

Position paper of the Institute of Social Ecology (SEC) related to the open call for applications for a professor in "Social Ecology"

Preliminary Remark

This paper describes the current situation of the Institute of Social Ecology and outlines the profile of the social-science-oriented professorship "Social Ecology" (call open until 15 September 2023). This text uses the term 'social science' in a broad sense, i.e. includes disciplines such as sociology, political science, human geography, social anthropology, etc. as well as economics.

1 The Institute of Social Ecology (SEC)

1.1 Goals, Topics, Organization

The Institute of Social Ecology aims at contributing to the scientific basis for a social-ecological transformation towards sustainability in a multi-perspective and interdisciplinary manner. Toward this end, we combine research, teaching, and cooperation with stakeholders. We understand Social Ecology as an inter- and transdisciplinary research field dealing with society-nature interaction as a core challenge of sustainability science. SEC contributes to solving societal problems through internationally recognized research, conceptual innovation, research-based teaching, and cooperation with non-scientific partners. The SEC professorships denominated as "Sustainable Resource Use", "Environmental History", "Social-Ecological Metabolism" and "Social Ecology" are oriented toward natural, cultural, and social sciences. An indispensable part of the success of SEC is the cooperation and productive debate between these scientific fields.

SEC works in **five thematic areas**: social-ecological transformation, environmental history and long-term social-ecological research, land use and colonization, social metabolism, and integrated social-ecological modeling. Since 2018, SEC is one of seven institutes at the Department of Economics and Social Sciences (WISO) of the University of Natural Resources and Applied Life Sciences Vienna (BOKU).

1.2 Scientific Excellence and success criteria for Projects

As a genuinely interdisciplinary institute, SEC addresses different scientific communities, which differ considerably in terms of their publication cultures. Accordingly, we publish books, book chapters, reports and journal articles, sometimes in high-ranking peer-reviewed journals such as Science, Nature, or PNAS, but also in thematically close specialized journals such as Ecological Economics, Ecology and Society, the Journal of Industrial Ecology, Resources, Conservation and Recycling, Land Use Policy, Global Environmental Change, Environmental Politics or the Journal of Land Use Science. The appreciation of different publication cultures is as important to us as the interdisciplinary connections to be considered when dealing with the aforementioned topics.

SEC cooperates with high-level research and practice partners both in national and international settings.

Working with organizations such as the OECD, UN Environment Programme (UNEP), European Environment Agency (EEA), the European Statistical Authority (Eurostat) and others, SEC is involved in the development of indicators and methods that have become an important part of official statistics and environmental reporting. SEC scientists participate in many advisory boards, assessment reports and other activities at the interface between science and policy, e.g. IPCC, the Austrian Panel on Climate Change, the Global Energy Assessment, UNEP's International Resource Panel, the Global Land Project or the EU-DG Environment.

1.3 Organization

SEC's inter- and transdisciplinary research depends on the continued success of the consistent integration of social, natural and cultural science at the highest possible level of quality. Only this strong interdisciplinary focus has enabled SEC to build world-renowned research partnerships and thus help to shape the field of global environmental change research.

Over more than three decades, SEC has acquired project funding from a wide variety of sources, including national and international basic research funders, problem-oriented research e.g. in EU framework programs, and excellence-oriented funding such as ERC grants. Based on these projects, SEC has been able to build up an experienced, highly qualified, and internationally successful team. The associated mode of operation requires continuity of personnel as well as a high degree of cooperation and division of labor. SEC was able to ensure this through its business model, which is innovative in the university sector, in particular by bundling university and project funds. We aim at equal treatment of university employees financed by third-party and global funds. We use project funds to create an overhead budget, which we use together with the part of the university's global budget allocated to SEC to pay for services that benefit the entire staff. In this way, we want to offer project-funded scientists in our team longer-term career prospects and, as far as appropriate and possible, permanent positions. For joint scientific success, we need their experience in long-term interdisciplinary collaboration as a crucial contribution to our team's success.

1.4 Teaching and doctoral training

Our teaching is focused on research-related interdisciplinary courses with a high proportion of English-language courses and international students. At BOKU, we contribute to various fields of study. One focus of teaching is the newly established English-language master's program "Climate Change and societal transformation". In the master's program Environmental and Bioresource Management (UBRM) we offer students a specialization in "Social Ecology". For PhD students, SEC has established the Doctoral School Social Ecology as an attractive research environment. Proximity to research, joint teaching in interdisciplinary teams (co-teaching), good supervision and guidance for our students, and high internationality are particularly important. At BOKU, and SEC in particular, there is high demand for social-science content in teaching, as well as for master and doctoral projects with methodological and conceptual elements from the social sciences. This professorship is intended to maintain and update these capacities in social science teaching and supervision at SEC.

2. On the profile of a social science-oriented professorship for Social Ecology

Developing the scientific basis for a social-ecological transformation will need strong contributions from the social sciences. A sustainability transformation requires profound changes in society, the economy, the state, and in politics on all levels. Yet, in Sustainability Sciences the social sciences are grossly underrepresented and underfunded.

Integration and productive irritation are equally important to us in filling this professorship. We hope that the newly filled professorship will be able to connect in terms of content and communication with what SEC is doing successfully today; on the other hand, we hope for fresh impulses and new development perspectives from the social sciences for our interdisciplinary work at the interface of society and nature.

2.1 Interdisciplinary theoretical work as a social process

Since its foundation, the Institute of Social Ecology has continuously worked on the development of a common basis for understanding society-nature interactions. We see continuous theoretical work on a common paradigm as an indispensable prerequisite for successful interdisciplinary cooperation between natural, social and cultural sciences. Interdisciplinary theory work cannot be delegated to individuals but is

a social process in which as many institute members as possible participate. We would like the new professor to actively participate in this process.

The SEC paradigm takes an explicitly systemic perspective on the interactions between society and nature and provides the theoretical framework for the two main concepts of our work: societal metabolism and colonization of natural systems. For our further development, an interest and willingness to engage with systemic approaches seems indispensable, and we are open to many approaches here. We want to further develop our paradigm with contributions from the new professorship, especially with regard to its connectivity in terms of content and communication with social science fields relevant to inter- and transdisciplinary sustainability research. For this purpose, an excellent overview of the relevant theory landscape is as useful as the ability to reflect and argue one's own theoretical position in difference to others.

2.2 Research perspectives

Social metabolism and the colonization of natural systems are investigated at SEC using methods co-developed by SEC scientists, e.g. Material and Energy Flow Analysis (MEFA) and the Human Appropriation of Net Primary Production (HANPP). Empirical work at SEC focuses on the analysis of the biophysical side of society-nature interactions, drawing on many years of experience, methodological expertise and extensive data sets. The ability to connect to these quantitative-empirical approaches is important for the success of this professorship.

SEC deals with society-nature interactions across a wide range of spatial and temporal scales, from local to global, from the past to the future. Social Ecology is characterized by a long-term and (universal) historical perspective that deals with different socio-ecological regimes from hunter-gatherer, to agrarian, to industrial societies in different parts of the world and – through critical engagement with modernization theories – also designs scenarios for possible futures. We would appreciate if the social-science oriented professor at SEC would share this interest. Through analyzing differences of social formations, we can grasp analytically the particularity of the biophysical and symbolic relationship of contemporary societies to the natural world. We are interested in conflicts of interest and questions of justice that arise during social-metabolic transitions, and in the roles actor constellations and power relations play in them. We aim to achieve a better understanding of the present situation through understanding its genesis and possible future trajectories. Therefore, environmental history as well as long-term socio-ecological research (LTSER) play an important role at SEC.

With the appointment of this professorship, we hope to enrich our conceptual and theoretical discussions with new contents and approaches. This should help us to open up new research directions in Social Ecology through strengthened linkages to contemporary social science, in particular in terms of stronger connections between our biophysical approaches with social science analyses. The critical discussion of currently influential theoretical discussions such as "New Materialism" or "Anthropocene", to name just two examples, is definitely desired in this context. Such challenging tasks can only be tackled jointly and in an interdisciplinary manner. Prerequisites for this are interest, curiosity, and the ability to relate your own social science-oriented research to biophysical research - with the common overarching goal of developing scientific foundations for a social-ecological transformation.

2.3 Social Sciences in Social-Ecological Teaching and Doctoral Training

Research proximity is a characteristic of teaching at SEC and should remain so. In teaching at BOKU, we face the challenge of educating students with often little social science competence. A social science-oriented professorship in Social Ecology should find smart solutions for this challenge in its didactic concept

and in its own teaching. A good connection to or understanding of quantitative approaches is essential here, also because a wide range of qualitative and quantitative social science methods is used in the theses to be supervised. We have had good experience with "co-teaching" in interdisciplinary teams.

3. Teaching and research concept – an invitation

We invite you to prepare a short research and teaching concept (max. 3-4 pages in total) as part of your application.

In your teaching concept, we ask you to comment on the following questions:

- What social science theory discussions, content, and authors should students with different backgrounds be exposed to?
- Which quantitative and qualitative methods from the social science repertoire should students know, and which should they be able to apply?
- How can advanced seminars in particular be organized so that students learn from each other in an interdisciplinary group?
- What topics for master's and PhD theses would you like to supervise?

In your research concept, we ask you to address the following points:

- Explain your ideas about productively combining social science approaches with the biophysical concepts and indicators of Social Ecology.
- Establish links between results of your previous scientific work and those of Social Ecology.
- Using specific socio-cultural, political, or economic phenomena as examples, you could show how your own approach changes the way we look at such phenomena and their potential for transformation, thus providing new perspectives on the social challenge of sustainable development.