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CONCERNS: Open letter with recommendations on effective funding for inter- and transdisciplinary research

DATE: 30 November 2020

Dear Ms Gabriel, Mr Paquet and Mr Schiltz

[CESAER](#) - the strong and united voice of universities of science and technology in Europe - and [UNICA](#) - the institutional Network of Universities from the Capitals of Europe - share a common aim to empower their member universities to address the global challenges and to contribute to ecological, economic and social sustainability, think for example of the contribution of research, education and innovation to the [European Green Deal](#). Our networks unite over a hundred universities across Europe and beyond. In addition to our strong disciplinary roots, we have joined forces to leverage bold and inter- and transdisciplinary research at the forefront of science and technology through the collaboration of experts from the Social Sciences and Humanities (SSH), Science, Technology, Engineering and Mathematics (STEM), and Medicine. The major challenges we face today - whether they are cultural, ecological, economic, health-related, social or societal - are so complex and overarching that inter- and transdisciplinary research collaboration is needed to assess, understand and contribute to solving them. With this letter, we transmit to you our recommendations on effective funding of inter- and transdisciplinary research and invite you to enter into top-level discussions with us on how to advance such funding under competitive national and European funding instruments in the years ahead.

We are convinced that inter- and transdisciplinary research can act as a catalyst to generate better and novel understanding and disruptive innovations to improve the quality of life and society. Recently, the Covid-19 pandemic has put the world's health systems under a magnifying glass and has also highlighted its systemic impact on the economy, culture and society as a whole, providing a visible example for the burning need for holistic and inter- and transdisciplinary approaches in research.

With this open letter, we (i) flag the challenges for our member universities when seeking funding for inter- and transdisciplinary research; (ii) highlight how universities and researchers can stimulate inter- and transdisciplinary collaborations; (iii) provide concrete recommendations for research funding organisations and agencies in general and the Directorate-General for Research & Innovation of the European Commission in particular to improve their policies and funding instruments; and (iv) offer our considerations on how to review the evaluation of proposals and corresponding guidelines to evaluators.

(i) Challenges when seeking funding for inter- and transdisciplinary research

We identified a number of issues that hamper efforts to achieve true integration and not just collaboration between SSH and STEM in collaborative research. First, focusing on inter- and transdisciplinary research can be a risk for researchers in the current discipline-oriented competitive context as they take time and other resources away from discipline-oriented research. The performance of researchers and the success of research projects are still often measured by highly cited publications in 'high impact' journals, which is a narrow type of outcome and poorly captures real impact, as argued in a recent [white paper on Next generation metrics](#). In addition, the flexibility and acceptance of a variety of deliverables for inter- and transdisciplinary collaborative projects are still largely lacking.

Moreover, SSH researchers often join STEM-based inter- and transdisciplinary collaborative research projects at later stages in an *ad hoc* fashion and thus are not sufficiently involved in the problem-definition and design of strategic programmes, work programmes, project ideas and projects which is ideally done together with relevant societal players. The most recent [statistics](#) from 2017 indicate that SSH researchers are less likely to lead inter- and transdisciplinary projects and they often have less experience in applying for external competitive funding. The same is true for early-stage researchers who get fewer opportunities to get involved in inter- and transdisciplinary research, as argued in a [white paper on Boost the careers of early-stage researchers](#).

(ii) Stimulate inter- and transdisciplinary research and increase funding success rates

We recognise the need to stimulate inter- and transdisciplinary research and support the move from critical distance (i.e. where SSH provides for a critique of STEM solutions to societal challenges) to critical proximity (i.e. where SSH perspectives are designed into STEM solutions from the beginning). The following recommendations may incentivise researchers to collaborate beyond their disciplines and help university leaders create more integrative environments that foster inter- and transdisciplinary research:

- We are convinced of a transformation from monodisciplinary to inter- and transdisciplinary approaches by our researchers. Universities can trigger such transformation by (i) enhancing mutual understanding and stimulating interaction between different disciplines to break silos and ingroups; (ii) encouraging researchers to share the same laboratories and research facilities; (iii) co-designing research programmes and projects; (iv) applying facilitation and conflict management techniques; (v) creating opportunities for capacity building to acquire aptitudes like empathy and trust; and (vi) putting in place support mechanisms and promoting and rewarding initiatives for monodisciplinary researchers to engage in inter- and transdisciplinary research collaborations.

- Serendipity - i.e. the capacity to use unexpected happenings in creative and productive ways - is a source of new discoveries and project ideas for inter- and transdisciplinary research, offers new insights in research priorities and brings more creativity into research collaborations.
- Universities are advised to adopt a systemic view and promote inter- and transdisciplinary learning and teaching by (i) challenging students, teachers and researchers to get out of their comfort zone and on their understanding of science and technology; (ii) teaching them new and different perspectives and approaches to science and technology; and (iii) developing more interdisciplinary courses.
- Universities are encouraged to adjust their assessment and reward systems, particularly for early-stage researchers by (i) adopting formal policies for inter- and transdisciplinary research and showcasing good practices and successful collaborations; (ii) establishing teaming possibilities in successful inter- and transdisciplinary projects; (iii) shifting to a culture of quality, risk taking and trust essentially replacing the focus on individual competitiveness with open, collaborative and team based approaches; (iv) applying new and progressive metrics; and (v) offering seed funding for inter- and transdisciplinary research programmes and projects within their institutions.
- Universities are advised to engage in dialogue with private funders, especially when seeking funding for high-risk inter- and transdisciplinary projects.

CESAER and UNICA are committed to support and encourage our Members to implement these recommendations and embark on the corresponding institutional changes. We would be delighted to learn from you what additional measures you see relevant and necessary for our member universities.

(iii) Improve funding for inter- and transdisciplinary research

We welcome the inclusion of the integration of SSH and STEM in many competitive national funding instruments and as one of the principles of Horizon Europe pledging to 'integrate SSH across all clusters and activities'. To maximise the impact of such funding instruments, we encourage research funding organisations and the European Commission to enact additional measures. Concerning Horizon Europe, we call upon the Commission to:

- Increase the communication, interaction and cooperation with SSH communities to improve the SSH-flagged calls for proposals;
- Provide seed funding through a tender under Horizon Europe to draft a business plan for the establishment of an SSH European Technology Platform (ETP) paving the way for the development of a Strategic Research and Innovation Agendas (SRIA);
- Adopt an inter- and transdisciplinary approach in the Strategic Programme and the work programmes, involve SSH researchers in the drafting phase of the Strategic Programme and the work programmes rather than adding SSH opportunities once the STEM topics are drafted, and encourage researchers to include SSH -where relevant - across the entire project life cycle;
- Ensure that automated data become available on SSH integration in Horizon Europe projects;
- Involve SSH researchers in the SSH flagging exercise in a structural way.

Most funding schemes are oriented on either STEM or SSH research - or even smaller subsets thereof - and insufficient funding is available for inter- and transdisciplinary research. Moreover, many research funding organisations seem to prioritise STEM projects that contribute to creating jobs and boosting economic growth. But we all know that we need inter- and transdisciplinary research to tackle global challenges and to contribute to ecological, economic and social sustainability.

Therefore, we call upon research funding organisations and policymakers to:

- Provide more long-term and sustainable funding for inter- and transdisciplinary research, including funding for intra-university research collaborations;
- Create funding instruments that enable (early-stage) researchers to build capacity to develop larger collaborative and high-risk research projects related to the grand challenges;
- Set deadlines for calls for proposals that facilitate teaming across disciplines and avoid sequential collaboration;
- Make contingency funds available to adjust to emerging ideas and needs;
- Include in the eligible costs the resources needed for self-evaluation by the project partnership and transfer of lessons learnt;
- Move from 'single principal investigator' to 'co-principal investigator' and 'leading team of (early-career) researchers';
- Stimulate and fund the interaction and exchange between SSH and STEM researchers, funders and policymakers.

To create more synergies between different funding instruments, we invite research funding organisations and policymakers to:

- Agree on a minimum set of criteria for inter- and transdisciplinary research;
- Enable researchers to create synergies and added value rather than combining funding streams;
- Provide seed funding for relationship building, networking and demonstrating track record in collaborative inter- and transdisciplinary research projects.

The above reflects our ongoing insights and recommendations to research funding organisations and the European Commission. Rather than engaging in a dialogue at the level of panels and units, we envision a more fundamental dialogue at the highest level to truly advance our mutual understanding of the magnitude of measures needed to boost funding opportunities for inter- and transdisciplinary research.

(iv) Review evaluation of proposals and corresponding guidelines to evaluators

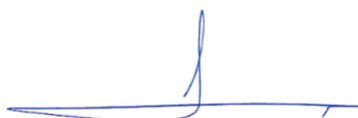
The current evaluation of proposals and corresponding guidelines to evaluators are designed and applied along discipline-specific approaches and processes, and do not seem to be well attuned to the specificities of inter- and transdisciplinary research projects and their application too often reduces the success of such projects when competing for funding. That is why we suggest reviewing the evaluation of proposals and the corresponding guidelines to evaluators along the following lines:

- Research funding organisations and policymakers are strongly encouraged to actively engage with experts in inter- and transdisciplinary research in the development of calls of proposals.
- There is a need to adjust the indicators for performance and evaluation for inter- and transdisciplinary research taking into account a broader social impact, i.e. beyond creating jobs and growth. The use of design-thinking approaches for research funding and a focus on the end result will help. It is pivotal to allow researchers to redefine the goals and methods of the projects based on interactions between disciplines and societal players during the course of their projects.
- We advise to revise the evaluation criteria and corresponding guidelines to evaluators through the lenses of SSH and STEM alike. It is crucial to train the evaluators accordingly in order to ensure a common language and understanding of definitions, application of criteria and funding decisions.
- We encourage the establishment of mixed assessment panels with experts in inter- and transdisciplinary research. It is important to make sure that experts in the disciplines involved in a project application are represented in the evaluation committee and in all stages of the evaluation and to ensure that their input has equal weight to stimulate familiarisation with inter- and transdisciplinary research.
- We advise you to learn from the evaluation and assessment of proposals applied by the European Strategy Forum for Research Infrastructures (ESFRI), adding a sound assessment of implementation to the evaluation of the scientific case. They employ a bottom-up, life cycle-based model towards implementation and maturity whereby the evaluation and assessment contain not only conclusions, but also tips to the selected project consortia on how to move towards implementation. This allows for iterative and mutual learning between consortia and reviewers and provides guidance that effectively builds up a portfolio of programmes and large-scale collaboration projects that are moved towards maturity and implementation. Such an approach allows for flexible and emerging pathways along three dimensions, i.e. (i) scientific excellence; (ii) impact and outreach; and (iii) management and implementation.

Concluding, the universities united within [CESAER](#) and [UNICA](#) are committed and ready to engage in a high-level dialogue with you on how to advance and improve the funding opportunities for inter- and transdisciplinary research. We would be delighted to get your initial reaction on our considerations and your proposals for a future high-level and constructive dialogue with us and possibly other European university associations on this topic.

If you have any further questions or enquiries, please do not hesitate to contact the Secretary General of CESAER at david.bohmert@cesaer.org and the President of UNICA at luciano.saso@uniroma1.it.

Sincerely

A handwritten signature in blue ink, consisting of a long horizontal line with a vertical stroke rising from the center and a small tick at the end.

Rik Van de Walle
President of CESAER
Rector of Ghent University

A handwritten signature in blue ink, featuring a stylized, cursive 'L' followed by a long horizontal stroke.

Luciano Saso
President of UNICA
Vice-Rector of Sapienza University of Rome