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Leibniz Centre for Agricultural Landscape Research (ZALF)

New Innovation Center for Agricultural Systems Transformation approved:

ZALF looks toward living laboratories for the future of agriculture

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The Leibniz Centre for Agricultural Landscape Research (ZALF) has received approval for its Extraordinary Item of Expenditure: the "Innovation Center for Agricultural Systems Transformation" (IAT). With the IAT, ZALF will work even more closely with Justus Liebig University Giessen, the University of Kassel and Geisenheim University to expand practice-oriented agricultural research. To this end, the new IAT will open in 2026 and will be comprised of current ZALF locations in Brandenburg as well as three new locations in Hesse. The IAT will form the organizational framework for the development of five regional living laboratories in Hesse and Brandenburg. In addition, several new working groups with up to nine professorships will be established and there are plans to increase the number of permanent staff by around 70. At its autumn meeting on 22 November 2024, the Joint Science Conference (Gemeinsame Wissenschaftskonferenz - GWK) approved funding for this strategic expansion in the amount of 9.5 million Euros per year.

On 22 November 2024, ZALF received the GWK's positive decision to establish the "Innovation Center for Agricultural Systems Transformation" (IAT). The new structure will be established as a permanent strategic expansion of ZALF in cooperation with Justus Liebig University Giessen, the University of Kassel and Geisenheim University. The aim of the expansion is to conduct joint long-term, systematic research with non-scientific stakeholders on the transformation of agricultural systems in living laboratory regions. Together with its cooperation partners in Hesse, ZALF will expand its research areas to include other topics such as integrated animal-plant systems, intensified organic farming and climate-resilient viticulture and develop important infrastructures for joint research.

"We are very pleased with this decision, as we have worked hard and intensively on this concept over the last few years. My thanks therefore go in particular to the colleagues involved here at ZALF and our partners in Hesse. I would also like to thank the Joint Science Conference, who have placed their trust in ZALF to provide significant scientific support and help drive the sustainable transformation of agriculture in Germany with this project. In recent years, we have already gained valuable experience in research with living and landscape laboratories, for example in the FINAL project or in our patchCROP landscape laboratory near Müncheberg. Thanks to this permanent expansion of our funding, we can now pursue this practical approach much more intensively and across a wider range of topics. Together with farmers and other non-scientific stakeholders, solutions will be developed in these living laboratories that are not only scientifically sound, but also jointly developed from the outset and can therefore be applied more quickly," says **Prof. Frank Ewert, Scientific Director of ZALF**, summarizing the vision of the new center.

"This decision is also a milestone for transformation research of special crop sites, such as landscapes for viticulture and fruit orchards, into a more sustainable future. We can only thank all colleagues involved in the concept at the various locations for this living and landscape laboratory approach, because only under real, practical conditions can all facets of a transformation process be mapped and thus put into practice as quickly as possible. This transformation and its implementation, including under economically viable conditions, is more urgent than ever before," adds **Prof. Hans Reiner Schultz, President of Hochschule Geisenheim University**.

"This cooperation will expand the work at the University of Kassel to include the new field of living laboratory research, to which great importance is attached both nationally and internationally. Our Department of Ecological Agricultural Sciences is already internationally renowned. Now we are forming a strong Hessian network, which will benefit our researchers and students alike," commented University President Prof. Dr. Ute Clement. "With the Leibniz Centre, this Hessian network has a partner with whom we can deepen this research and who enriches the research landscape in our region," confirms **Prof. Ute Clement, President of the University of Kassel**.

Prof. Katharina Lorentz, President of Justus Liebig University Giessen, emphasizes: "Our society urgently needs innovative ideas for sustainable and joint solutions in agriculture. I am very pleased that Justus Liebig University Giessen (JLU) - traditionally very strong in agricultural research - will contribute to testing the effectiveness of the new center's solutions and optimizing them together with all partners."

Claudia Müller, Parliamentary State Secretary to the Federal Ministry of Food and Agriculture (BMEL), states: "I am very happy that the Joint Science Conference has come to this decision. Cooperation between ZALF locations in Brandenburg and the new premises in Hessen makes it possible to take into account the diversity of German agricultural landscapes, drive practice-oriented innovation for

a future-proof agricultural sector and expand research activities in agricultural science at both national and international level. This is a vital element of one of the BMEL's key policy objectives: the resilience of our agri-food system."

Five living laboratories and nine working groups to be established in Brandenburg and Hesse by 2027

Starting in 2026, a total of five living laboratories in Brandenburg and Hesse in which long-term cooperation structures lasting several decades are to be established with relevant stakeholders in land use and politics on a local and landscape scale. The living laboratories will work on important regional issues of land use and regional value creation, such as issues of mixed crop cultivation on poor soils in Brandenburg or establishing viticulture in Hesse, to name just two examples. After the start-up year 2026, two coordination offices will be set up at the ZALF site in Müncheberg in Brandenburg and at the Giessen site in Hesse from 2027. Nine joint professorships and other working groups will also be created at ZALF and the partner institutions to complement ZALF's existing program areas. In total, an increase of 70 employees is planned.

The following living labs are initially planned in Brandenburg:

- East Brandenburg arable farming region (multifunctional and diverse arable farming systems)
- Havelländisches Luch (climate protection and grassland use in fenland regions)

Brandenburg's Minister of Science Dr. Manja Schüle highlights: „We in Brandenburg have long known that when it comes to agricultural landscapes of the future, there is no getting around the Leibniz Centre for Agricultural Landscape Research. I am delighted that the potential of this research facility is now also being recognized outside Brandenburg. The strength of the new Innovation Center for Agricultural Systems Transformation is obvious: Solutions to questions of food security, climate change and sustainability are developed in living laboratories instead of in ivory towers – hands-on and together with farmers and other agricultural stakeholders. This is agricultural research 'Made in Brandenburg'."

The following living labs are initially planned in Hesse:

- North Hessian Loess plain (intensified organic farming)
- Hessian low mountain range (integrated plant-animal-agricultural systems)
- Rheingau (multifunctional and climate-resilient viticulture systems)

"Hesse is an important agricultural location. I very much welcome the fact that the strengths of the three university agricultural and nutritional science faculties in Giessen, Kassel and Geisenheim will be put to optimum use in this transformation center," says **Hessian Science Minister, Timon Gremmels**.

Developing solutions that last in practice

The research topics of the living laboratories are to be closely adapted to the needs and characteristics of the respective regions. The special feature of this research approach is that the measures are developed and tested directly under real conditions. This results in practical solutions that should also be economically viable for farmers and stimulate regional growth. The research questions are developed from the outset with local stakeholders from practice, politics and society in cooperation with science and solutions are tested and reflected on together. For example, projects could be carried out on new technologies and product innovations to test political control instruments or to establish regional value chains. In addition to the regional level, the concept also enables the involvement of national politics and administration.

In contrast to purely scientific projects, in which experiments are carried out under highly controlled and standardized conditions, research in living laboratories is conducted under real, often complex conditions and in a co-design approach with non-scientific stakeholders. Although controlled approaches are important in order to achieve clear and comparable results, they often do not reflect the diverse challenges in practice. Many solutions developed in the laboratory fail in application because they are not adapted to the actual conditions on the ground. This is particularly true of complex agricultural problems, such as climate change or species extinction, which require practical and adaptable research.

A new impetus for agricultural research in Germany and Europe

Agricultural research in Germany will receive a significant boost from the IAT. The proposed living laboratories will offer a suitable platform for tackling the challenges of our time - such as climate change, food security, species extinction or maintaining soil health - in a comprehensive and practical framework. In addition to the impact on practice and society, important impulses for research are expected, not least for inter- and transdisciplinary research approaches and their evaluation as well as systemic agricultural research. The structure of the IAT also creates numerous points of contact, opportunities for cooperation and learning spaces, including an IAT Academy.

The IAT's innovative living laboratory concept takes up the recommendations of the German Science and Humanities Council (Wissenschaftsrat WR) from 2023, which emphasizes that long-term and systemic agricultural research is necessary to promote the transformation of agriculture. ZALF applied for the strategic expansion in 2022 via the home state of Brandenburg and successfully presented and defended it in on-site inspections by the Leibniz Association and the German Science and Humanities Council.

Funding information:

In the future, the IAT is to be funded by federal and state governments through an increase in ZALF's basic funding of 9.5 million euros per year. In view of the 2026 budget, which has not yet been finalized, the funding commitment is still subject to financing.

Project partners:

- Leibniz Center for Agricultural Landscape Research (ZALF)
- Justus Liebig University Giessen (JLU)
- University of Kassel
- Hochschule Geisenheim University



The Leibniz Center for Agricultural Landscape Research (ZALF), Justus Liebig University Giessen, the University of Kassel and Hochschule Geisenheim University will set up five living laboratories in Brandenburg and Hesse as part of the "Innovation Center for Agricultural Systems Transformation (IAT)". The aim of the collaboration is to develop sustainable solutions for agriculture in close cooperation between research and practitioners.

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About the Leibniz Centre for Agricultural Landscape Research (ZALF) in Muencheberg, member of the Leibniz Association:

Mission of ZALF is to deliver solutions for an economically, environmentally and socially sustainable agriculture –together with society.

As a contribution to overcoming global challenges such as climate change, food security, biodiversity conservation and resource scarcity, we develop and design crop systems, integrated in their landscape contexts that combine food security with sustainability. Therefore we process complex landscape data with a unique set of experimental methods, new technologies and models as well as socio-economic approaches.

ZALF research is integrated systems research: starting from processes in soils and plants to causal relationships on the field and landscape level up to global impacts and complex interactions between landscapes, society and economy. www.zalf.de