

2025 Plan of Operations for the Centre for Environmental and Climate Science (CEC)

Mission

The Centre for Environmental and Climate Science (CEC) is to contribute to sustainable local, regional and global development by being an innovative agent for research, education and external engagement in the field of environmental and climate science, with a broad interdisciplinary profile. CEC's activities generate evidence-based knowledge that contributes to sustainable solutions in the field of environmental and climate science and provides added value and leverage for disciplinary research at the Faculty of Science's departments and for relevant organisations throughout the University. CEC is to be a springboard for new generations of researchers with an interdisciplinary education and alumni with a background in environmental science. CEC is responsible for the development of the field of environmental science.

CEC's mission includes being:

- a *research actor* that encourages and conducts research on the environment, climate and computational science with a broad and interdisciplinary profile.
- a *coordinator* for strategic development of environmental, climate-related and computational science research and infrastructure initiatives
- a dynamic and creative *meeting place* for researchers who want to tackle current and upcoming environmental, health, climate and sustainable development challenges that require a broad approach
- a *hub for talent management* through training of future professional actors in the area of environmental and climate science as well as computational science
- a *knowledge bank* and forum for active collaboration between academia and wider society

Activities

CEC's mission is to initiate, support and conduct education and research concerning sustainable solutions in the areas of environment, health, climate and sustainable development. CEC is to advance interdisciplinary research and education in climate and environmental issues, highlight and communicate research results and act as a link to important stakeholders in its area of activity. CEC also conducts research and education in computational science, with an emphasis on applications in medicine, healthcare and the environment. CEC's activities are marked by an interdisciplinary approach and are based on collaboration across department and faculty boundaries, and on and external engagement. Strategic communication and external monitoring are integrated as tools at different levels in order to achieve CEC's goals and visions.

CEC is the host of the university-wide strategic research areas BECC and MERGE, the profile area Nature-based future solutions and the related thematic collaboration initiatives LU Land and the Sustainability Forum, the ICOS Sweden research infrastructure and the Agenda 2030, and

ClimBEco graduate schools. Through these, CEC takes an interdisciplinary responsibility for activities related to an area that encompasses the environment, climate and sustainability, regardless of where they are conducted at the University. CEC serves as a catalyst for interdisciplinary research development and for interdisciplinary teaching through CEC's first- and second-cycle (undergraduate education) courses and programmes and third-cycle (doctoral) education.

Challenges in 2025

The overall challenge for CEC in 2025 is to conduct ongoing activities in a satisfactory way while participating in the work of establishing the Department of Environmental and Earth Sciences (MGeo), with the aim of creating favourable conditions for long-term operational development. This includes assessments of the implications and opportunities for CEC's activities as well as the financial factors that will be affected by the establishment of a new department. One of the complexities of MGeo is to deal with establishing a new department while finding ways to accommodate CEC's current network organisations and activities.

The major challenge in 2025 is to prepare for a departmental merger with Geology and INES from 2026 in research, teaching, and external engagement, and to find forms for inter-departmental and inter-faculty networks and activities. Here, CEC will work with the other departments to develop new structures for the organisation and management of all activities, while moving CEC from Biology to the Geocentrum. This will be done in parallel with "normal" activities, posing challenges for staff who will be given additional duties, and for organisations that will be placed in a new context.

Overall, these changes entail challenges, but also future opportunities. The following points sum up the most important operational plans to meet these challenges in 2025.

Research:

- Conduct research during ongoing reorganisation/relocation, so that the included research orientations continue to develop
- Develop new pathways for interactions within the new department, while maintaining and developing CEC's interdisciplinary research

First and second-cycle education (GU):

- Adapt and develop GU programmes in relation to the capacities and needs of the new department and the faculty as a whole
- Prepare the GU organisation to become an integral part of the new department
- Recruit more teaching staff with the skills to be course directors

Third-cycle education (FU):

- Develop and strengthen the new FU subject in computational science
- Work towards a common organisation of third-cycle education in the new department and how CEC's doctoral programmes find their place within it
- Develop ClimBEco in cooperation with the new department

External engagement:

- Ensure that CEC's existing broad external engagement related to the environment, climate and computational science is given the resources and organisational conditions to continue broad inter-faculty work
- Help develop proposals on how the collaborative activities of the network organisations will develop and interact with the new department

CEC's overall vision and focus areas

CEC's 2025 Plan of Operations is based on an overall long-term vision and a short-term vision. These are presented in four main areas: 1. Interdisciplinary research actor 2. Educator of future professional actors, 3. Collaboration with external stakeholders, 4. Attractive workplace and creative scientific environment. Goals for each main area at an overall level and focus areas for 2025 are listed below. If conditions change, activities can be deleted, modified or added.

1. Interdisciplinary research actor

CEC's overall goals as an interdisciplinary research actor:

- A leading international interdisciplinary area encompassing climate and environment has been consolidated
- Establishment of computational science as an interdisciplinary research area, anchored in the first, second and third cycles and with an active role in inter-faculty research networks
- Long-term funding of research activities has been secured, with new teaching positions at both the new department and collaborating departments
- New research and external engagement platforms as well as national and international research projects have been developed that focus on future issues of climate and environmentally sustainable societal development, and innovative computational science methods have also been developed. The operations will be an attractive collaborative partner for future research projects within and outside LU
- Conditions are secured for working in an integrated and structured way on transdisciplinary research and innovation in the environmental and sustainability field, and reinforced work of the SRAs and profile areas
- A leading role in infrastructure within the environmental field has been strengthened, through secured funding and utilisation of ICOS Sweden and other networks within the EU, increased use of the major research facilities in Lund for environmental research, and secured resources for access to computational power for modelling

CEC's 1 to 2-year goals as an interdisciplinary research actor:

- Drive vision-related work and strategic planning in order to strengthen excellence, relevance and societal impact within CEC's research profiles
- Help identify ways in which CEC network organisations, including the Nature-based future solutions profile area and the SRAs BECC and MERGE, are organised to ensure their interdepartmental role

- Support BECC and MERGE regarding the joint national evaluation of the strategic research areas that will take place sometime in 2025-2026
- Provide information for researchers at CEC and in CEC's networks in order to exploit relevant funding opportunities for research (including Horizon Europe), external monitoring for synthesis and strategic initiatives
- Actively participate in the development of a network in the field of computational science both within and between faculties, as well as interactions within the new department
- Further develop cooperation between research, communication and external engagement to obtain increased understanding of research results at public authorities and in the private sector
- Continued proactive work on operation and funding of ICOS stations, support of related activities, and utilisation of this important infrastructure for excellent and societally relevant research

2. Educator of future professional actors

CEC's overall goals as an educator:

- Create international Master's programmes with a focus on attractive programmes for both students and employers
- Recruit teaching staff in the short and long term to cover needs in first and second-cycle education
- Ensure that third-cycle courses and programmes in environmental science and computational science remain interdisciplinary, involve research excellence and have a high degree of external engagement so that they can contribute to innovation and societal development
- The ClimBEco and Agenda2030 graduate schools are established as leaders in their respective areas, have secured long-term funding and are attractive to applicants from other programmes

CEC's 1 to 2-year goals as an educator:

- Ensure that the interdisciplinary approach that permeates CEC's programmes in the first, second and third cycles is maintained in the new department
- Ensure professional and efficient administrative support for first, second and third cycle programmes
- Recruit more teaching staff with the skills to be course directors

- Plan new Master's programme specialisations in environmental science and computational science
- Review third-cycle courses with a focus on creating a clear course offering of relevance within the new department, in dialogue with the faculty's graduate schools
- Work actively to establish the new third-cycle subject of computational science across the faculty

3. Collaboration with external stakeholders

CEC's overall goals for collaboration with external stakeholders:

- Ensure an organisational form for CEC's current network organisations that serves as a knowledge bank and arena for active collaboration between academia and the surrounding society. The aim is for these to help ensure that research at the faculty's and the University's various research institutions is utilised in society to create sustainable development
- Ensure a strong professional capacity to support researchers within the organisation's wider network of external engagement and communication, including CEC's current network organisations
- Develop activities aimed at cooperation between academia and healthcare actors, e.g. for the development of decision-making support for healthcare and public authorities

CEC's 1 to 2-year goals for collaboration with external stakeholders:

- Work to strengthen funding and to create synergies between stakeholder organisations including the Sustainability Forum, LU Land, Marint Centrum, Nature-based future solutions, BECC and MERGE, so that CEC can fulfil the broad external engagement remit assigned by the faculty
- Work to identify a long-term stable organisation for broad external engagement with a clear entry point for external partners and researchers within CEC's wider network
- Work to ensure continued collaboration to develop decision support with healthcare actors.

4. Attractive workplace and creative science environment

CEC's overall goals for an attractive workplace and creative science environment:

- In the dynamic and changing academic environment, it is clear to all staff members how the activities contribute to CEC's vision and strategy

CEC's 1 to 2-year goals for an attractive workplace and creative science environment:

- The shape of a coordinated administration for support and services to CEC, INES and the Department of Geology have been designed
- All activities are conducted in appropriate premises
- CEC is a workplace characterised by a good work environment including equal treatment of all staff and students, a workplace in which all staff are, and feel, involved and respected
- CEC has a steady stream of visiting research fellows and is a natural meeting place for researchers and students
- Strategic and operational external engagement and communication efforts aimed at key actors in society and other relevant target groups provide considerable visibility, create opportunities for CEC's research and education to develop and are integrated tools for achieving the organisation's goals