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ACCUREU
Assessing
Climate Change
Risk in Europe

D1.6: Evaluation report

GA number: 101081358, Funding type: HORIZON-CL5-2022-D1-07-two-stage

Deliverable number	D1.6
Deliverable name:	Evaluation Report
WP / WP number:	WP1
Delivery due date:	Project month 40 (30/09/2026)
Actual date of submission:	05/10/2026
Dissemination level:	Public
Lead beneficiary:	ECOLOGIC
Responsible scientist/administrator:	Jenny Tröltzsch, Katriona McGlade
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Changes with respect to the DoA

No changes

1. Dissemination and uptake

This deliverable provides both project consortium members and stakeholders engaged in ACCREU with an overview of the way in which co-creation has been implemented and received across the project. It allows those involved to understand how their experiences sit with those of other participating actors. It can feed into an exchange on co-creation processes with sister projects SPARCCE and CROSSEU and within the MIP4Adapt online community to share insights and lessons with other collaboratively engaged projects funded under HEU and the Mission on Adaptation. The report is also instructive for those considering the application of a co-creation approach in future European research projects. Finally, the critical reflections offered may assist with the drafting of future work programmes and evaluation of proposed co-creation approaches.

2. Short Summary of results (<250 words)

Co-creation is a structured science-practice interaction that moves beyond basic levels of consultative engagement to incorporate stakeholders throughout the research process. The project team actively engaged with stakeholders from the outset and integrated 158 of the 227 research questions discussed at the start of the project through 117 separate stakeholder meetings and events that involved international and national policy makers and authorities (n=34); regional and local policy makers (n=24); business and industry (n=15); NGOs and citizens (n=30) and the research community (n=14). It has been largely through this commitment to co-creation with stakeholders that ACCREU has been able to provide results that have been integrated in a range of decision-making processes. Co-creation has mostly been carried out in a 'bounded' way in this project, ensuring that the outputs are targeted to stakeholder needs and interests. In addition we have also piloted a more open 'reflexive' form of co-design in the process of developing a new research agenda. This deliverable draws together the results of the continuous evaluation that accompanied the co-creation process in the ACCREU project. It reflects back on the co-creation protocol devised at the outset of the project (Deliverable 1.2) considering the eight principles for co-creation against the insights gained from implementation. The report concludes with the presentation of ten lessons learned and ten accompanying recommendations with the aim of supporting future research project teams wishing to apply a co-creation approach.

3. Evidence of accomplishment

Not applicable

1. Introduction

1.1 Context and aims of the ACCREU project

EUROCORDEX¹ projections confirm that **Europe will warm more than the global average**, i.e. Europe will experience more than 2°C of warming (relative to pre-industrial levels) even if the Paris goal is achieved in terms of emissions (Tröltzsch et al., 2018). The impacts of climate change are already perceptible in Europe, and there is high confidence, that these impacts will intensify in the 21st century (Bednar-Friedl et al. 2022). According to Szewczyk et al. (2020), a trajectory towards +3°C warming could cost the EU 175 billion €/year (1.38% of GDP) in 2050, whereas curbing the temperature increase below 2°C globally would halve this figure.

From 2023 – 2026, the ACCREU project consortium (Assessing Climate Change Risk in EUrope) has worked to advance the knowledge of the economics of climate change impacts and adaptation in Europe and to **offer policy solutions guided by the needs of users**. The project consortium listed below involves 15 partners from across Europe with a proven track record of scientific excellence.

- Euro-Mediterranean Centre on Climate Change (CMCC), Italy
- International Institute for Applied Systems Analysis (IIASA), Austria
- University of Graz (Uni Graz), Austria
- VU University Amsterdam (VU), Netherlands
- Ecologic Institute, Germany
- Ca' Foscari University of Venice, Italy
- BC3. Basque Centre for Climate Change (BC3), Spain
- Deltares, Netherlands
- Potsdam Institute for Climate Impact Research (PIK), Germany
- Global Climate Forum e.V., Germany
- Technical University of Denmark (DTU), Denmark
- Climate Analytics GmbH, Germany
- Utrecht University (UU), Netherlands
- Paul Watkiss Associates, United Kingdom
- The Cyprus Institute, Cyprus

On the basis of the most recent research and latest climate information available, these researchers have **improved the assessment of impacts and economic costs of greatest relevance for the EU** (as set out in reports of Work Package 2), investigating previously neglected transmission channels, supply chains, non-market impacts of climate change on health and ecosystems, and subsequently including these in macroeconomic assessments (as set out in reports of Work Package 4). Integrated assessments of climate risks under different climate and socio-economic scenarios have been conducted, improving the assessment of costs, benefits, effectiveness, limits, and feasibility of adaptation against different impact types and scales. This work is complemented by economic

¹ [EURO-CORDEX Data](#)

appraisal of adaptation for selected stakeholders through case studies in Work Package 3. These cases helped to answer specific adaptation policy questions from regional stakeholders. Besides results for the case study stakeholders, the cases and wider literature were also used to derive **actionable insights and practical recommendations for common adaptation decisions** ('Adaptation Decision Types' or ADTs) facing many European communities and regions. The results on mitigation, adaptation, and residual climate damages have produced new research insights and have fed into decision-making spaces.

1.2 Co-creation in the ACCREU project

While these scientific contributions have been substantial, their successful integration into practical decision-making has been largely due to the co-creation activities undertaken in the ACCREU project. **Co-creation is a structured science-practice interaction** that moves beyond basic levels of consultative engagement to actively engage stakeholders in the process of research. Co-creation can be conceptualised along two axes, (see matrix in Figure 1) moving from instrumental to emergent knowledge on the vertical axis, and from brokered to open forms of debate on the horizontal axis.

1.2.1 Co-creation glossary

- **Instrumental** - sometimes termed utilitarian or prescriptive. This is focused on creating useable knowledge (to inform decision making)
- **Emergent** (critical/reflexive) – co-production that proposes new transformative ways of challenging existing thinking and narratives.
- **Brokered** (with use of intermediaries or brokers who help to mediate across boundaries);
- **Agora/assembly** – an open debate bringing together academic and non-academic actors to discuss from different worldviews in an open intellectual and social space, to invite conscious reflection.

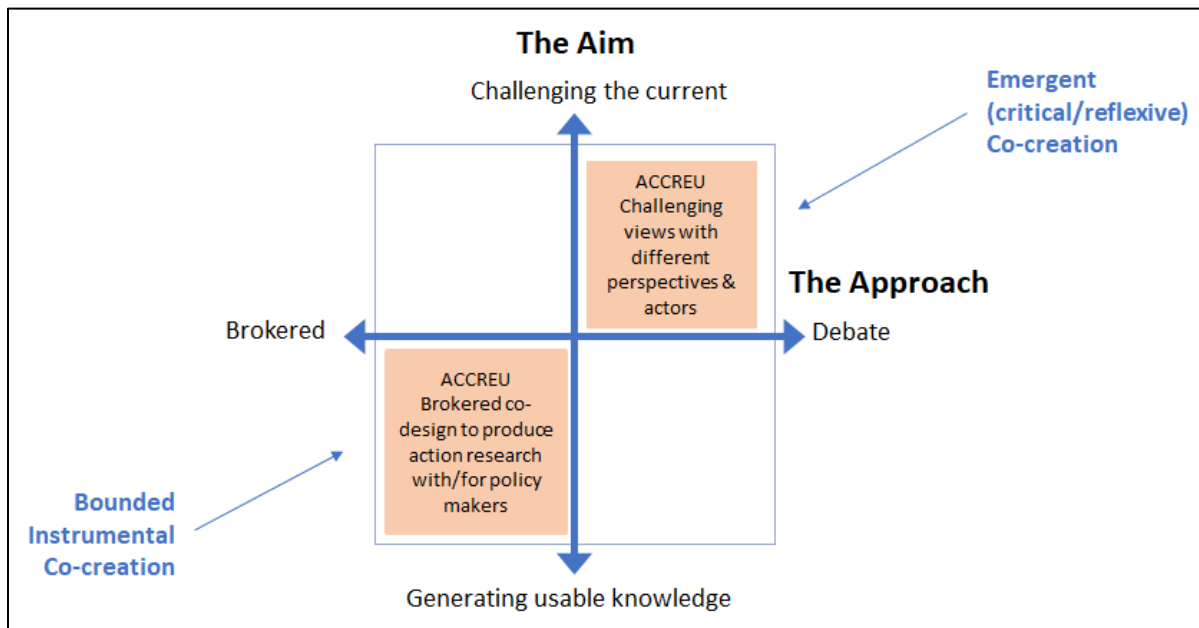


Figure 1 ACCREU on the Co-Creation Matrix (Adapted from Harvey et al. 2017).

ACCREDU has developed both bounded instrumental and emergent reflexive co-creation approaches, and this dual approach is one of the advances of the project in co-creation methodologies within projects conducting economic assessments. These bounded and reflexive approaches have different objectives and are not designed to be integrated with one another; rather they were undertaken to support different goals and to demonstrate different approaches to collaborative research.

The first form of co-creation applied in ACCREDU has been a **bounded and instrumental** approach, focusing on joint work and knowledge production. The purpose of this approach is to provide accessible, transparent and usable knowledge to relevant stakeholders. It uses a research process which involves proactive and participatory involvement of key societal actors from policy making at different levels of governance, as well as the private sector and civil society. This process was set out in Deliverable 1.2 – the co-creation protocol. These stakeholders contribute by helping to define the project research priorities at the start, participating in collaborative case studies as the project progresses, and orientating its communication and dissemination strategy towards the end. This approach is more likely to yield tangible output-oriented knowledge products within a limited timeframe and allow the project to take advantage of opportunities to feed into regional and national strategies and to ensure this approach can be implemented within the grant agreement and resources.

The ACCREDU approach to co-creation is structured according to a series of guiding principles (Box 1) that were developed on the basis of literature reviews and the team’s practical experiences of co-creation in the H2020 COACCH and HEU ACCREDU projects (Watkiss et al. 2018; McGlade et al. 2022).

Box 1: Principles for bounded co-creation (from Watkiss et al. 2025)

1. **Process orientated**, recognizing the process is as important as the outputs. Clearly defined and well-structured processes and outcomes increase the likelihood of stakeholder engagement and ownership.
2. **Objective and outcome-led**, with clearly identified roles and responsibilities. The literature recommends that the roles and responsibilities of all participants are mutually understood and agreed upon. Goal setting and role identification should happen early in the process to foster effective collaboration.
3. **Targeted, ensuring representative stakeholders are involved**. There is a need to limit the number of actors to keep the process manageable, but it is important to include a representative selection of stakeholders with different perspectives.
4. **Transparent and inclusive**, to allow alternative views. The literature stresses that co-design processes have to be built for inclusivity and creativity, not just for efficiency and effectiveness. The success of joint knowledge production will be enhanced if different perspectives of stakeholders are recognized and respected.
5. **Time managed**, with enough time, resources and facilities to deliver the process. The literature reports that co-creation demands significant time and effort, and it recommends that projects allow sufficient time for the process, including time and resources maintaining relationships with stakeholders.
6. **User and decision orientated**, with the aim to meet user needs and produce information of relevance for decisions and decision makers, while managing expectations.
7. **Joint product orientated**, using outputs to build the engagement and co-production process. The review of good practice co-production highlights that successful co-production often has an emphasis on producing joint outputs, such as joint knowledge products.
8. **Iterative**, with an ongoing process of review, learning and update throughout the project. Co-creation should be seen as an ongoing and collaborative process. Adjustment may be needed, especially when stakeholders work together for the first time. Regularly reviewing the process, including research assumptions, criteria, methodologies, ensures the usability of outputs. The literature highlights that there is a need for monitoring, evaluation, and learning (MEL) to support the iterative approach.

The bounded co-creation in ACCREU consists of four interlinking phases (McGlade et al., 2021). During **co-design**, researchers and non-academic partners jointly develop and define research questions that meet their common interests and needs. This is followed by **co-production**, in which the research programme is advanced together with stakeholders, for example working together on chosen case studies or policy decisions. Finally, **co-dissemination** develops strategies to communicate the project results in discussion with stakeholders and involves them in this dissemination process. This process is undertaken with iterative **monitoring, evaluations and reflections**, so that lessons can constantly emerge and be incorporated at each research stage. The progress on these co-creation activities was documented in Deliverable 1.4 (Report of strategic co-creation actions).

In the forthcoming sections we will discuss our co-creation experiences in ACCREU, returning in Sections 6 and 7 to bring new insights to bear on the principles and phases presented here.

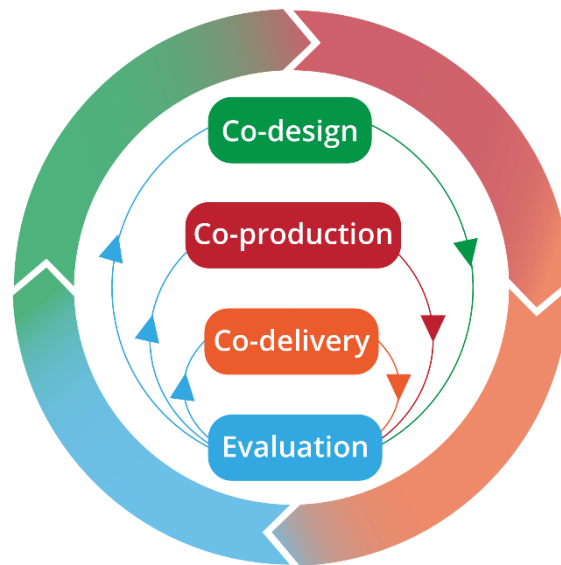


Figure 2 Phases of bounded co-creation in ACCREU

In addition to the in-depth bounded co-creation undertaken over the course of the project, ACCREU has also gone beyond the state-of-the-art for co-creation in economic assessment and undertaken **emergent, critical and reflexive co-design**. A reflexive approach aims to develop new ways of thinking and challenging existing norms and narratives. This reflexive approach requires different methods and principles (see **Box 2**) to facilitate transdisciplinary debate in an open intellectual and social space. This approach was applied to the topic of the economics of transformational adaptation and was written up in Deliverable 1.5 (Research priorities and review paper on emergent co-design (of the economics of transformational adaptation)).

Box 2: Principles for reflexive co-design (from Watkiss et al. 2025)

- Participatory framing of the problem and objectives is needed
- There is a need to bring diverse stakeholders with different views
- A transparent and inclusive forum for debate is needed, that challenges existing norms
- It is important to consider governance, power dynamics and agency, not just technical options
- Researchers are co-creators not knowledge or solutions providers
- Case studies and tools can help make it real
- An innovative and open workshop environment is needed
- Distributional issues, rights and justice are important
- An iterative process with continuous monitoring, evaluation and learning

1.3 Public outreach

In the ACCREU project, co-creation is understood as an integral part of developing and undertaking research. In support of the co-creation process, ACCREU has also undertaken a range of active dissemination activities to communicate the project results to a wider group of stakeholders such as the private sector and to inform the general interested public. These activities included for example:

- The ACCREU, CROSSEU & SPARCCLE Webinar "Reflections on the cost and effectiveness of climate change adaptation" held on 15 December 2025 was attended by 82 participants, whose 33 stakeholders from finance, insurance and public administration sectors.
- The ACCREU, CROSSEU & SPARCCLE Webinar "The macroeconomics of adaptation: lessons learned from the 3 projects" held on 23 June 2026 was attended by 63 participants, with 25 stakeholders from finance, trade, public administration and environmental sectors.
- The creation of a digital handbook; an interactive and easy-to-use product that allows users to navigate information, data, and methodologies related to climate risk assessment. It integrates multimedia, interviews with experts, infographics, factsheets and articles.
- The development of an open access, interactive, multi-level climate change scenario explorer. This tool is targeted to non-academic users and complements the digital handbook. The scenario explorer enables visual-map-based and graph-based navigation of ACCREU's findings.
- The creation of an open access database providing a central public entry point for discovering and accessing quantitative datasets generated through ACCREU's assessment of climate-change impacts and adaptation.

Full details of these activities are detailed in Deliverable 5.3.

2. Co-creation activities

Bounded stakeholder co-creation in ACCREU followed five steps that were framed along three phases of co-design, co-production and co-delivery (Watkiss et al. 2018; McGlade et al. 2022; ACCREU Deliverable 1.2) (see Figure 3).



Figure 3: The ACCREU approach to co-creation

Bounded co-creation activities were organised through three main channels: in-person stakeholder workshops, bilateral meetings with deep-engagement partners in case studies and thematic online workshops for each Adaptation Decision Type (ADT) (see Table 1).

The additional **reflexive co-design** (Watkiss et al. 2025) took place in a specially designed stakeholder forum. In this section we provide a brief recap of these activities for the purposes of situating the evaluation. For more detailed accounts of the activities see ACCREU Deliverable 1.4 (bounded co-creation process) and Deliverable 1.5 (reflexive process).

Table 1. Overview of stakeholder interactions in the ACCREU project

Date (s)	Activity	Purpose	Co-creation phase	Target group	Number
January 2024	First stakeholder workshop (Milestone 1)	Establish aims of the project, define research questions and stakeholder interests	Co-design	General and deep engagement stakeholders	Over 40 participants

October 2023 – November 2026	Bilateral meetings with deep engagement stakeholders (Deliverable 1.4)	Data exchange, refine research activities to ensure accuracy and applicability	Co-design (of ACCREU research agenda) Co-production Co-dissemination	Deep engagement stakeholders	Over 100 meetings held, each with differing numbers of participants
March – September 2025	ADT workshops (Milestone 3)	Sharing of initial results, collaborative identification of barriers and enabling factors across case studies	Co-production	General and deep engagement stakeholders, sector-specific actors	156 participants across seven ADTs and over 100 participants at the ACCREU ADT-FIRELOGUE clustering event
April 2026	Second stakeholder workshop (Milestone 2)	Reporting back to stakeholders. Discussion and interpretation of project results, joint knowledge products and tools for dissemination	Co-dissemination	General and deep engagement stakeholders	Over 35 participants
April 2026	Reflexive co-design workshop (Milestone 4)	Exploratory discussion on the economics of transformational adaptation	Co-design (of future research agenda)	Climate adaptation and economics experts	Over 40 participants

In the co-design phase, we analysed the goals and needs of the project and identified two groups of stakeholders: 1) those general interested in the project results and 2) deep engagement stakeholders who would directly participate in the co-creation of case studies and their upscaled relevance for Adaptation Decision Types (see ACCREU Deliverable 3.3).

Deep engagement stakeholders were sent a letter with project objectives and outlining the benefits of participation and expectations in terms of time and input. A semi-formal agreement to participate in the project was made, and stakeholders were assigned to a relationship manager from the consortium to manage communication. Stakeholder engagement activities were logged through the project in a dissemination tracker. ACCREU held 117 stakeholder meetings and events. This included:

- 35 with international and national policy makers and authorities.
- 25 with regional and local policy makers.
- 15 with business and industry.
- 30 with NGOs and citizens.
- 12 with the research community.

In total, ACCREU stakeholder engagement activities led to direct interactions with 1243 stakeholders (see Deliverable 1.4).

2.1 In-person workshops for general stakeholders

At the outset of ACCREU, a comprehensive piece of work identified key knowledge gaps, core research questions and necessary modelling improvements (Deliverable 1.1). This was also condensed into a short technical policy brief (Milestone 11, Policy Brief 1), including a page on each sector shared with participants in advance. This information was used to feed into the initial interactions with stakeholders at the first interactive workshop in January 2024 (Milestone 1). Based on previous experience in the COACCH project and on the literature review carried out for ACCREU, the workshop was held in-person only to build relationships and allow appropriate time and space for discussion. The focus of the workshop was to co-design priorities for modelling activities at European (WP2) and macroeconomic and global (WP4) scale, while also inviting inputs for the development of the case studies for WP3. The results of the stocktake and research gaps were analysed in a participatory way to identify preferences and priorities for proposed research questions, as well as allowing stakeholders to add additional areas of interest. As described above, this co-design took a ‘bounded approach’, meaning that while discussions were open and participatory, the frame of reference was restricted to the description of work and research agenda approved for the project. A total of 227 research questions were gathered (112 research questions suggested by the team, and additional 115 suggestions by stakeholders). The results of the workshop are described in detail in Milestone 1.

In April 2026, two further in-person workshops were held; one as a follow up to mirror the first stakeholder workshop at the end of the project (Milestone 2) and the other being a reflexive workshop on the economics of transformational adaptation (Milestone 4).

The first of these, the final bounded workshop, was held on Wednesday 29th April 2026. This workshop was held for general project stakeholders, in which results from WP2, WP3 and WP4 were presented (see full description in Milestone 2). The project team showed that from the received 227 research questions at the start of the project, ACCREU had been able to address two thirds (158) in the work undertaken. The focus of this workshop was to consider co-delivery of results, connecting the outputs of the project to communication products in a scenario explorer and digital handbook and discussing how the results and tools could connect to end-users’ decision-making processes.

The other workshop held towards the end of the project was the reflexive co-creation workshop on the economics of transformational adaptation (Milestone 4) held on Tuesday 28th April 2026. This was a more expansive co-design workshop held with experts in the areas of climate adaptation and economics, and including academics as well as policy makers. The aim of this workshop was to apply an emergent form of co-design in which the boundaries of discussion were much more open. It included inputs from the perspective of the community working on transformation in adaptation as well as from economists, asking how these two perspectives could be brought together. Drawing on a preparatory ‘think-piece’, the discussions centred on collaboratively analysing use-cases and undertaking visioning exercises to develop a research agenda for exploring the economics of transformational adaptation. Full details of the discussion are reported in Milestone 4 and Deliverable 1.5)

2.2 Online ADT-workshops for thematic stakeholders

In ACCREU, 15 case studies were clustered according to seven **adaptation decision types** (ADTs) (see Figure 4). The research to understand these different ADTs was driven by a ‘policy-first’ (rather than ‘science-first’) perspective, i.e. focusing on real-world adaptation decisions and short-term policy, rather than adaptation to future climate change in the 2050s. The goal was to support stakeholders to make informed decisions on climate adaptation within the domain of their ADT, using project insights from the economic appraisal of adaptation strategies and to develop an understanding of barriers and opportunities for implementation. To this end, seven online ADT workshops were held approximately at the mid-point of the project and provided an opportunity to bring together thematic stakeholders around a particular topic or sector. Participants reflected on the research conducted so far and exchanged information about the challenges, barriers and enabling factors in each ADT. A full account of the ADT workshops can be found in Milestone 3 and Deliverable 1.4. The results of the ADT analysis are reported in Deliverable 3.2 and Policy Brief 3.

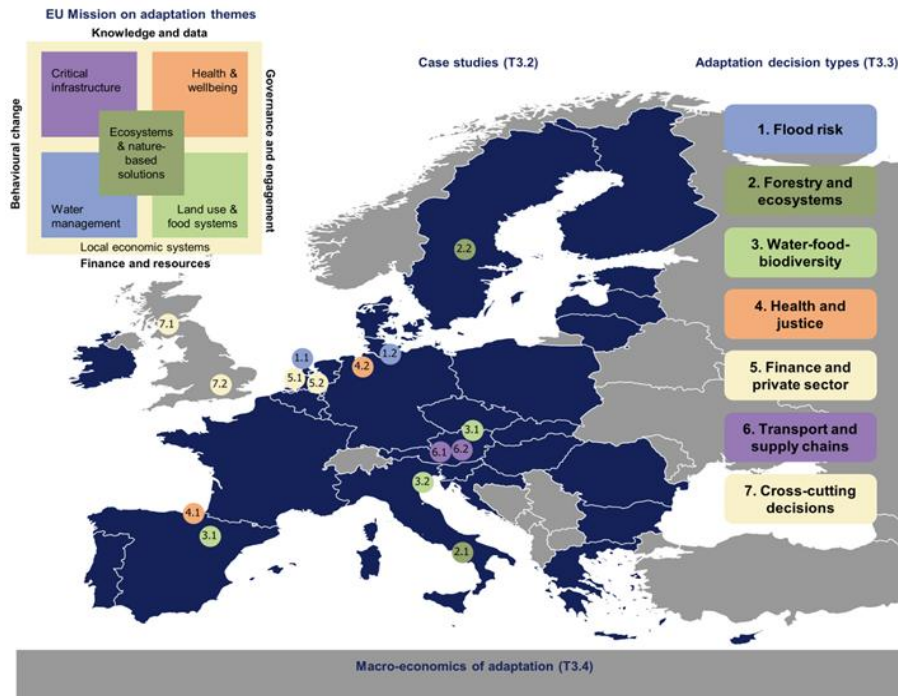


Figure 4: Map showing location and themes of ACCREU case studies and adaptation decision types (ADTs)

2.3 Bilateral meetings with deep engagement stakeholders

Much of the co-creation process took place through bilateral meetings with ‘deep engagement’ stakeholders who had been contacted during the proposal phase and early stages of the project and had a continuous engagement with members of the ACCREU team. These deep engagement stakeholders had indicated interest in collaborative development of a particular line of research relating to one of the project’s seven ADTs. In total, there were 15 case studies taken forward (~two per ADT), for which at least one deep engagement stakeholder was identified and a ‘relationship manager’ allocated. Initial face-to-face bilateral meetings were held in each case to define specific stakeholder interests and needs and to match these with research interests, agreeing on a plan to co-produce the case study research within the boundaries and work plan of the project.

Relationship managers were responsible for maintaining regular contact and exchange to facilitate the development of the research. This ensured that the project was producing outputs that had the potential to be directly taken up by end-users and their organisations. Bilateral meetings were monitored on an annual basis through surveys, a consortium tracker and discussions at project meetings, but their frequency and format were tailored by the relationship manager to meet the needs of each context. This meant that in some parts of the project e.g. where the research was being co-designed, or where data was required, exchanges were more frequent. In other parts of the project e.g. when modelling was taking place, there was less need for discussion. Nonetheless, relationship managers were expected to have regular contact (either by in-person or virtual meetings, email

contact or phone calls) at least every six months to support a productive working relationship. In these meetings, relationship managers shared interim results and discussed challenges such as access to data. At these meetings (of which there were a minimum of three per ADT), opportunity was given for example for stakeholders to share policy-relevant developments and researchers to clarify questions arising from the research.

Overall, as part of this intensive case study work, and also capturing the engagement with WP2 and WP4 general stakeholders, ACCREU held **117 separate stakeholder meetings and events** (to September 2026). These interactions were tracked using the dissemination tracker and can be summarised as follows: meetings with international and national policy makers and authorities (n=34); meetings with regional and local policy makers (n=24); meetings with business and industry (n=15); meetings with NGOs and citizens (n=30) and meetings with the research community (n=14). This **far exceeds the anticipated number of meetings outlined in the DoA** (which included one initial, and two bi-lateral meetings for each case study, which would be 21 meetings).

3. Evaluation process for co-creation activities

To evaluate and improve the co-design, co-production and co-delivery activities in an iterative way, stakeholder and consortium feedback was gathered on a regular basis and in varying formats. The main elements of the evaluation process were surveys, feedback discussion at events and individual interviews. Table 2 provides an overview of evaluation elements used in ACCREU.

Table 2: Overview of evaluation inputs gathered during the ACCREU project

Collaborative process	Evaluation input	When gathered
Stakeholder workshop 1	Evaluation survey filled by workshop participants	January 2024
Online stakeholder workshops on ADTs	Evaluation surveys + feedback exchange for 7 online workshops	March – Sept 2025
Stakeholder workshop 2	In-person interactive ‘sailboat’ evaluation exercise and discussion	April 2026
Overall co-creation process and stakeholder engagement in the project	Annual check-in on research question progress with consortium	2024, 2025, 2026
	Annual evaluation survey with consortium	2024, 2025, 2026
	Final evaluation survey with stakeholders	July – August 2026
	Evaluation interviews with consortium	June – July 2026

During the first **in-person stakeholder workshop** a short feedback survey was designed to capture initial impressions of the project and its co-creation ambitions was filled by the participants. Open questions invited participants to reflect on the aims of ACCREU and its co-creation approach, as well as the formats used during the first workshop. The format was reflective and qualitative, prioritising open expression.

The seven **ACCREU online workshops** were accompanied by either a participant evaluation survey or open feedback exchange at the workshops themselves. The surveys asked respondents to summarise their general impression and to gather feedback about organisation and suitability of workshop content.

At the **final stakeholder workshop**, evaluation of the overall ACCREU co-creation approach was conducted in an interactive, in-person format. Using a retrospective exercise, stakeholders identified what they liked and went well within the ACCREU co-creation approach and what should be changed in future co-creation processes. In a parallel fashion consortium members also noted their feedback on the co-creation approach.

Additional **annual online evaluation surveys** on the co-creation process were conducted in the consortium (2024, 2025 and a final round in 2026), especially focusing on the relationship managers.

Questions covered the concrete activities undertaken with stakeholders, factors that had helped or hindered stakeholder relationships, anticipated case-study challenges, opportunities for impact such as integration of results into decisions, policies and publications, and overall attitudes to co-creation.

At the **annual consortium meetings** project partners were regularly asked to review the research questions from the first stakeholder workshop as a reminder of the stakeholder interests and to monitor progress towards meeting end-users' needs.

At the end of the project, a **final evaluation survey was implemented with stakeholders** to gather general feedback on the benefits and drawbacks of the co-creation process. Unfortunately, this survey received an extremely low rate of completed responses and has not been taken into account in this evaluation. **In-depth evaluation interviews** were conducted with members of the consortium that were highly engaged in the co-creation process to explore the impact that co-creation was seen to have had on the research agenda and knowledge produced. The interviews covered comparisons with earlier projects (especially COACCH) and recommendations for future projects taking a co-creation approach.

4. Evaluation results

In this section we discuss findings from the evaluation activities described in Section 3. The sub-sections are organised thematically and draw together results from surveys, regular discussions, workshop evaluations and interviews to present overarching insights on the co-creation process.

4.1 Engagement formats for collaborative research

In ACCREU several different stakeholder engagement activities have taken place. Key activities during the intensive **collaboration phase with the case studies** included face-to-face meetings with stakeholders – 58% of the consortium members held this type of meetings with their stakeholders. Virtual meetings or phone calls were used by 75% of the researchers involved in co-creation.

Regular topics of exchange in the case studies included:

- Co-design of research
- Joint case study work
- Data exchange
- Discussion / presentation of findings
- Integration of results in decision or policies / in reports

Engagement within the case studies moved from the exploratory phase in the beginning towards deeper collaboration over time. Co-design and data exchange was already a focus in the first year of the project, often beginning with online interaction and then developing towards in person meetings. The latter were seen to be particularly valuable for progressing the analytical process. Joint development of case study work and the presentation of results increased during project duration as substantive results became available to share only in the later project stages. The integration of results into decisions, policies or reports remained lowest throughout, which can be expected given that policy uptake often needs time beyond a project's conclusion.

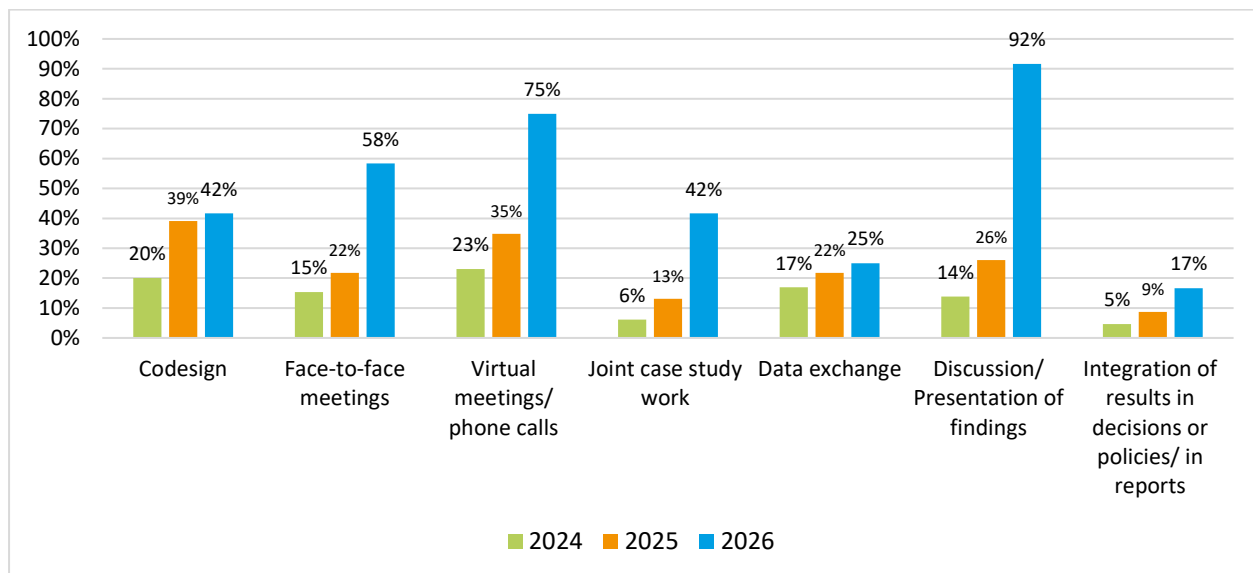


Figure 5: Stakeholder engagement activities undertaken by ACCREU relationship managers based on annual survey responses 2024-2026 (% of relationship managers undertaking each activity).

In addition to the bilateral meetings in the case studies mentioned above, the project consortium held a series of **online ADT workshops** (see discussion above and Milestone 3). Each workshop linked the work of two case studies and provided a possibility to exchange with a broader group of stakeholders. The evaluation feedback from these online ADT workshops showed them to be generally perceived as interesting, informative and of good quality. The thematic focus of the online workshops allowed project teams to bring together stakeholders with a specific interest or expertise in the topic under discussion. In the evaluation interviews, ACCREU partners highlighted the advantages of the online format: it facilitated participation from stakeholders across Europe and reduced the geographical barriers associated with larger in-person events. This was considered particularly valuable compared with centralised workshops in Brussels, where participation tended to be easier for stakeholders located in Belgium and neighbouring countries than for those travelling from more distant regions of Europe.

Experiences of individual ADTs also demonstrate the importance of tailoring workshop formats to the stakeholder context. For example, dedicated case-study workshops were deliberately kept relatively small and invite-based to create an environment in which key stakeholders were able to openly discuss specific and technical issues among colleagues and peers working on the topic. This points to a wider lesson emerging from the interviews with relationship managers that participant composition matters as much as participant numbers. Existing institutional relationships and power dynamics should be considered when designing workshops, as formal relationships between organisations, for example, between regulators and regulated organisations, may constrain open discussion in a multi-stakeholder setting. Depending on the purpose of the engagement, smaller or more targeted formats may therefore be more appropriate than large, broadly composed workshops.

At the same time, evaluations of participants attending these ADT workshops identified scope for improving the accessibility and concreteness of technical content. While discussions were valued,

some participants found parts of the workshops difficult to understand or insufficiently concrete, with presentations sometimes generating more questions. Language can add another barrier when technically complex climate adaptation topics are discussed in English with participants for whom English is not their first language. Future workshops could therefore benefit from clearer guidance for external speakers, more concise and concrete explanations of technical findings, and greater use of examples, figures, pictures and other visual material. These approaches could make complex modelling and adaptation research more accessible to participants with different disciplinary and professional backgrounds.

The experience also demonstrates that stakeholder interest can change considerably in response to external developments. Extreme events can create important windows of opportunity for engagement by increasing the immediate relevance of research. For example, the disruptive flooding in Lower Austria in 2024 was reported to have contributed to very high stakeholder interest in a subsequent ADT workshop addressing flood-related disruption to infrastructure. Maintaining sufficient flexibility in stakeholder engagement activities can therefore allow projects to respond to changing stakeholder needs and emerging policy windows.

A further lesson concerns the management of expectations. Larger, open workshops can generate a wide range of requests, ideas and expectations that cannot necessarily be addressed within the scope and timeframe of a research project or through the modelling approaches being developed. If these expectations are not clearly managed, stakeholders may perceive the project as insufficiently responsive even where substantial work has been undertaken on selected topics. Workshop organisers should therefore communicate clearly what stakeholder input can influence, what lies within the project's scope, and how contributions will be followed up. The evaluation also suggests that inputs should be interpreted in context: comments from stakeholders with sustained engagement or specific expertise may need to be distinguished from individual suggestions made during one-off participation.

Regarding **in-person workshops**, participants appreciated the collaborative atmosphere and opportunity to bring together diverse expertise and practical perspectives. Networking and exchange between stakeholders were seen as important benefits, alongside the opportunity to see different strands of the project and its results “coming together”. Participants particularly valued the integrated perspective connecting biodiversity, climate risk and modelling communities. This illustrates a complementary strength of in-person engagement: while online workshops can enable geographically diverse and targeted participation, in-person formats provide greater opportunities for networking, relationship-building and exchange across different communities. Overall, the evaluation supports the use of a mixed and purpose-oriented workshop approach rather than a single engagement format.

Targeted online workshops are particularly useful for engaging geographically dispersed stakeholders around specific technical or thematic questions, while smaller or invite-only formats can support more candid discussions where stakeholder relationships are sensitive. Larger in-person workshops are valuable for networking, cross-disciplinary exchange and integrating different strands of project work.

Bilateral-exchange is suitable for very focused discussions on certain thematic angles or linking to a specific location (in our project this was the case studies).

4.2 Managing stakeholder relationships

Each year, the ACCREU consortium was asked about the factors supporting their relationships with stakeholders. Three factors showed an increase over time. Common ground, which was defined as existing relationships and known connections, was the most frequently cited factor throughout and rose from 32% in 2024 to 83% in 2026. The sharing of interim findings and research outputs increased from 12% to 67%, and flexibility, such as adapting research questions and timelines, rose from 17% to 58%. These trends are consistent with the project timeline, as interim outputs became available to share and working relationships were progressively established. By contrast, shaping project activities to meet stakeholders' information and decision-making needs increased only modestly (15% to 25%), while the ability to dedicate time to regular communication declined slightly (20% to 13% and finally 17%). The “other” responses pointed to shared research interests and data needs, a common professional language, and the openness and enthusiasm of stakeholders with prior experience in European research projects.

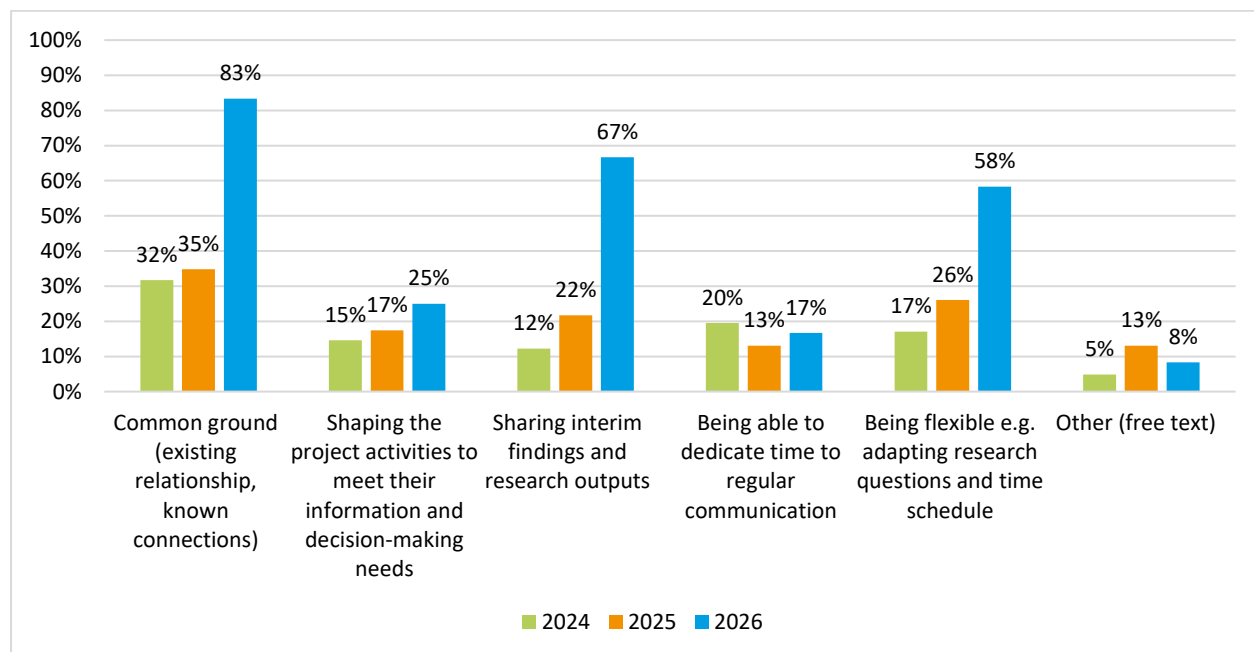


Figure 6: Factors supporting stakeholder engagement based on responses to annual survey by ACCREU relationship managers 2024-2026 (% of relationship managers citing each factor).

The survey results point to the importance of having a well-established relationship for facilitating collaboration and information exchange. In some cases, stakeholders were contacted in the proposal phase, whilst exploring ideas for the project, while in other cases, relationships already existed from previous projects. In both situations, interviewees highlighted that ACCREU **research had benefited**

from these relationships and established trust. ACCREU researchers detailed in interviews the diverse actions they had taken to support these relationships. General communication and exchange via email, meetings, workshops and invitations to external events were seen to aid the relationship. These general interactions were further strengthened through additional actions by ACCREU researchers. They made specific efforts to bring clear questions or results to meetings to maintain interest and ensure the stakeholders were not overburdened and saw the relevance of participating in the project. These researchers undertook actions to demonstrate their flexibility, tailoring research to the needs of end-users and providing specific results where requested. In this way, sensitive management of interactions at regular intervals can be seen as an enabling factor for building strong stakeholder relationships.

In some interactions, particularly in the co-design phase at the beginning of the project, emphasis was placed on guiding the general direction of the research, identifying areas of common interest. In other exchanges, particularly in the co-production phase, ACCREU partner-stakeholder interactions focused on exchange of sectoral expertise or access to data. Two ACCREU partners that were interviewed reflected on the ways in which stakeholders had to adjust to the idea that they were not a contractor but a peer, engaging in a process of shared learning. At the same time, the **strongly participatory set-up of the co-design process may have led to some unnecessary raising of expectations**; many of the stakeholder proposals gathered were beyond the scope of the models' capacities, data availability or the project's aims. Furthermore, ACCREU researchers had already, to an extent already identified research questions that were relevant and feasible in the project proposal phase. Navigating these differences of interest was a challenge that researchers and stakeholders had to negotiate together but which potentially could have been avoided by a different approach to co-design at the outset (see Section 4.1)

The ACCREU researchers surveyed and interviewed as well as the stakeholders consulted at the final workshop all acknowledged the benefits of engagement for developing relevant and interesting research, but also of the demands of this form of interaction. Done well, co-creation involved continuous engagement and commitment to the process from both sides. However, it cannot be expected that stakeholders are as engaged as a person employed to conduct research. The stakeholder is not remunerated for their time, and the work does not constitute a core activity in the same way as it does for project partners. In some situations, the relationship was not particularly productive and partners did not fully engage and/or did not have the right people on board or access to relevant data. One interviewee remarked that on one occasion, their stakeholder appeared not to remember the content of the collaboration. In general -as is the case in any multi-year project- it was clear that for all cases, turnover of staff and shifting priorities influenced stakeholder interest over time.

At times there was **not always a fully open information flow** from stakeholders to project partners about ongoing internal or political processes. Restrictions on availability and usage of data also meant that on occasion ACCREU researchers were forced to rely on assumptions (e.g., estimating costs from a cross-section image rather than real figures) for cost-benefit analysis. Oftentimes this lack of sharing was due to the stakeholder organisations' internal dynamics or political developments, rather than

any unwillingness at a personal level. However, while these dynamics did not necessarily compromise the relationship, they could at times be frustrating for researchers when data was not forthcoming but nor was there a full understanding of the factors impeding the flow of information. Other partners however, had extremely close relationships, including a case of office-sharing, which provided a positive atmosphere for information-sharing and trust-building, from which the research benefitted.

Regarding the interactions with stakeholders, several ACCREU research partners noted that holding group discussions could be difficult where those participating had existing relationships, hierarchies and interdependencies. **Uneven power dynamics between stakeholders** as well as more vocal or dominant personalities also had a bearing on discussions. In some cases this led to the case study being pursued in a particular direction that was of superficial interest to one stakeholder. To navigate these power dynamics, some research partners chose to hold meetings bilaterally to facilitate a more open and frank discussion about the direction and possibilities of the research. These bilateral settings also had the benefit of having greater levels of candour, although the confidential nature of some insights meant that these were not always possible to make use of in the research.

4.3 Opportunities for impact

The consortium was asked each year in the evaluation survey which opportunities existed for the impact of ACCREU results. The use of results in decision-making processes reached 67% in the last survey in 2026, integration of results into policy publications was possible for 58% of the consortium members, and half of the survey participants were able to develop joint knowledge products such as collaborative publications and media outreach. The concentration of opportunities for impacts in the final year is consistent, as results matured and pathways to impact became clearer.

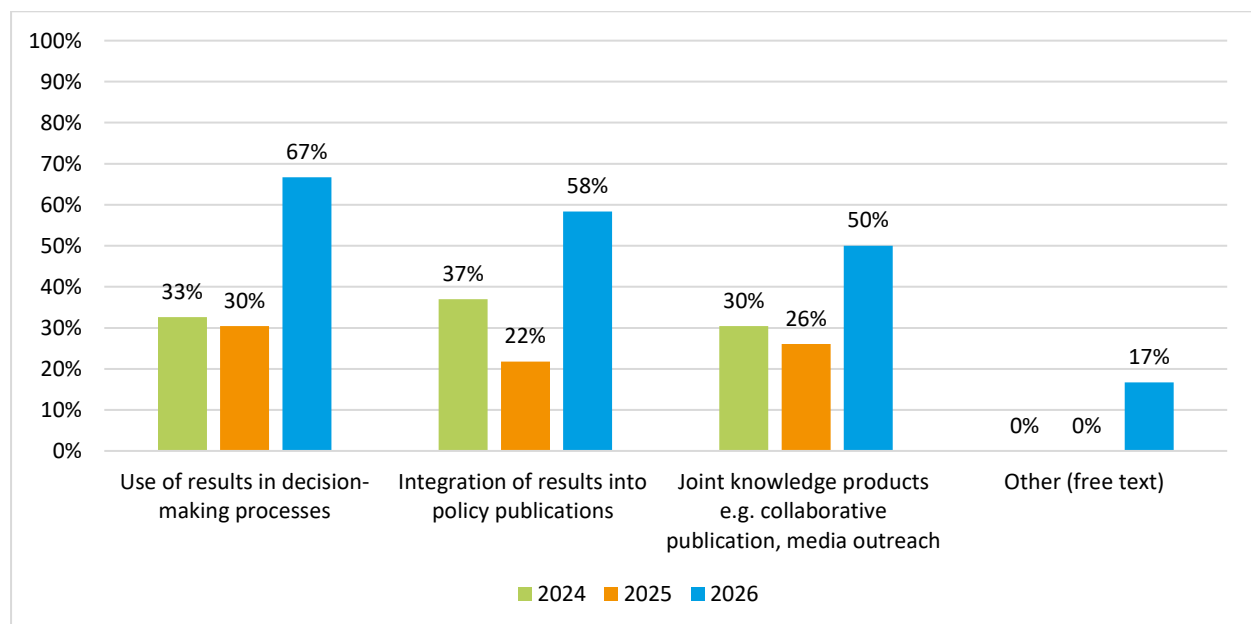


Figure 7: Opportunities for impact of project results (uptake and integration into decisions, policies, publications etc.) based on responses to annual surveys by ACCREU relationship managers 2024-2026.

The evaluation results indicate that **co-creation can strengthen the conditions for research results to achieve impact beyond the research community** and academic literature alone. In the final evaluation survey, the statement that co-creation improves the dissemination and communication of research results received an average score of 3.9 out of 5, suggesting relatively strong agreement among respondents. This could be based on developing outputs jointly with stakeholders, tailoring communication to specific audiences, building trusted relationships and responding to opportunities for policy engagement.

An opportunity lies in moving towards targeted and jointly developed communication products. Research findings can be translated into formats that better link to stakeholders' needs, such as policy briefs, presentations, visualisations, targeted workshops or contributions to existing stakeholder processes. **Jointly developed products may have particular potential for policy impact**, as stakeholders are requesting these products and are also involved in shaping these. At the same time, producing these additional formats can be resource-intensive, particularly where they are developed alongside mandatory project deliverables and academic publications. Sufficient resources for developing these products need to be considered as part of the research process rather than as an additional task at the end.

The project experience also highlights the importance of in-depth and targeted engagement compared to reaching out to larger groups. Case-study findings were sometimes shared directly with a relatively small number of individuals. While this may seem to limit the audience, strong one-to-one relationships developed through case-study work can build trust and create pathways into much wider professional and policy networks. **A small number of well-connected and highly engaged stakeholders may therefore generate greater opportunities for uptake** than a broad but comparatively weakly engaged community. However, this depends on stakeholders acting as intermediaries for developed products. Furthermore, the use of results within their organisations is often difficult for researchers to observe.

Another important pathway is responsiveness to policy windows and stakeholder demand. Opportunities for impact do not always correspond to the timing foreseen in a project's original work plan. They may emerge when a policy process starts, an extreme event raises attention or a stakeholder organisation has an immediate need for evidence. Participating in stakeholders' own meetings, presenting findings in existing policy processes or organising additional exchanges when interest is particularly high can considerably increase the relevance and visibility of research. The longstanding cooperation between the ACCREU team and the European Environment Agency has, for example, led to conversations about how to integrate the findings in the 2028 European Climate Risk Assessment (EUCRA-2). Allowing some flexibility in project work plans and resources can enable research teams to respond more strategically to these opportunities. An overview of the areas in which ACCREU has made an impact on European policy making is presented in

Table 3.

Table 3: Overview of policy impact of ACCREU research results

Area	Policy Impact
Government adoption	CS7.1/2 (UK): Fed into HM Treasury Spending Review (budget allocations), Office of Budget Responsibility fiscal report, Climate Change Committee CCRA4, citizen forums Oct 2025, Defra NAP4 development. Extensive national-level integration CS7.3 (Cyprus): Cabinet adopted revised National Adaptation Strategy autumn 2025. First-ever comprehensive cost assessment for Cyprus provided to the government. CS1.1 (Netherlands): Water board approved superdike design June 2025 for next planning phase
Government adoption (international)	International case study. Numbers from ACCREU fed into two global assessment reports the adaptation gap report 2024 and the adaptation gap report 2025), as well as providing data for the Independent High Level Expert Group on Climate Finance report. The ACCREU project is directly accredited in all reports. These results have, in turn, informed the global UNFCCC negotiations, with the study results on global adaptation costs cited in the UNFCCC Baku to Belem Roadmap to 1.3 Trillion.
Perspective shifts	CS1.2 (Germany): Helping regional stakeholders and planning bodies consider nature-based and hybrid solutions as viable components - shifting perception from grey-only to NBS. CS4.2 (Bremen): Drew attention to ways adaptation may overlook social justice dimensions"- developed monitoring indicators for equity.
Validation and guidance	CS2.2 (Sweden): Direct economic guidance to forest owners: fire-resistant trees + firebreaks most cost-effective. CS3.1 (Ebro): Validated current planning to restrict irrigation withdrawal. CS5.1 (Netherlands): Ongoing DNB collaboration - "learning process for developing further scenarios" for financial risk
Knowledge to practice	CS5.2 (Netherlands): Insurers: "workshops link knowledge to practice, ensuring insights take root" CS3.2 (Venice): Improved WWF understanding of climate-vulnerable zones, will support management strategy CS2.2 (Sweden): Direct economic guidance to forest owners: fire-resistant trees + firebreaks most cost-effective.

Finally, the evaluation suggests a need to adopt a broader and longer-term understanding of research impact. Uptake may not happen such that a specific tool, research results or recommendation is directly implemented during the lifetime of a project. Instead, findings can influence how stakeholders understand a problem, frame future decisions, develop policy options or assess evidence at a later point. These indirect forms of influence are difficult to capture through conventional project monitoring and require some follow-up assessments beyond the immediate delivery of outputs.

4.4 Feedback on co-creation as a whole

In the final annual survey, consortium partners were asked to reflect on their overall perceptions of co-creation as experienced in the ACCREU project. Figure 8 depicts responses to positively formulated statements about co-creation, which on a scale of 1 (disagree) to 5 (agree) received a generally high score from respondents. Agreement was strongest for adding value and overall impact (M (mean) = 4.4), improving the relevance of outputs for uptake (M = 4.3), and enhancing research quality (M = 4.2). Fostering collaboration and improving dissemination were also rated positively (both M = 3.9). Endorsement was weaker and more dispersed for co-creation's ability to increase transparency (M = 3.1) and the distinctiveness of co-creation as a methodological approach (M = 3.2), indicating these two points were less consistently experienced as benefits of co-creation.

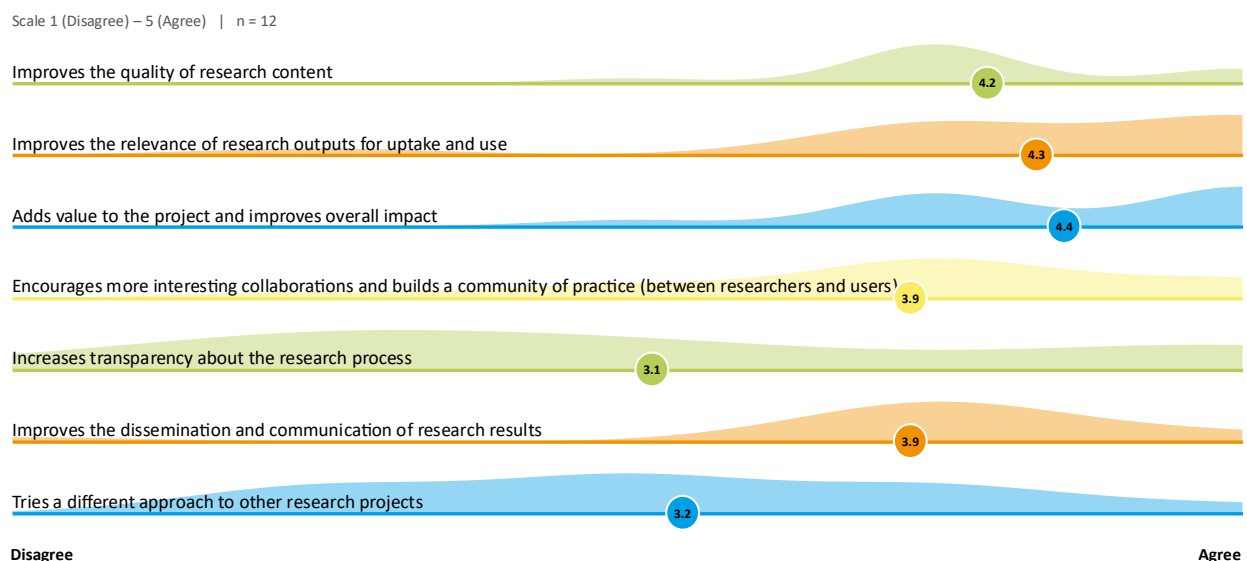


Figure 8: Benefits of co-creation in ACCREU based on results from a 2026 survey with the ACCREU consortium

Potential challenges or criticisms received lower agreement and were more variable, indicating that co-creation was not widely regarded as problematic. The clearest concern was keeping stakeholders engaged over the project duration (M = 3.8), followed by difficulties executing co-creation within modelling work (M = 3.3). Knowing how to engage stakeholders (M = 2.8), resource intensity (M = 2.7), and conceptual difficulty (M = 2.2) drew limited agreement or a wider spread in the answers, implying that these were not generally perceived as challenges. Respondents clearly rejected the

statement that co-creation is non-essential (M = 1.7), affirming its perceived value to the research process.

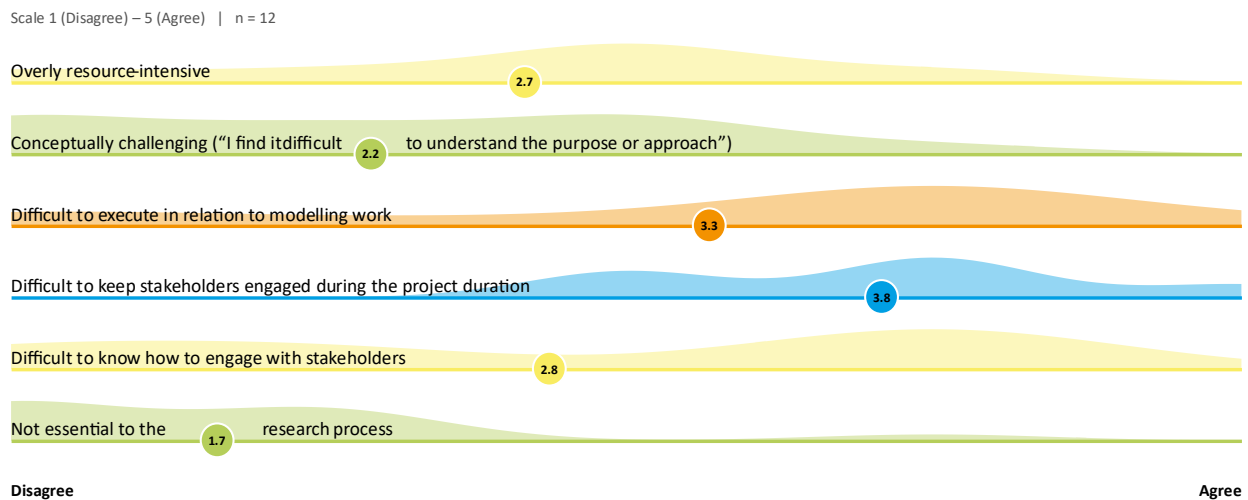


Figure 9: Challenges of co-creation in ACCREU based on results from a 2026 survey with the ACCREU consortium

During the final stakeholder workshop stakeholders and the project partners also had the opportunity to reflect on the overall co-creation process through an interactive exercise (see Figure 10). As this interactive analysis found that the research team viewed the project's co-creation approach positively, emphasising that stakeholder engagement improved the relevance and practical orientation of the research. Researchers noted that interactions with stakeholders helped identify additional research questions, clarify adaptation challenges and open new perspectives for future research. The combination of online and in-person workshops and case study interactions were considered insightful for identifying research and policy gaps, while discussions with stakeholders helped researchers frame and communicate their findings more effectively. The team also appreciated that stakeholders were open, engaged and willing to contribute throughout the process. Several researchers highlighted that co-creation helped clarify the target groups for the research and strengthened the connection between scientific work and policy questions, ultimately supporting adaptation decision-making and its implementation at the community level.

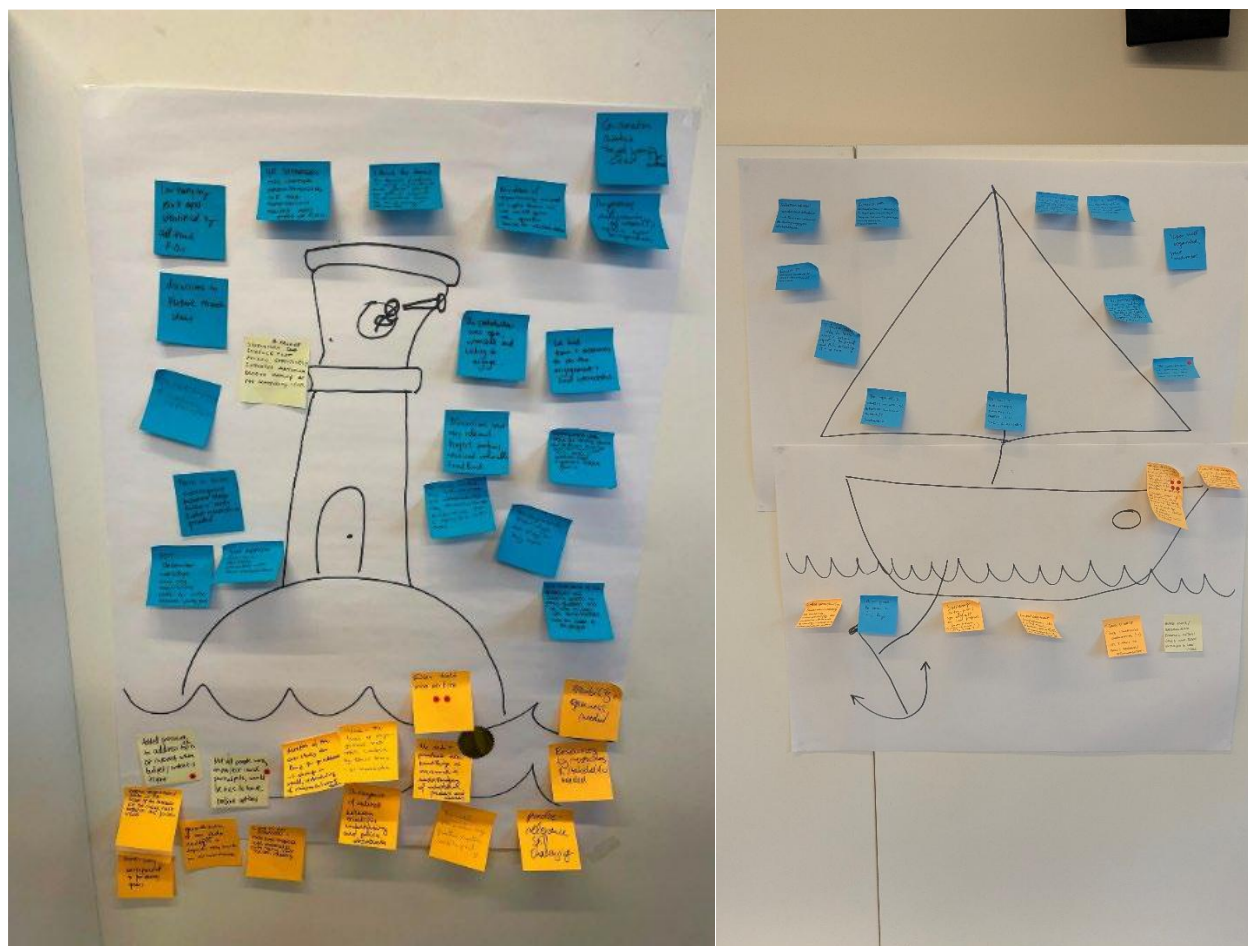


Figure 10: Posters from the ACCREU workshop in April 2026 showing an interactive feedback exercise with stakeholders about co-creation.

At the same time, the **research team identified several challenges** related to the co-creation process. Researchers noted that translating case study findings into more general conclusions remained difficult, as results strongly depended on local contexts and circumstances. This was further challenged by the limited participation from local and regional stakeholders compared to EU-level actors at the in-person workshop in Brussels. Time and resource constraints affected both researchers and stakeholders, while long case study durations sometimes created difficulties for practitioners due to staff turnover and changing institutional responsibilities. Some researchers felt that due to project processes, e.g. having to already pre-define research activities in the proposal, meant that stakeholder input could not substantially influence the project design or research scope. Researchers also highlighted tensions between scientific objectives and policy expectations. Additional challenges included the need for flexibility and openness in the process and the continuing difficulty of ensuring strong practical relevance of research results.

Moving to the stakeholders who had participated and been the beneficiaries of ACCREU research, their **feedback on the co-creation process was largely positive**, highlighting the project's strong

organization, open discussion and interdisciplinary exchange. They noted their appreciation for the focus on social justice and distributional issues, the timely emphasis on quantitative adaptation analysis and the use of real-world case studies that connect research to current policy needs. The online and in-person workshops were described by stakeholders as scientifically strong, while informal interactions between researchers and policy makers were seen as especially valuable for gaining new perspectives and fostering mutual learning. Stakeholders also valued the openness and reflexivity encouraged throughout the discussions, especially mentioning the reflexive forum.

At the same time, **stakeholders identified several areas for improvement**, such as having more opportunities for deeper discussion due to covering less topics in the workshops. Stakeholders were interested in the process of how previous feedback had influenced the research. Stakeholders also suggested providing more concise summaries in policy briefs including separating out which elements of the findings were novel, which were confirmation of existing knowledge or revisions to what was previously known. Furthermore, a closer engagement with EU Mission platforms and related initiatives to enhance impact and uptake was mentioned.

During interviews, several research project partners remarked on the importance of careful consideration about who is participating in which workshops. By inviting a large number of generally-interested participants to contribute to research topics, the resulting agenda can be subject to a level of ‘wish-listing’ as demonstrated by the extremely high number of research questions (n= 227) resulting from the first workshop. The research team did their best to respond, and by the end of the project, had managed to address 158 of these questions. The main reasons why questions could not be considered were that appropriate methods and models were not available within the project or in general; that the assessment would be too resource and time intensive for ACCREU; or that the research questions were considered in other projects and that the questions are beyond the topic-wise scope of project.

That the ACCREU team was successful in covering so many research questions would under other circumstances have been understood as a considerable achievement. However, because the co-design exercise in the first workshop was conducted with many stakeholders who were non-specialists, some of the suggestions may have been based on unrealistic ideas about the ways in which models run and the results they can deliver. Other suggestions may not have been particularly relevant to the research agenda agreed with the European Commission through the DoA for ACCREU. In this way, co-design can at times lead to unnecessarily high expectations about what the project was intended to and able to deliver and may have been responsible for occasional questioning of researchers’ efforts to respond to stakeholder demands.

An important finding was that the targeted discussions during bilateral exchanges and ADT virtual workshops were seen to lead to more productive interactions. Most research partners favoured the idea of co-designing research through targeted sectoral inputs from smaller groups of expert stakeholders. Furthermore, the feedback from interviewed members of the research team suggested that online exchanges were a better way of reaching relevant users of the research in contrast to Brussels-based workshops. In the latter, although face-to-face interactions produced lively discussion

and more members of the European institutions could easily join, the discussions did not always profit from the perspectives of local authorities involved in implementation of adaptation or private sector actors based outside of western Europe.

5. Summary and discussion

The lessons from ACCREU demonstrate that bounded, instrumental co-creation can provide a useful scaffolding, particularly for research teams who are not used to stakeholder engagement. The process acts as an ongoing reminder that researchers should develop their work with a consistent attention to stakeholder interests, especially where they seek to have impact (in addition to academic contributions). By keeping the end-user of the research in mind, projects like ACCREU have the possibility to support more effective uptake of the results produced. At the same time, a consistent theme across the evaluation was the amount of effort required to make co-creation work in practice. The evaluation demonstrates that effective co-creation is not achieved simply by involving more stakeholders or organising more engagement activities. Its value depends strongly on selecting appropriate stakeholders, choosing engagement formats suited to the purpose, maintaining relationships over time and clearly defining what stakeholder input can realistically influence. A central finding is the value of a mixed and purpose-oriented engagement approach. Different types of formats have different advantages, e. g. bilateral meetings supported detailed case-study collaboration, data exchange and discussion of technically complex issues, while larger in-person workshops had strengths linked to networking, interdisciplinary exchange and bringing together different strands of project work.

The evaluation also shows that the quality of stakeholder relationships is fundamental to productive collaboration. Existing relationships and trusted contacts became increasingly important over the course of ACCREU. The successes in research relationships built during ACCREU appear to have been based on responsiveness, willingness to adapt and moving with the stakeholders' interests while maintaining a balancing act in order to progress the research at the same time. This form of activity requires tact and understanding on both sides and here, it would seem, the most important factors for success are maintaining transparency around the development of the research and managing expectations. However, stakeholder engagement inevitably varied over time because of limited capacity, staff turnover, changing priorities, data restrictions and internal organisational or political developments. Above all, it should be understood that developing and following a co-creation protocol is not in-and-of itself sufficient: rather it is through the concerted efforts of individuals to keep stakeholders engaged that working relationships are built that sustain co-creation.

While it is positive that many researchers in ACCREU were able to build these relationships, this finding points to the high level of additional resources needed in co-creation projects and the mixed results that broader engagement actually brings. In certain country or subnational contexts, where engagement with scientific research and/or the topic of climate change is less widespread, even greater effort is needed from the research team to conduct advocacy work and capacity building. Differences in stakeholder type also have an important bearing on the level of interest and willingness or ability to share data and information. This sharing of information can also be compromised if care is not taken about the context in which communication is taking place. Experiences from the ACCREU research team show that formal relationships and dependencies can lead to caution in group discussions about the research. Consideration is thus necessary to decide which stakeholders to

engage with, where and what kind of context and support they may need to feel comfortable with the co-creation process.

ACCREU demonstrates the importance of carefully defining the scope of co-design and managing expectations. Broad co-design exercises generated many useful ideas but also resulted in research requests that could not be addressed because of methodological limitations, data availability, project resources or the agreed research scope. More targeted engagement with smaller groups of stakeholders possessing relevant expertise was often considered more productive. Co-creation should therefore be transparent about which elements of the research remain open to influence and what constraints already exist. This is particularly important in research projects where substantial elements of the research design have already been defined during the proposal stage. Furthermore, the results of a large research project such as ACCREU can be relatively academic and not necessarily actionable on the ground. Technical modelling and climate adaptation research can be difficult to communicate across disciplinary, professional and language backgrounds. Stakeholders therefore mentioned the usefulness of more concise explanations, concrete examples, visual material and policy-oriented summaries.

The evaluation further indicates that co-creation can create important pathways towards research impact. Opportunities for using ACCREU results in decision-making, policy publications and joint knowledge products became particularly visible towards the end of the project as results were available. But the impact that research can have is often diffuse (though this applies to many research projects). A three-year research project can mean that at some point in the time-span, there is a window of opportunity in which results can be influential and taken up in policy analysis and decisions. However, particularly with projects where results rely on models, it can be challenging to have interim results ready to present so as to maintain stakeholder interest. This can lead to periods where there is less communication with stakeholders, which can lead to a drop in interest from these end-users. For this reason, it is important to pair co-creation activities with an effective communication strategy that shares insights from other parts of the project through webinars and other forms of dissemination to maintain stakeholder engagement. Furthermore, impact should not be limited to observable uptake of a specific result during the project lifetime. Research may also shape how stakeholders understand problems, frame future policy options, assess evidence or connect with relevant research communities.

Overall, the evaluation results support the idea of a pragmatic and flexible approach to collaborative research. Co-creation was perceived as valuable by both researchers and stakeholders. Its effectiveness depended not so much on the ability to apply a fixed methodology but rather on the ability to establish appropriate relationships and the ability to adapt engagement to changing circumstances.

6. Reflections on the co-creation protocol

The co-creation activities undertaken in ACCREU provide an opportunity to reflect on how established principles for reflexive and bounded co-creation translate into practice in a large European research project. The principles developed by Watkiss et al. (2025) provide a useful framework for this reflection, covering the design and management of the process, stakeholder selection and inclusion, responsiveness to user needs, joint knowledge production and iterative learning.

The bounded co-creation in ACCREU supported the definition of research priorities of the project, focused on the collaborative case studies and communication of its results towards the end. Table 4 assesses the extent to which these principles were confirmed through the ACCREU experience and identifies practical lessons and examples of good practice emerging from their application.

Table 4: Reflections from the practical implementation of the principles for bounded co-creation developed at the outset of the ACCREU project

Principles for bounded co-creation (from Watkiss et al. 2025)	Lessons learned in ACCREU	Best practice examples from ACCREU
1. Process orientated , recognizing the process is as important as the outputs. Clearly defined and well-structured processes and outcomes increase the likelihood of stakeholder engagement and ownership.	Process is important but should be adjusted to meet the individual needs of each stakeholder. Cultural and sectoral context affect willingness to engage in processes of scientific co-creation. This context has a bearing on who can be engaged with and with which frequency.	Prepare a plan and structure for co-creation at the project beginning, Review once or twice a year to reflect if adjustments to formats or timing are necessary. In ACCREU for example, the timing of online workshops was delayed in order to be able to present more results, while another workshop was brought forward to meet stakeholder needs.
2. Objective and outcome-led , with clearly identified roles and responsibilities. The literature recommends that the roles and responsibilities of all participants are mutually understood and agreed upon. Goal setting and role identification should happen early in the process to foster effective collaboration.	This principle was confirmed in ACCREU – having early and frequent conversations with stakeholders supported the co-creation of the research.	Having dedicated relationship managers was important in providing a clear contact point for communication and work with stakeholders. The relationship managers were encouraged to have conversations about objectives and outcomes of the project at the outset.
3. Targeted, ensuring representative stakeholders are involved . There is a need to limit the number of actors to keep the process manageable, but it is	Having representation is important, but more specifically there is a need to ensure that the selected	The number of participants of events (in-person and online) were kept to a manageable number of participants, so that interactive discussions could be

important to include a representative selection of stakeholders with different perspectives included.	stakeholders have the knowledge and capacities to engage with the activities they are invited to contribute to. Having more than one contact person per institution is useful to help with continuity in case of changing staff availability.	accommodated. A range of online-workshops were offered to cover specific sub-topics from the project (Adaptation Decision Types) bringing in smaller groups of specialist interest groups together.
4. Transparent and inclusive , to allow alternative views. The literature stresses that co-design processes have to be built for inclusivity and creativity, not just for efficiency and effectiveness. The success of joint knowledge production will be enhanced if different perspectives of stakeholders are recognized and respected.	Different views are valuable but to keep discussions focused and time-efficient for participants, exchanges should be accommodated in separate formats.	Larger workshops brought together a wide range of views and frequent check-ins with the research team ensured that research progress could be transparently followed and reported back to stakeholders.
5. Time managed , with enough time, resources and facilities to deliver the process. The literature reports that co-creation demands significant time and effort, and it recommends that projects allow sufficient time for the process, including time and resources maintaining relationships with stakeholders.	Maintaining relationships requires considerable personal effort from the research team. Bilateral meetings and focused thematic workshops were an effective and time-efficient way to integrate views in the development of the work.	A significant amount of the ACCREU budget was dedicated to co-creation. Partners selected their case studies based on pre-existing relationships. Team members with experience in stakeholder engagement were involved to manage co-creation.
6. User and decision orientated , with the aim to meet user needs and produce information of relevance for decisions and decision makers, while managing expectations.	Opening up all research topics to discussion can lead to high expectations, which may not be possible to meet given available methodologies, models and resources.	Prioritisation (rather than full definition) of research questions at the beginning of the project to integrate stakeholder views and decision context.
7. Joint product orientated , using outputs to build the engagement and co-production process. The review of good practice in co-production highlights that successful co-production often has an emphasis on producing joint outputs, such as joint knowledge products.	ACCREU developed joint knowledge products in the scenario explorer and the digital handbook, but these came rather late in the project. For this reason, the early production of policy briefs and activities to feed research into case study work at an early stage were of particular importance.	Different joint knowledge products were developed to cater to the needs of individual stakeholders, e.g. summaries of case studies or national/regional data as input for a certain national assessment.
8. Iterative , with an ongoing process of review, learning and update	The experiences of ACCREU support this principle.	Relationship managers were regularly reminded to engage with their

throughout the project. Co-creation should be seen as an ongoing and collaborative process. Adjustment may be needed, especially when stakeholders work together for the first time. Regularly reviewing the process, including research assumptions, criteria, methodologies, ensures the usability of outputs. The literature highlights that there is a need for monitoring, evaluation, and learning (MEL) to support the iterative approach.	Evaluation of co-creation was an important marker, to regularly reflect on how processes were running, identifying barriers and management strategies to improve the co-creation process.	stakeholders and to report back on this engagement. Annual evaluation surveys with consortium were used to flag any emerging stakeholder management issues. Project meetings were used to share experiences and crowdsource ideas of how to address challenges.
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Overall, the ACCREU experience broadly supports the principles laid out at the outset of the project while also showing that they should not be understood as a fixed blueprint for stakeholder engagement. Co-creation needs to remain flexible and proportionate to the research activity, stakeholder capacities and interests, as well as the institutional, sectoral and cultural context. This is particularly relevant in a project involving different local/regional case studies, methodological approaches and national contexts, where the appropriate intensity and format of engagement can vary considerably.

7. Lessons learned and recommendations for research co-creation

The following lessons learned build on the experiences and evaluation of co-creation activities in ACCREU and are based on the reflections on principles and identified best practices. They highlight practical considerations for designing collaborative research that is relevant to stakeholders, feasible within research projects and can better position research to increase the uptake and impact of results. We have structured the lessons learned around the three different phases of co-creation.

7.1 Co-design

Lesson learned 1: It is important to be aware of the limits to stakeholder participation

Stakeholders' institutional role, interests, expertise, influence, access to relevant data and capacity to engage had an important effect on their ability to contribute to ACCREU. Engaging with stakeholders who can interact in a meaningful way is particularly important for technically demanding activities such as economic modelling, where stakeholders need sufficient interest to invest time in understanding the methods as well as sufficient expertise to be able to interpret the results. Experiences in ACCREU highlighted the importance of choosing the right stakeholders for the planned engagement, ensuring that they understand what type and level of input is expected from them, how their contributions will be used, and which decisions ultimately remain with the research team or are constrained by the project design.

Recommendation 1: Be purposeful about who you engage with, as well as how and when

Clarify aims of co-creation activities and research activities that stakeholders can meaningfully contribute to, using this to define the profile of stakeholders to engage with. In the case of projects with similar topics to ACCREU, a close link to the policy process, detailed knowledge of economic assessment and models and data access would be key criteria for selection.

Lesson learned 2: Strong stakeholder relationships are beneficial to uptake of the research

We found there to be higher uptake and engagement where there were established contacts with stakeholders. Informal interactions to maintain interest and build trust in a longer-term context were seen to be particularly beneficial for co-creation process e.g. ensuring that as one project finishes (e.g. COACCH) to carry on the relationship to help subsequent engagement (e.g. in ACCREU). At the same time, many new stakeholders were brought into the project by targeting specific end-users for whom the results were seen to be of interest e.g. economic leads in specific European or national institutions.

Recommendation 2: Invest in building long-term relationships across projects

Take a mid- to long-term perspective on stakeholder relationships. Invest time in developing relationships at the project start, in person meetings are recommended. Then build on these relationships by actively communicating e.g. about events or new publications across different projects to maintain interest and build trust.

Lesson learned 3: Overly broad stakeholder engagement can divert attention from core research

At the start of the project, ACCREU engaged widely with stakeholders. However, in practice, this meant that a number of proposed research questions were not necessarily well-suited to the scope of the project. In contrast, when the teams began to work on the case studies, smaller collaborative research specific research questions emerged that were more relevant to both researchers and stakeholders, with a clear pathway for uptake of results. It was also felt by the research team that stakeholder influence should be proportionate to their role, expertise and level of engagement. Inputs generated through broad workshops can be valuable for identifying perspectives and ideas, but should not automatically carry the same weight as knowledge generated through sustained collaboration with stakeholders closely involved in the issue. Working intensively with one or a small number of well-matched stakeholders on a concrete problem was seen to be more productive and beneficial to all parties.

Recommendation 3: Start with concrete, mutually relevant collaborations and build from there

Balance stakeholder inputs according to their expertise, role and depth of engagement, while using wider exchanges to complement rather than replace sustained closer collaboration. Start co-creation with a small number of well-matched stakeholders around concrete relevant research questions and use this as a foundation for broadening engagement in later stages of the co-creation process.

7.2 Co-production

Lesson learned 4: Researchers need to engage regularly and adapt engagement plans

Co-creation should be understood as an ongoing and iterative process rather than a series of isolated consultation points. Regular exchanges allow researchers to understand changing stakeholder needs, policy developments and emerging priorities and where feasible, adjust research activities or timelines accordingly. Those researchers who remained informed about relevant political and institutional processes and were able to adapt engagement activities, outputs and timelines to windows-of-opportunity increased their impact substantially. This requires some flexibility in project budgets and work plans within the limits of the work plan developed in the project proposal phase.

Recommendation 4: Build in flexibility to be responsive to political and institutional realities

Treat co-creation as an iterative process and build flexibility into engagement activities from the outset, while recognising the constraints of formal project structures. Where work plans and budgets cannot easily be adjusted, use flexible formats and timing within existing tasks to respond to changing stakeholder needs and policy opportunities.

Lesson learned 5: Engagement can be interrupted by factors outside of the project's control

Over the course of three years of engagement, collaborative activities were affected by practical constraints, including delays in receiving data, limited stakeholder availability, competing priorities, changing responsibilities and personnel. At times, these factors interrupted engagement and led to dependencies that were difficult for research teams to control. Researchers tried to mitigate these circumstances through maintaining contact and involving others from the same organisation.

However, the engagement process could have benefited from stakeholders communicating dependencies and upcoming decisions to allow delays to be anticipated and mitigated.

Recommendation 5: Plan for practical constraints to ensure continuity

Anticipate practical constraints from the beginning by establishing simple communication and progress-tracking mechanisms to inform about delays and constraints. Where possible, involve more than one person from a stakeholder organisation to reduce reliance on individual contacts and overcome bottlenecks, as well as provide continuity when responsibilities change and retain knowledge within the organisation.

Lesson learned 6: Honesty about limitations is essential to effective co-production

Due to the open approach to stakeholder involvement in the co-design phase, it is possible that expectations around the research were raised unnecessarily. Once researchers and stakeholders entered the co-production phase, this may have led to some differences in expectations around what it is possible to deliver, which methodological options are available and where important limitations and uncertainties remain. This is particularly important to consider in the context of modelling activities, where stakeholders without modelling backgrounds may have expectations that exceed what can realistically be produced with the available data, methods, resources and project timeframe. Being transparent about these constraints early on can help avoid misunderstandings and support more focused discussions about where stakeholder input can add most value.

Recommendation 6: Be transparent about the scope and boundaries of the project

Establish a shared understanding of the scope and expected outcomes of co-creation at the beginning of the collaboration and revisit these expectations at key stages. Be transparent about what stakeholders can influence and about methodological, data and project constraints that limit what the research can deliver.

7.3 Co-delivery

Lessons learned 7: Communicating complex research requires a range of targeted products

There is no single appropriate form of communication, even within a relatively defined audience such as policy-makers. Different users require different levels of detail depending on their role, expertise and intended use of the information. The ACCREU team often adapted knowledge products to support these differing needs and found that a layered approach to information sharing was valuable. Very short policy briefs e.g. 2–4 pages can communicate key messages, raise awareness and encourage stakeholders to engage with the research. More detailed technical policy briefs or synthesis reports e.g. 10–20 pages can provide the evidence, methodological explanation and policy implications needed by stakeholders who want to use the findings in decision-making. These can be complemented by detailed scientific reports, data and tools for more specialised users. The appropriate mix of formats should therefore reflect both the target audience and the purpose of communication. Technical findings were translated into concise, accessible and targeted communication formats tailored to stakeholder needs. Clear key messages, examples, figures and visualisations were developed to help communicate complex methods and results, particularly where participants have different levels of technical expertise or are working in a second language. Practical

relevance is equally important. For policy and decision-makers, communication aimed to distil what the findings mean for relevant policy choices rather than expecting users to derive these implications from detailed scientific outputs themselves. Efforts have been made to discuss tools and models in relation to concrete adaptation measures, policy choices and existing decision-making processes. Demonstrating how a new approach can complement stakeholders' existing tools, data and institutional procedures was positively received and is likely to support uptake more effectively than if it had been presented as a separate or competing system.

Recommendation 7: Use a layered approach, with a range of knowledge products for different users

Use a communication approach that combines short, accessible products for communicating key messages with more detailed technical material for stakeholders who need to apply the findings. Tailor the level of detail, language and format to different user groups, and clearly connect research outputs and tools to concrete policy choices, adaptation measures and existing decision-making processes.

Lessons learned 8: Research impact follows different pathways and timescales

Collaborative research can improve the relevance of research questions and outputs, strengthen communication and mutual understanding, and create opportunities for research uptake. However, collaboration cannot guarantee that stakeholders will use project results or that observable policy impacts will occur during the project lifetime. Uptake is influenced by many factors beyond the control of a research project, including political priorities, institutional responsibilities, available resources, decision-making cycles and wider policy developments. A lack of immediate uptake should therefore not necessarily be interpreted as a failure of the collaborative process. Impact may instead emerge indirectly or at a later stage, for example when stakeholders draw on research findings in subsequent policy discussions or decisions. Relationships and mutual understanding developed through co-creation can themselves provide an important foundation for future knowledge exchange and collaboration. Success should therefore not only be measured by immediate uptake, but also by whether collaboration has strengthened relationships, improved mutual understanding, produced relevant knowledge and established pathways through which research can inform future decisions.

Recommendation 8: Take a mid- to long-term view on research impact

Assess the success of collaborative research beyond immediate policy uptake. Evaluation should also consider intermediate and longer-term outcomes, including strengthened relationships, mutual learning, the relevance and usability of knowledge produced.

7.4 Overarching insights for co-creation

Lessons learned 9: Engagement formats are not one-size-fits-all

There is no single engagement format that is appropriate for all stages or objectives of collaborative research. For relationship-building and in-depth technical exchange, bilateral or small-group meetings can be particularly valuable. They provide space to build trust, understand stakeholder needs and discuss complex methodological questions in detail. This is especially important for activities such as economic analysis and modelling, where stakeholders need sufficient time to understand

assumptions and methods, ask questions and jointly interpret results. For broader exchange and integration of perspectives, workshops can be more appropriate. Larger in-person workshops can bring together different perspectives, facilitate networking and support collective discussion. However, they need to be carefully focused to avoid overwhelming participants with too much content or leaving insufficient time for meaningful interaction. Online workshops can provide a more accessible option for geographically spread stakeholders and discussion have a clearly defined thematic focus. For regular communication and maintaining momentum, shorter bilateral or online exchanges can be sufficient. These can be used for updates, feedback on interim results and agreement on next steps without requiring the time and resources associated with larger meetings.

Recommendation 9: Be selective about formats and choose according to purpose, complexity, needs and capacities

Select engagement formats based on the purpose, complexity and stage of the collaboration rather than aiming to use all available formats. Prioritise smaller, sustained exchanges for relationship-building and complex technical discussions, broader workshops where multiple perspectives add value and shorter online interactions for regular communication and targeted feedback.

Lessons learned 10: Co-creation protocols can guide but require adjustment

Conceptual frameworks and co-creation phases can provide useful guidance for structuring collaborative research, but in practice co-creation rarely follows a common process. Different stakeholder relationships may start at different points or require different forms and intensities of engagement. Some stakeholders may be closely involved in defining research questions, others in interpreting results. The type of engagement approach will also vary between institutional and national contexts. Stakeholders may range from organisations with long-standing experience in using research and models to those for whom research engagement is relatively new or where climate adaptation has limited institutional priority and resources. Engagement should therefore be tailored to different levels of experience and capacity rather than standardised across research case studies. A simple engagement route planner for key stakeholder relationships could support this more flexible approach. Developed jointly by the responsible researcher and the stakeholder, it could identify the purpose of the relationship, stakeholder interests and needs, expected contributions, suitable engagement formats and opportunities for uptake. The route planner should remain adaptable and be revisited as stakeholder needs, research activities or external circumstances develop.

Recommendation 10: Apply co-creation principles flexibly and develop tailored engagement pathways

Use co-creation frameworks as flexible guidance rather than as a fixed way to approach engagement. For key stakeholder relationships, develop simple and adaptable engagement route planners that reflect the stakeholder's role, capacity and needs, clarify where their involvement can add most value, and allow the approach to evolve throughout the project.

8. References

McGlade, K., Tröltzsch, J., Tarpey, J. and Watkiss, P. (2022). Co-creating Research: Best- Practice Guidelines. Insights from the Horizon 2020 EU project COACCH. Available at <https://www.coacch.eu/wp-content/uploads/2018/03/2811-COACCH-Co-creation-guideline-web.pdf>

Watkiss, P., et al., (2018). Co-design and co-delivery protocol. COACCH Project Deliverable 1.4. Available at <https://www.coacch.eu/wp-content/uploads/2020/02/D1.4-Co-design-and-co-delivery-protocol-M6.pdf>

Watkiss, P., McGlade, K., Tröltzsch, J., Tarpey, J. & Hunt, A. (2025). Co-Creation protocol for ACCREU. ACCREU Project Deliverable 1.2. Available at https://www.accreu.eu/wp-content/uploads/2026/05/ACCREU_D1.4.pdf

9. Annex

Raw Data Survey Results

Questions / (in brackets the adapted formulation in 2026, last project year)	Type	Answer options	2024 n= 23		2025 n= 23		2026 n= 12	
			Absolute	Percent	Absolute	Percent	Absolute	Percent
What activities have you undertaken with stakeholders so far in ACCREU? / (with stakeholders in ACCREU in the third year)	Multiple Selection	Codesign	13	20%	9	39%	5	42%
		Face-to-face meetings	10	15%	5	22%	7	58%
		Virtual meetings/ phone calls	15	23%	8	35%	9	75%
		Joint case study work	4	6%	3	13%	5	42%
		Data exchange	11	17%	5	22%	3	25%
		Discussion/ Presentation of findings	9	14%	6	26%	11	92%
		Integration of results in decisions or policies/ in reports	3	5%	2	9%	2	17%
What has helped your relationship with stakeholders so far in ACCREU? / (... in ACCREU over the last year?)	Multiple Selection	Common ground (existing relationship, known connections)	13	32%	8	35%	10	83%
		Shaping the project activities to meet their information and decision-making needs	6	15%	4	17%	3	25%
		Sharing interim findings and research outputs	5	12%	5	22%	8	67%
		Being able to dedicate time to regular communication	8	20%	3	13%	2	17%
		Being flexible e.g. adapting research questions and time schedule	7	17%	6	26%	7	58%
		Other (free text)	2	5%	3	13%	1	8%
What opportunities are there for impact (integration of ACCREU results into decisions, policies, publications, etc) over the next 6 - 12 months? / (have been developed/can still be developed?)	Multiple Selection	Use of results in decision-making processes	15	33%	7	30%	8	67%
		Integration of results into policy publications	17	37%	5	22%	7	58%
		Joint knowledge products e.g. collaborative publication, media outreach	14	30%	6	26%	6	50%
		Other (free text)	0	0%	0	0%	2	17%

Question	Type	Answer Option	2026 n=12 Averages
What do you think about co-creation based on your experience in ACCREU?	Rating Scale: 1 disagree - 5 agree	Improves the quality of research content	4,2
		Improves the relevance of research outputs for uptake and use	4,3
		Adds value to the project and improves overall impact	4,4
		Encourages more interesting collaborations and builds a community of practice (between researchers and users)	3,9
		Increases transparency about the research process	3,1
		Improves the dissemination and communication of research results	3,9
		Tries a different approach to other research projects	3,2
		Overly resource-intensive	2,7
		Conceptually challenging ("I find it difficult to understand the purpose or approach")	2,2
		Difficult to execute in relation to modelling work	3,3
		Difficult to keep stakeholders engaged during the project duration	3,8
		Difficult to know how to engage with stakeholders	2,8
		Not essential to the research process	1,7
		No clear benefits for the project outcomes	1,4