

Introduction:

Back to the future — Sustainable innovations for ethical food production and consumption

‘Back to the future’ — some people may think of an attention-grabbing word play in which ‘back’ juxtaposes with ‘future’ in a self-contradictory way, and most of us will associate it with the popular 1985 science fiction film. Indeed, both the word play and Zemeckis’ and Gale’s film relate on many levels to the key theme of the EurSafe 2024 conference in Ede: Sustainable innovations for ethical food production and consumption. First, just as the film idea was rejected over forty times by different studios before production could eventually start (‘Back to the Future’, n.d.), it often takes numerous trials, rejections and adaptations before research ideas and theories on sustainable innovations in agriculture and food production bring about transformations in practice. The agricultural and food production sector faces substantial barriers to innovation, such as specialized adoption uncertainty, management of complex relationships and knowledge bases, particularly academic-industry partnerships, competing innovation goals, conservative markets, highly fragmented and uncoordinated supply chains, and regulatory requirements (Dahabieh *et al.*, 2018). In addition, consumer rejection or acceptance of novel food technologies is variable and difficult to predict (Frewer *et al.*, 2011). Only by anticipating these barriers and being responsive to them, the full potential of innovations in agriculture and food production can be realized to tackle urgent societal challenges like climate change, animal welfare and food security and safety. Second, the success and enduring popularity of the science fiction film were often attributed to its focus on storytelling rather than on effect (‘Back to the Future’, n.d.). The same holds true for research on the ethics of innovation in agriculture and food (Gremmen *et al.*, 2019). The inclusion of social and ethical aspects or rather a shift towards an ethics of innovation requires rigorous research and carefully developed and applied theories. There is no room for catchy but premature conclusions. Third, in the film, technological advancement is uncritically embraced as a means to better people’s biographies. The preference of solving problems with technology is also present in the field of agriculture and food production. This approach is often referred to as technological fix, i.e. reducing overwhelming societal challenges to technological problems which are manageable and less demanding to resolve. While a simple rejection of this approach falls short of the complexity of the issue, further analysis of the philosophical and practical criticisms of technological fixes in the field of agriculture and food production would be valuable to gain a better understanding of, for instance, certain policy arguments regarding biotechnologies (Scott, 2011). Finally, we look back on 25 years of research, exchange and networking in the field of agricultural and food ethics as we celebrate EurSafe’s anniversary this year. Although we may never be able to travel back in time to build an alternate and better present, now is the time to take responsibility to create the kind of sustainable world and society we want for generations to come.

In this introduction, we explore different aspects of sustainable innovations for ethical food production and consumption. We do so by linking the sections and papers of this volume and by making explicit how the diverse contributions relate to the key theme of the EurSafe 2024 conference.

Section 1. Innovations in farming and food production

The agricultural and food production sector is facing major challenges, such as climate change, limited natural resources, biodiversity loss and inequalities in access to safe and healthy diets. To address the complexity of these challenges, to realize more sustainable food production and consumption patterns, and to reach the related UN Sustainable Development Goals (United Nations, 2015), paradigm changes are needed. This is illustrated by the contributions to this section, in which the focus does not lie on

specific technological innovations, but on innovations at a social- and a systems-level. One example is organic production which as a whole can be framed as an innovation of agricultural practices. Like all kinds of sustainable innovations, this is accompanied by value assumptions, discussions of norms and the need for ethical decision making. Is the system of organic production, which is often regarded as particularly sustainable but which currently relies on livestock production in many cases, still viable when climate- and animal welfare sensitive citizens reject the consumption of animal proteins? Other papers in this section discuss aspects of justice and policy making for a transition to sustainable food consumption. This section ends with a discussion on whether and under which conditions an intergovernmental panel on food security and sustainability should be established to fuel policy in analogy to the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Section 2. Novel technologies in food production

Though it is evident that innovations in agriculture and food production need to take place at a social- and a systems-level to be sustainable in the long term, technological developments can act as an integral part or even a driver or barrier within these wider transitions. Therefore, this section zooms in on particular novel technologies and discusses their challenges and opportunities in the light of ethical food production and consumption. Technological innovations presented here include for instance genome editing, cultured meat, seaweed and other alternative proteins, and nanotechnology. The contributions at the beginning of this section set the focus on public resonance of the respective technology, while the papers that follow are directed towards policy and regulatory choices.

Section 3. Veterinary and animal ethics

Including a section on veterinary and animal ethics in this volume on sustainable innovations for ethical food production and consumption is essential because animals are part of many food systems and are directly or indirectly affected by transitions of these systems. However, both the volume and scope of this section show that sustainable innovations are researched in numerous other contexts than food production by the EurSafe community. In contrast to the UN Sustainable Development Goals, animals are visible and play a key role in this volume, also when they are not subjected to food systems. Contributions with a focus on ethical theory challenge novel consumption styles with virtue ethics, discuss the concepts of dignity and speciesism, and explore the role of animals in Corporate Social Responsibility. Several papers on animal welfare link to specific innovative farming systems, social innovations, and regulatory considerations. Next are contributions on the concepts of shame, animal agency and animal palliative care show that learning from and transforming human–animal relationships can be regarded as sustainable innovation in its own right. As in previous sections, we also zoom in on particular technological innovations and their normative implications in the context of animal care: Artificial Intelligence, genetic testing and genome editing. Similar to the topic of human–animal relationships, papers on animal experimentation discuss advances, such as rehoming healthy laboratory animals, as innovations in this field. This section closes with contributions focussing on the roles and responsibilities, but also on the moral burdens of veterinary and other professionals caring for animals.

Section 4. Teaching ethics

This section reflects many of the topics that have already been introduced: alternative proteins, bioengineering, genome editing, and Artificial Intelligence. What connects them is their focus on teaching and education. Teaching sustainable innovations in agriculture and food production can on the one hand be framed as a means to overcome barriers to innovation. On the other hand, however, education on these topics is much more: it enables future researchers and professionals to engage in

responsible research and innovation practices and to refrain from hasty conclusions. Eventually, the provision of inclusive and equitable quality education may be seen as a sustainable, social innovation in its own right.

Section 5. Environmental ethics

Both individual technological innovations and innovations at a systems-level in agriculture and food production often impact the broader environment and ecosystems in which they are situated, including humans, other animals and natural entities. At the same time, a changing nature, manifested for instance in climate change and biodiversity loss, may require radical changes in the way humans view and relate to nature, and what this entails for the development and maintenance of sustainable food production systems and consumption patterns. This section starts with a contribution on the global challenge of developing an ethical agenda for the oceans and the planet. In the following, this section unites elaborations on the topics of synthetic biology, rewilding, bioprospecting and climate change. Other papers in this section focus on ethical considerations regarding feral cat and pest management. By including many contributions on these topics, we also highlight our ties with the International Society for Environmental Ethics (ISEE).

Section 6. Miscellaneous

This final section is a reflection of the enormous diversity of issues being researched within the EurSafe community. The papers of this section contribute in various, unique ways to the key theme of this volume. It starts with conceptual analyses of a fundamental practice (i.e. feeding and being feed) and historical developments in agriculture. Other contributions address novel methods and facilitation strategies for collaboration using technological innovations in the field of agriculture and food production as a case study. These novel strategies gain importance as we shift from interdisciplinary to transdisciplinary research initiatives, in which diverse stakeholders are not regarded as research subjects or participants, but as equal research partners. This approach may not only help to overcome barriers of innovation in an instrumental way, but also to create intrinsically just and sustainable future food systems. The section is closed by several contributions highlighting global perspectives on sustainable innovations for ethical food production and consumption. Including these perspectives helps to acknowledge that many common views, such as the labelling of organic production and plant-based diets as innovations are determined by Western perspectives that are not necessarily globally valid.

Overall, this volume includes a multi-faceted collection of contributions which deal with social and ethical considerations in the context of sustainable innovations in agriculture and food production. It is a matter of zooming in and out: from particular technological innovations to innovations at a social- and a systems-level. This also takes into account contexts other than food systems, in which sustainable innovations are relevant, such as the contexts of human–animal relationships or animal experimentation. With this collection of original research we aim to inspire further investigations and collaborations, and to move ahead towards a future of more sustainable and ethical food production and consumption.

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Editors

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