

2020 Plan of Operations for the Centre for Environmental and Climate Research (CEC)

Mission

CEC's mission is to initiate, support and conduct education and research on society's impact on the natural environment and on societal challenges and possible sustainable solutions concerning the environment, climate and sustainable development. CEC is to promote interdisciplinary research and education within climate and environmental issues, highlight and communicate research findings and serve as a link to key stakeholders within its area of operations. CEC activities are therefore of an interdisciplinary nature, based on cooperation across department and faculty boundaries and collaboration with community stakeholders. CEC activities are based on research at the faculty's departments, while CEC adds further value to the departments' research.

Vision

As an innovative and vibrant forum for interdisciplinary research, education and interaction between research and society, the Centre for Environmental and Climate Research is to be an engine for sustainable local, regional and global development in the field of the environment and climate. The centre develops and makes available evidence-based knowledge that contributes to sustainable solutions in the field of the environment and climate, brings added value and leverage for subject-specific research at Lund University, is a springboard for new generations of researchers and professionals trained in interdisciplinary approaches. The overall result is a deeper scientific understanding of, and ability to manage the conditions for, sustainable development.

Overall goals

CEC contributes with knowledge for sustainable development by:

- generating research findings and knowledge that create a basic understanding of how the human impact on the natural environment affects the conditions for long-term sustainable development
- systematically identifying existing and future threats to a sustainable societal development with regard to the environment and climate, and, in collaboration with societal actors and stakeholders, contributing with solution-oriented knowledge development
- working to ensure that society is able to counteract and manage existing and future environmental issues and create sustainable development by educating the future actors in the field of climate and the environment.

Based on subject-specific research, CEC supports and conducts interdisciplinary research and education in dialogue with the wider society by being:

- a **coordinator** for strategic development of environmental and climate-related research and infrastructure
- a **research actor** who, in close collaboration with other departments, encourages and conducts integrated environmental and climate research
- a dynamic and creative **meeting place** for researchers who want to tackle current and upcoming challenges for research and society
- a **hub for the provision of expertise** through training of future professional actors in the field, and
- a **knowledge bank and forum** for innovative collaboration between research and the wider society

Strategy

The aim of CECs activities is to increase our understanding of the human impact on natural processes. CEC thus has a broad scientific foundation. The centre aims to identify measures and strategies to prevent, avoid or counteract climate and environmental problems, and to achieve long-term sustainable development, which requires interdisciplinary approaches that include perspectives from engineering, social sciences and humanities. CEC leverages synergies that arise through collaboration between researchers from departments at the Faculty of Science and Lund University in general. CEC therefore initiates, supports and conducts research, education and collaboration with researchers across organisational and disciplinary boundaries at Lund University.

By being the host of Lund University's Sustainability Forum, the LU Land collaboration initiative, Lund University's hub within Climate-KIC, the ICOS Sweden research infrastructure and the university-wide strategic research areas BECC and MERGE, as well as the Agenda 2030, ClimBEco and Bioeconomy graduate schools, CEC takes broad responsibility for activities related to environmental, climate and sustainability research, regardless of where they are conducted at the University. As coordinator for departmental, faculty, and university-wide interdisciplinary research projects, CEC serves as a catalyst for interdisciplinary research development. CEC's undergraduate education, doctoral education and graduate schools are all based on close collaboration with other departments and the research initiatives coordinated by CEC.

CEC adds further value by:

- developing and managing research platforms and projects that focus on environment and climate and are based on broad expertise, where CEC operationalises and facilitates efficient collaboration across disciplines and with involvement of the wider society
- developing and conducting education in the field of the environment, which includes broad expertise from the various departments and faculties at the University
- developing and having the expertise to initiate, coordinate and conduct interdisciplinary research, education and external engagement

- being a dynamic and inspiring meeting place that inspires researchers and teaching staff at Lund University to develop research for environmentally sustainable development

CEC’s five- and ten-year objectives, and 2020 plan of operations

CEC’s 2020 plan of operations is based on the objectives for 2030. They are presented in four main areas: 1) interdisciplinary research actor, 2) educator of future professional actors in the field of the environment, 3) facilitator of communication and collaboration between academia and society to achieve the global goals, and 4) attractive workplace where both permanent and fixed-term employees are met with respect and are inspired to develop their activities. Interim objectives for each main area in 2030 and in 2025 are listed below, as well as activities to be implemented in 2020.

1. Interdisciplinary research actor

Objectives 2030	Objectives 2025	Plan of operations 2020
<p>1.a New research and external engagement platforms as well as national and international interdisciplinary projects have been developed that focus on future issues of climate and environmentally sustainable societal development. A key focus is on conflicts and synergies between the global sustainable development goals. The development work is based on systematic work on horizon scanning in collaboration with stakeholders, as well as identifying and preparing for new financing opportunities.</p>	<p>CEC is developing as an attractive hub of expertise for mid-career researchers, among others, for applying for and managing major interdisciplinary projects and platforms. Procedures are in place for collaboration with stakeholders outside academia, for innovation and for strategic use of infrastructure. Efficient and systematic work on horizon scanning is conducted in collaboration with stakeholders.</p> <p>CEC conducts capacity building for leadership of large interdisciplinary projects/platforms for CEC Fellows.</p>	<p>1.1 Design professional development (capacity building) opportunities for individual researchers and project coordinators linked to CEC</p> <p>1.2 Investigate and prepare for new financing opportunities (such as MISTRA), including opportunities for co-financing</p> <p>1.3 Perform various forms of horizon scanning, including within LU Land and with the help of the BECC/MERGE stakeholder reference group</p> <p>1.4 Identify concrete opportunities for syntheses and reports linked to ongoing processes in society</p>

<p>1.b BECC and MERGE are consolidated for the long term as internationally leading strategic research areas in the fields of climate, biodiversity and ecosystem services.</p>	<p>Long-term financing is secured, the work on implementing strategic plans is well underway, forms for collaboration with the line organisation are established.</p>	<p>1.5 Work to implement upcoming strategies related to the strategic research areas (LU's overall strategy, BECC's and MERGE's individual strategies), including strengthened and formalised collaboration between strategic research areas and the line organisation</p>
<p>1.c New teaching posts at both CEC and collaborating departments, focusing on environmental and climate issues, have strengthened CEC academically and its scope for interaction, thereby increasing CEC's opportunities to initiate and implement new research initiatives.</p>	<p>New teaching posts focusing on interdisciplinary expertise are in place, research initiation is underway.</p> <p>BECC's and MERGE's work on recruitment issues has created stronger links between CEC and collaborating departments.</p>	<p>1.6 Needs and resource inventory in cooperation with collaborating departments</p> <p>1.7 Continued collaboration between BECC/MERGE and partner departments on recruitment issues</p>
<p>1.d CEC Fellows is a visible interdisciplinary network that provides inspiration and support for research development and external engagement for participating researchers. The research conducted by fellows adds value to CEC's research development and external engagement. An interdisciplinary postdoc programme linked to the network, postdoc academy, develops key expertise in research interaction across disciplinary boundaries, external engagement, research communication, research initiation and knowledge synthesis.</p>	<p>Targeted communication initiatives, professional development and continued development of CEC Fellows have led to broad participation at the entire University and high visibility both within and outside LU.</p> <p>Increased funding has enabled the postdoc academy to have broader participation from the entire University.</p>	<p>1.8 Continued interdisciplinary dialogue within CEC Fellows, through interdisciplinary seminars on terms and concepts, as well as meetings in preparation of calls for applications</p> <p>1.9 Initiate the work on the postdoc academy through needs inventory and strategy development</p> <p>1.10 Start activities within the postdoc academy, initially targeting CEC postdocs</p>

<p>1.e The forms of collaboration with other departments have been developed so that they have a clear sense of co-ownership of the activities at CEC. CEC is an attractive collaboration partner for individual researchers as well as departments.</p>	<p>Forms for dialogue between CEC and collaborating departments, at the Faculty of Science and other faculties, and for researchers' participation in interdisciplinary projects linked to CEC, are well developed.</p>	<p>1.11 Intensified leadership dialogue with collaborating departments and faculties, needs inventory at collaborating departments</p> <p>1.12 Develop forms for seminar activities together with collaborating departments</p>
<p>1.f Forms for transdisciplinary research and environmental innovation have been developed, in which increased mobility between academia (CEC), wider society and, not least, industry creates conditions for environmental innovation and research on and for the development of climate and ecologically sustainable production chains and business models for private and public stakeholders.</p>	<p>A functioning and transparent method for increased research exchange between CEC and industry/private and public stakeholders is in place.</p> <p>Conditions have been created to participate in, or manage, major Vinnova applications.</p> <p>Long-term funding for Climate-KIC has been secured, and the academic leadership has been strengthened by added resources.</p>	<p>1.13 Initiate an inquiry on the conditions for externally employed doctoral students (including those who are municipally employed) and other collaborations and mobility between CEC and private and public stakeholders</p> <p>1.14 Dialogue with the University on the implications for Climate-KIC of the recently performed evaluation, including strengthened organisation</p>

<p>1.g CEC's role in the development of infrastructure in the field of the environment has been strengthened, through secured financing and utilisation of ICOS Sweden, increased use of the large research facilities in Lund for environmental research, as well as secured HPC resources for climate and earth system modelling.</p>	<p>Secured financing of ICOS Sweden beyond 2025 and completed co-location with ACTRIS Sweden. Contributed to strengthening environmental research linked to MAX IV. Sufficient HPC resources at LUNARC and SNIC.</p> <p>Through its strategic research areas, CEC participates actively in needs inventory and prioritisation work concerning infrastructure at University, faculty and department level.</p>	<p>1.15 Agreements with the Swedish Research Council are in place for ICOS Sweden</p> <p>1.16 Support ACTRIS Lund's continued development at Hyltemossa research station.</p> <p>1.17 CEC contributes directly and indirectly to the development of environmental and climate research at MAX IV and ESS by CEC-affiliated researchers actively participating in LINXS</p> <p>1.18 Promote increased awareness and use of ICOS infrastructure at Lund University</p> <p>1.19 CEC's strategic research areas initiate work on a long-term strategy for strengthened infrastructure in their area of operation</p>
--	---	---

2. Educators of future professional actors in the field of the environment

Objectives 2030	Objectives 2025	Plan of operations 2020
<p>2.a. The forms for collaboration with other departments have been developed so that they feel involved in the education activities at CEC, and CEC is an attractive partner for exchange of teaching hours. There is increased exchange with other departments in that more teaching staff who are primarily employed at other departments are part-time affiliated with CEC to promote interdisciplinary education in environmental science, and teaching staff who are primarily employed at CEC add value to the education at other departments. New teaching posts at both CEC and collaborating departments are clearly linked to study programmes.</p>	<p>Long-term academic leadership of study programmes, including the environmental health science programme, has been strengthened, through new teaching posts at CEC and/or through part-time and long-term affiliation with CEC of more teaching staff who are primarily employed at other departments through agreements.</p> <p>BECC's and MERGE's work on recruitment issues has strengthened the links between CEC and collaborating departments with regard to education.</p>	<p>2.1 Inventory of long-term needs for teaching staff in environmental science</p> <p>2.2 Education issues are raised in connection with all recruitment issues involving CEC</p> <p>2.3 Initiate efforts of affiliating teaching staff with the environmental science programme in the long term, through agreements with departments</p> <p>2.4 Assist other departments in the work on quality assurance of courses that are part of of CECs environmental science education but are run by other departments</p> <p>2.5 Doctoral students in environmental science increasingly participate in education both to contribute with their specific perspectives and to broaden the doctoral students' understanding of environmental science.</p>

<p>2.b First-and second-cycle education is developed in collaboration with societal actors and research so that it focuses on current challenges within sustainable development. The result is well-educated students who are in demand on the labour market.</p>	<p>The education is relevant to the labour market and is scientifically based on new research in environmental science.</p> <p>There is mutual learning and exchange of knowledge between education and research regarding the initiation of new teaching elements and research initiation.</p> <p>The environmental health science programme has been renewed so that it appeals to a broader category of applicants e.g. with an interest in urban environmental issues.</p>	<p>2.6 Quality assurance of the study programmes by revising syllabi and developing progression plans</p> <p>2.7 Skill development objectives that the students achieve are to be relevant to societal actors and to research</p> <p>2.8 Appoint programme directors to initiate renewal of second-cycle programmes</p> <p>2.9 Work to strengthen the link between CEC's research and education</p>
<p>2.c First- and second-cycle education has been internationalised, through international study programmes in environmental science, among other things.</p>	<p>An international second-cycle programme linked to the BECC and MERGE strategic research areas has been established.</p>	<p>2.10 Prepare internationalisation of individual courses where we can accept exchange students</p> <p>2.11 Continue to promote a fully financed international second-cycle programme linked to strategic research areas by adding more study places</p>

<p>2.d Widened admission achieved through describing and advertising CECs education in a way that attracts students from a wider segment of society, and by facilitating for students to include environmental and climate studies in their education through alternative points of entry. This has partly led to the further development of first- and second-cycle education into being relevant to a broader target group, and partly to greater disciplinary diversity among programme alumni, which, in the long term, leads to increased integration of climate and environmental perspectives in all parts of society.</p>	<p>Alternative points of entry to the first-cycle programme in environmental science have been established.</p>	<p>2.12 Promote the reintroduction of alternative points of entry at the faculty, as part of the work on widening participation</p>
<p>2.e The doctoral education in environmental science has been developed and expanded to having a clear identity and cohesion in terms of both the focus of the research projects and the curriculum of the students. A critical mass has been secured in terms of doctoral students in the education, enabling activities of high quality.</p>	<p>The number of doctoral students has increased. The doctoral student body actively interacts on research topics in environmental science within and outside their own research areas.</p> <p>The doctoral programme in environmental science is visible and well known within the international research community.</p> <p>Joint initiatives and activities are regularly organised together with other units of the University, such as LUCSUS.</p>	<p>2.13 Support activities that enhance the identity in environmental science, such as initiatives from doctoral students, annual meetings in the spring and writing retreats in the autumn</p> <p>2.14 Engage supervisors in the work to strengthen the environmental science perspective in all doctoral student projects, by organising various forms of inspirational activities</p>

<p>2.f CEC's graduate schools are run with a long-term perspective by being established as leaders in their respective fields, having secured long-term funding and by being attractive to applicants from a more diverse background.</p>	<p>The graduate schools are run with secured, long-term funding, by demonstrating such breadth in their content that co-financing with other relevant faculties is natural. External financing has been established.</p> <p>The graduate schools are collaborating with relevant graduate schools at other higher education institutions in Sweden and abroad, through the exchange of doctoral students and the implementation of joint activities, etc.</p> <p>A2030 has admitted at least one more group of doctoral students, and the graduate school is an attractive platform where doctoral students work on cross-disciplinary research in sustainable development. The graduate school's interdisciplinary courses have been established and are regularly offered.</p> <p>The BIOECONOMY graduate school has been secured in the long term: the graduate school has ensured recruitment by largely being based on online teaching materials so that contact hours can be</p>	<p>2.15 ClimBEco develops opportunities for recruiting from a wider set of disciplines, funding through activities in collaboration with other faculties ,and explores opportunities for external funding</p> <p>2.16 CEC conducts a dialogue with the Faculty of Science (doctoral education board) on evaluation and the possibility of making the ClimBEco graduate school permanent at the end of the current funding period (31 Dec 2021)</p> <p>2.17 ClimBEco continues to promote collaboration with the Bolin Centre for Climate Research and the "Excellence cluster Integrated Climate System Analysis and Prediction" (CliSAP) at the University of Hamburg</p> <p>2.18 ClimBEco and BIOECONOMY are reviewed to find opportunities for coordination</p> <p>2.19 A2030 implements its action plan, including by continuing to seek external funding through EU co-funding for the admission of another doctoral student group</p>
--	--	--

	<p>used for in-depth study with teaching staff.</p> <p>At least one Marie Curie ITM graduate school, associated with an existing graduate school, has been established.</p>	
--	---	--

3. Facilitator of communication and collaboration between academia and society to reach global goals

Objectives 2030	Objectives 2025	Plan of operations 2020
<p>3.a CEC is an organisation where communication and external engagement are well integrated.</p>	<p>Among CEC researchers there is an overall consensus on what external engagement and communication mean in daily operations.</p> <p>Researchers linked to CEC have the basic tools and the understanding of external engagement and communication they need, based on identified needs, in order to be able to integrate the elements into their daily operations to the extent they wish.</p>	<p>3.1 Workshop/internal training in communication and external engagement for researchers</p> <p>3.2 Mapping of the CEC researchers' and strategic research areas' need for support with regard to external engagement</p>
<p>3.b CEC has developed further thematically focused collaboration platforms that focus on contemporary challenges for climate and environmentally sustainable development.</p>	<p>CEC has secured a stable framework for stakeholder interactions around sustainable land use by creating a long-term platform that builds on LU Land.</p> <p>Has developed yet another collaboration platform within climate, for example.</p>	<p>3.1 Continue to develop the internal structure for the operation of LU Land</p> <p>3.2 Conduct activities in accordance with LU Land's action plan, including breakfast seminars, thematic meetings and horizon scanning</p> <p>3.3 Follow up results of completed horizon scanning within land use by initiating knowledge compilations and research projects</p> <p>3.4 Apply for a collaboration platform linked to climate</p>

<p>3.c CEC has strong professional capacity to support external engagement by integrating the expertise of CEC's various collaboration/communication operations and strengthening its funding.</p>	<p>The communication and collaboration platforms that CEC hosts work in a coordinated fashion at the intersections of their respective interests.</p> <p>CEC has sufficient capacity to support projects with collaboration activities from application to projects at CEC and within its network.</p>	<p>3.1 Work for closer collaboration with relevant initiatives at LU, e.g. Urban Arena Testbeds, LU Water, LU Food Faculty, LUBIRC</p> <p>3.2 Continued development of coordination of activities within the Sustainability Forum, strategic research areas and LU Land</p>
<p>3.d Sustainability Forum has obvious roles as strategic management support for sustainability issues at all levels at LU and as a node for sustainability communication both internally at LU and as a bridge between the University and society.</p>	<p>Sustainability Forum serves as strategic support for the faculty managements in the regular revision of sustainability plans.</p> <p>Sustainability Forum contributes to LU's internal communication in a way that makes sustainable development an obvious part of the University's organisational culture.</p> <p>Through its externally targeted communication and participation in local, regional and national arenas, Sustainability Forum supports the University's contribution to social transformation for sustainable development.</p>	<p>3.1 Sustainability Forum implements its activity plan, including Sustainability Week, a conference in collaboration with LU's strategic research areas, seminar series for different target groups, accessibility adaptation and website development.</p> <p>3.2 Sustainability Forum develops the steering group members' role as a link to the faculty managements for a dialogue on sustainability issues including the implementation of the LU Strategy for Sustainable Development.</p>

<p>3.e CEC's management has the capacity for environmental scanning that enables researchers at CEC and their networks to provide information on relevant public events regarding environmental and climate research.</p>	<p>CEC has a coordinated and structured way of providing researchers within CEC and CEC networks with information on relevant events in society.</p> <p>CEC has well-developed and systematic contacts with consumers in the field of the environment and climate.</p>	<p>3.1 Conduct and develop systematic environmental scanning meetings with environmental and climate communication officers at LU, in order to find synergies</p> <p>3.2 Continue to work on integrating and coordinating CEC's communication, external engagement and research coordination</p> <p>3.3 Develop the work within BECC/MERGE's reference group, focusing on environmental scanning.</p>
<p>3.f CEC conducts systematic alumni activities that provides a network within the field of the environment, climate and sustainability in Sweden that is used for collaboration, marketing and development of education and research.</p>	<p>CEC is a clear identity to its alumni. This is maintained through regularly recurring activities.</p> <p>CEC has created a structure where alumni experiences and expertise are utilised in, for example, first- and second-cycle education and research projects.</p>	<p>3.1 Invite to and arrange a special alumni activity at CEC's spring conference</p> <p>3.2 Kick-off for ClimBEco's alumni activities through the 10th anniversary of the graduate school</p>

4. Attractive workplace where both permanent and fixed-term employees are met with respect and are inspired to develop their activities

Objectives 2030	Objectives 2025	Plan of operations 2020
<p>4.a CEC has a well-developed organisation and is an obvious and long-term part of Lund University's organisational landscape, which contributes to a good and safe work environment.</p>	<p>CEC is well established as a specialised centre at the Faculty of Science, but with activities that include and affect all of Lund University. The organisation is run by a core team of permanently employed staff, along with a team of teaching staff/researchers who have their main employment at other organisations but who work part time at CEC.</p>	<p>4.1 Together with the faculty, promote a stable and long-term organisation and funding of CEC</p>
<p>4.b An expanded CEC staff team means that CEC has enhanced its capacity to take on coordinating tasks related to interdisciplinary research development.</p>	<p>Strengthened CEC staff team, with more teaching staff being linked to CEC part time to conduct activities, research and education.</p>	<p>4.2 Dialogue with the faculty about strengthening the CEC staff team</p>

<p>4.c The activities are conducted in shared premises that are fit for purpose, which provide space for permanently employed staff, part-time affiliated staff or staff engaged in kind in CEC operations and students. The premises include meeting places of different types and sizes, and the organisation has access to appropriate lecture halls and labs. The premises are easily accessible and visible.</p>	<p>The activities are conducted in shared premises that are fit for purpose. The premises allow researchers and doctoral students linked to CEC with primary employment at another department to work at CEC part time.</p>	<p>4.3 Continued work to gain long-term access to premises that are fit for purpose through dialogue with the Department of Biology, the Department of Chemistry and LU Estates (<i>LU Byggnad</i>) about the opportunities for larger, more suitable and integrated premises, possibly in collaboration with other sustainability-oriented activities.</p> <p>4.4 Continued dialogue with the faculty about financing increased costs of premises.</p> <p>4.5 Continued work for a short-term solution through dialogue with the Department of Biology on opportunities for more and more cohesive offices and other premises (lunch rooms, meeting rooms) in the Ecology Building and with the Department of Chemistry and LU Estates (<i>LU Byggnad</i>) on alternative temporary premises.</p>
--	---	---

<p>4.d CEC has a continuous flow of visiting researchers, seminars and workshops and contributes with informal meetings, making CEC a natural meeting place for environmental researchers at Lund University.</p>	<p>CEC has a certain element of visiting researchers, seminars and workshops and contributes to informal meetings to a certain extent.</p>	<p>4.6 Nominate at least one externally funded visiting professor (Royal Academy of Sciences, Wallenberg Foundation, Hedda Andersson or equivalent)</p> <p>4.7 Start giving profiled CEC seminars with the aim of attracting students and researchers from collaborating departments, in order to establish meeting points for interdisciplinary development.</p>
<p>4.e CEC works systematically together with collaborating departments to identify career paths for early-career environmental researchers. A postdoc academy is established.</p>	<p>CEC has begun systematic work together with collaborating departments to identify career paths. A postdoc academy has been established.</p>	<p>4.8 Together with the directors of studies at the collaborating departments, identify opportunities for postdocs and early-career researchers to participate in teaching across departmental boundaries</p> <p>4.9 A postdoc academy is initiated (see above).</p>
<p>4.f Doctoral students/researchers/teaching staff who are principally employed at another department linked to CEC, feel a strong inclusion and participation in CEC activities.</p>	<p>The connection to CEC's doctoral students and others who are active in CEC activities has been strengthened.</p>	<p>4.10 Clarify CEC as an organisation through signage and information sharing</p> <p>4.11 Strengthen the sharing of information on ongoing activities in CEC's network</p> <p>4.12 Present CEC to collaborating departments in collaboration with members of the CEC staff team.</p>

<p>4.g Has conducted a generational renewal in management and engaged more employees in management functions, thereby reducing the vulnerability of the organisation.</p>	<p>Has partly carried out a generational renewal in management and engaged more employees in management functions.</p>	<p>4.13 Encourages teaching staff and researchers at CEC to participate in leadership development to create future potential leaders</p> <p>4.14 Work to strengthen CEC's team of staff so that more people are available for management assignments (see above).</p>
<p>4.h Is a workplace characterised by a good work environment including equal opportunities of all employees and students, a workplace where all employees feel valued and respected.</p>	<p>Is a workplace characterised by a good work environment.</p>	<p>4.15 Continued systematic work environment management that includes all parts of the CEC organisation</p> <p>4.16 Follow-up of the work environment survey with an action programme that includes a stress management workshop in spring 2020</p> <p>4.17 Prepare for the next round of the work environment survey</p>