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Leibniz Centre for Agricultural Landscape Research (ZALF)

Modelling:

Munich could achieve regional food self-sufficiency

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Can cities rely on their surroundings for their food supply? In the case of Munich, the answer is a resounding yes. In fact, if food waste is reduced and people switch to a less meat-based and a regionalized diet, the required catchment area shrinks. This is the result of a study by a team of researchers from the Leibniz Centre for Agricultural Landscape Research (ZALF). The study was commissioned by Karl Bär, an agricultural economist and member of the German Bundestag.

Despite its high population density and mountainous landscape, southern Bavaria could theoretically produce its own food, even when adopting a fully organic production system. According to the scientists' calculations, this would be the case even if the peatlands currently used for agriculture were to be rewetted.

Regional food supply has many advantages

The vision behind the study is a regional supply of fresh food with short transport routes and the strengthening of local agriculture. "Short value chains and transport routes often have a positive economic and social impact and are usually more climate-friendly. In order to initiate political discussions and processes in this direction, we wanted to create a scientific basis with our research," says Dr. José Luis Vicente-Vicente, lead author of the study report. To this end, the ZALF team calculated the potential of a purely regional diet for Munich and the surrounding area, including the districts of Upper Bavaria, Lower Bavaria and Swabia. The so-called "foodshed modelling" takes into account local growing conditions, yields and agricultural structures as well as alternative production methods and dietary shifts, such as organic and flexitarian diets.

Even if the areas for the economically important cultivation of hops for beer production are retained, a radius of 114 kilometers around Munich is sufficient as a catchment area for regional food supply. The radius becomes larger (125 kilometers) with purely organic farming, but smaller by up to ten kilometers if food waste can be reduced along the value chain. If Bavarians were to reduce their consumption of animal products such as meat, milk or eggs, the amount of land needed to grow animal feed would decrease and the degree of self-sufficiency would be even higher. This would also be in line with the recommendations of the Planetary Health Diet, which has calculated what a healthy diet could look like within planetary boundaries.

Funding:

The study was conducted on behalf of the Bundestag office of Karl Baer.

Further information:

[Read the report \(in German\): Foodshed Munich - Assessment of the catchment area and potential food self-sufficiency in Munich](#)

[More on the Planetary Health Diet \(article by the German Federal Center for Nutrition\)](#)



A team from ZALF has calculated: The region around Munich would have the potential to be regionally self-sufficient in food - both conventional and organic. The results were presented in Munich in May. From left: Daniela Schmid (Munich Nutrition Council), Dr. José Luis Vicente-Vicente (ZALF), Karl Bär (Member of the German Bundestag), Stephanie Stiller (ÖMR) and Sofie Langmeier (Green Party, Munich City Council). | The picture can be used for editorial purposes by stating the source: © Büro Karl Bär | Picture in color and print quality: <http://www.zalf.de/de/aktuelles>

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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