Engaging with local decision-makers

ESM2025 leverages the World Café method to foster meaningful dialogue between researchers and local stakeholders — from national and local government and agencies, to businesses and NGOs — exploring climate science needs and discussing how project outcomes can inform policy. This briefing provides a concise summary of our World Cafés in Paris and Grenoble, shedding light on the most urgent stakeholder priorities and the valuable contributions of the climate modelling community.

Global to regional to local knowledge

Decisions at the city and regional levels need regional and local scale information and data.

There is a need for a better understanding of the differences between ESMs, regional and local models.

Earth system models (ESMs) operate on the global scale, but outputs can be downscaled using machine learning or emulators, for example. These can also be used to simulate future outcomes and at a low cost.

Integrated Assessment Models (IAMs) have a “central” place in the discussion between policymakers and the scientific community, as they offer a great summary of both societal and climate changes, and can also act as “translators” of high complexity models such as ESMs.

From Earth System Models to Integrated Assessment Models: Bridging the gap in climate modelling

ESM2025 Research Highlight sets out how Earth system models contribute and interact within the diversity of climate models, including Integrated Assessment Models.

Consistency of mitigation pathways in ESMs is an issue, as ESMs do not directly represent socioeconomic evolutions, and thus no feedback is taken into account.

The consistency of mitigation pathways is being addressed to some extent in ESM2025 through better integration of IAMs and ESMs.

Our last Research Highlight on land modelling across modelling platforms and land-based mitigation strategies will be published soon. It will cover actionable research in land-use management and nature based solutions.

> *"Getting the chance to talk to stakeholders and the kinds of questions for which they are seeking answers. It was certainly challenging!"*

Climate risks: assessment and response

Information needed on climate extremes and low probability events, including "shock events" that could trigger great change in socioeconomic decisions (eg. war, extreme climate events).

Need for knowledge on adaptation strategies in cities.

Considering sustainable development principles and collaborating with local meteorological organisations can help!

There are EU research projects focusing in all these different aspects of climate change!

Research could be developed to help action planning (eg. support reforestation policies).

A multidisciplinary and systemic approach may help bridge knowledge gaps.

There is a contradiction between long term risks vs short term decisions.

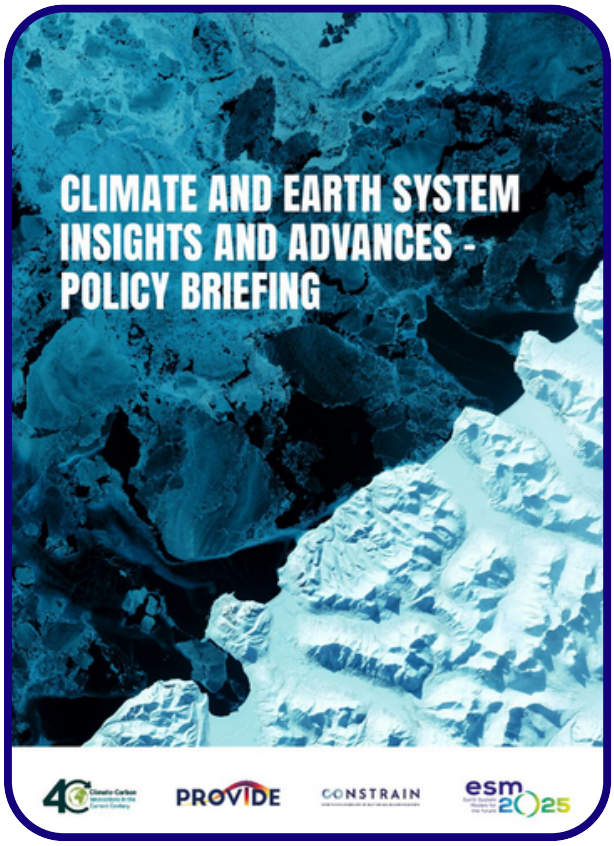
Information on the future "degrees of freedom" for each scenario may favour rapid decisions instead of waiting for technological solutions.

Decision-maker actions tend to be reactive rather than preventive, and there is a reliance on techno-solutions.

Business tends to plan up to 10 years ahead and focus on adapting rather than mitigating.

Need for a change of paradigm, with new values and narratives.
State interventions need to include the cost of climate change and value the benefits of concrete actions.

Our policy briefings set out new insights and advances in climate science including: revising the carbon budget to meet the 1.5°C target, the risks of climate overshoot and reducing other greenhouse gases.



Communicating about climate change

There is a missing link between research and local stakeholder communities:

- **Local stakeholders need help tailoring research results to their needs.**
- **To make the link, it is necessary both to interpret scientific results and to understand political challenges.**

Existing tools could benefit from greater visibility (eg. Copernicus - EU's Earth observation data service).

Private Sector

It helps if information is related to the costs of climate change.

Provide stakeholders with easy to remember metrics, such as, "1€ spent in prevention is 7€ saved in humanitarian relief".

Promote actions in the context of the Corporate Social Responsibility agenda.

- Success stories are useful in showing the positive aspects of changing lives and behaviours.
- Global Warming Levels are easy to understand.
- Scenarios are useful if fit to stakeholders' needs.

Need for clarification: should stakeholders expect climate scientists to provide model output interpretations, or raw data only?

Develop education tools (for policy and schools) and integrate climate change into the curriculum.

ESM2025 models will provide tools to project future climate change and its impacts more accurately and integrated models to identify robust responses, contributing to the evidence base for important assessments by the IPCC, IPBES, and UNEP.

All ESM2025 tools, models, and diagnostics are openly available to the global research community.

ESM2025 contributes actively to innovative climate education in collaboration with the Office for Climate Education. We have developed educational resources and professional development workshops for teachers and teacher trainers. Explore all our education initiatives: Education and Professional Development - ESM2025

In ESM2025, we have dedicated resources to engage with policy and decision makers and for communications to broader audiences.

We work closely with the European Commission to discuss our research findings and we endeavour to communicate results broadly.