

Co-evaluating urban climate services:

Perspectives from climate scientists, decision makers and boundary agents on what makes “good” services

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**Barcelona
Supercomputing
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**Earth
Systems**

Services

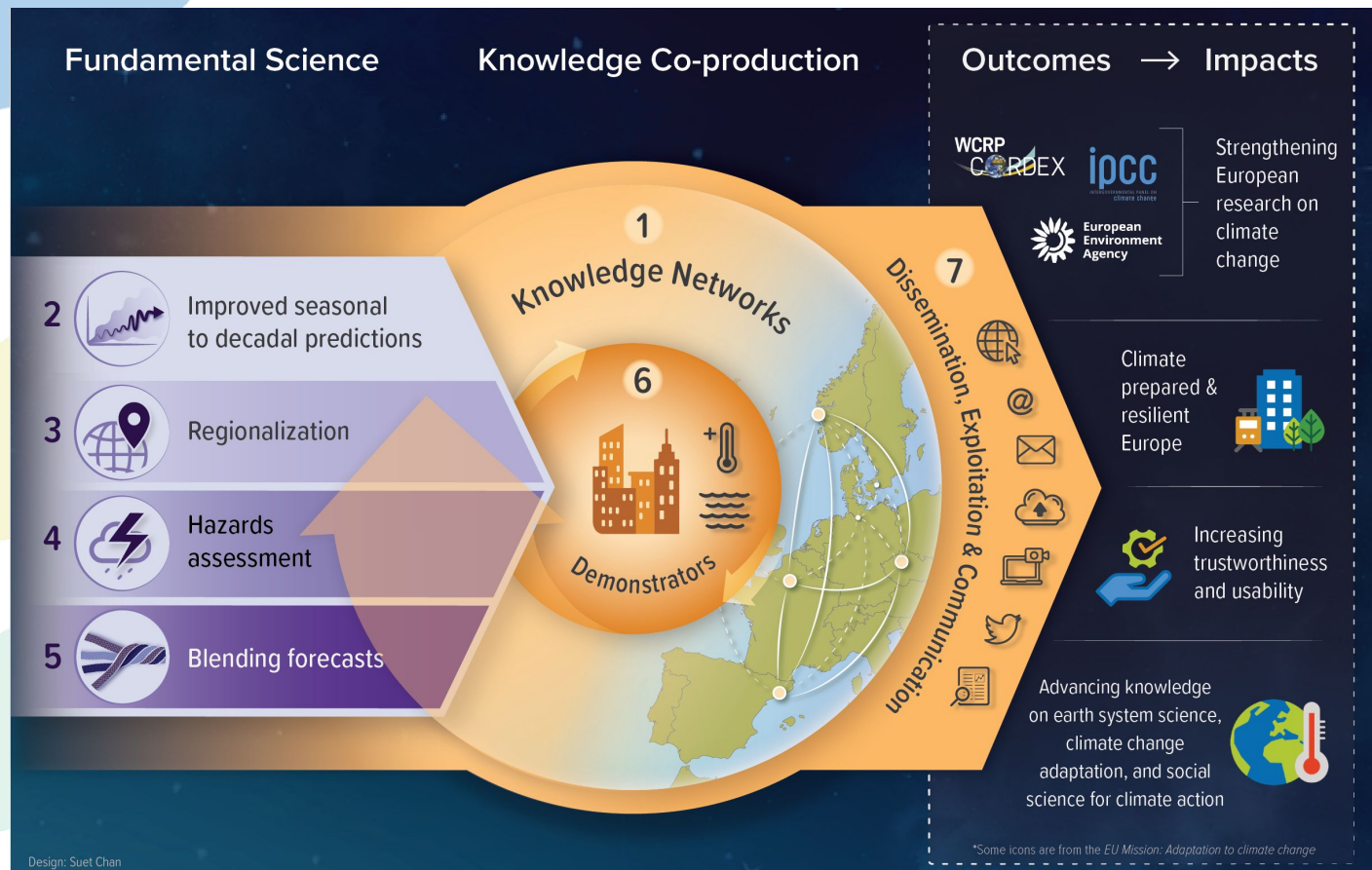
Knowledge Integration Team (KIT)

What do we do?

We co-design climate, air quality and health resilience services, while facilitating knowledge exchange and technology transfer of state-of-the-art research at local, national, and international levels.

Engagement & knowledge co-production
Dissemination
Operationalisation
Science communication & outreach
Policy engagement
Services evaluation
User experience & product design

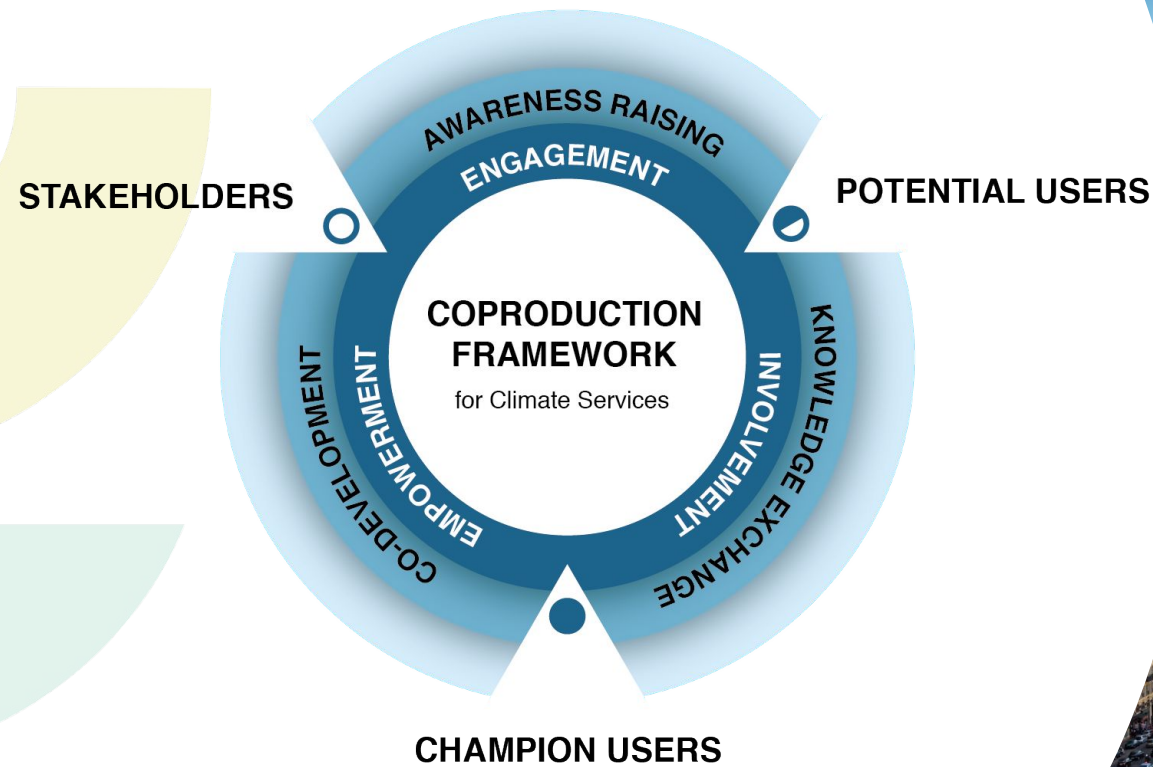
The Impetus4Change Project



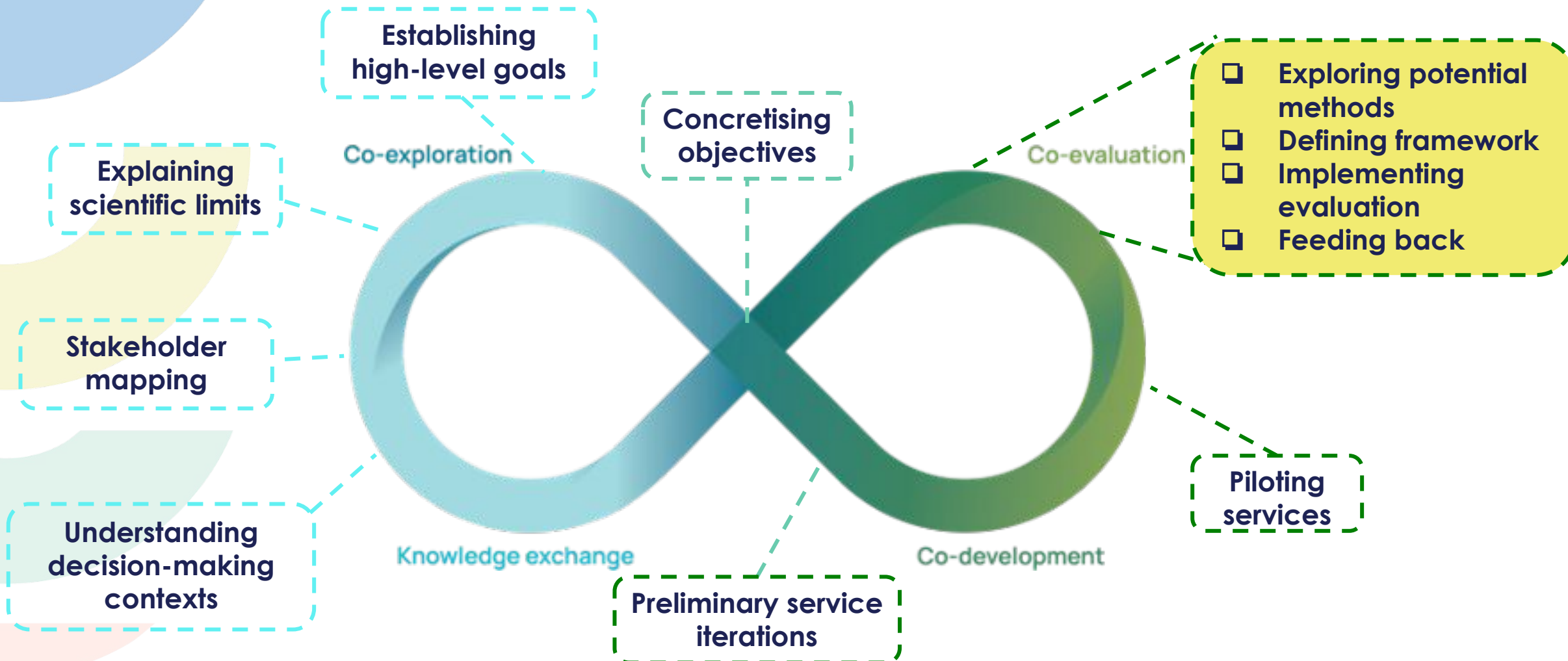
The overall objective of I4C is to improve the *quality, accessibility and usability* of short-term climate information and *climate services at local and regional scales*, where the impacts are most intensely felt, to strengthen and support final users in adaptation planning and action.



Co-production in four demonstrator cities



Co-evaluation as a part of co-production



Why co-develop co-evaluation?

The UK's first Climate Change Risk Assessment was seen as a success by many of the physical scientists involved in terms of its scientific accomplishments but a failure by government officials because its findings were not able to meaningfully inform the subsequent National Adaptation Plan (Porter and Clark, 2023) DOI:10.1016/j.envsci.2022.10.018

“Deciding which standards of quality should be deployed in assessing a climate service is then a highly political choice of which characteristics of knowledge or information are most important for supporting climate adaptation” Bremer et al. (2021)
DOI: 10.3389/fclim.2021.627665

Framework is:	Developed	Co-developed
Evaluated	My views & My assessment	Our views & My assessment
Co-evaluated	My views & Our assessment	Our views & Our assessment



Generating Ideas



Extracting and synthesizing common pillars

What themes emerge?

What is important at each stage?

Process	Outputs	Outcomes	Impacts
Engagement & Collaboration	Relevance & Usefulness	Application & Use	Economic & Financial
Inclusivity & Diversity	Accessibility	Enhanced knowledge	Benefits
Communication & Understanding	Understandability	Influence on Actions & Decisions	Social Benefits
Transparency & Reliability	Usability	User Feedback	Policy & Regulatory Benefits
Goal-setting & Relevance	Feasibility	Measurability	Positive Feedback
Feasibility	Reliability		Measurability
	Suitability & Adaptability		
	Up-to-date & Timely		
	Scope		

Climate services that:

1. are inclusively co-produced by the actors they will impact
2. foster open and clear communication that develops climate knowledge
3. contribute to real, relevant and impactful adaptation action
4. are reliable, transparent and trusted



Tailoring to the local context

What?

How?

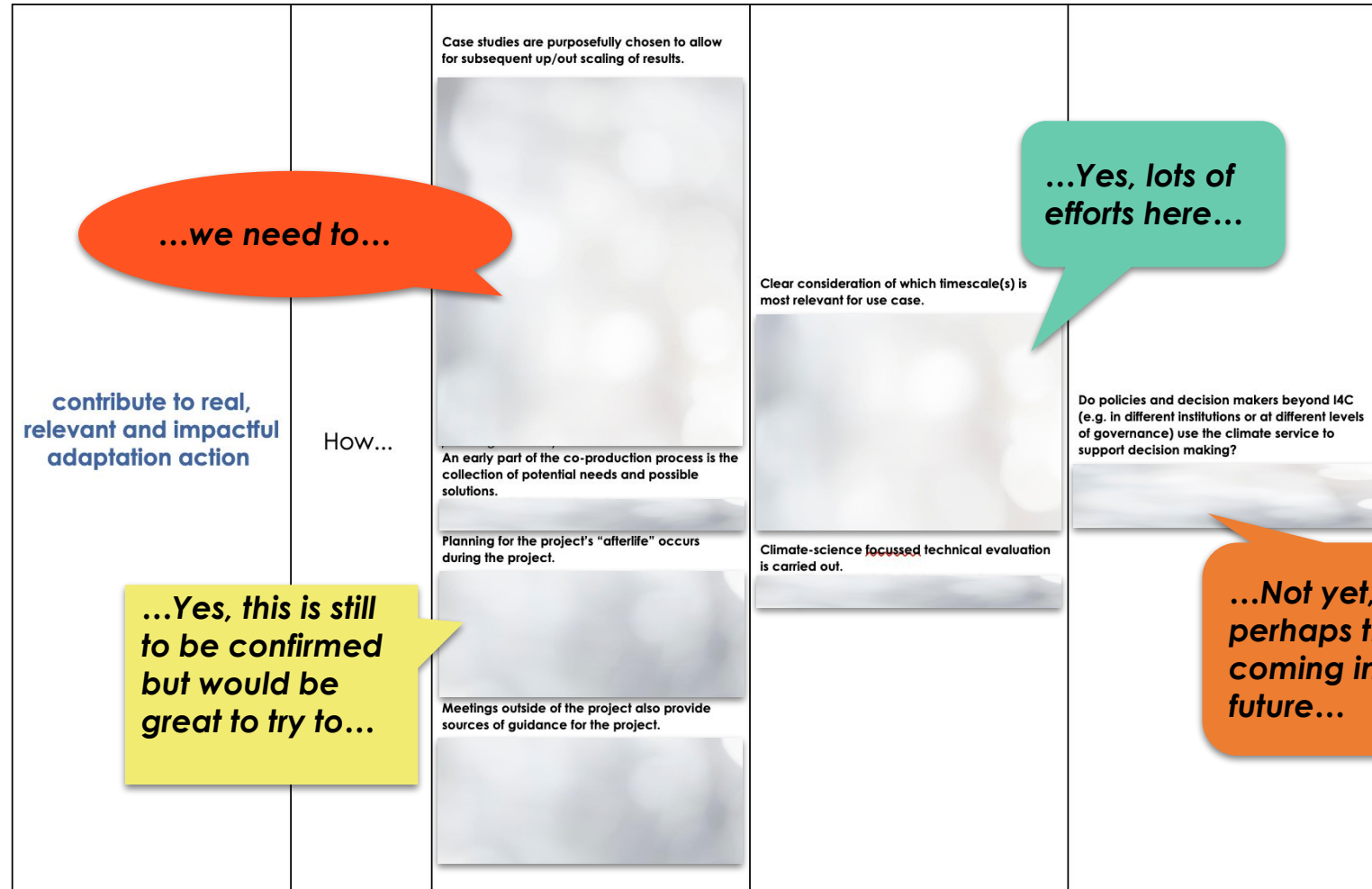
Climate services that:

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I4C evaluation pillars.	...to evaluate	Co-production process	Outcomes	Impacts
Climate services that: contribute to real, relevant and impactful adaptation action	What...	Identifying enough "mass" to benefit from the outcomes of the project (e.g. Viñedo focuses on one small set of wine producers). Be mindful of the timescale of the adaptation measures that the CS can inform. Is it aligned with the CCA measures of different timescales to avoid miss adaptation? Seek to understand the needs of decision makers during the development (in order to ensure the information in the CS flows to them when it is needed). Start with an outline of the need and outline of the possible solution tools (not an empty box) and then seek to modify both during the co-production process.	The outcomes should identify who else might benefit from the project. Be mindful of the timescale of the adaptation measures that the CS can inform. Is it aligned with the CCA measures of different timescales to avoid miss adaptation? The CS should provide scientific evidence that supports the "radical" adaptation actions we need. Data that visualises scenarios (e.g. Santa Coloma want to know "what could we do differently?"). Provides information that is tailored to a real-world challenge.	The project results are upscaled beyond the directly involved SHs to all similar SHs (e.g. ensuring that the CS could apply to ALL wine producers not just those involved). Accessibility of the service (e.g. Viñedo collaboration with private companies meant it could not be used further). But in FocusAfrica, also worked with private sector but negotiated to have the platform open. But in Africa all info had to go through NHMS...which meant local DNs stopped the flow even though project allowed it. Also need a lasting project, that has legacy, requires resources. The CS should generate next steps (future questions and needs) - e.g. about what uncertainties to tackle next / in future work. Where relevant, climate services may move from research projects -> operational projects (challenging to understand long-term societal impact for research projects only).
	How...	Purposeful case study selection (with an aim to generalise the results to others). Overlap with I4C 1 on inclusive co-production. Synthesise I4C specific outcomes from the health research workshop. A good co-production process would mean no surprises in the co-evaluation results. Collect initial outlines of possible needs and solutions as early co-production step.	Consider climate information across timescales. How many decisions / decision makers have been influenced by it? Have read / are aware of the work. Do we have a specific solution? Survey / interviews can be used for ex post SH evaluation. Was the information used? Was it helpful? Would SHs use it again? Technical evaluation can cross-check with observations.	Develop the CS's project "afterlife" during the project. How many policies have used I4C data to support their decision making. Project legacy: are I4C data outputs still used planned to be used into the future, and / or are they taken up by higher levels of governance (e.g. in regional health planning).

I4C evaluation pillars.	...to evaluate	Co-production process	Outcomes	Impacts
Climate services that: contribute to real, relevant and impactful adaptation action	What...	The co-production process draws in enough SHs to make the tailored project impactful. The co-production process is timed to <u>poincided</u> with adaptation decision making structures. There are efforts to understand SH needs during the development of the climate service. The project starts with a rough outline of what is needed and what can be offered (not an <u>empty</u> blank page) that is then continually refined throughout the co-production.	The climate service is ready when it is needed, i.e., aligned to adaptation decision making structures (rather than "miss adaptation"). The outputs identify who else may benefit from the service (or a similar service). The climate service provides the scientific support for the "radical" adaptation action needed. Climate information is provided for scenarios that support decision making between choices. The climate service is tailored to a real-world challenge.	The produced service can be upscaled to other similar SHs beyond the project. The project outputs should be freely available beyond the end of the project. Nesting the project inside a longer-term transformation provides legacy.
	How...	Case studies are purposefully chosen to allow for subsequent up/out scaling of results. An early part of the co-production process is the collection of potential needs and possible solutions. Planning for the project's "afterlife" occurs during the project. Meetings outside of the project also provide sources of guidance for the project.	Clear consideration of which timescale(s) is most relevant for use case. Ask SHs which decisions are influenced by the climate service, whether it was useful/would be used again, and how many decision makers are aware of it. Climate-science <u>focused</u> technical evaluation is carried out.	Do policies and decision makers beyond I4C (e.g. in different institutions or at different levels of governance) use the climate service to support decision making?

Implementing & feeding back



Closing remarks & take-home questions

- Perspectives on what makes a “good” (or “bad”) climate services vary significantly
- Fair evaluation therefore requires a diversity of views from different types of stakeholder
- The other Co²
- Don’t wait until the end to begin evaluating
- Keep a diary
- When was the last time someone asked what you thought was important for a good climate service?
- How would you answer that question?
- How would you measure it? When?
- What impact might that have on your work?
- When was the last time you asked someone else?



Thank you for your attention!

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4CHANGE
TO CHANGE

EGU25-17903 | Orals | [CL5.4](#)

[Stakeholder relevant hazard indicators in regional climate models from the EU-Impetus4Change project](#)

Stephen Outten, Francesca Raffaele, Natalia Zazulie, Silius Mortensønn Vandeskog, and **Stefan Sobolowski**

Mon, 28 Apr, 15:15–15:25 | Room 0.14

[CORDEX Flagship Pilot Study URB-RCC: Urban Environments and Regional Climate Change – Where We Are and Where We Are Going](#)

Tomas Halenka, Gaby Langendijk, and Peter Hoffmann

Mon, 28 Apr, 15:25–15:35 (CEST) | Room 0.14

EGU25-18397 | **ECS** | Posters on site | [ITS1.16/AS5.4](#)

[Assessing the added value of statistical downscaling to the predictive skill of global subseasonal temperature forecasts during the Paris 2024 Olympics](#)

Eren Duzenli, et al. Fri, 02 May, 10:45–12:30 | Hall X5 | X5.159

Abstract

Climate services seek to provide information that enables climate-informed decision making by non-climate scientists. Often, especially where climate services are co-produced, boundary agents (typically social scientists) act between these groups to facilitate the seamless flow of knowledge in both directions and create climate services that are scientifically accurate and apt for building climate resilience. Or at least that is the idealised aspiration.

In practice, developing climate services that are both useful and used involves contending with a wide range of factors beyond the project boundaries, ranging from the current limitations of climate science to societal power (im)balances and to the fitness of purpose of any service to a decision context. Different actors involved in developing and using climate services view them in different ways and hold different preferences on what constitutes a successful climate service. Thus, creating criteria to evaluate a climate service has an inherent subjectivity and designing a holistic evaluation framework requires drawing out these perspectives and preferences from decision-makers, climate scientists and boundary agents, and then bringing them together.

Impetus4Change (I4C, <https://impetus4change.eu/>) is a Horizon Europe project joining 18 institutions from 8 countries that aims to improve the quality and usability of near-term climate information in cities and regions. Throughout the entirety of the project we are simultaneously co-producing climate services in four Demonstrator cities: Barcelona, Bergen, Paris, and Prague. This involves three stages: co-exploring the problems, solutions and realities that decision makers face; co-designing mock-ups of climate services and then co-developing these through Adaptalabs (highly interactive, transdisciplinary hackathons). The entire process is co-evaluated to capture lessons learned and combine these with detailed analysis of climate adaptation knowledge networks to explore the services' replicability.

This presentation will cover the steps taken to generate tailored frameworks for evaluating urban climate services, including the generation of ideas from 60 participants of the first Adaptalab, the synthesis of pillars of the framework, and the tailoring of these pillars to each of the four Demonstrator cities. Using the Barcelona case study as an example, we show that actor perspectives on what is important vary not just in terms of what to assess, but also when. We conclude with examples of how we might evaluate different aspects of the co-production process, its outputs and its outcomes and our experiences operationalising the framework.

<https://meetingorganizer.copernicus.org/EGU25/EGU25-18189.html>