Drivers of diet change

Research coupling nutrition and environmental concerns is critical but should increasingly look at ways to integrate insights from psychology.

The sustainability of food systems has become central to the ongoing public-health debate about the need to shift to healthy diets in order to fight premature deaths and increasing morbidity worldwide. In January 2019, *The Lancet* launched the EAT–Lancet Commission[1] on healthy diets from sustainable food systems. The motivation behind this commission was the absence of globally agreed and scientifically based targets for achieving healthy diets sustainably. The report describes a universal healthy diet that represents a reference to estimate the health and environmental effects of shifting to diets alternative to the current ones. The main feature of this proposed reference diet is more plant-based food and reduced inclusion of livestock products. The experts involved suggest that with such a reference it will be possible to assess which diets and food-production practices will contribute to the United Nations Sustainable Development Goals and the Paris Agreement.

The recommendations from the Commission have been the object of scrutiny. In a recent article, Hanna L. Tuomisto[2] highlighted some of the gaps in the report including, for example, the lack of consideration of the environmental impacts associated with alternative ways to produce livestock co-products such as wool, leather and fertilizers, to name a few, in case livestock production is significantly reduced. And beyond the environmental considerations, Tuomisto also discussed the health concerns related to diets with a low intake of livestock products, in particular concerns of a likely deficiency of micronutrients. Others have linked environmental and nutritional considerations. For example, Kerstin Damerau and colleagues[3] have recently estimated that in regions such as North America and Europe, reducing ruminant meat consumption would reduce the water footprint of diets — a key environmental consideration — but would also lead to a decline in the supply of micronutrients such as iron, zinc and vitamins B_6 and B_{12}. And in an article published last year, He and colleagues[4] documented the environmental and nutritional impacts of the significant increase in the consumption of meat, cooking oil and other non-starchy foods in China.

Despite the gaps and the need for more research on the inherent environmental and nutritional complexities of achieving better diets, the overall message of the Commission is well-taken — finding ways to decrease the consumption of livestock products where possible has to be part of a global strategy to adopt healthier and environmentally friendly diets. Surely, sustainability scholars largely agree.

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But even if we know how significant the environmental and health impacts of certain diets are, and even if we have proper guidelines to identify healthier and more environmentally friendly diets, a big question still remains unanswered: what does it take for people to shift to an alternative diet? It is obvious that the question is extremely complex and cannot be answered without insights from the behavioural sciences.

In an Article in this issue, Eker and colleagues present us with an innovative approach linking a behavioural diet-shift model to an existing integrated assessment model that captures the mechanisms of global environmental and economic change within and between the economy, energy, carbon cycle, climate, biodiversity, water, population and land use. The behavioural model represents the complexity of diet change through psychological theories widely used in environmental and public-health contexts, respectively the Theory of Planned Behaviour and Protection Motivation Theory.

The researchers divided the population into a group following a meat-based diet and a vegetarian group. They modelled diet changes between the two groups according to income level and behavioural factors. According to the Theory of Planned Behaviour, the switch to a vegetarian diet is due to social norms — as more vegetarians shift the norm, further diet change occurs. According to Protection Motivation Theory, actions are driven by the perceived severity of a threat as well as the perceived ability to cope with it. Here the researchers include both the health threat and the climate-change threat associated with eating meat. With such a complex modelling framework, Eker et al. investigate the factors that could drive a widespread diet change. The overall message is that diet-change behaviour seems to respond more to social norms and self-efficacy than to health and climate-risk perceptions. Of course, results have to be taken with caution given that this is a modelling study subject to limitations.

In any case, the work fills a significant gap, as emphasized by Jonathan M. Gilligan in a News & Views article, also in this issue. Integrated assessment models are widely used to improve our understanding of the links between human and natural systems. In the context of climate change, they are mostly used to guide the design and analysis of climate-change policies. However, they have traditionally included a very coarse representation of individual behaviour.

The work by Eker et al. will hopefully stimulate more research to understand the drivers of the behaviour changes needed to achieve sustainable food systems. More broadly, we hope it will stimulate further research to find innovative ways to bridge across disciplines in order to produce the kind of evidence that can better guide policies for a sustainable and healthy future. ❐

Published online: 9 August 2019
https://doi.org/10.1038/s41893-019-0366-3

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