

## The shift to plant-based diets as a sustainable food strategy

Whether diets will evolve through social interventions to move closer to sustainable agriculture is being investigated in a growing and promising area of research.

Natural resources are being exploited and degraded through unsustainable land use and agricultural practices. One way to make agriculture more sustainable is to reduce meat and dairy consumption. But people do not change their diet easily. At the Livestock, Environment and People (LEAP) conference (<https://www.leap.ox.ac.uk/event/leap-conference-2022>) held in Oxford, UK on January 25, 2023, participants learned that men are underrepresented in food surveys, that meat disgust increases in omnivore humans after they participated in Vegan January (also known as Veganuary)—and that it is an open question whether and how diets can be shifted.

This is not the only open question in the broader field of sustainable agriculture. Indeed, how to change our food systems to make them part of a programme for sustainable stewardship of the planet is a burgeoning field of research. To capture some of the most interesting developments, at *Communications Earth & Environment* we have assembled commissioned content and research articles in a Collection on Sustainable Agriculture [<https://www.nature.com/collections/ebbfedc>].

Some of the published articles included in the collection already provide guidance for future food pathways. We should move away from the simple maximization of agricultural production and instead optimize biodiversity, conservation and productivity at the same time to facilitate the agricultural transition<sup>1</sup>. This could be possible by documenting and recognizing indigenous knowledge<sup>2</sup> and by taking active measures to protect green agricultural policies in case of unforeseen events<sup>3</sup>. It is essential to adopt multidisciplinary approaches in sustainable agriculture research if we are to design effective policies. We invite submissions of high-quality research to complement our existing content and bring in new insights and different perspectives.

A range of interesting angles were introduced at the session on Health and Social Behaviour at the LEAP conference. Taxes on red meat products were more effective in reducing meat purchases in a naturalist online grocery store in the United States than warning labels that highlight the negative environmental impacts of meat production [Lindsay Jaacks, University of Edinburgh]. However, it is legally difficult to implement policies like meat taxes, at least in Anglo-American legal systems, because it involves rethinking and disrupting current food systems law [Rebecca Williams, Edinburgh Napier University]. Carbon footprint labels may incentivize the adoption of sustainable diets<sup>4</sup>, but their effect on the shift from a meat-based to a plant-based diet is not yet established [Emma Garnett, University of Oxford]. Nudging techniques, such as in-store messages about social norms and reduced meat consumption, did not necessarily lead to increased purchases of plant-based food items in a behavioural intervention at a UK university [Vibhuti Patel, University of Sheffield].

A key and lively discussion at the conference focused on the question of why meat disgust increases among omnivore humans after participating in Veganuary [Elisa Becker, University of Exeter]. Several reasons for this behavioural change emerged during the panel discussion, including increased awareness of meatless food alternatives and growing concerns about the negative impact of meat production on the environment and animal welfare. Nevertheless, ethical concerns were also raised about marginalizing those who continue to eat meat.

Research on human behaviour and food choices in response to social norms and interventions is expanding. Unfortunately, men and ethnic minorities are poorly represented in surveys on people diets. We also lack up-to-date information on what adults following different diets are actually eating



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and why. “Feeding the Future”, a research study on UK adults ([www.ceu.ox.ac.uk/research/feeding-the-future-study-feed](http://www.ceu.ox.ac.uk/research/feeding-the-future-study-feed)), and similar projects now aim to gather more evidence to fill these gaps [Keren Papier, University of Oxford]. Initiatives to engage the public and change food norms include a push to incorporate more plant-based options in national dietary guidelines and to inform the public about the nutritional wealth of food alternatives.

It clearly emerged from the LEAP conference that research on public perception and choice of food systems, and documentation of changes in social food

norms are key foundations for progress. There is still much to be investigated to make sure the science helps inform decision makers to take effective action.

Ultimately, the goal is for people to embrace a balanced and diverse diet that meets individual nutritional needs and ethical choices while supporting sustainable agricultural practices. Emotions can run high when a matter as visceral as food choice is being tampered with. The task of setting diets on a path towards less meat, and agriculture on a path towards sustainability is not at all trivial. But if we all work together, we can rise to the challenge.

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