

BECC RESEARCH STRATEGY 2026-2030

The strategic research area (SRA) Biodiversity and Ecosystem Services under Climate Change (BECC) develops research that targets sustainable management of ecosystems in a world undergoing rapid change. BECC researchers study direct and indirect human impacts, from local to global scales, on the climate, ecosystems, biodiversity, ecosystem functioning, and how knowledge about these dynamics may inform mitigation and adaptation decisions in the face of such changes, while recognising societal power structures, and conflicts.

RESEARCH

BECC is today a well-recognised, strong, and stimulating research environment in Sweden. It brings together successful research groups from a range of disciplines and stimulates interaction across fields and collaboration with stakeholders. BECC defines its major research priorities through cross-cutting Grand Challenges, Biodiversity, Ecosystem Services, and Carbon Cycle – under Climate Change (Appendix 1), and identifies emerging topics in close collaboration with its Principal Investigators (PIs). Research strategies are jointly developed with BECC's PIs to ensure broad relevance, innovative thinking, and interdisciplinary problem-solving. BECC has actively built and continues to strengthen its interdisciplinary environment by integrating research on ecosystems, economics, and policy and governance processes, promoting close collaboration among researchers engaged in empirical work, modelling, and theory development. The work has so far resulted in significant contributions in identifying and addressing key environmental challenges, many of which demand intense inter- and/or transdisciplinary collaboration.

Goals and visions for maintaining and pursuing excellence in research

BECC continuously:

- fosters a dynamic and intellectually stimulating challenge-driven research environment that promotes collaboration among researchers, disciplines, and societal actors.
- identifies thematic and cross-cutting interdisciplinary research areas with high potential for scientific advancement, where research excellence is critical for addressing overarching ecological challenges and their societal implications (and vice versa).
- identifies research lines with highest societal relevance and impact.
- contributes novel theory, empirical evidence, models, synthesis, and innovations that address fundamental and applied research gaps underlying the twin crises of biodiversity loss and climate change.

In five years BECC:

- consolidates its position as the scientifically leading, interdisciplinary platform on biodiversity, the carbon cycle, ecosystem services, and their interactions, in Sweden, and has strongly increased its visibility as such.
- BECC's PIs instinctively think boldly and act beyond disciplinary boundaries, prioritising the relevance of scientific questions, developing and applying cutting-edge methods at the highest excellence. They understand mechanisms embedded in ecological complexity – linking controlled systems with field studies to capture real-world dynamics, engaging with stakeholders to address societal complexity, and connecting local needs to global challenges.

- places stronger emphasis on complex interactions and feedback mechanisms, including how social and political decision-making influences environmental challenges and vice versa.
- has piloted pioneering solutions for sustainability in sectors like forestry and agriculture.
- has become a recognised advisor and resource for a diversity of stakeholders and practitioners, enhancing short-term crisis preparedness (e.g. in agriculture and forestry), and long-term biodiversity conservation from a sustainable and forward-looking perspective.
- PIs develop and employ advanced technologies such as AI-assisted biodiversity monitoring, large-scale data syntheses, and network analyses across scales. The conducted research mobilises global data, improves modelling approaches, and ensures secure, effective and responsible use of AI.
- has increasingly strengthened its integration of natural and social sciences, conceptually, methodologically, theoretically, and empirically.
- through its symposiums (Swedish Biodiversity Symposium and Swedish Climate Symposium), has become a think tank that integrates research, societal actors and governmental bodies, that is used for political decision making and large-scale transformations.
- is a recognised actor at the EU level, has significantly increased its European research and innovation initiatives, is engaged at the science-policy interface, and influences the research funding landscape and call designs.

In ten years BECC:

- has extended its research and impact scope to an international level and is now internationally recognised leader in biodiversity, ecosystem services, carbon cycle and their interactions by relevant research communities, policymakers, and other stakeholders.
- has been instrumental in standardising measurements and indicators, such as metrics for soil and ecosystem health, that are critical for law compliance.
- PIs coordinate and facilitate national biodiversity monitoring, large databases and modelling infrastructure, and synthesis initiatives.

Strategic interventions to ensure staying at the absolute research frontier

- BECC participates in university-wide and national evaluations of its research and regularly conducts internal evaluations, supported by a scientific advisory board, to identify weaknesses and strengths, and to take appropriate timely action.
- BECC maintains scientific excellence and policy relevance through continuous research renewal, generational leadership transitions, and international recruitment.
- BECC engages in strategic recruitment at the university level to ensure a resilient and strong research environment, securing key competences needed to address its Grand Challenges.
- BECC invests in strategic funding with distinct purposes: “Action” for testing innovative ideas and preparing initiatives such as project proposals or research syntheses; “Incubator” for developing ideas and strengthening research groups; and “Lighthouse” for bringing together PIs from diverse backgrounds to collaborate on chosen challenges, creating new concepts and research directions, and laying the groundwork for EU and international funding proposals.
- BECC provides spaces and opportunities to meet, discuss, and develop collaborations by supporting guest researcher visits and organising topical workshops and seminars.
- BECC strengthens its capacity to attract EU and other high-level funding by supporting retreats, sabbaticals, and networking to form competitive international research consortia.

- BECC supports its PIs by providing capacity to respond to policy assignments, contributing to scientifically robust implementation of major policy frameworks.
- BECC is prepared to respond swiftly to acute and sudden societal and political needs by adapting funding allocations and mobilising its expert network and support structure.

Fostering the next generation of researchers

- BECC provides start-up packages for newly appointed senior researchers in BECC-relevant fields, for example covering operational costs, funding of a PhD student or postdoc, helping them establish their research within the BECC framework. Project funding is also available through open calls for PhD student and postdoc projects.
- BECC organises meetings, network events, and workshops that explicitly link research renewal with leadership development, proposal planning, and societal relevance of research, to encourage a culture of collaboration across disciplines and career stages.
- BECC strengthens national and international networking by organising the Swedish Climate Symposium and the Swedish Biodiversity Symposium, creating opportunities for early- and mid-career researchers to connect with research communities and societal stakeholders.
- BECC supports international secondments of young BECC researchers, enabling them to gain new experience and establish global networks.
- Early-career network meetings promote collaboration and provide guidance on academic profiling, CV building, prioritisation, and work-life balance. Mentorship programmes linking BECC senior researchers with early-career researchers will further support professional development and leadership continuity.
- a BECC grant manager facilitates coordination of Horizon Europe proposals, strengthening the capacity of early-career researchers to compete for prestigious grants.

Securing increased funding from the EU

- close cooperation with LU Research Services and the Research and Innovation Services at UGOT ensures that researchers receive best available institutional support.
- a BECC Grant Manager supports systematic policy tracking, networking, and identification of promising researchers, providing tailored assistance where needed.
- BECC fosters a strong culture of peer-to-peer learning, encouraging researchers to share experiences, strategies, and best practices for successful applications.
- ad-hoc seminars and workshops offer hands-on, timely guidance on funding opportunities.
- for individual excellence grants, BECC offers writing retreats and contributes to sabbatical opportunities, enhancing focus and productivity.

Publications in top-tier journals

- strategic foresight, including horizon scanning and gap analyses with PIs, helps identifying emerging research frontiers.
- continuous, strategic engagement with stakeholders provides insight into issues of societal and political relevance, thereby merging scientific excellence with societal impact.
- the new “Lighthouse” funding instrument encourages collaboration with international high-profile experts, fostering innovation, network-building, and long-term development. This initiative serves as a driving force for identifying and supporting cutting-edge research. workshops facilitate peer-to-peer exchange on how to design research projects and frame manuscripts for publication in prestigious/leading scientific journals.

BECC and the Sustainable Development Goals (SDGs)

- focusing on three Grand Challenges, BECC creates platforms for interdisciplinary research that directly contributes to multiple SDGs, including: SDG 2 - Zero Hunger, SDG 6 - Clean Water and Sanitation, SDG 11 - Sustainable Cities and Communities, SDG 12 - Responsible Consumption & Production, SDG 13 - Climate Action, SDG 14 - Life Below Water, SDG 15 - Life on Land, and SDG 17 - Partnerships for the Goals.
- BECC explores connections and synergies among these goals and related targets, while also identifying tensions and strategies to address them. This integrative approach includes examining questions of fair and effective governance at global, national, and local levels.
- regular collaboration with LU's Sustainability Forum and its associated graduate research school Agenda 2030, further reinforces the commitment to advancing the SDGs by and beyond 2030.

EDUCATION

BECC's research is deeply integrated with undergraduate and postgraduate programmes at both LU and UGOT, contributing to many master and PhD theses. At UGOT, the master's programme ACE (Atmosphere, Climate, Ecosystems) strengthens the link between education and cutting-edge research. The two-year graduate research school ClimBEco brings together researchers and graduate students from the two SRAs BECC and MERGE at both LU and UGOT. Since its inception, ClimBEco has provided interdisciplinary training to 257 PhD students focusing on global change research. It has become the strongest direct link between research and education, fostering a dynamic network and nurturing a new generation of interdisciplinary researchers.

- BECC continues to support ClimBEco in adapting its training programme to current societal challenges, developing international recognition and collaborations, for example a summer school, and diversifying and expanding its funding base.
- BECC connects ClimBEco to ongoing research initiatives and policy engagement, strengthening the pathway from education to impactful interdisciplinary research.
- BECC strives to develop a new master's programme inspired by the ClimBEco model, alongside further cross-faculty teaching collaborations in sustainability and global change.

SOCIETAL IMPACT

BECC aims at translating its research into scientifically grounded solutions for society needed to solve our Grand Challenges. To have such societal impact requires collaboration and communication beyond academia. Through the years, BECC has been a driving force in establishing several collaborative networks and platforms that enhance the societal relevance of research on climate and biodiversity and that connect academia with society, collectively reflecting a collaborative spirit and commitment to anticipating and addressing emerging societal challenges. Key initiatives include the climate communicator network at LU, and the collaborative platforms LU Land and Gothenburg Global Biodiversity Centre (GGBC). BECC also co-initiated two national symposia: Swedish Climate Symposium and the Swedish Biodiversity Symposium

Strengthening local, national and international collaborative networks and societal relevance

- BECC plays an active role in the Collegium for strategic research areas of LU (SRA) and maintains a strong connection with the university leadership, faculties and departments. Its support functions are active in the LU SRA administration group, the LU research coordinator

and climate communicator networks. BECC maintains especially tight collaboration with SRA MERGE, sharing support functions and a stakeholder reference group.

- BECC provides seminars, courses and consultations to help navigate societal issues, identify stakeholders, and integrate their engagement into projects. It also invites co-creative innovative processes with stakeholders, such as policy labs, to generate policy-relevant solutions.
- BECC monitors scientific and societal developments to identify emerging challenges, knowledge gaps, and opportunities for impactful engagement and research.
- BECC enhances dialogue and collaboration with stakeholders and practitioners across sectors, scales and geographical contexts by:
 - supporting members in contributing to public discussions, and in serving as experts in national and international bodies including national authorities, EU organs, IPCC, IPBES, as well as researcher networks and the like.
 - engaging a high-level stakeholder reference group including selected representatives from relevant authorities and societal stakeholders to align BECC's strategic development with current societal needs and developments.
 - promoting knowledge exchange on climate and biodiversity at the local level through, for example, collaboration with nature and UNESCO biosphere reserves.
 - acting as a key organiser of national scientific events in collaboration with universities and stakeholders across Sweden.
 - together with LU Land and GGBC, enhancing researcher-practitioner dialogue via seminars, and workshops that address regional and global policy concerns and societal challenges.
 - developing stakeholder-targeted syntheses and policy briefs, often in direct response to requests emerging from stakeholder interactions.

RECRUITMENTS AND RENEWAL

BECC has undergone a generational leadership shift, appointing two new Coordinators and several new Grand Challenge leaders. The support functions have been strengthened with a communicator, and from 2026, a grant manager will further enhance coordination and funding capacity.

- BECC performs regular gap analyses to identify critical competencies that need to be developed or replenished in the near future.
- BECC maintains regular and transparent communication among faculties, departments, and researchers to coordinate recruitment efforts and identify opportunities for collaboration and alignment across all activities.
- Previous successful recruitments of assistant- and associate professors, in collaboration with faculties and departments, have significantly advanced sustainability research excellence, serving as a model for continued academic recruitment.
- BECC nurtures emerging leadership talent through leadership training, peer-to-peer learning, and the Grand Challenge leadership structure, where PIs can grow into leadership roles.