulevaisuuteen*. Wisdom Letters, 2023(1). <http://urn.fi/URN:NBN:fi:ju-202303062027>
6. Mykrä, N., Lehtonen, A., Nokkala, T., & Heikkinen, H. L. T. (2023). *Ekspansiivinen oppiminen kohtaa kestävyysosaamisen*. *Kasvatus*, 54(3), 271–276. <https://doi.org/10.33348/kvt.131358>

Non-academic publications

1. Prades, A., & Lechón, Y. (2024). Sustainability competences and the WCF4CLIM project: towards a transformational change for the educational community. *Vértices* 37, La Revista del CIEMAT.
2. Mykrä, N., & Lehtonen, A. (2024). Mitä on kestävyysosaaminen? *Ympäristökasvatus, Teema* 2024, 4–8. <https://feesuomi.fi/lehti/mita-on-kestavyysosaaminen/>
3. Mykrä, N. (2024). Mikä GreenComp? In P. Ratava & J. Tomberg (Eds.), *Lukioiden kestävyystiekartasto: reittejä kohti hyvinvoivaa ja kestävää yhteisöä*. Opetushallitus. <https://hankejulkaisut.mobiezone.fi/zine/13/article-2550>
4. Mykrä, N., Suojoki-Saarinen, S., & Lehtonen, A. (2024). Kestävyysosaamista lukion opetussuunnitelmassa. In P. Ratava & J. Tomberg (Eds.), *Lukioiden kestävyystiekartasto: reittejä kohti hyvinvoivaa ja kestävää yhteisöä* (pp. 24–28). Opetushallitus. <https://hankejulkaisut.mobiezone.fi/zine/13/article-2552>
5. Mykrä, N. (2022). Oivalla OPSista: Lukion opetussuunnitelma kestävyysosaamisen jäljillä. *Ympäristökasvatus – verkkolehti, FEE Suomi*. <https://feesuomi.fi/lehti/lukion-opetussuunnitelma-kestavyysosaamisen-jaljilla>

Presentations in national conferences

2025

1. Lehtonen, A., Mykrä, N., Nokkala, T., & Heikkinen, H. L. T. (2025). *Kestävyyskasvatuksen johtamisen haasteet ja mahdollisuudet*. Kasvatustieteen päivät, 6 November 2025.

2024

2. Heikkinen, H. (2024). *Planetaarinen sivistys*. UNESCO-seminaari, Opetushallitus, Helsinki, 5 September 2024.
3. Mykrä, N., Lehtonen, A., Karvinen, M., & Jaakkola, N. (2024). *Opetussuunnitelmat ja kurssit edistämässä kestävyysosaamista korkeakouluissa*. Korkeakoulupedagogiikan päivät – Pedaforum, HAMK Hämeen ammattikorkeakoulu, Hämeenlinna, 5 June 2024.

2023

4. Mykrä, N., Lehtonen, A., Nokkala, T., & Heikkinen, H. L. T. (2023). *Yliopistot edistämässä kestävyttä: Kansainvälisiä näkökulmia*. Kasvatustieteen päivät 2023, Åbo Akademi, Vaasa.
5. Mykrä, N., Lehtonen, A., & Jaakkola, N. (2023). *Kestävyysmurros ja opetussuunnitelmien kehittäminen korkeakouluissa*. Symposium presentation at Kasvatustieteen päivät 2023, Åbo Akademi, Vaasa.
6. Mykrä, N., Lehtonen, A., Nokkala, T., & Heikkinen, H. L. T. (2023). *Tiekartta ekologisesti kestävään opetussuunnitelmaan*. Pedaforum 2023.
7. Lehtonen, A., Nokkala, T., Mykrä, N., & Heikkinen, H. L. T. (2023). *Kohti kestävää yliopistoa: Opiskelijoiden osallistumisen haasteet ja mahdollisuudet kestävyden edistämisessä opetussuunnitelmatyössä*. Korkeakoulututkimuksen symposium, 2023.

2022

8. Lehtonen, A., Mykrä, N., Nokkala, T., & Heikkinen, H. L. T. (2022). *Unelma kestävästä koulusta*. Kasvatustieteen päivät 2022.

Other conferences or seminars both international and national

International

1. Espluga, J. (2025). *Com organitzar un Cicle formatiu sobre Crisi Ecosocial (i les dificultats per superar la modernització ecològica a les universitats)*. Workshop on Environmental Sociology, Associació Catalana de Sociologia, University of Barcelona, 26 June 2025.
2. Mykrä, N. (2025). *GreenComp – The European sustainability competence framework and the ECF4CLIM Roadmap*. Explore Nordics – Pedagogical Methods in Nature Interpretation and Environmental Education Seminar, Uppsala, 19–21 March 2025.

National

3. Mykrä, N. (2025). *Reilu vihreä siirtymä: Osaava työvoima muutoksen moottorina*. Panel at A fair green transition: Skilled workforce as the engine of change, Ammattiliitto Pro, Helsinki, 26 September 2025.
4. Mykrä, N. & Lehtonen, A. (2025). *GreenCompista käytäntöön: Tutkimusta ja kokemuksia ECF4CLIM-hankkeessa*. LYKE-network webinar of Nature Schools, 2025.
5. Mykrä, N. (2025). *Kesäyliopistot rakentamassa kestävää tulevaisuutta: Kestävyyden monet ulottuvuudet käytännössä*. Webinar of Suomen Kesäyliopistot, 11 April 2025.

2024

International

6. Espluga, J. (2024). *La universidad ante el activismo por la justicia ambiental*. III Seminar on Education for Global Justice, UAB – Universidad de Antioquia – Universidad Autónoma de California, 6 November 2024.

National

7. Lehtonen, A. *Sustainability and VET: From GreenComp Sustainability Competences to Pedagogical Practice*. VTE Research Insights Webinar Series, 2024.
8. Lehtonen, A. (2025). *Fostering Sustainability Competences through Playful Learning in Higher Education*. Climate University Annual Meeting, 4 November 2025.
9. Lehtonen, A. & Mykrä, N. (2024). *GreenComp and ECF4CLIM Roadmap for sustainability education*. FORTHEM Seminar, Jyväskylä, 2024.
10. Mykrä, N. (2024). *Tavoitteena kestävyysosaaminen*. Ympäristökasvatuksen monet menetelmät -seminar, SYKLI, Marttinen Youth Centre, 2 October 2024.
11. Mykrä, N. (2024). *GreenComp and ECF4CLIM Roadmap for sustainability education*. Teachers' Climate Change Forum, Hyytiälä, Finland, 3 September 2024.

12. Lehtonen, A. & Mykrä, N. (2024). *Green skills related to GreenComp sustainability competences*. FORTHEM Staff Week: Student & Staff Wellbeing and Innovative Pedagogies, University of Jyväskylä, 9 October 2024.

2023

National

13. Lehtonen, A. & Mykrä, N. (2023). *GreenComp as a tool for sustainability education*. Erasmus+ TCA Thematic Seminar, Opetushallitus, Jyväskylä, 2 October 2023.
14. Mykrä, N. (2023). *Unelma kestävästä koulusta: Työpajojen tuloksia*. Kestävyyskasvatuksen hankkeiden väliseminaari, Opetushallitus, 10 May 2023.
15. Mykrä, N. (2023). *Tieteeseen perustuvia politiikkasuosituksia seuraavalle hallitukselle*. Ympäristökasvatuksen Pyöreä pöytä, FEE Suomi, 16 March 2023.

2022

16. Mykrä, N. (2022). *Ympäristökasvatus, planetaarinen hyvinvointi ja kestävyysosaaminen*. Vastuullinen Vantaa, 24 October 2022.
17. Mykrä, N. (2022). *Kestävyysosaaminen kasvatuksessa ja koulutuksessa*. Ympäristökasvatus nyt -webinaari, Tunne ilmasto -hanke, Suomen ympäristöopisto SYKLI, 7 April 2022.

Annex 2: List of blog posts

	Title	Release	Accessed
1	Climate changes-phobia vs a stepwise approach?	November 9, 2021	56
2	Are we enough open to the change our daily behaviors?	November 26, 2021	58
3	December thoughts	December 27, 2021	58
4	Our winter energy crisis	January 25, 2022	56
5	Everyone's contribution is valuable	February 21, 2022	57
6	Is the war affecting climate actions?	March 6, 2022	56
7	The Little Things That Make Sustainability Attractive	April 19, 2022	58
8	In May the splendor of nature cries out about biodiversity	May 1, 2022	53
9	Simple thoughts from a town without inhabitants	June 21, 2022	65
10	This summer as a simple warning	July 14, 2022	56
11	Summer holidays	August 2, 2022	58
12	Back to school	September 16, 2022	56
13	Why do we rush to get to school by car instead of walking	October 13, 2022	54
14	The lights of the nights in late autumn	November 12, 2022	55
15	Sustainability in the time of inflation	December 16, 2022	54
16	A story told by an abandoned suitcase	January 17, 2023	60
17	A year of war that trampled sustainability and climate change	February 13, 2023	64
18	Home, the place we always return to	March 14, 2023	59
19	Could we be proud of our smart cities?	April 11, 2023	60
20	From pragmatism to sustainability	May 21, 2023	68
21	Summer holidays and our adventurous trips	July 19, 2023	62
22	Skills for an unpredictable future	August 10, 2023	66
23	ECF4CLIM, Navigating Complexity Through Co-Design	September 4, 2023	67

D8.6, Report on the communication and dissemination activities

24	From Mountains to Metropolis: Jane's Nature Classroom	October 14, 2023	110
25	Is net-zero emissions the final solution?	November 18, 2023	69
26	Sustainability Competences through Agroecology: A practical ECF4CLIM collaboration in Barcelona	December 18, 2023	76
27	Contemplating the Skills Needed for Future Societal Demands	January 27, 2024	90
28	Fostering Sustainability in Education: A Multidisciplinary Approach	February 24, 2024	92
29	The ECF4CLIM participatory approach: sharing experiences with teachers	March 6, 2024	67
30	Empowering Future Guardians: Proposing and Implementing an Eco-Social Course at UAB to Equip Students for Nature Conservation	April 8, 2024	72
31	Enhancing Empowerment in Educational Communities and Society Through Illustrative Interventions	May 24, 2024	63
32	Climate Change Adaptation through Sustainability Education. Drought challenge	June 7, 2024	82
33	By train from Finland to a project meeting in Romania	June 21, 2024	81
34	Sustainability Competences for Agroecology	July 6, 2024	79
35	Changing Habits by Changing Things: the ECF4CLIM reuse T-shirt Flea Market	August 8, 2024	76
36	Environmental Protection or Humanity Protection? Which One Is It?	September 21, 2024	81
37	Fostering Adaptability in Schools: Preparing Students for a Challenged Future	November 7, 2024	70
38	How IoT is Making Schools More Sustainable and Eco-Friendly	November 23, 2024	68
39	Climate Change and the Catastrophes Affecting Us: A Call for Collective Responsibility	January 16, 2025	85
40	Enhancing Sustainability in Schools and Universities: Impacts of our Interventions	February 14, 2025	53
41	Technology and Sustainability: How Can We Learn Digitally Without Harming the Planet?	April 5, 2025	56

D8.6, Report on the communication and dissemination activities

42	Seeing Through Different Eyes at CEIP MOZART: how Diverse Perspectives Transform Sustainable Education	April 13, 2025	65
43	Meta-Competences in a Changing World	July 2, 2025	55
44	Meta-Skills and Education for Sustainability: Building Future-Ready Citizens	July 3, 2025	76
45	AI in Education for Sustainability: Friend, Coach, or Trap?	August 11, 2025	62
46	Schools as Living Labs: What We Learned from ECF4CLIM Interventions	September 20, 2025	51
47	From Results to Real Impact: How ECF4CLIM is Powering Change in Sustainability Education	October 7, 2025	63
48	Sustainability in Everyday Life: What Students Should Learn to Take Action	November 19, 2025	15



Annex 3: ECF4CLIM, Final Conference, AGENDA



ECF4CLIM MEETING

A EUROPEAN COMPETENCE FRAMEWORK FOR A LOW CARBON ECONOMY AND SUSTAINABILITY THROUGH EDUCATION

ECF4CLIM Final Conference

Host: CIEMAT and the demonstration site in Madrid

Day 1: Wednesday, 10th December 2025

Venue: CIEMAT & CEIP MOZART

General Assembly				
Portuguese time	Spanish time	Finnish and Romanian time	Topic	Presenter
8:00 8:15	9:00 9:15	10:00 10:15	Meeting at CIEMAT Bus transfer to CEIP MOZART: Welcome message by CIEMAT on the bus • Venue: CIEMAT	Yolanda Lechón/ Ana Prades CIEMAT
			<i>Bus to CEIP MOZART (Alcalá de Henares)</i>	
9:00 11:30	10:00 12:30	11:00 13:30	Visit CEIP MOZART primary school (demonstration site) → Welcome message from the Project Officer, the City Council and/or the Regional Government in Madrid → Best Intervention International Award: first prize award ceremony → Coffee break → Presentation of the interventions; field visit in classes • Venue: CEIP MOZART	CEIP MOZART / CIEMAT
11:30 12:30	12:30 13:30	13:30 14:30	<i>Guided tour of the cathedral</i>	
12:30 13:30	13:30 14:30	14:30 15:30	<i>Lunch at Alcalá de Henares</i> • Venue: TBC	All
13:30 15:30	14:30 16:30	15:30 17:30	Walk through the city and creative activities around the ECF4CLIM roadmap Including visit to Alcalá University • Location: Alcalá de Henares	JYU
			<i>Bus to CIEMAT</i> <i>Closure of day 1</i>	



ECF4CLIM MEETING

A EUROPEAN COMPETENCE FRAMEWORK FOR A LOW CARBON ECONOMY AND SUSTAINABILITY THROUGH EDUCATION

Day 2: Thursday, 11th December 2025

Venue: CIEMAT

Link for on-line participation:

<https://us02web.zoom.us/j/88085535498?pwd=AnGoo0WqQMiq6jG2OubmCYIPaLlZdz.1>

Zdz.1

General Assembly				
Portuguese time	Spanish time	Finnish and Romanian time	Topic	Presenter
8:00 8:30	9:00 9:30	10:00 10:30	Registration	
8:30 9:30	9:30 10:30	10:30 11:30	Main project outputs (1): The ROADMAP for sustainability competences → Overview and key insights (25 min) → Debate with the representatives from the Demonstration Sites (20 min) → Final discussion and conclusions (15 min)	JYU & research teams All
9:30 10:00	10:30 11:00	11:30 12:00	<i>Coffee Break</i>	
10:00 11:00	11:00 12:00	12:00 13:00	Main project outputs (2): The interventions → Overview and key insights (25 min) → Debate with the representatives from the Demonstration Sites (20 min) → Final discussion and conclusions (15 min)	USE & research teams All
11:00 12:00	12:00 13:00	13:00 14:00	Main project outputs (3): The hybrid participatory approach → Overview and key insights (25 min) → Debate with the representatives from the Demonstration Sites (20 min) → Final discussion and conclusions (15 min)	CIEMAT/UAB Research teams All
12:00 13:30	13:00 14:30	14:00 15:30	<i>Lunch Break</i>	
13:30 14:30	14:30 15:30	15:30 16:30	Advisory Board & policymakers' feedback on the ECF4CLIM policy brief	CIEMAT/UAB
14:30 15:00	15:30 16:00	16:30 17:00	<i>Coffee break</i>	
15:00 16:30	16:00 17:30	17:00 18:30	Research teams: Internal preparatory meeting on insights for the final conference Demonstration Sites: exchange on possible next steps/collaboration options (e.g., ERASMUS+)	Research teams & representatives from DSs
19:30	20:30	21:30	<i>Conference Dinner</i>	



ECF4CLIM MEETING

A EUROPEAN COMPETENCE FRAMEWORK FOR A LOW CARBON ECONOMY AND SUSTAINABILITY THROUGH EDUCATION

Day 3: Friday, 12th December 2025

Venue: CIEMAT

Link for on-line participation:

<https://us02web.zoom.us/j/88396008369?pwd=FdjHNRJXRP4wUrtBjbLvjIHAzqmcB8.1>



Final Conference				
Portuguese Time	Spanish Time	Finnish and Romanian Time	Topic	Presenter
8:00 8:15	9:00 9:15	10:00 10:15	Registration	
8:15 8:30	9:15 9:30	10:15 10:30	Welcome by CIEMAT Directors of the energy and environment departments & Project Officer	Mercedes Ballesteros, Begoña Artiñano, Gaëlle Le Boulter
8:30 9:00	9:30 10:00	10:30 11:00	Project overview: main outputs & recommendations	ECF4CLIM Coordinators, Yolanda Lechón, Ana Prades
9:00 9:45	10:00 10:45	11:00 11:45	What have we learnt? Key insights from educational communities and research teams (Finland)	JYU & Finnish educational community
9:45 10:15	10:45 11:15	11:45 12:15	Coffee Break Poster session (1 poster per DS)	
10:15 11:00	11:15 12:00	12:15 13:00	Key insights from educational communities and research teams (Portugal)	IST & Portuguese educational community
11:00 11:45	12:00 12:45	13:00 13:45	Key insights from educational communities and research teams (Romania)	Meda Research & Romanian educational community
11:45 12:30	12:45 13:30	13:45 14:30	Key insights from educational communities and research teams (Spain)	Ciemat/USE/ LIAR & Spanish educational community
12:30 13:00	13:30 14:00	14:30 15:00	Summary of key insights and key challenges Panel discussion with the Advisory Board and policymakers	Markku Lehtonen All
13:00 14:00	14:00 15:00	15:00 16:00	Farewell drinks (Spanish wine & food) Closing of the conference	

Annex 4. Some KPIs reflecting the tendencies of website in the last 30 days



Fig.1 Number of new users, evolution in the last 30 days



Fig.2 Distribution of the users in the last 30 days (main countries)

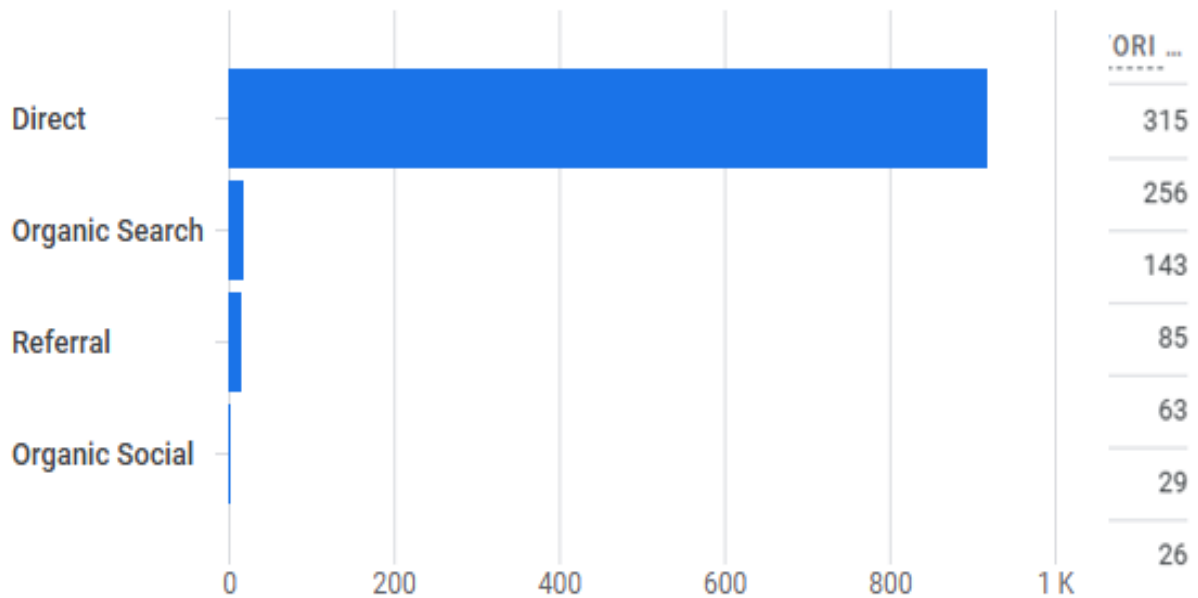


Fig.3 New users by entry channel

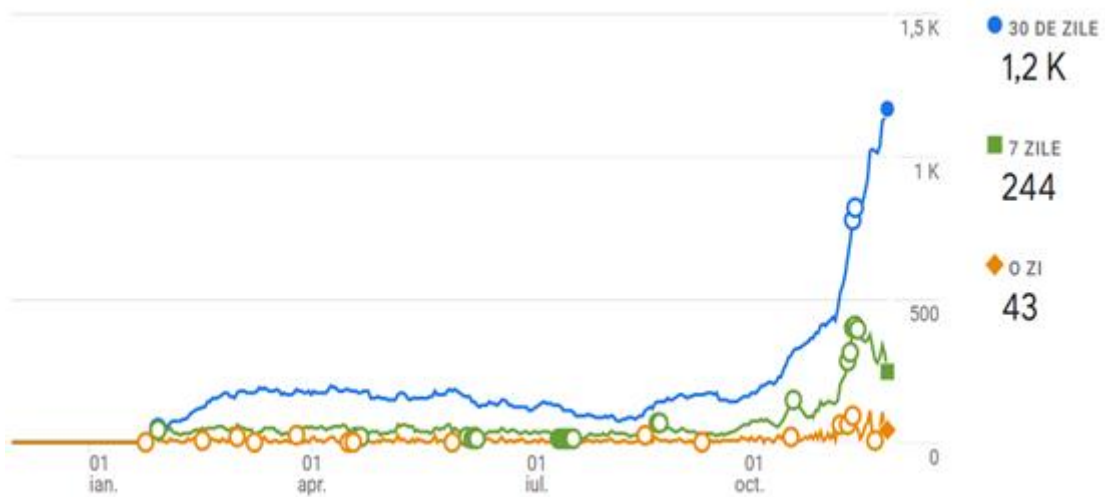


Fig.4 Evolution of activity of new users in the last 30 days

Title	Pageviews	Sessions	Engagement Rate	Session Duration
1. Home ECF4CLIM – A European Framework for Sustainability /	869	682	70.67%	2m 18s
2. Digital Platform, exchange of knowledge and practices. /digital-platform/	205	203	76.35%	2m 6s
3. About the project - ECF4CLIM /about-the-project/	122	117	72.65%	57s
4. Demonstrative Interventions - ECF4CLIM /materials-from-demonstration-sites-2/	119	128	72.66%	5m 37s
5. The Roadmap - ECF4CLIM /the-ecf-roadmap/	107	102	77.45%	2m 12s
6. Public reports (deliverable) of the project. /project-reports/	87	96	76.04%	8m 11s
7. Consortium and Network - ECF4CLIM /consortium/	86	85	78.82%	2m 26s
8. Blog /blog/	66	57	61.4%	1m 17s
9. Project Highlights - ECF4CLIM /project-highlights/	62	46	76.09%	43s
10. Seeing Through Different Eyes at CEIP MOZART: how Diverse Perspectives Transform Sustainable Education - ECF4CLIM /seeing-through-different-eyes-at-ceip-mozart-how-diverse-perspectives-transform-sustainable-education/	47	45	26.67%	1m 5s

Fig.5 Pageviews and sessions in the last 30 days

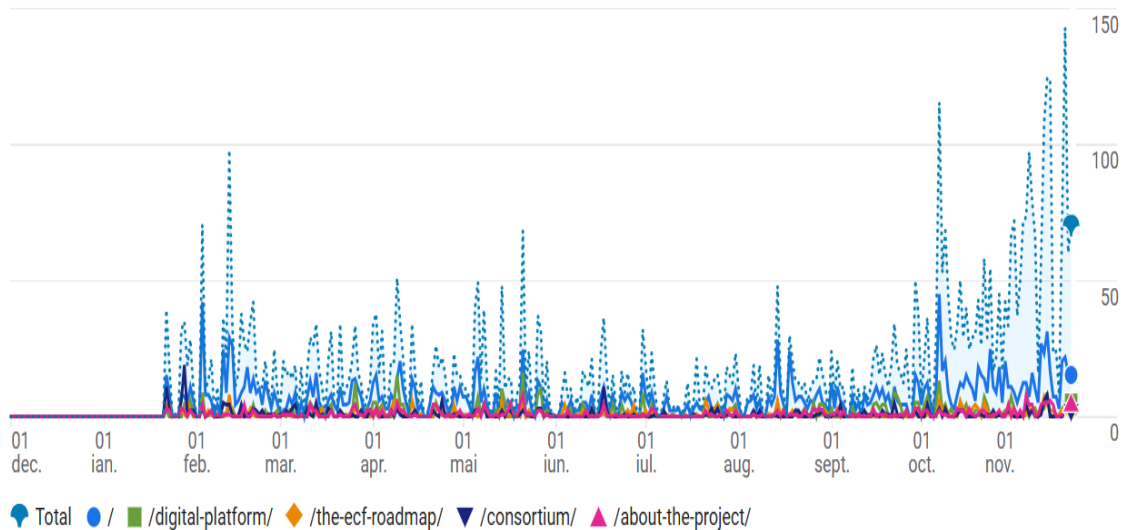


Fig.6 Clicks on the specific pages (2025, new version, ecf4clim.eu)

D8.6, Report on the communication and dissemination activities

Calea paginii ş...lăsa ecranului ▾ +		↓ Afisări	Utilizatori activi	Afisări pentru fiecare utilizator activ	Dura medie interacţiunii pentr fiecă utilizat aci
Total		6.221 100 % din total	2.570 100 % din total	2,42 Medie 0%	36 se Medie (
1	/	2.211 (35,54 %)	1.101 (42,84 %)	2,01	23 se
2	/digital-platform/	533 (8,57 %)	318 (12,37 %)	1,68	26 se
3	/the-ecf-roadmap/	340 (5,47 %)	171 (6,65 %)	1,99	30 se
4	/consortium/	303 (4,87 %)	200 (7,78 %)	1,52	40 se
5	/about-the-project/	301 (4,84 %)	247 (9,61 %)	1,22	19 se
6	/project-reports/	178 (2,86 %)	109 (4,24 %)	1,63	50 se
7	/project-highlights/	172 (2,76 %)	101 (3,93 %)	1,70	12 se
8	/blog/	157 (2,52 %)	123 (4,79 %)	1,28	26 se
9	/materials-from-demonstration-sites-2/	132 (2,12 %)	75 (2,92 %)	1,76	1 min. 23 se
10	/work-packages/	100 (1,61 %)	72 (2,8 %)	1,39	43 se

Fig.7 Pageviews and sessions in the last 90 days

page_view	6,2 K
user_engagement	4,7 K
session_start	3,7 K
first_visit	2,5 K
click	937
scroll	916
file_download	705

Fig.8 Number of different events (2025, new version, ecf4clim.eu)

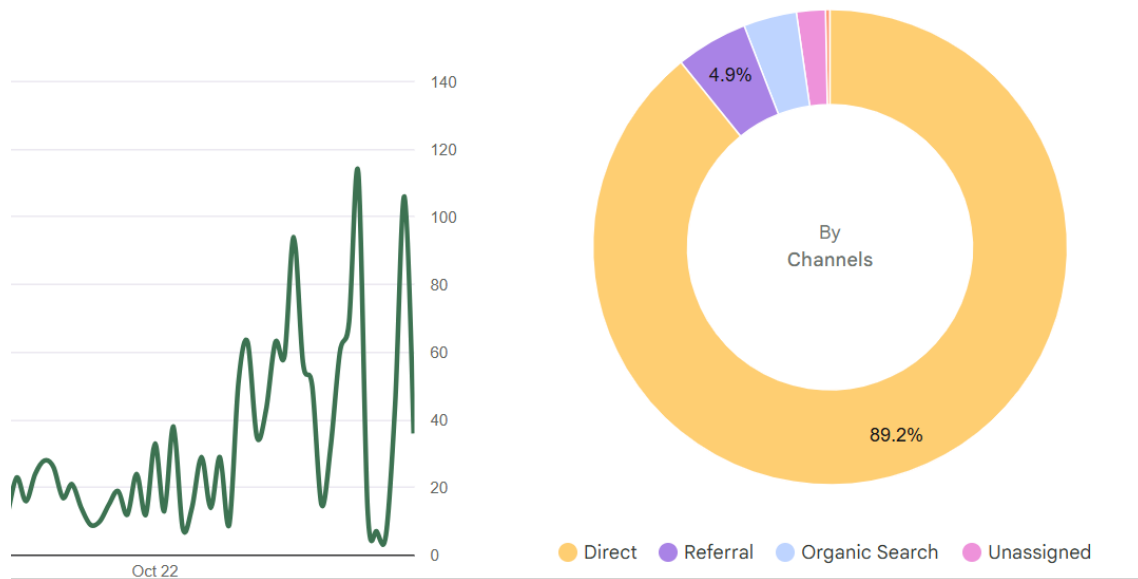


Fig.9 New visitors (last 30 days) tendencies and their entry points

Annex 5. Press Releases

ECF4CLIM Launches Roadmap to Strengthen Sustainability Education in Europe

The European guide offers practical tools and real examples for embedding sustainability skills across all levels of education.

Madrid, 1 December 2025. The European ECF4CLIM consortium, coordinated by CIEMAT and funded by the EU's Horizon 2020 programme, has released the **Sustainability Competences Roadmap**, a practical guide designed to help schools and universities strengthen sustainability education.



The Roadmap builds on **GreenComp**, the European Commission's sustainability competence framework, and adapts it to the **daily reality of primary, secondary and higher education institutions**. The guide expands GreenComp by including not only individual skills and knowledge, but also the **collective culture of schools and the technological and material resources**—from infrastructure to digital tools—that support sustainability learning.

Developed with schools and universities in **Finland, Portugal, Romania and Spain**,

the Roadmap provides practical examples, teaching approaches and tools that have been tested in real educational settings. Its development involved a participatory process with teachers, students and school leaders, alongside reviews by external experts and the project's Advisory Committee.

The document is organised around four key areas of sustainability learning: **Engagement** (values and participation), **Connections** (systems and perspectives), **Change** (futures and innovation) and **Action** (community involvement and agency). Each area includes guidance for teachers and leadership teams, along with barriers and enablers commonly found in schools.

The Roadmap is intended for educators, school management teams, universities and public administrations. It can be used to plan and evaluate sustainability initiatives, develop educational programmes and support policy decisions.

The publication will be formally presented at the **ECF4CLIM Final Conference**, held at **CIEMAT in Madrid from 10–12 December 2025**.

The Roadmap is available at: <https://mappa.fi/en/greencomp-roadmap/>
Press contact: prensa@ciemat.es

ECF4CLIM Final Conference Brings European Sustainability Education Experts to Madrid

A three-day event will present results from a four-year EU project to advance sustainability competences in schools and universities.

Madrid, 21 November 2025. CIEMAT will host the **Final Conference of the ECF4CLIM project** from **10–12 December**, marking the conclusion of a major European initiative funded by **Horizon 2020** to strengthen sustainability competences across all levels of education.



Over four years, ECF4CLIM has worked with schools and universities in four countries to develop and validate a **European Sustainability Competence Framework** that integrates individual learning, collective school culture and the techno-material conditions that shape educational environments.

The project has applied a **hybrid participatory methodology**—combining **action research** and **citizen science**—in **13 educational centres** across **Finland, Portugal, Romania and Spain**. This approach has enabled educational communities to diagnose their own sustainability competences, co-design interventions and evaluate their impacts, producing evidence-based tools and insights for future adoption.

The three-day programme includes a field visit to **CEIP Mozart (Alcalá de Henares)**, where participants will observe practical examples of the interventions designed jointly with teachers, students and school leaders. Sessions at CIEMAT's headquarters will present the project's main results, including the **Sustainability Competences Roadmap**, a **catalogue of tested interventions** and the participatory method developed by the consortium. These resources provide a structured approach for embedding sustainability competences into curriculum design, school culture and campus operations.

The conference will bring together researchers, international specialists in sustainability education, representatives from educational communities in all partner countries and officials from the **European Commission**. Delegations from **Finland, Portugal, Romania and Spain** will share key lessons learned, highlighting challenges, opportunities and pathways for scaling sustainable, participatory practices in education systems.

Around **60–70 participants** are expected to attend in person, with the possibility of online participation for additional stakeholders.

Press accreditation and interview requests: prensa@ciemat.es

The Press-Release, Spanish version, released on November 28th



NOTA DE PRENSA

La educación del futuro se debate en Madrid: expertos europeos presentan el nuevo marco de competencias en sostenibilidad

- Madrid se convierte en capital europea de la educación para la sostenibilidad con la conferencia final del proyecto ECF4CLIM.
- El CIEMAT acogerá del 10 al 12 de diciembre a los expertos europeos que están transformando la educación en sostenibilidad.

Madrid, 28 de noviembre de 2025. El Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT) acogerá del 10 al 12 de diciembre de 2025 la Conferencia Final del proyecto ECF4CLIM (H2020); un encuentro internacional que reunirá en Madrid a investigadores e investigadoras de diversas disciplinas, expertos en educación para la sostenibilidad de Finlandia, Portugal, Rumanía y España, y miembros del Comité Asesor internacional.

Durante cuatro años, el proyecto europeo ECF4CLIM ha desarrollado y validado un nuevo Marco Europeo de Competencias para la Sostenibilidad orientado a impulsar cambios transformadores en el ámbito educativo. En palabras de Ana Prades, investigadora del CIEMAT, “el proyecto va más allá del enfoque clásico de *GreenComp* (centrado en el individuo) para integrar también las competencias colectivas (normas, reglas y culturas organizativas) y las competencias técnico-materiales (infraestructuras, equipamientos y entorno físico) que pueden favorecer o limitar la transición hacia la sostenibilidad en los centros”.

Mediante un método participativo híbrido, que combina investigación-acción y ciencia ciudadana, el consorcio ha trabajado con 13 centros de Primaria y Secundaria, además de universidades de España, Finlandia, Portugal y Rumanía para diagnosticar sus competencias en sostenibilidad, co-diseñar intervenciones y evaluar su impacto. Además, un total de 1.800 representantes de las comunidades educativas de los cuatro países se han implicado en el proyecto (incluyendo estudiantes, profesores, personal administrativo y representantes de las comunidades educativas), junto a 30 investigadores de diversas disciplinas.

Un encuentro único en Madrid

MÁS INFORMACIÓN Y ENTREVISTAS:

Unidad de Comunicación y
Relaciones Públicas CIEMAT
prensa@ciemat.es
91 496 26 78

CIEMAT. Centro de Investigaciones
Energéticas, Medioambientales y
Tecnológicas
Av. Complutense, 40, 28040 Madrid



NOTA DE PRENSA

Del 10 al 12 de diciembre, el encuentro presentará una visión completa de los resultados del proyecto: la hoja de ruta, el catálogo de intervenciones y el enfoque metodológico que sustenta el marco validado.

Uno de los hitos clave del encuentro será la visita al CEIP Mozart de Alcalá de Henares (Madrid) el día 10, uno de los centros que ha colaborado en el proyecto, y en el que se mostrará cómo estas metodologías se han implementado en la práctica, evidenciando su potencial para transformar centros educativos en entornos más sostenibles y participativos.

"ECF4CLIM es un proyecto único", afirma Prades, que a través de la educación en sostenibilidad ha articulado una alianza europea que combina universidades y centros de investigación de España, Finlandia, Portugal y Rumanía, con apoyo de Hungría y Grecia. Entre las Instituciones figuran University of Jyväskylä (Finlandia), Instituto Superior Técnico (Portugal), Universitat Autònoma de Barcelona (España) y Meda Research (Rumanía), además de ISQ (Portugal), ENLITIA (Portugal) y QUE Technologies (Grecia).

Sobre el CIEMAT

El CIEMAT (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas) es un Organismo Público de Investigación adscrito al Ministerio de Ciencia, Innovación y Universidades a través de la Secretaría General de Investigación, focalizado en la investigación en torno a la energía y el medio ambiente y los campos tecnológicos relacionados con ambos.

Con más de siete décadas de historia, el CIEMAT tiene como misión contribuir al desarrollo sostenible de España mediante la generación y aplicación del conocimiento científico y tecnológico. Actualmente, la sede del CIEMAT se encuentra en Madrid, y cuenta con cinco centros territoriales en el territorio español: la Plataforma Solar de Almería (PSA) en Almería, el Centro de Desarrollo de Energía Renovables (CEDER) y el Centro Internacional de Estudios de Derecho Ambiental (CIEDA) en Soria, el Centro Extremeño de Tecnologías Avanzadas (CETA) en Extremadura, y el Centro de Investigaciones Sociotécnicas (CISOT) en Barcelona.

MÁS INFORMACIÓN Y ENTREVISTAS:

Unidad de Comunicación y
Relaciones Públicas CIEMAT
premsa@ciemat.es
91 496 26 78

CIEMAT. Centro de Investigaciones
Energéticas, Medioambientales y
Tecnológicas
Av. Complutense, 40, 28040 Madrid

Annex 6. ECF4CLIM in GD Newsletter

Knowledge and Citizens updates



ECF4CLIM demonstrates why [role-play exercises are important](#) for developing sustainability actions. By stepping into different perspectives, students, teachers and families learn empathy, collaboration & creative problem-solving, which are all key skills for driving real environmental change. The project's [Internet of Things \(IoT\) dashboard](#) also empowers students, teachers & administrators to monitor indoor air quality and energy use in real-time to create healthier, greener learning spaces.

Annex 7. Abbreviations & Acronyms

AB	Advisory Board
BIA	Best Intervention Award
CINEA	European Climate Infrastructure and Environment Executive Agency
DSs	Demonstration sites
EC	European Commission
EEA	European Education Area
ECF	European Competence Framework
EU	European Union
GA	General Assembly
IoT	Internet of Things
IPR	Intellectual Property Rights
KERs	Key Exploitable Results
KPIs	Key Performance Indicators
NGOs	Non-Governmental Organizations
PDR	Plan for Dissemination of ECF4CLIM Results
PERSS	Plan
SCT	Sustainable Competence Team
SCC	Sustainable Competence Committee
SMEs	Small and Medium size Enterprises
STEM	Science, Technology, Engineering, and Mathematics
TDS	Transdisciplinary Strategy
YT	YouTube channel