

Missions for sustainability: New approaches for science and society

Session abstract

Template for session organizers

The session abstracts should provide a brief overview of the session scope and design and a **synthesis of the key discussion points and results** of each session. They should always position the issues addressed in **relation to the main themes** of the conference.

The session abstracts will serve to prepare a **conference documentation** for dissemination to the interested general public (PDF). They may equally be used as a basis for producing a summary in other formats (multimedia). In addition, these abstracts will inform a **position paper** on mission-oriented research and innovation, prepared by the Leibniz research network after the event.

Please do not attribute statements to individual participants (results-oriented abstract)

Please use accessible language / English only

Total length: ~1500 words

Session organizer(s)

Name, position, affiliation

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Session title

Rethinking research excellence in an era of sustainability transformation

Session description (~500 words)

Societal transformations towards sustainability require suitable knowledge. This requires research to consider societal responsibility more systematically, and to direct it, accordingly, towards a high solution-orientation and impact. Currently two main issues are debated: Firstly, how can this responsibility be understood, operationalized and implemented. Secondly, how should research quality and excellence criteria, particularly in funding and evaluation processes, be modified. Debates also circle around possible conflicts that emerge between research carried out in stronger orientation towards more societal responsiveness, and other existing scientific models, above all stressing freedom of research, efficiency and efficacy.

The session dealt, firstly, with approaches to enhance research quality and excellence criteria, as well as the relevance, definition and measurement of impact as quality criterion. Based on preliminary results from the LENA-Shape/LeNa Value project, it focused on current definitions of excellent research and debates about needs to revise them. Different system boundaries (e. g. disciplines), for which new definitions of excellence should apply, were addressed, as well as the renewed shape of dealing with impact considerations within a revised excellence framework. Secondly, ethical foundations of science, research and knowledge were addressed by discussing the relation between research responsibility and freedom of research. The key argument was that the normative and, e. g. in Germany, constitutionally guaranteed principle of freedom of research cannot be separated from responsibility in and of research. Even more, that reflecting on and practicing societal responsibility – including reflecting on and balancing conflicts of values and norms – is an act of implementing excellence in research in an enhanced understanding. Thirdly, it was discussed in how far the German FONA (Research for Sustainability) programme can be understood and serve as a role model for a reviewed concept of excellent research. Based on results of a recent evaluation carried out by Fraunhofer ISI, the programme performance with respect to traditional measures of excellence was presented, but also achievements and barriers towards new forms to design and implement research processes in a more societally responsible way. Furthermore, limitations of measuring societal impacts and the need for new concepts in this field were discussed.

Format: three presentations and discussions on each

Main discussion points and reflections (~500 words)

- Which (potentially changing) role do issues of normativity play in funding calls, research processes and evaluation procedures if societal responsibility is considered in a more systematic way, and how can this be dealt with appropriately? Being possibly transparent regarding values, understandings, definition, assumptions within research processes is one answer to this. This means that normativity

and ethical reflection may not be seen as being somewhat external to research but rather inherent part of it

- What role could mission-oriented innovation science policy play here? Mission-orientation clearly rests on normative decisions and these have to be made explicit (transparency, see above). This also implies the need to ethically reflect on i) the role of science within democratic institutions and political power constellations, ii) the way science itself is being done: inter- and transdisciplinarity, participation, non-scientific knowledge, etc.
- A mission-oriented science and research also requires to measure how far it contributes to the achievement of the mission. This poses additional challenges for the definition, measurement and assessment of research impact: it is not only necessary to monitor output of research in commonly used scientific and academic terms, but also the impact with respect to the mission, which, however, often occurs within an additional time lag, requiring according evaluation procedures, resources and competencies of involved actors.

Main results and conclusions (~500 words)

- In order to support societal transformations towards sustainability in an appropriate way, research processes, the definition and measurement of research quality/excellence and research impact, as well as science system framework conditions (e. g. funding and evaluation guidelines) have to be modified to consider societal responsibility more suitably and systematically.
- Societally responsible research is not a contradiction to freedom of research, but is part of the practice and implementation of freedom. Ethical reflections on the foundations, goals, methods and consequences of research are a core element of scientific excellence, for which sufficient funding and time resources should be provided.
- The German FONA (Research for Sustainability) programme can be seen as an example of both, a modified defined excellent research and existing barriers to design and implement research processes more responsibly and to measure societal impacts beyond common bibliometric and scientometric methods. Thus, more money for funding of programmes such as FONA is not enough; additionally, institutional and structural changes (funding guidelines, evaluation procedures, etc.) and a modified model of excellence have to be institutionally established and practically implemented.

Open questions:

- How can enhanced criteria for research quality/excellence be defined suitably in detail that are both thematically relevant and practicable in analytical and resource requirement respects?
- How far can general criteria be developed for all disciplines and how far is a specification for specific disciplines and/or thematic fields necessary?
- How can often occurring time-lags of research impacts be addressed suitably – methodologically, research organizationally and with respect to resource requirements?
- How can research processes be organized (and accordingly funded) to better provide the space, fora and resources needed for research that better meets key responsibility criteria?
- How can the processes and methods of monitoring research outcomes be developed further appropriately, in order to support an ex-ante impact assessment of research on mission achievements which better enables both researchers to reflect about their concrete intentions and decision makers to adjust their expectations on research results?