



**BELGIAN  
CLIMATE  
CENTRE**

# **Annual Report**

**2024**

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# Foreword

January 2025

Dear readers,

In just two years, the Belgian Climate Centre has established itself as a key player in Belgium's scientific and policy landscape on climate issues. With passion, commitment, and an unwavering drive to make a difference, the team of the Centre has turned ambitions into concrete action.

This past year has been marked by major achievements: the launch of synthesis science working groups, the first-ever Belgian Science for Climate Action conference, and the creation of the Belgian Scientific Expert Catalogue. These milestones reflect its mission to bring together the brightest minds in research, foster dialogue between scientists and policymakers, and ensure that science directly informs climate action.

Of course, the road hasn't been without its challenges. 2024 was also a year of transitions and adjustments, notably with leadership changes within the Climate Centre. But once again, the team rose to the occasion, showing agility, resilience, and an even stronger commitment to its mission. This ability to adapt and push forward is precisely what makes the Belgian Climate Centre so dynamic—an institution in motion, listening, and always looking ahead.

And what an exciting future lies ahead! 2025 promises to be a pivotal year, one in which the Belgian Climate Centre will further consolidate its role as a scientific catalyst and a key actor in Belgium's climate policies. The challenges are immense, but so are the opportunities to innovate, to unite, and to accelerate the transition towards a more sustainable future.

I want to extend my heartfelt thanks to everyone who has contributed to this incredible momentum: the researchers, our institutional and private partners, the policymakers, and of course, the team, whose daily dedication is the true driving force behind this initiative.

Together, let's keep building on this momentum and continue making science a powerful tool for climate action!

*Arnaud Vajda*

*President of the Executive Committee, BELSPO*

# List of acronyms

Acronym	Definition
BCC	Belgian Climate Centre
Belspo	Belgian Science Policy Office
C3S	Copernicus Climate Change Service
CERAC	Climate Risk Assessment Centre
ECMWF	European Centre for Medium-Range Weather Forecasts
IPCC	Intergovernmental Panel on Climate Change
KMI-IRM	Royal Meteorological Institute
KSB-ORB	Royal Observatory of Belgium
KU Leuven	Catholic University of Leuven
NGI-IGN	National Geographic Institute
UGent	University of Ghent
ULiège	University of Liège
ULB	Université Libre de Bruxelles
UCLouvain	Catholic University of Louvain
VMM	Flanders Environment Agency
WMO	World Meteorological Organisation
WWF	World Wide Fund for Nature

# Introduction

The Belgian Climate Centre (BCC) was inaugurated in November 2022. The BCC was created following substantial scoping work to determine current needs and opportunities in the field of climate-related research in Belgium. The BCC's primary objective is to strengthen scientific research at the highest level on climate and climate-related economic and ecological issues. The BCC serves as a central contact point for policy and decision-makers, public and private organisations and citizens for a wide range of climate-related services. The overall mission of the BCC is to maximise the impact of science on climate action i.e. on climate mitigation and adaptation in Belgium to support an efficient and socially just transition towards ecologically sustainable economies and societies for all.



*Maximizing the impact of science on climate mitigation and adaptation in Belgium to support an efficient and socially just transition*



# Objectives

Within this context, the three main strategic objectives of the BCC are:

## 1 **Strengthening scientific research capacity**

The BCC's first objective is to bundle, strengthen and amplify climate-related research capacity by establishing structural collaborations with research institutes, both at the federal and regional level and with universities, hereby putting forward complementarity and interdisciplinarity as key values. The interdisciplinary approach is ensured by focusing on four main research domains:

- Physical climate, the functioning of the earth's surface;
- Land & water, earth-related processes interacting with climate change;
- Society, the management of climate action in human societies;
- Technology, tools and techniques involved in climate action.

## 2 **Facilitate the transfer of knowledge from researchers to a wide range of stakeholders**

The second objective is to facilitate the collaboration, transfer of knowledge and connections between researchers and users to enable science-based decision-making. The BCC ensures this by developing climate services and facilitating access to data and information.

## 3 **Increasing the applicability of future research programs into climate action**

The BCC's third objective is to increase the coherence and strategic impact of research programs through the transfer of experience from societal actors to researchers and by leveraging funding opportunities.

2024 was the second year of existence of the BCC. In this early stage, the BCC's activities were mainly focused on the first and second objectives i.e. strengthening scientific research capacity and facilitating the transfer of knowledge.

Activities include the publication of the Belgian climate projections and data, the launch of the 'synthesis science working groups programme', various publications and the start of externally funded projects. Furthermore, the BCC organised the first 'Belgian Science for Climate Action' conference, different workshops, and developed the Belgian Scientific Expert Catalogue.

In addition to these activities, in 2024 the BCC focused on expanding and strengthening its team and preparing for its role as the Permanent Secretariat of the brand-new Scientific Climate Council.



# Team

At the start of 2024, the team of the BCC counted 6 permanent positions and 2 one-year positions. Over the year, three new permanent roles (Senior Data Scientist, Permanent Secretary of the Scientific Climate Council and Scientific Community Manager) and a data homogenisation expert (as a fixed-term position) were hired at the BCC.

By the end of the year, the recruitment processes to seek worthy successors of both directors were launched. Temporary support solutions through the federal Talent Exchange programme were also found.

Furthermore, BCC will recruit two postdocs in the context of the synthesis science working groups by early 2025 (see further information below).

*"I am glad I got the opportunity to start up the Centre, I can look back on a very successful period. We launched many projects and were able to contribute significantly to the Belgian climate debate. We brought together a wonderful team, the train is on the rails!" -  
Valerie Trouet*

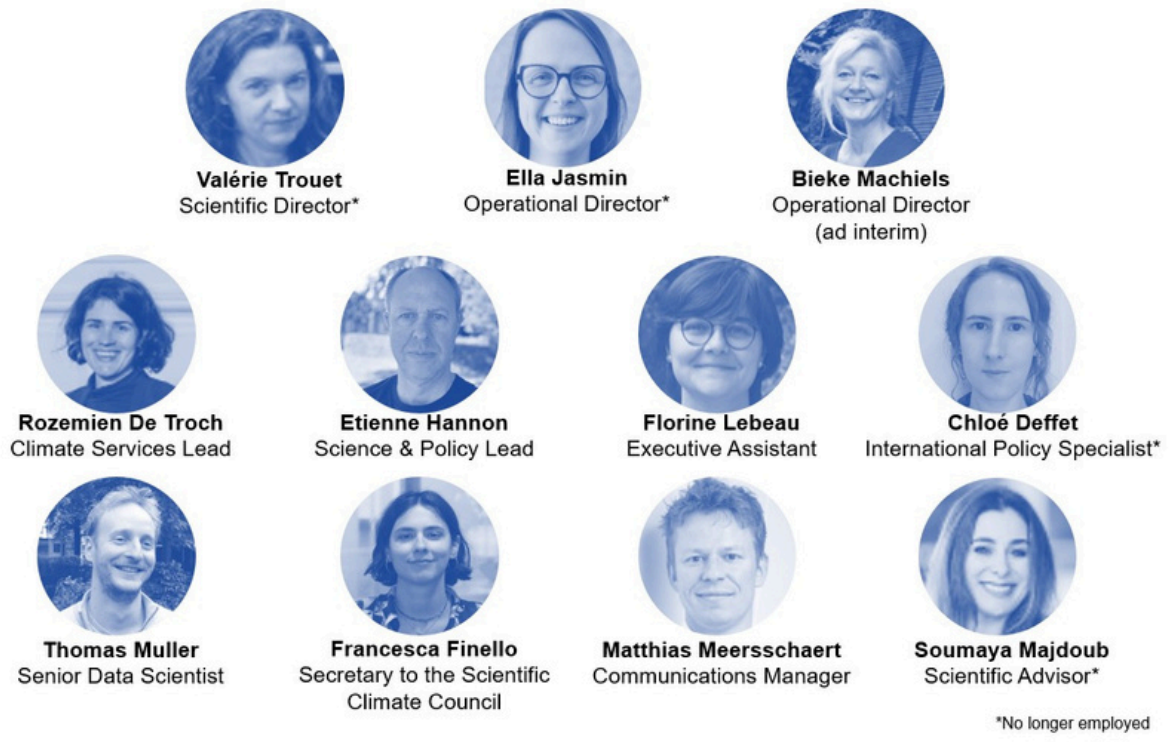


Figure 1 Belgian Climate Centre - Team in 2024





# A year in review

The BCC's activities in 2024 mainly focused on the objectives of strengthening scientific research capacity and facilitating the transfer of knowledge. To this end, several activities were developed and implemented.

## Strengthening research capacity

### *Synthesis science working groups*

On February 15, 2024, the BCC launched successfully its first call for scientific synthesis projects (see Annex 1). This call invited proposals for two two-year projects focused on the topic of overshoot and societal tipping processes. With this call, the BCC will support and fund projects led by interdisciplinary teams employing innovative approaches and state-of-the-art techniques for compiling and analysing existing datasets and information. The goal is to advance evidence-based decision-making in Belgium's public and private sectors.

To foster interdisciplinary research collaboration within Belgium on these topics, the call involved the creation of two synthesis science working groups of up to 20 scientists and stakeholders, each led by a team of up to four Principal Investigators (PIs), including at least one PI from a Federal Scientific Institute. For each topic, the working group will be financially and organisationally supported by the BCC. The BCC ensures multiple two-day meetings over the two-year duration of the project, as well as the recruitment of a post-doctoral fellowship for one early-career Working Group member. This postdoc member will be co-mentored by one of the PIs and the BCC.

The two topics of this first call were chosen based on themes that are part of the BCC's four research domains (physical climate, land & water, society, and technology) as well as based on recommendations from the Centres' Scientific Board. At the recommendation of the Scientific Board, the BCC implemented a two-tier application process, with Letters of Intent that were evaluated by the Scientific Board. Subsequently, the Scientific Board recommended three PI teams (two on the topic of overshoot and one on the topic of societal tipping points) to submit a full proposal.

After further evaluation by the Scientific Board, one full proposal per topic was selected for funding and PI teams were notified in November 2024, after which the recruitment process for the associated postdoctoral fellows started. The two supported synthesis science projects are expected to kick-off in 2025.

## Making connections

### ***Belgian Science for Climate Action Conference 2024***



Participation at a glance			
Belgian scientists	Students	Stakeholders	Journalists
180	70	90	15
Around <b>400</b> in total			

Figure 2 Belgian Science for Climate Action Conference 2024 – Opening session – ©Noé David

In February 2024, the BCC organised the first Belgian Science for Climate Action conference at the Maison de la Poste in Brussels (see the conference programme in Annex 2). The theme of this inaugural edition was ‘Climate extremes: causes and consequences’, a theme well covered in the climate research of the Federal Scientific Institutes and the Belgian scientific community. The two full days gathered about 400 Belgian scientists students, decision-makers, public and private sector representatives, and journalists. They took part in workshops, debates, and scientific sessions showcasing the diversity and richness of Belgian climate research and stakeholder interactions. It was the first time that a climate-centred event of this amplitude with such a diverse public was organised in Belgium.

In 18 parallel sessions, more than 70 researchers and representatives of the public and private sectors presented their work on climate extremes, their risks, impacts and potential solutions. Individual sessions covered a wide range of climate extreme-related topics, including tipping points, nature-based solutions, the resilience of transport and energy infrastructure, health, and climate attribution, as well as more general topics such as effective communication and funding opportunities. Some of the sessions were co-organized by invited organisations, such as sessions on risk assessment (CERAC), systems thinking (The Shift), energy (EnergyVille) and insurance (Assuralia).

In addition to the sessions, the conference included five keynote lectures from national and international experts from the scientific, policy and private sector communities, as well as a climate-themed art performance. Furthermore, two poster sessions included 80 posters on a wide range of climate extreme-related topics and three student poster prizes were awarded by the BCC Scientific Board. In total about 95 students attended the conference, 20 of whom volunteered to help run it.

To establish the BCC's place in the Belgian climate science landscape, the first edition of the Belgian Science for Climate Action conference was organised shortly after the creation of the BCC. Attention was paid to gender and language balance as well as the career stages of session chairs and presenters.

The BCC received very positive feedback on the conference and the request to make the Belgian Science for Climate Action conference a recurring event. Henceforth, the conference will be organised every other year. The next one will take place in 2026.

### ***Catalogue of climate scientific experts***

A [user-friendly online platform](#) was developed to centralise information on climate-related scientific experts in Belgium. Through a search tool, users can easily find scientific experts by searching for their topics of interest.

# Catalogue of Climate Scientific Experts

Welcome to the beta version of our Catalogue of Climate Scientific Experts! This catalogue centralises information on climate-related scientific experts working in universities, federal scientific institutes, and regional research centres of Belgium. It currently features **443** well-established scientific experts who are actively engaged in climate research.

Use the dropdown buttons below to search for experts by their area(s) of expertise and/or discipline. If you are a scientific expert and would like to update your information or be added to the catalogue, [contact us](#). We hope this tool helps you find the right expert for your needs.

🔍

Or

🔍

Figure 3 Catalogue of Climate Scientific Experts

The objectives of the online catalogue are three-fold:

- providing Belgian decision makers from the policy, private and public sectors, as well as media with easy access to relevant information on climate scientists;
- providing Belgian scientific experts with relevant information for future collaborations;
- facilitating access to a broad range of experts, to fit current and upcoming needs and challenges of climate action.

By providing an online list of climate-related researchers, the catalogue enhances knowledge transfer between scientists, decision-makers and other sectors, serving as a crucial tool for fostering science-based decisions.

A beta version of the catalogue was launched in August 2024 after extensive mapping of climate scientific expertise in Belgian federal and regional research institutes and universities. About 700 well-established scientists in Belgium working on at least one of the four of the BCC's research themes (physical climate, land and water, society and technology) were identified. To identify well-established scientists, the BCC selected doctoral degree holders who published since 2018 one peer-reviewed scientific article and are currently working on science. For academic scientists, only those who currently hold a permanent position were selected.

After the selection of the scientists, the BCC proceeded as follows:

1. Surveying climate scientific experts (fall 2023–spring 2024): selected experts received two personalised surveys and about 375 of them agreed to be listed in the online catalogue;
2. Preparing and launching the Climate Scientific Expert catalogue (summer 2024): the beta version of the online catalogue listing 374 experts was launched in August 2024 and received very positive feedback from stakeholders and scientists;
3. Additions and updates to the catalogue (Fall 2024): following the launch of the catalogue and its positive reception, the BCC received about 75 requests from experts to be added to the catalogue.

At the moment of writing this report, there were 443 experts listed in the catalogue. The BCC intends to expand the catalogue further in the future and to enhance the search functionality with relevant filters and tags to improve user experience and accessibility. This will be possible once the Catalogue is hosted on a new website, to be launched by the end of 2025.

### ***Workshop ‘Climate litigation in Belgium and beyond’***

On 11 September 2024, the BCC organised a workshop on the theme of ‘Climate litigation in Belgium and beyond’ (programme in Annex 3). This event was the first of a series of thematic ‘Science for climate action’ workshops, which will take place every quarter at the BCC. This series of workshops aims to gather academic and non-academic experts, decision-makers from the public and private sectors, and representatives of civil society, around key climate-related research themes encompassing a broad range of scientific domains, from the physical climate and terrestrial science to technologies and humanities.

The program for the ‘Climate litigation in Belgium and beyond’ workshop was established in collaboration with a scientific board composed of Professors Charles-Hubert Born (UCL), Hendrik Schoukens (UGent), Emmanuel Slautsky (ULB) and Romain Weikmans (ULB). The workshop provided an opportunity to take stock of the situation, bringing together some of the best experts in the field of climate litigation in Belgium, actors and witnesses from these different cases, and various stakeholders.

The diverse interventions and panel discussions allowed to approach the question from different perspectives and to draw up a very complete state of the art. The workshop brought together about 100 participants, on-site and online, from a variety of public and private organisations.

## ***First leadership meeting of the European National Climate Centres***



Figure 4 Group picture of the participants

In June 2024, the BCC organised the first leadership meeting of the European National Climate Centres (programme in Annex 4). Representatives from nine European National climate centres travelled to Uccle to meet and get to know each other and to discuss priorities, best practices, challenges, and synergies in an informal setting. For part of the two-day meeting, the BCC was joined by representatives from selected third-party EU-level organisations to discuss collaboration, funding, and knowledge transfer strategies.

This was the first time that many of the climate centre leadership members met. It was decided to continue meeting on an annual basis. Hungary's National Multidisciplinary Laboratory for Climate Change offered to host the 2025 meeting.

The BCC together with some of the present European National Climate Centres – the UK, Ireland, Switzerland, and Norway– also worked together on an article published in November 2024 that synthesises the experiences of these countries, highlighting common themes, challenges, and key learnings throughout the process of developing and evolving a National Framework for Climate Services (see Annex 8 for reference to the publication).

### ***Support for the engagement of Belgian scientists in IPCC assessment cycles***

Based on observations from a workshop organised the previous year (September 2023) concerning gaps in the dissemination and accessibility of information related to the modalities and procedures for engaging in the IPCC process, the BCC supported the Belgian IPCC focal point within the Belgian Science Policy Office (Belspo), by systematically relaying the various calls launched by the IPCC during 2024 to the researchers listed in the catalogue of experts. This wide dissemination of the IPCC calls enabled a broad base of Belgian scientists to be nominated for important activities of the IPCC in the start-up phase of its 7th evaluation cycle, namely:

- call for experts to contribute to the Special Report on Climate Change and Cities;
- call for experts for the IPCC Workshop on the IPCC Inventory Software;
- call for experts to participate in the Scoping Meeting for the IPCC Seventh Assessment Report (AR7);
- call for experts for IPCC Scoping Meeting for an IPCC Methodology Report on the Carbon Dioxide Removal Technologies and Carbon Capture Utilization and Storage;
- call for experts to contribute to the Methodology report on short-lived climate forcers.

This collaboration with the Belgian IPCC focal point will continue in the future. The BCC plans to create a joint information hub, with Belspo and the Walloon platform for the IPCC. This hub will give Belgian scientists wishing to engage in IPCC assessments access to all useful information. It is also planned to explore potential solutions to provide financial support for Belgian scientists contributing to the various IPCC reports.

## Facilitating access to data

### ***Publication of the Belgian climate projections and impact indicators***

Climate projections and impact indicators for Belgium were produced in the context of two former Belspo-funded research projects, CORDEX.be I (2015-2017) and CICADA.be (2019-2021), both led by the KMI-IRM in collaboration with the modelling groups of Catholic University of Leuven (KU Leuven), Catholic University of Louvain (UCLouvain) and University of Liège (ULiège). These Belgian climate projections and indicators represent the best available information on Belgium's future climate and are crucial to studying future climate trends, impacts and extremes.

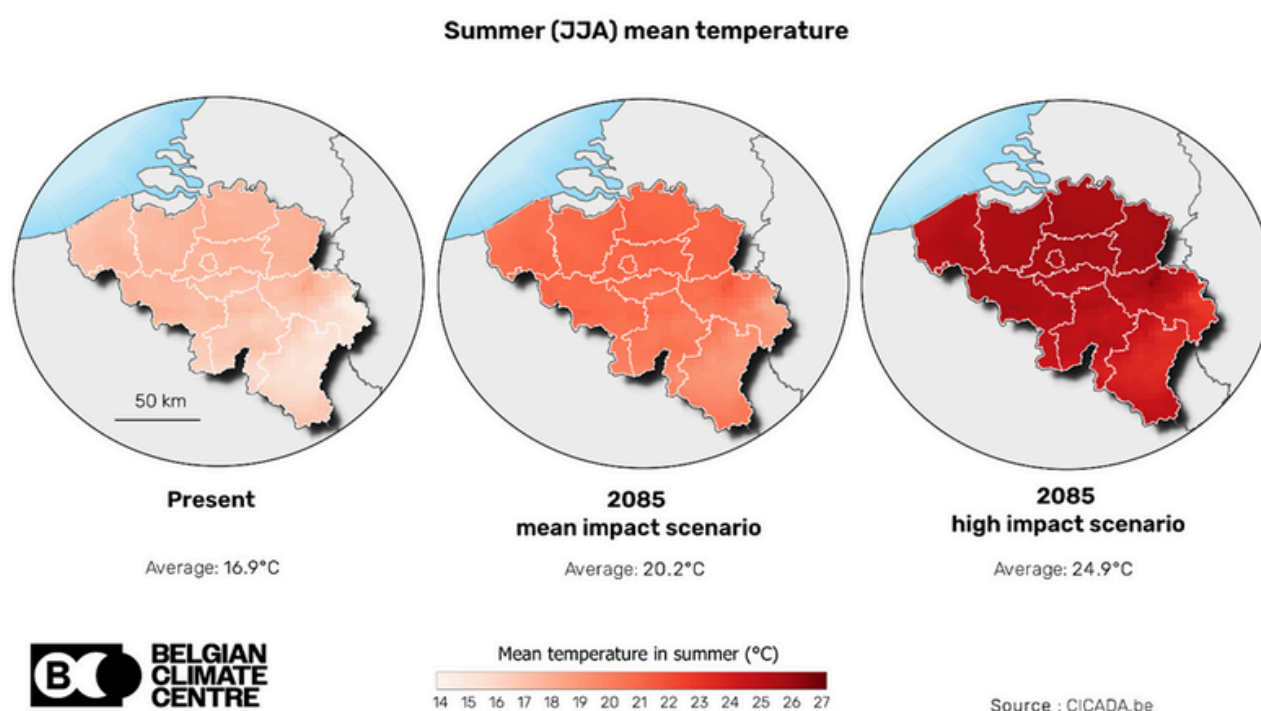


Figure 5 Summer (JJA) mean temperature in Belgium

To improve user access and increase the uptake of these projections and climate indicators for Belgium, these data are made accessible for download in a centralised way through the federal geodata portal of the National Geographic Institute (NGI-IGN).

The BCC was a key player and catalyst in the publication process. More specifically the publication process involved the collection and selection of the datasets, as well as the creation of a user guide.



The publication of the climate projections and impact indicators at the federal geodata portal was officially launched during an event organized and hosted by the BCC on 31 May 2024. The event gathered about 50 participants from the Belgian climate modelling community and users of climate projections from the research, policy, public and private sectors.

The panel discussion and interactions during the event demonstrated the relevance of the publication of these projections and impact indicators, which answer multiple user needs (mostly related to adaptation):

1. for research applications linked to climate change impact studies on health, more specifically the impacts of extreme temperature on mortality, as well as the impact of droughts on plant growth;
2. to quantify the future physical climate hazards, which is needed for estimates of losses for the insurance sector and climate and environmental risk assessments, which will be one of the core activities of CERAC;
3. to set priorities and define measures in the adaptation plans and strategies for policymakers.

The lessons learnt from this publication process are very valuable as the new Belgian climate projections, aligned with the latest emission scenarios from the IPCC's 6th Assessment Report, are currently being updated and are expected to be ready by 2026. This work is supported by the BCC and carried out by the KMI-IRM, KU Leuven, and the University of Liège.

## Data portal catalogue

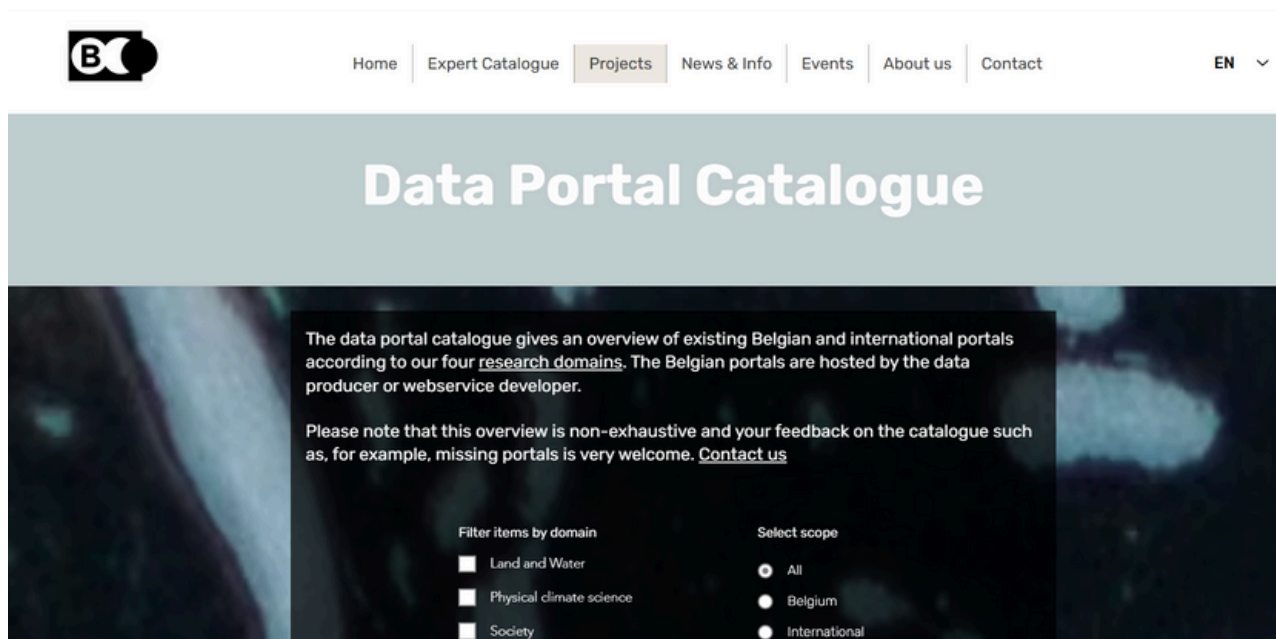


Figure 6 Data portal catalogue

An online catalogue was developed to provide an overview of existing Belgian and international data and information portals. This online tool is a first step in making climate-related data easily accessible to scientists and decision-makers. Users can search for data portals based on one of the BCC's four research themes (physical climate, land & water, society, technology) or geographic scope (Belgium and International).

The data portal catalogue features at the time of writing 125 portals and serves as a dynamic tool, with additional portals to be added over time based on both in-house and user contributions.

### ***Climatological data for researchers***

The BCC facilitated and supported the development of a user-friendly data portal that allows public access to the climatological observations generated at KMI-IRM. The BCC:

- Supported the creation of a data portal that provides easy access to specific data sets for researchers upon registration, including monthly climatological (temperature and precipitation) time series for Belgium, as well as daily gridded data;

- Contributed to the necessary homogenisation and update of the monthly and daily climatological time series, which will be continued in the context of a C3S project (see table in section 'Partnerships and external funding').

The new data portal was launched in September 2024.

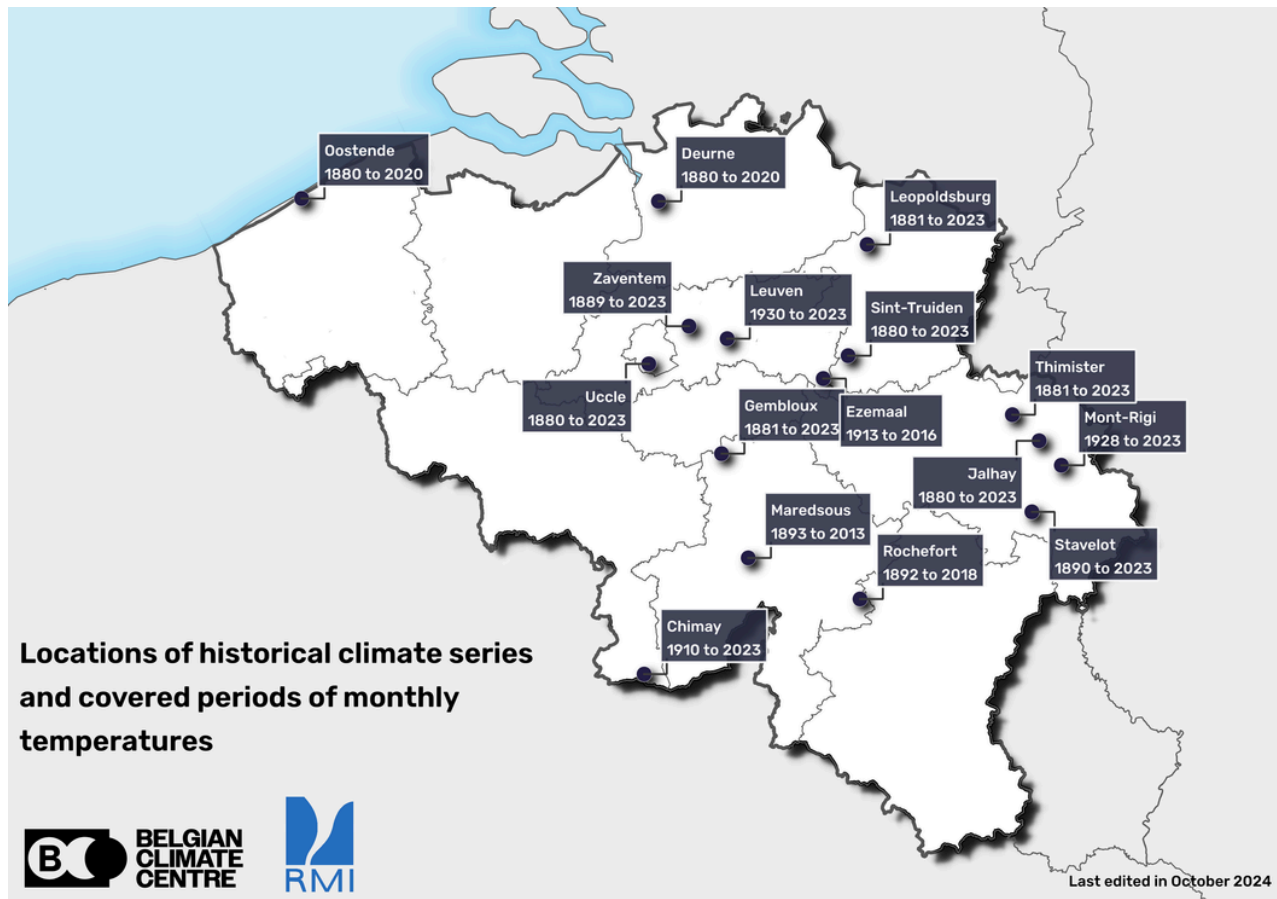


Figure 7 Locations of historical climate and covered periods of monthly temperatures

## Partnerships and external funding

In 2024 the BCC was successful in attracting external funding through national (e.g. Belspo Fed-Twin programme) and European funding programmes (e.g. Copernicus Climate Change Service, European Space Agency). Five projects were funded in partnership with research organisations like KMI-IRM, KSB-ORB, VITO, University of Namur, Bureau Bas Smets and University of Florence (see Table below).

Name of project	Start	End	Partners	Budget and funding organisation	Role and short description
Earth Climate Observatory (ECO): Monitoring of the Earth Energy Imbalance	April 2024	Sept. 2025	Royal Observatory of Belgium (Belgium), Stockholm University (Sweden), Legos/CNRS (France), Vrije Universiteit Brussel (Belgium), Imperial College (United Kingdom), Royal Meteorological Institute (Belgium), Deutscher Wetterdienst (Germany), and PMOD/WRC (Switzerland)	European Space Agency, Earth Explorer 12 Mission (Phase 0)	<b>Partner.</b>
Building Biospheres	July 2024	Nov. 2025	Bureau Bas Smets (coordinator), University of Florence (coordinator)	Budget: € 130.000, Vlaams Architectuur Instituut (VAI)	<b>Coordinator.</b> Belgian Pavilion at Biennale Architettura Venice (Italy) in 2025.
Attribution of Extreme events to climate changes based on advanced statistical and dynamical theories	August 2024	/	Royal Meteorological Institute (coordinator), University of Namur (coordinator)	Belspo Fed-Twin	<b>Partner.</b>

Name of project	Start	End	Partners	Budget and funding organisation	Role and short description
Climate service for Belgian vector-borne disease management	Nov. 2024	Nov. 2026	VITO (coordinator)	Budget: € 200.000; ECMWF – Copernicus Climate Change Service (C3S)	<b>Partner.</b> The project aims to develop a climate service custom-made for the “Vector-borne diseases and zoonoses” unit at the Belgian federal institute of public health or Sciensano, to address the rising impacts of climate change on public health by facilitating the surveillance and prediction of diseases related to vectors like ticks and exotic mosquitoes. BCC contributes to the communication, outreach and stakeholder interaction.
NOISELESS	Feb. 2025	Feb. 2027	KMI-IRM (coordinator), VITO (partner)	Budget: € 121.926; ECMWF – Copernicus Climate Change Service (C3S)	<b>Coordinator.</b> Homogenization of historical Belgian time series for uptake in the C3S Climate Data Store as part of the C3S National Collaboration Programme.

In 2024 the BCC was also represented in committees and advisory boards of multiple partner and stakeholder organisations both at national and international level (e.g. CERAC, KMI-IRM, WWF, VMM, C3S, AquaFlanders and WMO; see full list in Annex 5).

### ***Permanent secretariat of the federal Scientific Climate Council***

Under the law of 15 January 2024 on the governance of federal climate policy, the BCC was given the mission to host the permanent secretariat of the Scientific Climate Council. This independent body, composed of 5 to 7 members, selected on the basis of their scientific expertise, will be primarily responsible for providing advice on progress and funding of federal climate policies.

The permanent secretary, who took up her duties in September 2024, is in charge of organising the work of the Council and carrying out all the preparatory work necessary to accomplish its missions, including collecting, analysing, synthesising and making available to the Council all relevant data and information concerning its mandate. Furthermore, the secretary is responsible for ensuring public access to the advice, recommendations and reports adopted by the Council, as well as for assisting the Council in preparing its annual report. In 2024, the BCC supported the procedure of selection and appointment of the members of the Scientific Climate Council. Pending the establishment of the Council (scheduled for Q1 2025), the permanent secretariat will assist the Council members with the preparation of their first opinion, as part of the annual policy cycle 2025.

The BCC is also a member of the Federal task force 'energy and climate', which is the coordinating body composed of representatives of various federal administrations responsible for implementing and assessing federal climate policies and measures.

### ***Communication and outreach***

Over the past year in 2024, BCC has significantly strengthened its communication and outreach efforts to engage with its diverse audiences and amplify its impact. Through its active presence on key social media platforms (see Annex 6), the BCC has fostered a dynamic dialogue with its community. The BCC also kept the scientific community, and its stakeholders informed through two newsletters ([September 2024](#) and [November 2024](#)), while the Centres' website has further enhanced its visibility and accessibility.

The BCC media interactions have generated widespread coverage, reaching new audiences and raising awareness on climate change and its societal challenges and impacts (see Annex 7). In addition, the BCC team contributed to the scientific community with several scientific publications, presentations and reports (see Annex 8). Finally, BCC shared its expertise and knowledge through panel discussions, keynote addresses, and invited lectures, continuing its commitment to thought leadership in their fields (see Annex 9). These initiatives have helped the BCC to build stronger connections, disseminate knowledge, and further its mission.



# Governance



In addition to the BCC's Scientific Director and Operational Director, who work together in the daily management of the Centre, the BCC is governed by a Steering Committee and a Scientific Board. Furthermore, the BCC has an annual budget allocation of €2.000.000.

## ***Steering Committee***

The Steering Committee (see list of members in Annex 10) is responsible for guiding, monitoring and evaluating the BCC's mission and objectives and consists of representatives of the Federal Scientific Institutes, universities and research centres, the private sector, an international member and the federal departments of Health, Food Chain Safety and Environment and of Economy. The Steering Committee is chaired by Belspo to discuss and support strategic decisions.

Five members of the Steering Committee are appointed to the Bureau. They meet regularly to provide guidance and oversee the BCC's governance.

## ***Scientific Board***

The BCC Scientific Board was established in 2024 and includes as its members Belgian university and FSI scientists, public and private sector stakeholders and international scientists (member list in Annex 10). In the selection of scientific board members, the BCC strived for, and succeeded, in a balance regarding gender, language and research domain.

The BCC Scientific Board has convened 3 times in 2024 to discuss both operational and strategic scientific activities of the BCC, and more specifically:

- evaluation and selection of synthesis science working group research topics and proposals;
- evaluation of the student poster prizes at the BCC conference;
- IPCC authorship;
- the role of BCC in the coordination of the scientific community and transfer of knowledge strategies in Belgium and beyond.



# Annexes

## Annex 1. Call for Synthesis science working groups

**The Belgian Climate Centre invites proposals for two two-year synthesis science projects on the topics of overshoot and societal tipping processes**

### 1. Introduction

The [Belgian Climate Centre](#) aims to strengthen climate-related research capacity in Belgium and to improve the transfer of scientific knowledge to a wide range of stakeholders. The BCC focuses on four broad research domains: physical climate, terrestrial, societal, and technological aspects of anthropogenic climate change.

The Belgian Climate Centre invites Belgian researchers to submit proposals for two two-year **synthesis science** projects on the topics of

- (1) overshoot
- (2) societal tipping processes.

To foster interdisciplinary research collaboration on these topics, this call involves the creation of two Working Groups of up to 20 scientists and stakeholders, each led by a team of up to 4 Principal Investigators (PIs). For each topic, one Working Group will be supported. This includes support to convene at the Belgian Climate Centre in Uccle during multiple two-day meetings over the two-year duration of the project. It further supports a **post-doctoral fellowship** for one early-career Working Group member for the duration of the project. Supported projects can start from January 1, 2025 onwards, but no later than July 1, 2025.

### 2. Description and aim

#### 2.a. Synthesis science

The Belgian Climate Centre seeks to fund two synthesis science projects led by interdisciplinary teams that apply innovative approaches, as well as state-

of-the-art compilation and analysis techniques to existing data sets and information, with the aim to advance evidence-based decision making in the Belgian public and private sectors.

Synthesis science projects integrate diverse existing data sets and concepts to generate impactful research based on new knowledge and insights within and across disciplines. By engaging experts with multiple perspectives and diverse backgrounds, synthesis science projects can explore a vast body of information for use by other disciplines or by society in general. Synthesis science projects increase the scope and applicability of scientific results and thus contribute to the pressing societal need to address complex grand challenges, such as anthropogenic climate change, that cut across multiple societal sectors and disciplines (Carpenter et al. 2009, Baron et al. 2017). Synthesis activities, which involve sustained, intense interactions among a diverse group of experts with ready access to raw data, metadata, and sophisticated analytical tools, can include (Carpenter et al. 2009):

- analysis of disparate data sets and their mining from new perspectives that allow novel analyses;
- development and use of new analytical, computational, visualization, and modeling tools that may lead to greater insights;
- collaboration between theoreticians, empiricists, modelers, and practitioners to formulate new approaches to existing questions;
- integration of science with education and decision-making.

Synthesis science projects do not produce or collect new primary data, but synthesize and/or analyze existing data sets. They go beyond projects that aim only at a synthesis of publications and reports as they create new knowledge from novel combinations of existing information, in which the whole is greater than the sum of the parts.

Examples of scientific publications resulting from synthesis science projects across disciplines are manifold, a couple of references are listed herewith:

Cortés Arbués, I., Chatzivasileiadis, T., Ivanova, O., Storm, S., Bosello, F. and Filatova, T., 2024. Distribution of economic damages due to climate-driven sea-level rise across European regions and sectors. *Scientific Reports*, 14(1), pp.1-15.

Hubau, W., Lewis, S.L., Phillips, O.L., Affum-Baffoe, K., Beeckman, H., Cuní-Sanchez, A., Daniels, A.K., Ewango, C.E., Fauset, S., Mukinzi, J.M. and Sheil, D., 2020. Asynchronous carbon sink saturation in African and Amazonian tropical forests. *Nature*, 579(7797), pp.80-87.

### *2.b. Synthesis science topics*

The Belgian Climate Centre Working Groups will focus on synthesis science topics of strong scientific and societal impact and urgency. The BCC invites proposals that focus on the research topics of (1) overshoot and (2) societal tipping processes. Synthesis science projects can be focused on Belgium, on other regions with broad expertise (e.g., Congo Basin, Antarctica), or on continental (e.g., EU) or global scale.

#### Overshoot

According to the IPCC Special Report on global warming of 1.5°C, most emissions scenarios that limit warming to 1.5°C by 2100 include a temperature overshoot period (Rogelj et al. 2018). A temperature overshoot is defined as the temporary exceedance of a specified global warming level (e.g., 1.5°C) during a specified time period, followed by a decline to or below that level (Matthews et al. 2021). Such temperature overshoot pathways are achieved through anthropogenically enhanced CO<sub>2</sub> removal from the atmosphere and storage, e.g., through negative emission technologies and geological CO<sub>2</sub> storage, and the overshoot period often lasts multiple decades. As the implementation of greenhouse gas emissions reduction policies by governments are as yet insufficient to limit global warming to 1.5°C or even 2°C, temperature overshoot pathways receive increasing attention from scientists and policymakers (e.g., Liu and Raferty 2021, Meyer et al. 2022).

The Belgian Climate Centre seeks to support a working group that uses synthesis science to investigate various aspects of overshoot, including, but not exclusive to:

- Magnitude and duration of temperature overshoot
- Impacts of overshoot on ecosystems and human systems
- Adaptation in the context of temperature overshoot
- Anthropogenically enhanced CO<sub>2</sub> removal and storage
- Climate induced structural ecosystem overshoot (Zhang et al. 2021)

### Societal tipping processes

Tipping points can occur in complex systems with non-linear dynamics and strong self-amplifying feedback where small perturbations can trigger large responses in the system, causing a qualitative change in its future state (Lenton 2013). Tipping points exist in the climate system, in ecosystems, and in societal systems, systems that are increasingly interlinked in the Anthropocene.

Recently, societal tipping processes have received increasing attention for their potential role in a rapid global transformation to carbon-neutral societies. Societal tipping processes involving contagious and fast-spreading processes of change in technological and energy systems, political mobilization, financial markets, structural reorganization, and sociocultural norms and behaviors have the potential to be key drivers towards climate action (Otto et al. 2020).

The Belgian Climate Centre seeks to support a working group that uses synthesis science to investigate (coupled) socio-economic, socio-technological, socio-political, or socio-ecological tipping processes, including, but not exclusive to:

- Early detection and forecasting of societal tipping points
- Societal tipping interventions and deliberate processes towards decarbonization
- Interaction between societal tipping processes (e.g., compound effects, spillover effects)

### **3. Application process & instructions**

The call is open to Belgian research institutes and stakeholders only. Proposals for Working Groups on the above-described topics can be submitted by teams of up to four Principal Investigators (PIs), including at least one PI at a Federal Scientific Institute (FSI; see list in Appendix 1), completed with colleagues from Belgian regional research institutes and/or universities. Inclusion in the PI team of up to one Belgian stakeholder representative from the government, the private sector, or non-governmental organizations is strongly encouraged. No more than two members of the PI team should have the same affiliation.

Proposals will be evaluated by the Scientific Board of the Belgian Climate Centre (see Appendix 2) on their scientific merit, novelty, complementarity and interdisciplinarity of the PI team, transfer of knowledge to stakeholders,

and potential for societal impact. Other elements of the proposal that will contribute to the evaluation process are attention to data management and to Diversity, Equity, and Inclusion (DEI). We encourage the participation of early career scientists and efforts to include diverse perspectives in working groups. The Scientific Board reviewers of your proposal will not necessarily be subject matter experts, so your proposal should be understandable and compelling to non-specialists.

A lean yet thorough proposal preparation, submission, and evaluation process is important to us and we will therefore apply a two-stage proposal submission process. In the first stage, all interested PI teams are invited to submit a Letter of Intent (LOI) by April 15, 2024. We foresee to notify PI teams of the LOI evaluation results by the Scientific Board by June 15, 2024. In a second stage, after evaluation of the LOIs, a selection of PI teams will be invited to submit a full proposal by September 1, 2024. In Fall 2024, two full proposals (one per topic) will be recommended for funding.

### *3.a. Letter of Intent (LOI)*

Your LOI should consist of (1) a cover sheet, (2) a letter not exceeding 2000 words, and (3) biosketches of the four PIs that do not exceed two pages in total. A formal budget plan is not required as part of your LOI submission. LOIs are to be written in English. Please number proposal pages and submit your proposal as a single pdf file to [[info-cc@climatecentre.be](mailto:info-cc@climatecentre.be)]. Please name your file as follows: WG\_Overshoot\_[namePI1] or WG\_Societal\_ [namePI1] with [namePI1] being the last name of the PI that comes first in alphabetical order. The deadline for submission of LOIs is April 15, 2024.

#### *Cover sheet*

- Date of Submission
- Descriptive Title
- PI Names, affiliations, and Complete Contact Information (4 PIs max). At least one PI must be an FSI employee.
- Primary synthesis science topic: overshoot or societal tipping processes
- Potential Conflicts of Interest with Reviewers - Check the list of Belgian Climate Centre Science Board members (see Appendix 2) and note any potential conflicts of interest (see Appendix 3)

### *Letter*

Your letter should be clear and concise and include a problem statement, proposed methodology, PI team complementarity, anticipated results and deliverables, and knowledge transfer and impacts. Your letter can include up to 1 figure or table. Figure and table captions, as well as citations, are excluded from the 2000-word limit.

- a. Problem statement: Clear and concise statement of the synthetic knowledge gap that will be addressed in this project, why it is important, and how filling the gap will be accomplished.
- b. Proposed scientific assessment and methodology: Brief description of methodology, including which data sets you anticipate to use, and why it is appropriate
- c. PI team: brief explanation of how the expertise of each PI team member is essential and will contribute to the interdisciplinarity and success of the project
- d. Anticipated results and deliverables: include envisioned scientific journal articles, proposals (include potential funding agency), reports, and other written products, as well as data and software products.
- e. Knowledge transfer and impacts: Briefly describe the primary intended stakeholders of your project (policy-makers, public and private sector, the media, broader public, etc.) and give concrete examples of how they can use the results of your project. Also, describe how you will transfer the scientific knowledge generated in this project to the intended stakeholders.

### *Biosketches*

Biosketches should not exceed 2 pages in total and should include for each PI:

- Name(s), affiliations, and Complete Contact Information
- Education and professional appointments
- Selected expertise, products, and synergistic activities relevant to the proposed synthesis science project

### *3.b. Full proposal*

A selection of PI teams will be invited by June 15, 2024 to submit a full proposal by September 1, 2024. For this stage also, we prioritize a lean yet thorough proposal process and full proposals will be limited in length. In addition to the limited-length proposal body, full proposal submissions will include a full list of working group participants, a two-year work plan, a data management plan, a Diversity, Equity, and Inclusion (DEI) plan, a post-doctoral mentoring plan, and full Curriculum Vitae of the PIs. Detailed instructions for the full proposal submissions will accompany the announcement of the selection of the PI teams by June 15, 2024.

## **4. Financial information**

A formal budget plan is not required as part of your LOI or full proposal submission. The Belgian Climate Centre will calculate a budget for successful proposals that will include the below-mentioned costs.

For each of the two selected Working Groups, the Belgian Climate Centre will fund:

- Salary for a post-doctoral fellow for the two-year duration of the project. The post-doctoral fellow will be selected by the Belgian Climate Centre and the PI team, will be co-mentored by one of the four PIs and by the Belgian Climate Centre, and will be hired as staff members of the Climate Centre. More details on post-doctoral recruitment will be provided with the detailed instructions for full proposals (June 15, 2024).

Expenses for up to 4 (nationally and/or internationally attended) workshops over the two-year duration of the project to be held at the Climate Centre on the Space Pole in Uccle. The Belgian Climate Centre will support up to 20 workshop participants. Support includes two Climate Centre meeting rooms, and technical and administrative support during the workshops, catering, and (national) travel costs, as well as international travel and lodging costs for up to 5 international participants.

Scientific publication costs up to 5000 EUR total.

Belgian Climate Centre Working Group funding does NOT include:

- Field research or collection of new data
- Case studies
- Continuation or completion of ongoing work
- Technical or administrative support outside of scheduled workshops
- Supplies, travel other than to Working Group meetings
- Projects requesting overhead at home institutions

## **5. Contact**

Please contact Chloé Deffet ([chloe.deffet@climatecentre.be](mailto:chloe.deffet@climatecentre.be)) for questions regarding this call for proposals or the LOI preparation and submission process.

## **6. References**

Baron JS, Specht A, Garnier E, Bishop P, Campbell CA, Davis FW, Fady B, Field D, Gross LJ, Guru SM and Halpern BS, 2017. Synthesis centers as critical research infrastructure. *BioScience*, 67(8), pp.750-759.

Carpenter SR, Armbrust EV, Arzberger PW, Chapin III FS, Elser JJ, Hackett EJ, Ives AR, Kareiva PM, Leibold MA, Lundberg P and Mangel M, 2009. Accelerate synthesis in ecology and environmental sciences. *BioScience*, 59(8), pp.699-701.

Cortés Arbués I, Chatzivasileiadias T, Ivanova O, Storm S, Bosello F and Filatova T, 2024. Distribution of economic damages due to climate-driven sea-level rise across European regions and sectors. *Scientific Reports*, 14(1), pp.1-15.

Hubau W, Lewis SL, Phillips OL, Affum-Baffoe K, Beeckman H, Cuní-Sanche A, Daniels AK, Ewango CE, Fauset S, Mukinzi JM and Sheil D, 2020. Asynchronous carbon sink saturation in African and Amazonian tropical forests. *Nature*, 579(7797), pp.80-87.

Lenton TM, 2013. Environmental tipping points. *Annual Review of Environment and Resources*, 38, pp.1-29.

Liu PR and Raftery AE, 2021. Country-based rate of emissions reductions should increase by 80% beyond nationally determined contributions to meet the 2C target. *Communications earth & environment*, 2(1), p.29.



Matthews JBR et al., 2021 Annex VII: Glossary. In Climate change 2021: The physical science basis. Contribution of working group I to the sixth assessment report of the Intergovernmental Panel on Climate Change (eds Masson-Delmotte V et al.), pp. 2215-2256. Cambridge, UK: Cambridge University Press.

Meyer AL, Bentley J, Odoulami RC, Pigot AL and Trisos CH, 2022. Risks to biodiversity from temperature overshoot pathways. *Philosophical Transactions of the Royal Society B*, 377(1857), p.20210394.

Otto IM, Donges JF, Cremades R, Bhowmik A, Hewitt RJ, Lucht W, Rockström J, Allerberger F, McCaffrey M, Doe SS and Lenferna A, 2020. Social tipping dynamics for stabilizing Earth's climate by 2050. *Proceedings of the National Academy of Sciences*, 117(5), pp.2354-2365.

Rogelj J et al., 2018 Mitigation pathways compatible with 1.5°C in the context of sustainable development. In *Global warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (eds Masson-Delmotte V et al.). Cambridge, UK: Cambridge University Press.

Zhang Y, Keenan TF and Zhou S, 2021. Exacerbated drought impacts on global ecosystems due to structural overshoot. *Nature ecology & evolution*, 5(11), pp.1490-1498.

### **Appendix 1: Belgian Federal Scientific Institutes (FSIs)**

Royal Belgian Institute for Space Aeronomy (BIRA-IASB)

Royal Belgian Institute of Natural Sciences ([KBIN-IRSNB](#))

Royal Library of Belgium ([KBR](#))

Royal Institute for the Study and Conservation of Belgium's Artistic Heritage ([KIK-IRPA](#))

Royal Meteorological Institute ([KMI-IRM](#))

Royal Museums for Art and History ([KMKG-MRAH](#))

Royal Museum for Central Africa ([KMMA-MRAC](#))

Royal Museums of Fine Arts of Belgium (KMSKB-MRBAB)

Royal Observatory of Belgium (KSB-ORB)

State Archives of Belgium (RA-AE)

Sciensano

## **Appendix 2: Belgian Climate Centre Scientific Board**

Prof. Heleen De Coninck – Technische Universiteit Eindhoven (NL)

Prof. Ann Desmet – ULB

Dr. Ann Dierckx – Esscenscia

Prof. Pierre Friedlingstein – University of Exeter (UK)

Dr. Rafiq Hamdi – KMI-IRM

Prof. Eric Lambin – UCLouvain

Prof. Stef Lhermitte – KU Leuven

Prof. Delphine Misonne – UCLouvain SLB

Dr. Kris Piessens – KBIN-IRSNB

Dr. Chantal Roggeman – Federal Climate Change Department

Dr. Bart Rymen – Belspo

Dr. Gerrit-Jan Schaeffer – Energyville

Prof. Nadia Soudzilovskaia – UHasselt

Ir. Kathleen Vandewerf – SWECO

Prof. Ann Van Griensven – VUB

## **Appendix 3: Conflict of Interest Guidelines (adapted from Belspo guidelines)**

Evaluators (in this case: Scientific Board Members) are considered to have a conflict of interest (COI) if they stand to profit professionally, financially, or personally from approval or rejection of an application. Scientific Board Members with a potential COI with any of the proposals, will be excluded from the evaluation of those proposals.

More specifically, this means evaluators must:

- have no direct link with the project;
- not be involved in the preparation of the Lol and/or the full proposal;
- not benefit from the acceptance of the proposal;
- not be a family member or partner relative to the first degree of any of the applicants;

- not belong to applicants' institutions;
- not be a director or a trustee of the applicants' institutions;
- not have been employed within the applicants' institutions in the past 5 years;
- have no common funded projects or co-publications with any of the applicants or their research groups within the last 5 years;
- not be in any other situation which compromises or casts a doubt on his or her ability to evaluate the proposal impartially, or that could reasonable appear to do so in the eyes of an external third party.

# Annex 2. Programme of the Belgian Science for Climate Action Conference 2024

## Belgian Science for Climate Action Conference 2024 Maison de la Poste – 19-20 February 2024 Programme

Day 1	Session
08:30 - 09:30	Registration
09:30 - 9:40	Conference Opening
09:40 - 10:40	<p>Opening Plenary <u>Clair Barnes</u> Environmental statistician, World Weather Attribution, Imperial College London</p> <p><u>Thomas Dermine</u> State Secretary for Economic Recovery and Strategic Investments, in charge of Science Policy</p> <p><u>Bas Smets</u> Architect, Professor in Practice at the GSD of Harvard University</p>
11:00 - 12:00	<p>Parallel Session 1:</p> <ul style="list-style-type: none"> <li>• Compounding events and tipping points</li> <li>• Warning systems: lessons learnt from 2021 floods</li> <li>• Nature-based solutions for climate extremes</li> </ul>
12:15 - 12:45	Artistic Performance
12:45 - 14:00	Lunch
14:00 - 15:00	<p>Parallel Sessions 2:</p> <ul style="list-style-type: none"> <li>• Resilience of transport infrastructure to climate extremes</li> <li>• Systems thinking for climate risks</li> <li>• Biodiversity and agricultural resilience to climate extremes</li> </ul>
15:00 - 15:30	Coffee Break
15:30 - 16:30	<p>Parallel Sessions 3:</p> <ul style="list-style-type: none"> <li>• Resilience of energy infrastructure to climate extremes</li> <li>• Inequities in exposure to climate extremes</li> <li>• Navigating the climate research funding landscape</li> </ul>
16:30 - 17:30	Poster Presentation
17:30 - 18:30	Drinks & Networking

Day 2	Session
09:00 - 10:00	Registration
10:00 - 11:00	<p>Opening Plenary  <u>Valérie Masson-Delmotte</u>  Paleoclimatologist, Research Director CEA, Laboratoire des Sciences du Climat et de l'Environnement, Paris Saclay</p> <p><u>Jan Rotmans</u>  Captain of Transition, Professor, Erasmus University Rotterdam</p>
11:00 - 11:30	Coffee Break
11:30 - 12:30	Parallel Sessions 1: <ul style="list-style-type: none"> <li>• Physical and mental health impacts of climate extremes</li> <li>• Climate risk assessments: perspectives</li> <li>• Sea-level extremes and marine heatwaves</li> </ul>
12:30 - 14:00	Lunch
14:00 - 15:00	Parallel Sessions 2: <ul style="list-style-type: none"> <li>• Impacts of climate extremes on the carbon cycle</li> <li>• Insuring climate risks: towards public-private partnerships</li> <li>• How to create a (media) impact with your research</li> </ul>
15:00 - 15:30	Coffee Break
15:30 - 16:30	Parallel Sessions 3: <ul style="list-style-type: none"> <li>• Attribution of climate extremes</li> <li>• Q&amp;A with the Belgian Climate Centre</li> <li>• Cities and climate extremes</li> </ul>
16:30 - 17:30	Poster Presentation
17:30 - 18:30	Closing Ceremony

# Annex 3. Programme of the Workshop “Climate litigation in Belgium”

## Workshop ‘Climate litigation in Belgium and beyond’ Belgian Climate Centre - 11 September 2024 Programme

Time	Session
09:00 - 09:30	Registration & coffee
09:30 - 09:40	Welcome and opening Valérie Trouet / Ella Jamsin (Belgian Climate Centre)
09:40 - 10:55	Session 1: The rise and diversity of climate litigation cases in Belgium and beyond Moderated by: Luc Lavrysen (UGent) Hendrik Schoukens (UGent) The sprawling diversity of recent climate litigation in Belgium: beyond Klimaatzaak to Petrol Station- and Farmers-cases Carole Billiet (UHasselt, UGent) Climate litigation against companies: the Shell jurisprudence as a groundbreaking template? Panel discussion: Anaïs Berthier (ClientEarth), Matthias Petel (UCLouvain, Harvard Law School)
10:55 - 11:15	Coffee break
11:15 - 12:30	Session 2: Use of scientific evidence and soft law in climate litigation Moderated by: Romain Weikmans (ULB) Joeri Rogelj (Imperial College London) Determining individual States' 'fair share' of emissions reductions Wim Thiery (VUB) Climate extremes: how attribution science informs climate lawsuits Charles-Hubert Born (UCLouvain) Climate science and soft law as a reference for general standards of behavior: the real claws of the Paris Agreement?" Panel discussion: Mariolina Eliantonio(Maastricht University)
12:30 - 13:45	Networking lunch
13:45 - 15:00	Session 3: Politics versus independent judicial power Moderated by: Emmanuel Slautsky (ULB) Céline Romainville (UCLouvain) Climate change as a challenge to democracy and the separation of powers Cedric Jenart (UAntwerpen) Separation of powers and the Belgian climate case: a checks and balancing act Panel discussion: Françoise Tulkens (UCLouvain), Olivier Van der Maren (VBO-FEB), Nicolas Van Nuffel (Coalition Climat – Klimaatcoalitie)
15:00 - 15:20	Coffee break
15:20 - 16:35	Session 4: Outside the courtrooms: Looking at the effects of climate litigation Moderated by: Patricia Popelier (UAntwerp) Vincent Lefebve (CRISP, ULB) Climate litigation as an example of strategic litigation: opportunities & risks Delphine Misonne (UCLouvain – Saint-Louis) Climate litigation: a trigger to strengthen climate governance? Panel discussion: Karel Reybrouck (KU Leuven), Sarah Tak (Klimaatzaak)
16:35 - 16:45	Wrap-up and closing

# Annex 4. Programme of the first leadership meeting of the European National Climate Centres

## First leadership meeting of the European National Climate Centres

Belgian Climate Centre - 12-13 June 2024

### Programme

Day 1	Session
09:00 – 09:30	Registration and coffee
09:30 – 09:45	Icebreaker – Round of table
09:45 – 10:45	Introductory presentations by each national climate centre (approx. 10'), including the following elements: why? mandate what? goals how? governance, budget, personnel, activities
10:45 – 11:00	Coffee break
11:00 – 12:00	Workshop session 1: strategies for coordination of research community, transfer of knowledge to stakeholders
12:30 – 14:00	Lunch
14:00 – 15:15	Workshop session 1: strategies for coordination of research community, transfer of knowledge to stakeholders Workshop session 2: governance and funding
16:15 – 15:45	Coffee break
16:30 – 17:15	Workshop session 3: Priorities, partnerships & synergies
Day 2	Session
8:30	Meet in the hotel lobby to jointly take the train to Leuven
10:00 – 13:00	Visit of Leuven - <a href="https://en.leuven2030.be/">https://en.leuven2030.be/</a>
13:00 – 14:30	Lunch in Leuven
14:30	Train back to Brussels or directly to Brussels airport

## Annex 5. Representation in committees and advisory boards

Organisation (full name)	Role	Staff Member
<b>Architecture Workroom Brussels</b>	Board member	Valerie Trouet
<b>CERAC</b>	Steering Committee member	Valerie Trouet, Etienne Hannon
<b>CERAC - Study "Is Belgium living within its safe operating space"</b>	Advisory Board member	Ella Jasmin
<b>Mission Forum event May 2024</b>	Organising committee member	Valerie Trouet
<b>KMI-IRM</b>	Scientific Board member	Valerie Trouet
<b>TERENO (Terrestrial Environmental Observatories, Germany)</b>	Advisory Board member	Valerie Trouet
<b>WWF Belgium</b>	General Assembly member	Valerie Trouet
<b>Terrascope</b>	Advisory Board member	Rozemien De Troch
<b>Liège Colloquium on Ocean Dynamics</b>	Scientific and organising committee member	Rozemien De Troch
<b>Strategisch Plan Waterbevoorraing Vlaanderen (Aquaflanders and VMM)</b>	Advisory Board member	Rozemien De Troch
<b>C3S User engagement Workshop with the Belgian user community 21 June 2024</b>	Organising committee member	Rozemien De Troch
<b>CERAC - Study "Is Belgium living within its safe operating space"</b>	Steering Committee member	Rozemien De Troch, Etienne Hannon
<b>WMO Climate Services Information Systems (CSIS)</b>	National Focal Point	Rozemien De Troch

Table 2 Representation in committees and advisory boards



## Annex 6. Social media

Social Media	# Posts (2024)	# Followers
LinkedIn	97	2,373
X	135	408
Facebook	22	62
Instagram	20	159

Table 3 Social media posts and followers

## Annex 7. In the media

Media	Date	Type Of Interaction	Staff Member
<u>Zwijgen is geen optie</u>	01/2024	Podcast	Valérie Trouet
<u>De Morgen</u>	20/01/2024	Column	Valérie Trouet
<u>De Morgen</u>	17/02/2024	Column	Valérie Trouet
<u>RTBF</u>	20/02/2024	Interview	Ella Jamsin
<u>De Morgen</u>	21/02/2024	Interview	Valérie Trouet
<u>VRT - Radio 1 de Ochtend</u>	03/03/2024	Interview	Valérie Trouet
<u>De Morgen</u>	02/04/2024	Interview	Rozemien De Troch
<u>De Morgen</u>	13/04/2024	Column	Valérie Trouet
<u>VRT NWS</u>	17/04/2024	Interview	Rozemien De Troch
<u>De Morgen</u>	22/04/2024	Interview	Valérie Trouet
<u>Science Connection</u>	01/05/2024	Article	Matthias Meersschaert
<u>L'Echo</u>	12/05/2024	Interview	Etienne Hannon
<u>VRT NWS</u>	15/05/2024	Interview	Valérie Trouet
<u>La Libre</u>	19/05/2024	Interview	Etienne Hannon
<u>Plus Magazine</u>	04/06/2024	Interview	Valérie Trouet
<u>De Standaard</u>	05/06/2024	Interview	Valérie Trouet
<u>De Morgen</u>	08/06/2024	Column	Valérie Trouet
<u>De Standaard</u>	26/06/2024	Interview	Valérie Trouet
<u>VRT - Radio 1 'De Ochtend'</u>	14/06/2024	Interview	Valérie Trouet
<u>De Morgen</u>	19/06/2024	Interview	Valérie Trouet
<u>VRT - De Afspraak</u>	25/06/2024	Interview	Valérie Trouet
<u>De Morgen</u>	06/07/2024	Column	Valérie Trouet
<u>Factcheck Vlaanderen</u>	26/07/2024	Interview	Rozemien De Troch
<u>De Morgen</u>	03/08/2024	Column	Valérie Trouet
<u>Le Soir</u>	12/08/2024	Interview	Valérie Trouet
<u>De Morgen</u>	20/08/2024	Interview	Valérie Trouet
<u>Dag Allemaal</u>	20/08/2024	Interview	Valérie Trouet
<u>De Tijd</u>	30/08/2024	Interview	Valérie Trouet
<u>De Morgen</u>	31/08/2024	Column	Valérie Trouet

<b><u>De Morgen</u></b>	03/09/2024	Interview	Valérie Trouet
<b><u>VRT - De Afspraak</u></b>	04/09/2024	Interview	Valérie Trouet
<b><u>VTM - Nieuws</u></b>	06/09/2024	Interview	Rozemien De Troch
<b><u>Het Nieuwsblad</u></b>	13/09/2024	Interview	Valérie Trouet
<b><u>De Morgen</u></b>	25/09/2024	Interview	Valérie Trouet
<b><u>De Morgen</u></b>	28/09/2024	Column	Valérie Trouet
<b><u>De Morgen</u></b>	26/10/2024	Column	Valérie Trouet
<b><u>VRT - Radio 1 'De Ochtend'</u></b>	31/10/2024	Interview	Rozemien De Troch
<b><u>VRT NWS</u></b>	31/10/2024	Interview	Rozemien De Troch
<b><u>Het Nieuwsblad</u></b>	01/11/2024	Interview	Rozemien De Troch
<b><u>La Libre</u></b>	13/11/2024	Interview	Valérie Trouet
<b><u>De Morgen</u></b>	23/11/2024	Column	Valérie Trouet
<b><u>Het Nieuwsblad</u></b>	25/11/2024	Interview	Valérie Trouet
<b><u>De Standaard</u></b>	26/11/2024	Interview	Valérie Trouet
<b><u>De Morgen</u></b>	28/12/2024	Interview	Valérie Trouet

Table 4 Appearances of BCC staff in the media

## Annex 8. Scientific publications, presentations and reports

### Scientific publications

Authors from Belgian universities or research institutes are marked with the asterisk (\*) and authors from the Belgian Climate Centre are in bold.

Xu G., Broadman E., Dorado-Liñan I., Klippel L., Meko M., Büntgen U., De Mil T.\*, Esper J., Gunnarson B., Hartl C., Krusic P., Linderholm H., Ljungqvist F., Ludlow F., Panayotov M., Seim A., Wilson R., Zamora-Reyes D., **Trouet V.**, (2024). Jet stream controls on European climate and agriculture since 1300 CE. *Nature*;

De Mil T.\*, Matskovsky V.\*, Salzer M., Corluy L.\*, Verschuren L.\*, Pearson C., Van Hoorebeke L.\*, **Trouet V.**, Van den Bulcke J.\*, (2024). Bristlecone Pine Maximum Latewood Density as a Superior Proxy for Millennium-length Temperature Reconstructions. *Geophysical Research Letters*;

Yao Q., Jiang D., Zheng B., Wang X., Zhu X., Fang K., Shi L., Wang Z., Wang Y., Zhong L., Pei Y., Hudson A., Xu S., Bai M., Huang X., **Trouet V.**, (2024). Anthropogenic warming is a key climate indicator of rising urban fire activity in China. *National Science Review*;

Golding N., Lambkin K., Wilson L., **De Troch R.**, Fischer A. M., Hygen H. O., Michiko Hama A., Dyrddal A. V., **Jamsin E.**, Termonia P.\*, Hewitt C., (2024). Developing National Frameworks for Climate Services: Requirements, Experiences and Challenges from across Europe. *Climate Services*;

Kuhl E., Esper J., Schneider L., **Trouet V.**, Kunz M., Klippel L., Büntgen U., Hartl C., (2024). Revising Alpine summer temperatures since 881 CE. *Climate dynamics*;

Davis, A. J. S.\*, Groom Q.\*, Adriaens T.\*, Vanderhoeven S., **De Troch R.**, Oldoni D.\*, Desmet P.\*, Reyserhove L.\*, Lens L.\*, and Strubbe D.\*, (2024). Reproducible WiSDM: a workflow for reproducible invasive alien species risk maps under climate change scenarios using standardized open data. *Frontiers in Ecology and Evolution*;

U'Ren J. M., Oita S., Lutzoni F., Miadikowska J., Ball B., Carbone I., May G., Zimmerma, N. B., Valle D., **Trouet V.**, Arnold A. E., (2024). Environmental drivers and cryptic biodiversity hotspots define endophytes in Earth's largest terrestrial biome. *Current Biology*;

Yao Q., Zheng B., Fang K., Hudson A., Zhou F., Chen H., Tan H., Guo F., **Trouet V.**, (2024). Modulations of NAO on the interplay between monsoon and westerlies in Asia on interdecadal timescales. *Climate dynamics*;

## **Conference presentations**

Zuidema P., Babst F., Groenendijk P., **Trouet V.**, Beeckman H. \*, Haneca K. \*, Toirambe B. \*, et al, (2024). Pantropical tree growth resilience to drought. EGU General Assembly, 14-19 April; Vienna, Austria.

Bregy J., Maxwell J., Robeson S., Harley G., **Trouet V.**, (2024). Variations in the western flank of the north Atlantic subtropical high since 1140 CE: extremes, hydroclimate patterns, and volcanic forcing. Geological Society of America, 15-16 April; Asheville, USA.

**De Troch R.**, (2024). National climate services and connection with EU Policies using C3S. C3S general Assembly, 17-20 June, Brussels, Belgium.

## **Reports**

Climate Resilience for Physical Assets: An Approach to Assess Climate Risks, (2024). Deloitte;

State of Climate Services Report, (2024). World Meteorological Organization (WMO).

## Annex 9. Contribution to panels, keynotes and invited lectures

### Contribution to panels

Event name and location	Date	Panel speaker
Arctic Science and Policy (Brussels, Belgium)	22/01/24	Valérie Trouet
Equinox Summit (Brussels, Belgium)	26/03/24	Valérie Trouet
Think2030 Conference Belgium - Ensuring a resilient future for the European Green Deal (Brussels, Belgium)	27/03/2024	Etienne Hannon
CERAC launch event (Brussels, Belgium)	22/04/24	Valérie Trouet
Copernicus 7th C3S General Assembly (Brussels, Belgium)	17-18/06/2024	Valérie Trouet, Rozemien De Troch

### Keynotes and invited lectures

Event name and location	Date	Panel speaker
Special Climate Envoys meeting ((in the Framework of Belgian EU Presidency) (Ghent, Belgium)	30/01/24	Valérie Trouet
New Scientist Live on climate, UHasselt (Hasselt, Belgium)	22/02/24	Valérie Trouet
EU Joint Research Centre (Ispra, Italy)	14/03/2024	Valérie Trouet
Koninklijke Vlaamse Academie van België (KVAB) (Brussels, Belgium)	18/04/2024	Valérie Trouet
Senior Policy meeting vergroenen van goederenvervoer (in the Framework of Belgian EU Presidency) (Antwerp, Belgium)	23/04/24	Valérie Trouet

<b>Event name and location</b>	<b>Date</b>	<b>Panel speaker</b>
Organizatie Duurzame Energie (ODE) (Brussels, Belgium)	26/04/24	Valérie Trouet
International Conference on Renewable Resources and Biorefineries (Brussels, Belgium)	5/06/2024	Valérie Trouet
Internationale Scheldecommissie (Valenciennes, France)	26/06/24	Valérie Trouet
Training climate coaches, FPS Health, Food Chain Safety and Environment (Brussels, Belgium)	28/08/24	Rozemien De Troch
Swiss Federal Research Institute WSL distinguished lecture (Birmensdorf, Switzerland)	24/09/24	Valérie Trouet
Lecture 'Anthropogenic climate change and the importance of climate models for climate adaptation- and mitigation' within course 'Energy and sustainability', University of Antwerp (Antwerp, Belgium)	3/10/24	Rozemien De Troch
Lecture 'Anthropogenic climate change' within course 'Sustainable Energy', ULB-VUB	7/10/24	Rozemien De Troch
The Pennsylvania State University, Department of Geography, State College (State College, United States)	11/10/24	Valérie Trouet
Cooper Union School of Architecture (New York City, USA)	15/10/24	Valérie Trouet
UCCRN International workshop (7th UDCW), UMONS (Charleroi, Belgium)	31/10/2024	Etienne Hannon
Climate Event, University of Twente (Enschede, The Netherlands)	5/11/24	Valérie Trouet

## Annex 10. List of Steering Committee members and Scientific Board members

Name	Affiliation
Arnaud Vajda	Belgian Science Policy (Belspo)
Aurore de Boom	Greenwin
Pierre Coheur	ULB
Daniel Gellens	Royal Meteorological Institute (KMI-IRM)
Filip Lefebvre	VITO
Gaël Lymer	Royal Belgian Institute of Natural Sciences (IRSNB/KBIN)
Hans Beeckman	Royal Museum for Central Africa (MRAC/KMMA)
Hein Lannoy	Assuralia
Inge Arents	Flanders Food
Luc Bas	CERAC
Martine De Mazière	Royal Belgian Institute for Space Aeronomy (IASB/BIRA)
Michel de Paepe	UGent
Michel Moutschen	ULiège
Michiel van den Hout	Klimaatonderzoek Initiatief Nederland
Nancy Mahieu	FPS Economy - DG Energy
Nicole van Lipzig	KU Leuven
Peter Wittoeck	FPS Public Health - DG Environment - Climate Change Department










Table 7 List of Steering Committee members

<b>Name</b>	<b>Affiliation</b>
Ann Desmet	ULB
Ann Dierckx	Essenscia
Ann Van Griensven	VUB
Bart Rymen	Belgian Science Policy (BELSPO)
Chantal Roggeman	FPS Public Health - DG Environment - Climate Change Department
Delphine Misonne	UCLouvain Saint-Louis
Eric Lambin	UCLouvain
Gert Jan Schaeffer	EnergyVille
Heleen De Coninck	Eindhoven University
Kathleen Van De Werf	SWECO
Kris Piessens	Royal Belgian Institute of Natural Sciences (IRSNB/KBIN)
Nadia Soudzilovskaia	UHasselt
Pierre Friedlingstein	University of Exeter
Rafiq Hamdi	Royal Meteorological Institute (KMI-IRM)
Stef Lhermitte	KU Leuven

*Table 8 List of Scientific Board members*



## Our team today

 Chloé Dettlet International Policy Specialist	 Etienne Hannon Science & Policy Lead	 Ella Jamsin Operational Director	 Florine Lebeau Executive Assistant
 Soumaya Majdoub Scientific Advisor	 Matthias Meerschaert Communications manager	 Rozemien De Troch Climate Services Lead	 Valérie Trouet Scientific Director
			 TBC Data scientist



BENEDETTI INTERIEUR



