



Decision of the Science Faculty Board on the continuation of work towards a merger of CEC, INES and the Department of Geology into a single department

Background

The Centre for Environmental and Climate Science (CEC), the Department of Physical Geography and Ecosystem Sciences (INES) and the Department of Geology all carry out research and education of a very high international standard. Common to much of the research activities of these departments/units is that they can be associated with the geo-environment-climate field, which has received increasing political and media attention in recent years. The field encompasses large, complex and important scientific issues that can be expected to be political priorities for the foreseeable future and thus the subject of substantial research funding both nationally and internationally. INES and CEC, in particular, have also seen significant expansion in the 2000s.

Over a long period of years, the faculty and the departments have become accustomed to development through growth, while focus regarding cost-effectiveness has not always been rigorous, for example in terms of premises and staff. However, it cannot be expected that financial resources for scientific research will increase at the same rate as in recent decades. The Faculty of Science faces major challenges in the coming years due to changes in the world around it. Projections of the forthcoming governmental budget suggest that funding for the sector will at best remain at current levels. Given the needs of e.g. defence and health care, cuts are not unlikely. Rapidly rising inflation is also contributing to a shrinking financial envelope for our activities. The Faculty's establishment of physics and chemistry activities at Science Village will lead to increased rental costs and thus increased demands to prioritise and streamline activities. At the same time, government and external funders are placing increasing demands on the accountability and

monitoring of our activities. This applies, for example, to systematic quality control in education and research, financial management of external grants, information security and work environment management. This in turn places increasing demands on leadership, organisation and professional operational support.

In parallel, there are also major changes in the external funding landscape where we see a shift from traditional grants to individual researchers towards larger grants for more transnational research in areas defined by societal challenges where priorities are set by political considerations in Sweden and the EU. Collaboration with external agencies, organisations and industry is often an important part of such interdisciplinary projects. We also see increasing economic pressure on infrastructure, not least national infrastructures, where ICOS, SITES and ACTRIS can serve as examples in the geo-, environment- and climate field.

RQ20

In 2020, Lund University conducted a comprehensive review of the departments' research activities – RQ20. The RQ20 evaluators found that there is a very large variation in size among the University's departments and that this affects the departments' ability to respond to changes in the surrounding world, where larger departments are better placed than smaller departments to, for example, meet increased administrative demands, manage variations in external funding and make strategic priorities in research.

More specifically, the RQ20 evaluators pointed to great opportunities for deeper collaboration between three of the faculty's smaller departments/units; CEC, INES and the Department of Geology.

At the initiative of the Dean, the Heads of CEC, INES and the Department of Geology met with the Head of the Department of Biology in spring 2021 to discuss the conclusions of RQ20 and the possibilities for increased collaboration in research, education, administration, finance and recruitment. With support from bibliometric analyses, it was concluded that, on the one hand, there are already developed research collaborations between CEC, INES and the Department of Geology and some parts of Biology and, on the other hand, that the analysis points to a great potential for development of the research area defined by the network within and between the units (including parts of Biology).

Investigations in spring 2022

While there appears to be potential to further develop activities in the geo-environment-climate field through strengthened institutional collaboration, there are also challenges that in various ways require change.

The CEC has reached a point where its own academic staff is not sufficient to run the extensive networking and education activities for which it is responsible, while at the same time it cannot fit into existing premises. The operational dialogues have revealed that INES has identified challenges in areas such as recruitment (both students and staff), staffing of management positions, quality assurance and internal document and information management. Geology is in a negative financial spiral, driven partly by declining student numbers and partly by a surplus of difficult-to-use space.

In light of these challenges, the vulnerabilities generally identified for smaller units, and the underexploited research and educational opportunities that the faculty leadership perceived existed at the interfaces between CEC, INES and the Department of Geology, the Dean decided to investigate the feasibility of coordinating and organizing the activities of CEC, INES and the Department of Geology (here merged in the working name “CIG”) within a single department. Two investigations were therefore appointed in spring 2022.

The first study with external experts was commissioned to make proposals on how research activities at the CIG departments could be organised within a joint department, which subject areas should be strengthened, how research infrastructure could be better managed and coordinated, and how administrative support functions could be strengthened and made more efficient within a joint department (STYR 2022/1317). The second study, chaired by the Chair of the CEC Board, was tasked with examining how CEC’s activities related to the coordination of major research programmes and interdisciplinary collaboration platforms could be managed and organised within a larger department comprising CEC, the Department of Geology and INES (STYR 2022/291).

The conclusion of the external study group is that there is great potential in merging the CEC, INES and the Department of Geology into a single CIG department. The investigators believe that such a department could be very strong in the geo-environment-climate field and influential both nationally and internationally. The constituent units can combine strong basic research in the field and system-wide interdisciplinary research and collaboration, which can strengthen and further raise the profile of the Faculty of Science’s activities in

the geo-environment-climate field. The study proposes that the Faculty initiate preparatory work with the aim of forming a CIG department. Issues that need to be further clarified include the internal organisation of the department and its disciplinary profile, the organisation of postgraduate education, undergraduate education and infrastructure, and the use of premises.

The second study, chaired by the Chair of the CEC Governing Board, recommends that the CEC's activities related to the coordination of major research programmes and collaborative platforms should continue to be carried out in a centre form. Such a centre should have a clear mission to initiate, facilitate and conduct inter- and transdisciplinary research, collaboration and communication in the field of environment and climate change, be led by a scientist of high scientific merit, and faculty/researchers employed by the CIG and other institutions should be associated with the centre's matrix activities. The mechanisms (e.g. buy-out, support for post-docs, PhD students) to be used to associate researchers with the Centre need to be further explored. Another important issue that needs to be further investigated is whether or not undergraduate and postgraduate environmental science education should be linked to the Centre. The Centre needs to have a clear visibility so that it is perceived as a common concern for all actors involved. In the event of a merger, the Faculty Management is of the opinion that the Centre should have its organisational location in the new CIG department.

Simplified real estate survey in spring 2023

A basic prerequisite for a common CIG department is that the activities can be concentrated in common premises. The Dean has therefore decided to carry out a simplified real estate survey to examine the possibilities of co-locating CEC, INES and the Department of Geology in Geocentre I and Geocentre II. The survey should be completed in spring 2023 (April or May) and is expected to be the basis for developing a joint premises programme for the activities of the three departments.

Effects of a merger

It is impossible to fully predict the outcome of a reorganisation of this kind, nor is it possible to enumerate all the possible disadvantages and advantages. One argument against a merger is the extensive and resource-intensive preparatory work that will be required, which could have a negative impact on the current activities of the departments/units. However, from a future

perspective, there are a number of overarching reasons in favour of a merger, which the faculty management sees as strong motivations for moving forward towards a merger.

Research and infrastructure

Both the RQ20 evaluation and the external CIG study have pointed to significant opportunities for further development of the activities in the relevant subject areas. A merger with new research constellations should provide good opportunities to identify and develop new directions and to better address complex research problems of the kind on which policy and research funding bodies are increasingly focusing. The two SFOs BECC (*Biodiversity and Ecosystem services in a Changing Climate*) and MERGE (*Modelling the Regional and Global Earth system*), which form the hubs of the extended network within which much of the environmental and climate-related research is conducted, would both be part of a single CIG department. Such a department would also be the home of the newly designated profile area ClimBioSis (*Sustainable solutions in the climate change-biodiversity-society nexus*).

CEC currently hosts ICOS Sweden while a large part of the LU users are located at INES. At the same time, INES hosts the Carbon Portal, the ICOS common hub for data storage, curation and sharing. A merger places the entire infrastructure and a very large part of the LU users in the same organisation, creating better conditions to further develop both the infrastructure and the activities that benefit from it.

At INES, strong expertise is concentrated in the GIS Centre, which has the potential to become a clearer resource and collaborative partner for several disciplines and constellations within an expanded CIG department. Similarly, the Computational Biology and Biological Physics Unit, which has recently become part of the CEC, can become an important resource and catalyst for new directions in a merged CIG department.

Education

There are several aspects that need to be further explored, but there is plausible scope for significant co-ordination gains in undergraduate education. The subject area covered by a merged department should be very attractive to students and there should be good opportunities to develop the education and learning environment to attract more students. There should also be opportunities to strengthen the links between research and education.

Although many courses are narrow and require specialised teachers, a larger teaching force should still provide better opportunities to plan and allocate tasks related to development and teaching. Similarly, a larger teaching force should allow, for example, external and often time-limited initiatives to be optimally exploited. At present, there may be obstacles to participating in such initiatives due to time constraints within the teaching staff.

A larger department would mean a larger and broader academic environment for the PhD students and a larger PhD student community. The combination of more doctoral students and more faculty staff could create critical mass for new doctoral courses and other activities that enrich doctoral education. It is very likely that at least one new graduate school will be hosted by a merged CIG department. In the call for funds for graduate school grants opened by the Faculty, “environmental and climate science” and “computational science” are two of three identified strategic areas in which faculty support is relevant.

Finance, administration and premises

A merger would create a department with significantly larger financial resources and thus a better capacity to manage fluctuations in resource allocation and a better capacity for strategic human resource planning than any of the three units can achieve separately. A larger, unified department would also give the discipline greater weight and a more equal voice in relation to the other units within the Faculty. A larger unit also means that technical and administrative staff can be specialised to a greater extent and also cover for each other, which can make operations more efficient and less vulnerable. For example, the conditions for the CEC’s activities, which are currently strained by the small academic core at the CEC, could be improved and more teachers could be involved in the Centre.

Co-location in common premises would bring the activities together in a smaller area than they occupy today, but at the same time offer more appropriate space. The CEC’s urgent space needs would thus be solved, while there should be good conditions for both the CEC’s and the GIS unit’s centre functions to have greater visibility and accessibility in new premises that can be planned for such activities. Better use could be made of teaching facilities, which are currently under-utilised. This would reduce overall premises costs. Moreover, optimising the use of premises and costs is necessary regardless of the issue of departmental mergers, and is part of an overall review that the faculty management deems necessary for all the faculty’s activities.

Faculty Perspective

Since the Department of Astronomy and Theoretical Physics was closed at the turn of the year and mainly incorporated into the Department of Physics, the faculty now has eight departments (Table 1). Of these, the Department of Biology and the three departments shared with LTH (the Centre for Mathematical Sciences, the Department of Chemistry and the Department of Physics) are clearly larger units than the others. The Department of Geology and the CEC are clearly the smallest units of the Faculty, together with Medical Radiation Physics.

Table 1. Size of departments expressed in terms of FTE staff employed (including doctoral students) and total costs. All data are for 2022 but staff distributed from the Department of Astronomy and Theoretical Physics to the Department of Physics, the Department of Geology and the CEC as of 1 Jan 2023 have been included in the table.

Institution	Headcount (FTE)	Total costs (MSEK)
Department of Physics	399 (of which 120 N-fak)	498 (of which 164 N-fak)
Department of Biology	289	406
Department of Chemistry	266 (of which 159 N-fak)	393 (of which 235 N-fak)
Centre for Math. Sciences	139 (of which 42 N-fak)	192 (of which 56 N-fak)
INES	110	118
CEC	76	96
Department of Geology	70	90
Medical Radiation Physics	23	24
CIG	256	304

A merger would create a department with a staff and finances on a par with the other departments of the Faculty, with the exception of Medical Radiation Physics. The vast majority of the Faculty's departments would thus have comparable conditions and comparable needs, which would create much better conditions both for management and for providing adequate operational support from the Faculty Office.

Finally, the major transformation of the university's northern campus area that is now being initiated with the establishment of the Science Village is an important aspect. The activities currently carried out at CEC, INES and the Department of Geology constitute a large part of the activities within the faculty that will be further developed on the existing part of the campus at Sölvegatan. The Science Village and the activities there can be expected to get high visibility among researchers, students and the general public, and it is therefore important that the parts of the faculty that remain on Sölvegatan have strong identities and long-term stable conditions.

Position of the Faculty Management

The faculty management shares the conclusions of both studies and believes that there is great potential in merging CEC, INES and the Department of Geology into one department, and that CEC's coordination of major research programmes and interdisciplinary platforms should take place in a centre organisationally located at the new CIG department. In summary, the faculty management wants to achieve the following with such an organisational change:

- Create even better conditions for conducting world-class research in the geo-environment-climate field by bringing together strong basic research in the field and more applied, interdisciplinary research in new constellations.
- Strengthen the faculty's capacity to initiate, facilitate and conduct inter- and transdisciplinary research in the field of environment and climate from a natural science perspective. The centre conducting these activities will be given greater visibility and better conditions to attract and invite collaboration across departmental and faculty boundaries, nationally and internationally.
- A strong unified voice and a long-term strong base for research and education in the geo-environment-climate field at the Faculty and the University and a unit with long-term strength to prioritise and support strategic infrastructure and strategic recruitment.
- Achieve more equal size of departments within the faculty to create better conditions for effective management and high-quality administrative support to all activities.

The faculty management has discussed the overall objective of merging CEC, INES and the Department of Geology with the managements of the three units and there is a consensus on the significant development possibilities of such a merger. At the same time, all parties recognise that there are several issues or aspects that need to be addressed before a final decision on the merger can be taken.

Against this background, the faculty management has requested that the Faculty Board decide to instruct the Dean to initiate work to clarify how the activities of a joint department can be designed and organised. The further work should then be based on the proposals made in the two studies. A further important starting point is that the new institution should include a centre

responsible for the CEC's activities related to the coordination of major research programmes and collaborative platforms. Issues or aspects to be considered in detail include the internal organisation of the department, including the composition of research groups/units, the organisation of undergraduate and postgraduate education, the design and dimensioning of administrative functions, etc.

Another important starting point is that the further work must be well anchored within CEC, INES and the Department of Geology and that staff from the three units, as well as student representatives, are involved in the work. The faculty management believes that the detailed organisation of the work, including the appointment of persons for assignments within this work, should be decided by the Dean based on this starting point.

The costs of this work are expected to be covered within the existing framework in 2023. Costs for 2024 and beyond will have to be dealt with in future resource allocations for 2024, but the faculty management's assessment is that a merger process will be able to be financed in full.

Decision

Against the above background, the Faculty Board decided the following on 1 February 2023:

- To instruct the Dean to, upon consultation with the Management Board, initiate work to clarify how the activities of a joint department comprising the current CEC, INES and Geology can be organised and designed on the basis of the proposals made in the two studies carried out. The elaboration of various aspects such as the internal organisation of the department (including the composition of research groups/units), the organisation of undergraduate and postgraduate education, how links with related activities in other departments can be maintained and developed, the design and dimensioning of administrative functions, etc. will be carried out in working groups with representatives of the staff of the units involved as well as student representatives. The new department will include a centre formation responsible for the activities currently carried out by the CEC concerning the coordination of major research programmes and collaborative platforms.
- That the detailed organisation of the review process, including the appointment of persons to be involved in the work, shall be decided by the Dean after consultation with the Management Board.

- That the Dean shall submit to the Faculty Board a request for funds to carry out this preparation work.
- That the work must be planned so that the faculty management can present a proposal for a decision on the establishment of a merged department, or a final position against such a merger, before the end of 2024. An interim report with preliminary conclusions shall be submitted to the Board in the autumn of 2023, when the incoming Dean and Pro Dean are appointed.
- That future Board meetings shall have a standing item on the agenda to keep the Board informed of the progress of the preparation work.