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Germany – Europe – World 2042: A Transformative Longitudinal Study

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The Leuphana University of Lüneburg has launched an initiative that will conduct a longitudinal study on sustainability transformations in conjunction with transformative research.

***Germany – Europe – World 2042:* A Transformative Longitudinal Study** | *GAIA* 23/2 (2014): 132–134 | **Keywords:** transdisciplinarity, transformation, transformative research, transitions

22 years after the *Rio Earth Summit*, we are still facing fundamental challenges in the attempt to bring about sustainable development (e. g., Kates et al. 2001, Rockström et al. 2009). Science must play a central role in this attempt and has the responsibility to find interdisciplinary solutions to these challenges (cf. Clark and Dickson 2003, Reid et al. 2010, Spangenberg 2011, Holm et al. 2013). In this context, the concepts of transformative and transformation research (e. g., WBGU 2011, Markard et al. 2012) as well as knowledge, competencies and education for sustainable development are widely discussed (Wiek et al. 2011, Barth and Michelsen 2013). In the year 2042 the *Rio Earth Summit* will celebrate its 50th anniversary. By then, major steps towards a sustainability transformation should have taken place.

Research on sustainability issues is normally conducted within project periods of three to five years – largely as a result of the terms and conditions of programme funding. Documenting and developing transformation processes, however, requires a much longer perspective.

The initiative *Germany – Europe – World 2042. Transformation is Possible* (hereafter: the *2042 initiative*) challenges this restrictive paradigm. Over a projected period of 50 years, and starting from 1992,[1] the *2042 initiative* will document the progress of sustainability transformation at local, national, and international levels. Besides, it aims at making its own significant contribution by carrying out focused transformative research projects that build on the knowledge gained in the monitoring processes.

With its transformative and longitudinal approach, the *2042 initiative* pursues four objectives:

- Deepen the conceptual, theoretical, and methodological understanding of the conditions, mechanisms, and potential of sustainability transformations.
- Develop, test, and implement a concept for a longitudinal study investigating the progress of sustainability transformations at local, national, and international levels over a period of 50 years. The findings will be documented and communicated by means of a "transformation radar". This will help to ensure that the study has a transformative impact, an impact that may become apparent when results are used in decision-making processes, or to shape policies or governance issues.
- Engage in societal, technological, and other transformation processes by means of focused transformative research projects and case studies. The longitudinal study is, as a "boundary object",[2] intended to facilitate the inter- and transdisciplinary integration of findings at all levels.
- Build networks with national and international, scientific and non-scientific actors.

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1 While the period since 1992 is important to determine what we can learn from the past about sustainability transformations, the initiative will focus on accompanying future developments.

2 For the use of "boundary objects" as an instrument of integration, see Bergmann et al. (2012, pp. 105 ff.).

The initiative combines transdisciplinary research, collaboration, engagement, and participation processes, systems analysis and assessment as well as the development of solution options. In addition to basic research on transition processes, the *2042 initiative* will, together with relevant actors, produce and communicate knowledge in order to facilitate societal transformation. Inspiring examples include a Harvard longitudinal study decoding keys to a healthy life (Powell 2012), or a Bertelsmann Foundation study monitoring political and economic transformation.[3] The *2042 initiative* will even go beyond these approaches by assessing transformation processes and stimulating change in an open and evolving process.

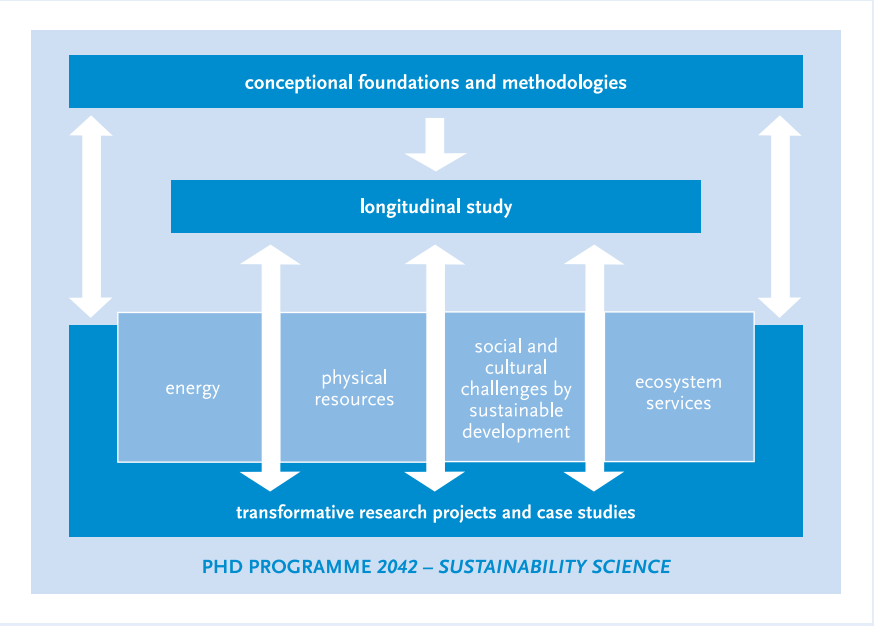

FIGURE: Primary research areas at the beginning of the *2042 initiative*.

A Longitudinal Study of Sustainability Transformation: the Transformation Radar

At regular intervals of four to five years, the 2042 transformation radar will document the state of sustainability transformations from local to national and global levels. Rather than focus on indicators recording the status of certain "symptoms" (e. g., air pollution), the goal of the study is to record systemic characteristics illustrating the potential, deficits, and progress in implementing sustainability. This entails recording, analysis, and transdisciplinary assessment of the dynamics of sustainable development in different societal areas, such as politics, economics, science, and the media, as well as in relevant fields of action, such as agriculture, energy, mobility, and education. Although there is room for working with existing indicators, the emphasis lies on pursuing new and innovative approaches that, for example, focus on the interrelationships among indicators, and possible goal conflicts.

Bossel (2000) describes six fundamental properties, or "orientors", for explaining the behaviour of self-organising systems. Lang et al. (2007) have developed a similar approach in their "sustainability potential analysis", which uses six generic criteria such as "buffer capacity and resilience" to determine the state of a system. These perspectives serve as orientation for identifying variables relevant for the 2042 longitudinal study. Transformational changes in a system need to be assessed in terms of the question: Are we headed in the right direction? This involves, for instance, integrating the perspectives of different societal actors to determine sustainability achievements or changes in sustainability indicators. Sustainability assessment requires assessment structures and criteria that account for its integrative nature (Gibson 2006); the transformation radar will account for these requirements.

The conception of the 2042 longitudinal study is one of the core elements of the first project phase. It is being developed together with the members and partners of the *2042 initiative* and will be refined in the course of the project. Merging different perspectives and survey parameters, which will be identified and described in a number of different disciplinary fields and implementation areas, will additionally foster knowledge integration. In a mutual learning process, this is expected to further the scope and originality of both the longitudinal study and the individual transformative research projects.

Over a period of 50 years, the 2042 initiative *will document the progress of sustainability transformation at local, national, and international levels.*

Transformative Research Projects

A series of transformative research projects will accompany the study. Their common objective is to actively shape the transformation processes. As a rule, these problem- and solution-oriented projects will be at the interface between science and practice, and, in a transdisciplinary approach, produce both scientific findings and social benefits.

Currently, the primary research fields of the Faculty of Sustainability of Leuphana University of Lüneburg form the research basis for the *2042 initiative*. These research fields serve as a starting point and are not meant to be excluding other relevant fields in the future. Initial projects are conducted >

3 *www.bti-project.de*

The 2042 initiative has to be understood as an "open innovation initiative".

in the fields of energy, physical resources, ecosystem services, and social and cultural challenges of sustainable development (see figure). Studies on conceptual foundations and methodology complement the research areas. They are expected to have a strong impact on both the longitudinal study and the accompanying transformative projects.

Next Steps

The initiative started off with a first phase in January 2014. The work is initially focusing on 1. creating the methodology and research design of the longitudinal study; 2. initiating pilot projects in the primary research fields; 3. developing the methodological foundations for transformative research projects; 4. establishing the project within the faculty as well as preparing collaboration with various research networks. First core activities of the *2042 initiative* are taking place in the fields of transdisciplinary research, teaching and outreach:

Research: Four doctoral scholarships have been awarded within the 2042 doctoral programme at Leuphana University of Lüneburg (with at least two scholarships to follow each year) to build a working basis for the initiative. The scholars are also collaborating on different project levels; furthermore, they tutor student groups within the initiative's teaching activities. The research approach of the initiative is designed to ensure long-term continuity of the doctoral programme and other associated transformative projects. Proposals for new research projects are being prepared.

Teaching: Beginning in the summer term 2014, transdisciplinary project seminars that run over the course of one year will be offered in the environmental science major, reaching about 60 to 80 students. The seminars will address core topics of the longitudinal study and explore indicators in different fields (see figure). Additionally, the Böll Foundation and the Leuphana University of Lüneburg will offer seminars on "greener production", focusing on sustainable agriculture, food production and consumption.

Outreach: The *2042 initiative* will collaborate, discuss and communicate with scientific and non-scientific actors on the study itself and its results in order to contribute to both the scientific and public debate on societal transformation and to meet the needs of modern science communication. For example, starting in spring 2014, the Böll-Leuphana cooperation is organising a series of dialogues between experts and the public on "greener production". In spring 2015, a symposium on *Germany – Europe – World 2042: Transformation is Possible* will take place, bringing together leading national and international institutions in the field of sustainability science to set up a 2042 network.

Outlook

The next step for the *2042 initiative* will be to build a network of national and international partners, thus establishing it as a global initiative. On the national level, *NaWis (Verbund für Nachhaltige Wissenschaft)* will play a major role, while on the international level, the *Network of Programs in Sustainability (NEPS)* is expected to become of central importance. The Leuphana University of Lüneburg will serve as a node in this network, integrating the activities of network partners. Together with partner institutions, the *2042 initiative* will develop and implement transformative longitudinal studies in other countries around the world as well as transformative research projects in different societal areas.

Collaboration can be organised on different levels – from being a partner conducting a transformative case study, to developing research methodologies for solution-oriented sustainability research, up to contributing to or analysing data from the longitudinal study.

The *2042 initiative* has to be understood as an "open innovation initiative". Actors from science, politics, economics, and civil society are welcome to become involved and make creative contributions.

We would be pleased to hear from you, whether you are interested in taking part or whether you have questions.

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