Comment

Universities should lead on the plant-based dietary transition

As the Intergovernmental Panel on Climate Change¹ and the EAT–*Lancet* Commission² have pointed out in recent reports, substantial reductions in demand for animalbased foods are vital for achieving climate targets and for keeping food production within planetary limits. One might expect universities to heed such findings and adjust their food procurement accordingly, especially since they contributed to the research on which these reports are based. However, one only needs to visit a typical university canteen to find that this is not the case. This routine observation is confirmed by studies that have found animal-based food to contribute disproportionately to the environmental footprint of universities compared with plant-based food, and substantially so.³⁴

Even when leaving aside the contribution of animalbased food production to climate change, the case for shifting to alternatives, mostly plant-based foods, remains strong. Although impacts differ between different animal products, most economically significant animal-based food production contributes disproportionately to multiple, often all, of the following predicaments: the degradation and overexploitation of ecosystems, misallocation of water and land, risk of pandemics, air and water pollution, and animal suffering.^{1,2,5,6} These are all issues that, we the authors assume, most academics and students do not want to contribute to unnecessarily. By procuring different kinds of foods, universities could achieve reductions in many of these negative effects. By doing so, universities could even save money.³ They also might promote healthier diets among their students and personnel,^{2,3,6} especially if they emphasise the healthiest kinds of plant-based foods.

A typical university procures, directly or indirectly, several tons of animal products every month, and advertises these products to thousands of people every day. This has consequences beyond immediate economic impacts and effects on consumer health. By not changing their practices and policies, universities are sending a message to students, staff, and wider society that the issues associated with animal-based food are not important enough to warrant changes. Thereby, universities risk undermining a large body of scientific literature which suggests the contrary. Moreover, principles such as justice, sustainability, and ecosystem protection are undermined, while convenience and traditional consumer choice are elevated.^{5,6} It is not sufficient to talk about change: universities need to act to help us grow out of the unhelpful norms and perspectives that limit our potential for change.⁶⁷

Although some universities are taking some action,⁸ most are not responding adequately to this emergency. For example, in our experience, some universities do not adequately meet the demand for plant-based dishes that is already present at their campuses. University leaders thus should be challenged to enact change, and be supported in doing so.

What should universities do? Leading on the plantbased dietary transition implies extensively shifting one's food consumption toward plant-based food and empowering people to satisfy their nutritional needs without reliance on animal products (which is generally possible).^{6,9} We suggest several measures that could contribute to both goals.

A first step would be to ensure that at least one affordable, satisfying, and healthy plant-based option is available every day; optimally, a wide variety of healthy plant products would be offered, including nutrient-fortified products in line with evidencebased nutrition recommendations.^{6,9} A second natural step would be to provide students and staff with information about what they eat-eq, via food literacy interventions and impact scorecards for dishes.^{5,8} Third, as is already practised at many universities, leaders could also actively encourage dietary shifts through soft measures, such as reducing the animalbased component in a given dish, and small price incentives.^{4,5,8} Universities are uniquely positioned to effectively implement such measures due to their competencies in research and education, and because they are places of collective experimentation, not least due to the presence of students.8 Although leaders bear most responsibility for initiating change, everyone affiliated with universities can contribute.7 For instance, university canteens in Berlin now serve much less animal-based food than they previously did,



partly in response to clients who have asked for more climate-friendly options.

At universities that have already implemented many soft measures, university leaders might choose to explore harder measures to make further progress, such as large price incentives, or curtailing the offer of popular, yet excessively impactful foods.⁵ However, overly abrupt decisions can be counterproductive.7 It is thus preferable for measures to be supported by many campus citizens, and universities should tap their potential for collective deliberation to overcome entrenched social norms. A recent development at Erasmus University illustrates this idea: a collaboration between several student associations, organisations, groups, and individuals has resulted in a detailed petition which, among other things, calls for the university as a whole to create a plan for transitioning to a campus free of animal-based food by 2030. The petition has been well received by the university's leadership.¹⁰

Besides potential long-term visions, there are many other themes worthy of collective deliberation, such as the principles underlying campus food policy. For instance, how are purchasing costs weighed against environmental and health impacts? There is much to discuss and decide, and it will be expedient to establish dedicated institutional frameworks. Meanwhile, universities can and should act on what is already clear, namely facilitating and promoting extensive dietary shifts towards healthy plant-based nutrition. To motivate and enable swift and coordinated action, we suggest aiming for at least halving the amount of animal-based food consumed in canteens within the next 3 years. Universities are widely regarded as important guides in people's preparation for the future, and in many ways, leading on the plant-based dietary transition could be instrumental in stepping up to this role.

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- Shukla PR, Skea J, Calvo Buendia E, et al. Climate change and land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. https://www.ipcc.ch/srccl/ (accessed April 7, 2023).
- 2 Willett W, Rockström J, Loken B, et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. Lancet 2019; 393: 447–92.
- Cleveland DA, Jay JA. Integrating climate and food policies in higher education: a case study of the University of California. *Clim Policy* 2020; 0: 16–32.
- Taylor I, Bull JW, Ashton B, et al. Nature-positive goals for an organization's food consumption. Nat Food 2023; **4**: 96–108.
- Rust NA, Ridding L, Ward C, et al. How to transition to reduced-meat diets that benefit people and the planet. Sci Total Environ 2020; 718: 137208.
- 6 Hull SC, Charles J, Caplan AL. Are we what we eat? The moral imperative of the medical profession to promote plant-based nutrition. Am J Cardiol 2023; 188: 15–21.
- Bolderdijk JW, Jans L. Minority influence in climate change mitigation. Curr Opin Psychol 2021; 42: 25–30.
- 8 Franchini C, Biasini B, Rosi A, Scazzina F. Best practices for making the university campus a supportive environment for healthy and sustainable diets. *Curr Opin Environ Sci Health* 2023; **32**: 100436.
- 9 Koeder C, Perez-Cueto FJA. Vegan nutrition: a preliminary guide for health professionals. Crit Rev Food Sci Nutr 2022; published online Aug 12. https:// doi.org/10.1080/10408398.2022.2107997.
- 10 van Tetterode P. University board wants campus to be completely vegan by 2030. Erasmus Magazine 2022. https://www.erasmusmagazine.nl/ en/2022/03/10/university-board-wants-campus-to-be-completely-veganby-2030/ (accessed April 7, 2023).