

EurSafe News

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Dear EurSafe members,



We are over a year into the pandemic. A year ago when we were submitting abstracts for the 2021 EurSafe conference, I remember thinking by the time this conference happens, we will all meet in Fribourg. We

now know that the upcoming conference of our network, from 24-26 June, will be online, and that while things have progressed, with vaccines becoming available, there is still a long way to go.

One of the many overwhelming feelings of living through a pandemic is perhaps the feeling of isolation. Despite being confined to our homes, our scholarly community has continued growing and engaging with the future of food systems. In this newsletter, I am honoured to have contributions from colleagues new to EurSafe, and long-term EurSafe members, highlighting the role of technologies in transforming our food systems.

In the first contribution, Julia Rijssenbeek, PhD candidate at Wageningen University and researcher at Freedom Lab, presents a perspective on deep transition of food systems. From resource-intensive to circularity, to internalizing costs of environmental degradation of our current diets, and ultimately re-thinking our relationship to the natural world, her contribution captures the connected challenges that lie ahead. It is also important to note that this contribution is a result of personal engagement of Rijssenbeek with the WEF Global Shapers in



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writing a European Food Manifesto for the UN food system summit.

Going to the other side of the ocean, a concrete example of the deep transition described by Rijssenbeek is found in the second contribution by Samantha Derrick. With colleagues, Derrick launched the Plant Futures Initiative at UC Berkeley. Bringing together a wide range of speakers, from food entrepreneurs to medical doctors, they explored the way forward in our food system, at the intersection of scholarly, entrepreneurial and activist work in human, animal, and environmental health. In addition to a stimulating event, Derrick describes how a global community of Plant Futurists is born.

The third contribution takes us to Prof. Van der Weele's (WUR) family farm in the Netherlands.

From her scholarly work in the protein transition, considering the role of cultured meat, to reviving the role of pulses in her own family farm, and her experiments in fermentation with artist Arne Hendricks, her contribution provides a riveting personal and scholarly look into the tensions between tradition and innovation in transitions. As we come to understand the shortcomings of our food system, build communities to move forward, how do we deal with new tensions?

Tensions with new technologies and traditional ways of doing in agriculture is a topic that has been much discussed and still raise many questions, even with the usual suspects: genetically modified organisms (GMOs).

From Dutch farms to the Swedish countryside, the fourth contribution by Per Sandin (SLU) highlights

the end of the Swedish Mistra Biotech project that ran for eight years and delivered much food for thought at EurSafe meetings over the years. To hone in on one aspect of the project, Sandin presents the story of the domestication of field cress, and tensions between conventional and biotech means for this domestication. What do we expect from innovations, and in what timeframe?

I was captivated by the story of this crop, that finds itself at the crossroads of food, feed, and energy production, as Sandin highlights the accidental and personal nature of an innovation's journey. In contrast to the story of a crop, the fifth contribution by Tim Dassler and Trine Antonsen of Genøk present recent work done for the Norwegian Environmental agency on how to broaden the assessment of GMOs, to include an ethical assessment. While it is not new that non-safety criteria are part of the Norwegian Gene Technology act, much work remains in doing ethical assessments. They present the potential of tools like the Ethical Matrix, and underline that tools will not replace stakeholder engagement as the role of ethicists. You can join this conversation in their pre-conference workshop on June 23 at the EurSafe conference.

Last but not least, a sixth contribution by David Rose (Reading University) and Laurens Klerkx (WUR), shows how technologies become pervasive in the transition of food systems, what is called Agriculture 4.0. Such technological developments are alluded to in other contributions of this newsletter like, gene editing, and alternative proteins. Will new technologies exacerbate tensions between traditional, and new ways of farming, or will they facilitate existing practices? In the midst of a multitude of technological options who are the winners and losers, and how can we move forward responsibly with these technological developments? In their paper, Rose and Klerkx stress the importance of inclusion of stakeholders moving forward.

So what's the role of technologies in transforming our food systems? From these contributions,

I take that it's mostly up to us as a collective to decide which way we want technologies to play a role in the transition. Whatever way we take, it will need to be one that is just, and takes humans, animals and environment into account. On that note, I'm excited to hear many of the interesting presentations at the EurSafe conference next month, with the theme: Justice and Food Security in a Changing Climate. The last contribution of this newsletter is by Ivo Wallimann-Helmer, director of the UniFR_ESH Institute hosting the conference, and research assistant Hannah Schübel. In their piece, they highlight the many questions that will be discussed in June.

At the end of this newsletter, you will find a Call for Papers by the conference organizers, the conference poster in case you have not yet registered yet, the exciting announcement of a new Master Program in Human-Animal Interactions at Vetmeduni Vienna, and EurSafe news from the association's President, Franck Meijboom.

Please feel free to contact any of the editorial board members, listed at the end of the newsletter, if you would like to write an article or a book review or if you are a young scholar willing to present your work to the EurSafe community.

Looking forward to seeing everyone's home offices when we meet in June,

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The deep transition of food systems

Julia Rijssenbeek



2021 is the year of food systems. In September, the first global Food Systems Summit will take place, convening all UN countries and aiming at igniting change towards just and resilient food systems. Such momentum for food systems shows how

individual actions and alterations in parts of the food system is not considered sufficient to solve its current problems, and that readiness for a systematic approach is growing. Among the players of great importance in achieving sustainable food systems is the European continent, a major global food power. It is also Europe's own ambition to improve its food system, as creating a European food system that will be the global standard for sustainability is among Europe's transformative policies to reach its ambitious Green Deal.

What does a transition towards a sustainable food system mean for Europe? The EU is rather ambiguous as to what it means by a sustainable food system. 'A key challenge in the implementation of the F2F Strategy is the unresolved ambiguity of what is meant by 'food sustainability' or a 'sustainable food system'. The European Commission does not define sustainability or even acknowledge that it is a multidimensional concept, instead pointing to the range of environmental, health, social and economic benefits of shifting towards a sustainable food system' (Schebesta & Candel 2020). This ill-defined concept, the authors write, will result in policy incoherencies and in creating unclarities among stakeholders whose visions on food sustainability differ.

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What is clear is that the current food system is not sustainable. Industrial agriculture was key in increasing food production and formed the base for the Green Revolution lifting large numbers of people out of hunger. But the Green Revolution did not come without its problems, rather, it is now well-known that it led to ecological degradation and to an increase in socio-economic inequality (Shiva 2016).

A transformation of this system is thus needed to shift from industrial agriculture to sustainable agriculture. Yet, the debate on how to navigate away from this old system is often polarized, mainly taking place between two polarized positions, i.e., the ecomodernist position on the one side and the ecologist position on the other (Mann 2018).

Bottomline is that we cannot solve the problems of modern, industrial agriculture by keeping to apply the dominant principles of this paradigm. Think of dominant principles like considering food waste and ecological degradation as mere externalities or increasing growth and efficiency in production resulting in unsustainable production of large volumes of food instead of the sustainable production of qualitative nutrients.

In contrast to the debate between the ecomodernist and ecological perspective, the framework of Deep Transitions (Schot 2018) offers a systematic way to understand the transition differently. It frames the transition towards sustainable agriculture not as an ideological question (such as ecomodernism vs. ecology) but as an inevitable transition. And it offers a systemic way to think about what overcoming the challenges of industrial farming and shifting towards sustainable agriculture might look like. The framework understands agriculture and food as a socio-technical system (just like energy, housing, transport, communication, and health care) that is part of industrial modernity. The challenges of the socio-technical systems of industrial modernity – ecological degradation and inequality – can thus not be addressed within this exact paradigm of industrial modernity. Instead, these challenges mark a



transition period to new socio-technical systems. Indeed, ecological degradation and inequality are the exact problems of the current food system as mentioned before. But it counts more broadly for sustainable development goals (SDG's) that they cannot be reached within the paradigm of industrial modernity, yet the formulation of these goals in individual domains forgoes a more systemic view on what is needed to reach them.

Thinking of what this deep transition will look like urges us to first understand the principles of industrial modernity that currently influence socio-technical systems like the food system. From there, we can speculate on what the principles of the next deep transition and thus of the next food system might look like. In order to solidify speculations and give a strong idea of the inevitable nature of these new principles, I will add European initiatives that adhere to these new principles. For one, industrial modernity is marked by highly resource-intensive economies, dependent on fossil fuels. Europe has one of the highest resource consumption rates in the world (including land use for agriculture) and the European food system mainly relies on fossil fuel as energy source. In-

deed, countries are turning to circular agricultural visions, like the Dutch vision on circular agriculture, in an attempt to create more resource-extensive agricultural models. Also, food is a major bio-waste stream and creates an untapped potential for the biobased economy.

Another characteristic of industrial modernity is its focus on economic growth and the externalization of negative side-effects like an ecological footprint. Indeed, food production in Europe has focused mainly on yield increase since the Green Revolution and European diets are animal protein rich, account for the bulk of our dietary emissions that are not reflected in the prices for meat (Sandström et al. 2018). Broader definitions of welfare, countering the focus on sole economic growth, are now appreciated. Echoing this, the broader definition on health is now gaining steam in food systems as well. The recent EAT-Lancet report calculates the optimal diet for planetary and human health. It emphasizes the need to shift to a more plant-based diet. Indeed, the number of vegetarians and vegans among young European adults is growing, citing climate change as their key concern. Moreover, true cost initiatives and meat tax are gaining attention among European countries in order to account for the ecological costs of food sources.

A third idea guiding industrial modernity and defining the food system is the instrumental view of nature and labor. The European food system caused the degradation of ecosystems, soils, and biodiversity. While agriculture remains a big employer within the EU, farmers struggle in the sector, and the European countryside is emptying out with hundreds of farmers each day. As a reaction to this, organizations like Commonland are successfully restoring degraded landscapes, valuing them not only for their instrumental value to produce food but also for their social, ecological and inspirational value.

These are just a few principles guiding industrial modernity that brought about the problems in our current food systems. By not following these prin-

ciples, the above-mentioned initiatives are already paving the way to a sustainable food future. Through the Deep Transition framework, we can understand how a transition in food and agriculture is embedded in a paradigmatic shift away from industrial modernity. The framework explicates how in food systems a greater challenge lies ahead than 'just' making some adjustments to current practices in individual domains and how it is accompanied by changes in many other systems. Coming back to the ill-defined concept of a 'sustainable food system', as mentioned at the beginning, making a transition to a sustainable food system requires Europe to recognize the shortcomings of industrial modernity and formulate real answers to its guiding principles. For Europe, the beacon of industrial modernity, transitioning to a sustainable food system starts there.

References

- Mann, Ch., 2018, The Wizard and the Prophet Charles C. Mann. *The Wizard and the Prophet: Two Remarkable Scientists and Their Dueling Visions to Shape Tomorrow's World*, Knopf
- Schebesta, H., Candel, J.J.L. Game-changing potential of the EU's Farm to Fork Strategy. *Nat Food* 1, 586-588 (2020). <https://doi.org/10.1038/s43016-020-00166-9>
- Schot, J., Kanger, L., 2018, Deep transitions: Emergence, acceleration, stabilization and directionality, *Res. Policy*, 6 (2018), pp. 1045-1059
- Shiva, V., 2016. *The violence of the green revolution: Third world agriculture, ecology, and politics*. University Press of Kentucky.
- Sandström, V., Valin, H., Krisztin, T., Havlík, P., Herrero, M., & Kastner, T. (2018). The role of trade in the greenhouse gas footprints of EU diets. *Global Food Security*, 19, 48-55.

paper

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Plants Futures, A Better Way Forward

Samantha Derrick



In recent months, the plant-based food market has boomed in response to disruptions in the industrialized meat sector (PBFA 2021) and new consumer demand driven by growing awareness that industrial agriculture is a significant driver of greenhouse

gas emissions and climate change (The Hartman Group 2021). Research shows that the demand for plant based food has been growing for a variety of reasons, including environmental sustainability, animal welfare, and perhaps most significantly, personal and public health (Sterling & Bowen 2019). The COVID-19 pandemic has exposed a myriad of shortcomings in our food system and has increased the urgency around shifting towards plant based eating.

Yet, despite increasing awareness around the well-documented advantages of plant-based diets, meat remains at the center of most Western diets. In the U.S., the average person consumes 222 lbs of meat per year (USDA ERS 2021). The replacement of meat with vegetables from the center of the plate, particularly in Western diets, presents both a challenge and an opportunity. The Plant Futures Initiative (PFI), born at UC Berkeley, is an initiative that brings together the often intricate and distinct levers needed for the successful expansion of the plant-based revolution into both academia and business.

PFI's inaugural event consisted of a two-part endeavor featuring the Plant Futures Symposium, held in January 2021, and the Plant Futures Challenge Innovation Lab, currently ongoing at UC Berkeley Haas. The Plant Futures

plant futures

Symposium provided an immersive dive into the key issues, creative tensions, and opportunities emerging in the plant-based foods sector, bringing together key innovators. With over 500 attendees from across the globe, the Plant Futures Symposium catalyzed a global movement of 'Plant Futurists' who convened to learn, contribute, and address the importance of a synergistic plant-centric paradigm that supports and facilitates the cross-pollination of public health, medicine, entrepreneurship, and sustainable agriculture.

Aptly dubbed a 'kaleidoscope' by Will Rosenzweig, faculty steward of Plant Futures, the Symposium featured leaders from the scientific, medical, academic, non-profit, and industry communities that among myriad other facets, examined what a plant-centered future would look like, the associated challenges and benefits surrounding implementation, and the potential of unintended consequences.

The presenters, each with their riveting and unique perspectives, collectively created a renaissance that far exceeded the sum of its parts. Nina Gheihman, Postdoctoral Scholar at UC Berkeley Haas, opened the symposium by highlighting the urgent challenges and opportunities for transforming our broken agro-industrial food complex and the importance of a systems-level and holistic approach to change: 'Innovation, expansion, and growth must necessarily be mitigated by thoughtful considerations of the complexities, diversity, and the nuance needed to truly transform, not just disrupt, the most important system humanity has ever cultivated.'

Zoë Robaey, Assistant Professor in Ethics of Technology at the Philosophy Group of Wageningen University discussed the largely unknown

and unintended consequences of innovation in agriculture, and the importance of imbuing food systems innovation with a values-sensitive design paradigm that takes into account the values and perspectives of a diverse range of stakeholders and encourages innovators to consider how their inventions will look a century or more from now. Robaey's discussion around values-sensitive design seamlessly transitioned into the Access, Inclusion & Diversity panel, featuring Jasmine Leyva, Filmmaker, Lauren Ornelas, Founder of Food Empowerment Project, and Garrett Broad, Associate Professor at Fordham University, who collectively discussed the glaring under-representation of minorities in the plant based food sector and the importance of culturally diverse leadership to facilitate equitable access to the plant based food sector.

Similarly, the discussion around climate change highlighted some striking statistics. Grass-fed beef for example, while often seen as a sustainable alternative to factory farming, in truth poses myriad unintended consequences. Shifting to grass-fed beef would require a 270% increase in land use, according to Matthew Hayek who discussed the environmental implications of the global food system for climate change (see Hayek and Garrett 2018). The ever-increasing environmental consequences of animal centered diets are threatening the stability of our ecosystem and as Hayek noted, a divestment away from agriculture is just as critical as a divestment away from fossil fuels.

On the Nutrition & Health panel, Dr. Milton Mills highlighted the ominous implications of the special interest driven stranglehold the United States Department of Agriculture maintains over dietary guidelines for Americans, such as continuing to promote dairy, a food with well-documented as research effects on health, particularly for communities of color who are especially sensitive to lactose. The discussions among Dr. Mills, Dr. Will Bulsiewicz, and Dr. David Katz, advocated for the powerful benefits of eating a diversified, plant-based diet for our gut, longevity, and overall

health profile. At the close of the panel, Dr. Katz reminded us that we must eat 'as if the world depends on it.'

The late Greg Steltenpohl, co-founder of Califia Farms, discussed the exciting and expansive future prospects of plant based dairy, as well as weaving in elements of his legacy and wisdom by highlighting the union of entrepreneurship with systems change in order to support a regenerative food systems at a unique and critical choice point in history:

'The key essential element of a plant food system and why it's systemic is because it addresses personal health, planetary health, and public health. It head-on addresses the climate change imper-

ative, introduces the ability to include animal health, as well as diversity and inclusion, race and class, and food access and food justice all in its design, and it addresses that intrinsically.'

The rapid evolution towards a plant centric diet has global implications for both human health and planetary well-being. Now more than ever, plants are functioning as a powerful catalyst for transformation in the food and health systems. The adaptability, creativity and commitment from industry, students, and faculty of all backgrounds continues to generate the change we need, on our plates, in industry, academia, and beyond. Given the likely intensification of the established commercial, special interest, and Western cultural headwinds the emerging plant-based movement will encounter, it is imperative that the creativity and cross-disciplinary commitment of Plant Futurists be further enhanced and maintained for an imperative systematic transformation in what has become the most critically important system for ensuring our collective survival.

References

- PBFA. *New Data Shows Plant-Based Food Outpacing Total Food Sales During COVID-19*. Plant Based Foods Association. Published May 26, 2020. Accessed April 26, 2021. www.plantbasedfoods.org/plant-based-food-outpaces-total-food-sales-during-covid19
- Newsletter: The Hartman Group. Accessed April 26, 2021. www.hartman-group.com/newsletters/127750186/saying-no-to-meat-what-s-behind-the-rising-interest-in-plant-based-protein
- Sterling SR, Bowen S-A. The Potential for Plant-Based Diets to Promote Health Among Blacks Living in the United States. *Nutrients* 2019;11(12). doi:10.3390/nu11122915
- USDA ERS - *Per Capita Red Meat and Poultry Disappearance: Insights Into Its Steady Growth*. Accessed April 26, 2021. www.ers.usda.gov/amber-waves/2018/june/per-capita-red-meat-and-poultry-disappearance-in-sights-into-its-steady-growth
- Hayek MN, Garrett RD. Nationwide shift to grass-fed beef requires larger cattle population. *Environ Res Lett*. 2018;13(8):084005. doi:10.1088/1748-9326/aad401

Protein transition between pulses and cultured meat

Cor van der Weele



Intro: frontiers and hinterlands

In the protein transition, which is meant to be a process of deepgoing change, much hope focuses on frontiers of innovation. What happens behind these frontiers may seem less spectacular: maybe sooner or later we will simply all be following in the direction of the pioneers, leaving the old and bad products, values, habits, etc. behind us? In fact, the hinterlands

are much more interesting than just being slow and lagging behind; these are areas where tensions between tradition and innovation are sorted out and perhaps transformed. Below, I describe part of my present engagement in those hinterlands, which involves my work on cultured meat at Wageningen University, my family's farm, new collaborations and more.

From pulses to cultured meat

The protein transition is not just a matter of where to go but also of where we come from. Let me start precisely 50 years back for a piece of history that is partly personal. In 1971, Frances Moore Lappé published *Diet for a small planet*, a book in which she argued for a big reduction in meat consumption in Western countries, as the (then) present levels were too wasteful to enable global food security. A perfect alternative is available, she argued: pulses, supplemented with grains, are a great source of protein, and she added many recipes to make the transition to such a traditional diet easier. The book was a bestseller and it was translated into many languages. When I read it, in 1978, the perspective looked convincing and congenial to me. I came from an arable farm where peas were among the crops being grown. I loved peas and I also knew how good they are for the soil, just like other species of pulses. And since progress was in the air and Moore Lappé's book was so convincing, I assumed that this transition was on its way.

But no: in the decades to follow, global pulse consumption kept going down while meat eating increased ever further. In most countries, meat consump-

tion started to rise as soon as people could afford it; apparently, it was more attractive than anything else.

This is why, when in 2007 I first heard about the idea of cultured meat, I thought 'Ah! This might finally help!' From then on, I have been very interested in cultured meat as part of the protein transition, studying and reflecting on responses, observing how the mere idea –experienced as very strange and unnatural at first – quickly activated latent ambivalence about meat in many (focus group) discussions; it made people question the self-evident nature of meat ('How natural is our normal meat, actually?'). During those discussions, we witnessed time and again how normal meat started to look a little stranger as people got somewhat used to the idea of cultured meat. People especially liked the idea of small scale cultured meat production, in local factories, with biopsies from happy and equally local animals, a scenario

that we termed 'the pig in the backyard' (Van der Weele and Driessen 2013, 2019). In a follow-up project I am now finalizing, I wonder whether such small scale cultured meat production may perhaps be a new option for farmers.

... and back to pulses

Pulses meanwhile suffered from increasing neglect. When the FAO called 2016 International Year of the Pulses, they hoped to save pulses from oblivion and from the imago of being the old-fashioned and increasingly obsolete 'meat for the poor'. Breeding programs had been stopped in many places, including Wageningen, because pulses were no longer commercially interesting. This was also the case at our family farm – and farms all over: farmers were abandoning peas and beans.

What also changed with time in our family was that the older generation died. I now co-own the



farm with a brother and a sister, and we run it with the help of other family members. Aiming to take sustainable turns and also to contribute to the protein transition, we noted a few years ago that while the business model for peas continued to be bad, some agricultural organizations started to promote fava beans, as a protein crop more suitable for our climate than soy. We decided to try and grow them. Although that worked very well, so far we can only sell them as feed for animals. We naturally also hope to grow them as a source of human food.

Let me mention one track of collaborative probing. When artist Arne Hendriks – maker of e.g. The incredible shrinking man - came to Wageningen University as artist in residence specifically for the protein transition, we talked. While I met someone who knows how to make tempeh from soy and who would love to try it with fava beans, Arne talked to a miso maker who was likewise interested in trying fava beans. The idea emerged to have a series of experimental workshops on the

farm. A biochemist from Wageningen and other colleagues liked to join. Then corona struck and nothing happened for a while. By now we held just two mini workshops, one in which we made miso from fava beans, one in which we tried tempeh, not yet fully successfully. As we emerge from the pandemic we intend to continue the experiments with more people, more products, more perspectives, always also with an eye on new business models. New stories too: Arne Hendriks likes to construct counterfactual histories, wondering for example what might have happened to Dutch culture and taste if the Dutch world sailors in the seventeenth century - who had a trading post in Dejima, Japan – had taken miso back with them to the Netherlands. Such stories, he says, may change the light in which we see the present and the future.

The art of dealing with tensions

Pulses and cultured meat are both alternatives for meat but moving between them implies moving between the old and the new, tradition and innovation, between low tech and high tech, between commercial precariousness and excitement. These are conspicuous tensions in the protein transition, but that does not imply they represent irreconcilable opposites that we have to firmly choose between. 'The pig in the backyard' is a cultured meat scenario that includes tradition as well as innovation, both socially and technologically. Similarly conceivable are fields of traditional beans being monitored by drones and being processed by small fermentation companies. While beans are no doubt more sustainable, cultured meat may be more promising in seducing people away from meat and getting them used to alternatives (Van der Weele et al. 2019). Instead of choosing between the old and the new, the challenge is rather how to broaden our views of innovation (cf Vinsel and Russell 2020). Dealing with the tensions between frontiers and hinterlands requires ingenuity.

References

- Hendriks, A. <https://arnehendriks.net>
 Moore Lappé, F., 1971 (and later editions). *Diet for a small planet*. Ballantine Books
 Van der Weele, C. and C. Driessen, 2019. How normal meat becomes stranger as cultured meat becomes more normal; ambivalence and ambiguity below the surface of behavior. *Frontiers in sustainable food systems*, 28 August. <https://doi.org/10.3389/fsufs.2019.00069>
 Van der Weele, C., P. Feindt, A.J. van der Goot, B. van Mierlo and M. van Boekel, 2019. Meat alternatives, an integrative comparison. *Trends in Food Science and technology* 88: 502-512. <https://doi.org/10.1016/j.tifs.2019.04.018>
 Vinsel, L. and A.L. Russell, 2020. *The innovation delusion; how our obsession with the new has disrupted the work that matters most*. New York, Currency.

paper

Long Time, Some Seed Taking Stock of the Mistra Biotech Program

Per Sandin



Mistra is an independent Swedish research foundation for strategic environmental research, and it funds a small number of comparatively large research programs rather than projects. One such program - The Mistra Biotech Program - ran in two phases between 2012 and 2020.

From the outset, the program aimed at sustainability in agricultural and food systems involving the use of biotechnology. A large number of researchers have been involved, from natural sciences, social sciences and humanities. A very substantial part of the project has concerned ethics, and over the years, the programme has resulted in a number of contributions to Eursafe (for instance Brunius et al 2016, Sandin and Moula 2015, Röcklinsberg and Gjerris 2018). The program period has indeed been an exciting one for the food and biotechnology world, not least due to the arrival of new gene-editing techniques (CRISPR/Cas9) and the ensuing discussions on how to regulate these technologies, especially in the EU (Zetterberg and Björnberg 2017).

Some of the component projects in the program have concerned the development of potatoes with changed starch composition, using both 'conventional' and biotechnological methods, and the domestication of a potential new oil crop, the wild plant field cress (*Lepidium campestre*), with the view to food, feed, and biofuel applications – again, using both conventional and biotech methods. Here I will offer some reflections on the field-cress project, based both on research done within the program and personal experiences. The project, and its pre-history, provides insights that might bear on the development

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of new crops and the ethics of such endeavours. The initiative to domesticate field cress in Sweden came from the late professor Arnulf Merker about thirty years ago. However, plans to domesticate wild plants into oil crops have been discussed at least since the 1950s. Field cress is a winter-hardy, biennial crop and the project has aimed at its future use as both an oil crop and a catch crop for use in a Nordic climate. The plan is to sow it alongside e.g. barley in the spring. The barley grows with the field cress below it. The barley is harvested in year 1, the field cress remains, grows

References

- Brunius, C., Moula, P. & Sandin, P. 2016. *The ethical matrix as a potential tool in public procurement of food*. In: *Food futures: ethics, science and culture*. Wageningen Academic Publishers. pp. 395-398.
- Röcklinsberg, H. & Gjerris, M. 2018. Potato Crisps from CRISPRCas9 modification – aspects of autonomy and freedom. In: Springer, S. & Grimm, H. (eds.), *Professionals in Food Chains*. Wageningen Academic Publishers, the Netherlands, pp. 430-435.
- Sandin, P. and Moula, P. Simple plain fare or exquisite eating – is simplicity really a consumer virtue? In: D.E. Dumitras, I.M. Jitea and S. Aerts (eds.): *Know your food: Food ethics and innovation* (Wageningen Academic Publishers 2015), 249-253.
- Zetterberg, C. & K. Edvardsson Björnberg. 2017. Time for a new EU regulatory framework for GM crops? *Journal of Agricultural and Environmental Ethics* 30: 325-347.

and is then harvested in year 2. This also means that, in addition to the obvious task of developing the plant material so that it is suitable for cultivation, some new growing practices might have to be implemented.

First, development of entirely new crops is rare, and the timescale for their introduction is extremely long. Most of the plants grown today were domesticated several thousand years ago over long periods of time, and the number of species that have been domesticated is not as large as one might think. It has been estimated that about 250 species can be considered fully domesticated, and that the number of species that have undergone domestication, but not necessarily full domestication, is about ten times higher. Even with the much larger toolbox that is available to today's plant breeders – a toolbox that contains genetic engineering of various types but also conventional methods like hybridization and mutagenesis – the process requires time, and time means resources and money. One reflection that was voiced was that it is beneficial to have a project running even if it is kept on the back burner – to keep it 'simmering with bursts of progress'. This is important to remember in a climate for research and innovation that often emphasizes novelty, speed and efficiency, and has a tendency to be organized in project form. Today the project has proceeded from proof-of-concept stage to scaled-up pilot studies and early-stage technology development. Nevertheless, even those involved envisage 10-20 years until field cress could be an established crop. (Needless to say, such estimates have often proven to be too optimistic in the past.)

Second, the long time frame also means that the objectives of the project have changed, and they have at times been pursued in parallel. At some points, applications in food and feed has been emphasized, at other points, feed, biofuels and environmental benefits. Such changes can both reflect and effect changes in the ethical and regulatory landscape. Not only are the consequences of a particular course of action difficult or impossible to foresee, but values have also changed



considerably since the early 1990s. Just think of the increased market shares for organic food, the controversies about genetically modified food, the discussions about meat and meat eating, and the attitudes around globalization.

Lastly, we should not forget the importance of coincidences and individuals. The history of the field-cress project illustrates this. It appears that the project originally was the brainchild of one person, Arnulf Merker, who pursued it on a small scale. After his untimely death, there was a feeling of responsibility towards his idea among some

of his colleagues, that might have contributed to keeping the momentum and carrying it on. Finally: One accession of field cress that turned out to be significant in the project came from Arild, Skåne, in southern Sweden. This was, incidentally, where Arnulf Merker had a summerhouse.

The final report from the Mistra Biotech program, which includes a comprehensive list of publications, can be accessed [here](#).

Towards ethics in assessment of GMOs

Tim Dassler and Trine Antonsen



Tim Dassler and Trine Antonsen

There is increased awareness about ethics with use of novel genome editing technologies. Genome editing, as a relatively new technology, still has a lot of unknowns. Ethics is meant to help us decide what to do when facing uncertainty, and it is not surprising that the interest in ethics in connection with assessments of GMOs has been renewed. The European Group on Ethics in Science and New Technology (EGE) recently released a report on the ethics of Genome Editing (2021). It addresses the use of this technology in humans, livestock and plants, highlights the need for attention to varieties of meaning attributed to ‘humanness’, ‘naturalness’ and ‘diversity’.

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Furthermore, the report also directs attention to framings such as use of the metaphors when describing genome editing, e.g. ‘writing’ and ‘editing’, and how they shape the discourse. In Norway, an expert group has developed an ethical guideline to be used under the Norwegian Gene Technology Act (GTA). Here we present this guideline and discuss the Norwegian Biotechnology Board’s (NBAB) comments to it. We also provide some reflections concerning the use of such guidelines, e.g. can they secure a fair, inclusive and transparent ethical assessment of GMOs?

Non-safety criteria and the Norwegian Gene Technology Act

The Norwegian GTA of 1993 is unique in an international context. It requires GMOs to be sustainable, ethically justifiable and beneficial to society for them to be approved. It means that an application for production or use can be denied on each of these accounts alone and apart from the risk assessments required by international agreements. In 2017 the Norwegian government decided to prohibit a GM maize variety resistant to glufosinate-ammonium, a herbicide toxic to humans and animals that is not allowed for use in Norwegian farming (Ministry of Climate and Environment 2017). This decision was based on advice from NBAB that this variety should not be approved because it is ethically unacceptable to import products created for use with a herbicide that is not allowed in Norway. This decision paved the way for elaboration of an ethical framework.

A framework for ethical assessment

In 2019 the Norwegian Environmental Agency (NEA) appointed a committee of ethicists to propose guidelines for the operationalization of the ethics criteria in the GTA (Forsberg et al. 2019) to help the regulating authority and case officers to find ethically relevant aspects and provide an open, transparent and verifiable procedure for the assessment of ethical justifiability of GMOs.

The guideline includes a procedure for assessment and a set of guiding questions that covers a broad range of ethical aspects (e.g. care, stewardship,

integrity, virtues and practices). Furthermore, a new ethical matrix is proposed as a tool to aid the ethical assessment. The proposed ethical matrix is comprehensive, as it includes a variety of ethical perspectives and traditions (utilitarian ethics, deontology, virtue ethics and care ethics) that are relevant in the assessment of GMOs. In order to guarantee a fair and adequate assessment of GMOs the committee argues that the generally accepted principles of common morality, i.e. ‘no harm’, ‘beneficence’, ‘autonomy’ and ‘justice’ should be supplemented with other relevant values such as ‘trust’, ‘stewardship’, ‘care’, ‘solidarity’, and ‘naturalness and respect for dignity/integrity’.

Comments to the Ethical guidelines

In 2020 NBAB commented upon the proposed guidelines. NBAB is appointed by the Norwegian government, with a mandate to discuss and assess biotechnologies’ ethical and social aspects as well as their contribution to sustainability. The NBAB suggests several changes, and among other things they point out that there is a dilemma between making very specific procedures for the assessment, on the one hand, and making room for reflective ethical judgment, on the other (NBAB 2020). In more philosophical terms, this points to a dilemma between a rule-based assessment versus an ethical assessment that relies more on the assessors’ ethical competence and capacities for moral judgment (i.e. phronesis/practical wisdom).

The debate seems settled for now since NEA acknowledges that any ethical assessment should include a practical moral judgment. This does not mean that an ethical assessment of a GMO, including those produced by genome editing techniques, is a subjective undertaking where one can cherry-pick what is important and what is not. Rather the ethical guideline makes it clear that the assessment must follow accepted and transparent methods and be based on relevant considerations. In addition, the assessment must include a broad and adequate range of values, including the generally accepted principles of common morality ‘no harm’, ‘beneficence’, ‘autonomy’ and ‘justice’ which should be supplemented with other relevant

values such as ‘trust’, ‘stewardship’, ‘care’, ‘solidarity’, and ‘naturalness and respect for dignity/integrity’, so that no groups, stakeholders, agents or areas are left out.

One blind spot of the proposed guidelines is that although they address stakeholder involvement and public morality directly, there is little focus on emotions and feelings and how these can be influenced. How the public thinks and feels about GMOs is nevertheless important for determining ethical and societal justifiability and should thus be included in any comprehensive assessment of GMOs or new genome editing techniques. To this end we suggest utilizing a different kind of matrix which we invite you to discuss with us during EurSafe 2021; the ethical sustainability matrix, that also takes into account stakeholders and public opinions and emotions in addition to the different types of (non)knowledge, a broad set of values and important ethical traditions.

The way forward

Can the application of tools such as the Ethical Matrix secure a fair, inclusive and open ethical assessment of GMOs? The ethical matrix enables its user to formulate questions that capture complex ethical issues, their relation to various stakeholders and how these are connected. It also illustrates those different types of knowledge and ethical values that are non-subjective but interconnected in a complex web of relations and thus interdependent.

In their response to the guidelines, NBAB asks how an assessment is done in practice. Without doubt, the guideline proposed is comprehensive and does not provide simple solutions to questions of ethical uncertainty. After all, such uncertainties regard what we find good and right, how we understand ourselves as humans and our relationship to nature and how we understand goals such as biodiversity and sustainability. However, tools and guiding questions can help make the assessment more inclusive, transparent and verifiable. Yet, as a decision-making tool it does not replace ethical expertise e.g., in identifying and analyzing issues of framing and use of metaphors,

or regarding practical judgement. Nor does it replace stakeholder involvement as an essential part in including different types of knowledge, values and how society thinks and feels about novel and disruptive technologies, such as GMOs.

References

- European Group on Ethics in Science and New Technologies (EGE). 2021. Ethics of Genome Editing. In: *Opinion* no. 32. Brussels: Belgium. doi:10.2777/763
- Forsberg, E.-M., Hofmann, B., Kaiser, M., Myskja, B. K., Strand, R., & Ursin, L. 2019. *Vurderingskriteriet etikk: Veileder for operasjonalisering av vurderingskriteriet etikk i genteknologiloven*. Cristin-resultat-ID: 1807181
- Ministry of Climate and Environment (KLD). 2017. *Regjeringen sier nei til genmodifiserte planter (in Norwegian)*. www.regjeringen.no/no/aktuelt/regjeringen-sier-nei-til-genmodifiserte-planter/id2555387.
- Norwegian Biotechnology Advisory Board (NBAB), 2017. *Slutføring av søknadene om godkjenning av dei genmodifiserte insekt- og sprøtemiddelresistente maissortane 1507 og Bt11 til dyrking under EU-direktiv 2001/18/EF (in Norwegian)*. www.bioteknologiradet.no/filarkiv/2017/06/Sluttbehandling-av-genmodifisert-insekt-og-sprøtemiddelresistent-mais-1507-og-Bt11-til-dyrking.pdf.
- Norwegian Biotechnology Advisory Board. NBAB. 2020. *Uttalelse om rapporten Veileder for operasjonalisering av vurderingskriteriet etikk i Genteknologiloven*. www.bioteknologiradet.no/filarkiv/2010/07/2020-05-14-veileder-for-etikk-kriteriet-i-genteknologiloven.pdf.
- Norwegian Environment Agency. NEA. 2020. *Rammeverk for Bioteknologirådets vurderinger av etisk forsvarlighet etter genteknologiloven*.
- Norwegian Gene Technology Act, *Act of 2 April 1993 No. 38 Relating to the Production and Use of Genetically Modified Organisms, etc. (Gene Technology Act)*. www.regjeringen.no/en/dokumenter/gene-technology-act/id173031.

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‘Game-changing’ technologies of agriculture 4.0: promises, alternatives, and responsible innovation

David Rose and Laurens Klerkx



David Rose and Laurens Klerkx

In December 2019, we published a paper on the ‘game-changing’ technologies of the so-called fourth agricultural revolution, such as AI and robotics, gene editing, vertical farming, and alternative proteins (Klerkx and Rose 2020).

We argued for the need for a period of reflection on the inclusion and exclusion effects of different emergent agricultural and food technologies and of different future visions of agriculture and food systems and how they interact with one another.

Since writing this paper, much has changed in the world. The onset of the COVID-19 pandemic has accelerated calls for the digitalisation of agriculture and for automated technologies that can perform farm tasks without the need for labour. Digital extension methods have been increasingly used in the absence of face-to-face contact between advisors and farmers. The pandemic has added to the already many sustainability challenges facing farmers; the need to



increase productivity, without negatively impacting on the environment nor society. Also, with the advent of the 2021 UN Food Systems Summit, initiatives reflecting on food systems transformation and the role of emerging technologies therein are burgeoning (see e.g. Barrett et al. 2020; Klerkx and Begemann 2020).

In recent times, we have seen a growing amount of literature focusing on the ‘promises’ of so-called ‘game-changing’ agricultural technologies (Klerkx et al. 2019). New technologies promise much from increasing the productivity of farms through more evidence-based decision making and analysis of data (e.g. decision support systems, remote sensing, and AI), and reducing the reliance on migrant labour (e.g. robotics), as well as lifestyle improvements by freeing a farmer from dull, dangerous, and dirty jobs, whilst offering the chance to reduce other inputs to help save costs and the environment. Other less traditional forms

of agriculture, such as vertical farming and cultured meat may take the burden off the environment by sparing land. Yet, these are mainly just promises; projections of possible benefits once the technologies are further developed, adopted, and implemented at scale. Analyses of the benefits of precision agricultural technologies over the last two decades continue to provide a mixed picture; some finding benefits to the primary producer, many noting benefits for large technology companies, but others finding limited cost-benefit for farmers, and there may be rebound effects. Further research is needed to explore whether or not emergent agricultural technologies are truly game-changing and, if so, for whom? Who are the winners? Who are the losers? And who gets to decide?

In the original paper, we also explored how the different technologies associated with the fourth agricultural revolution would interact with one another and whether the use of one technology at scale would cause inclusion and exclusion effects on others. Though there is some emergent reflection and research on the scaling of agriculture 4.0 technologies (e.g. Wigboldus et al. 2020) the impacts of, for example, autonomous robotics being implemented at scale is still unknown – will this facilitate transitions towards further intensification of production systems? Or, will this enable other types of systems, such as agroecology, to thrive if we re-assess how these technologies can enable other ways of farming? If farmers are able to adopt one new technology, will this work alongside other technologies and does it mean that they are unable to invest further in others? The roles of different public and private actors within the agricultural knowledge and innovation system [AKIS] (see Fielke et al. 2017; Klerkx and Begemann 2020) is an important area to study if we are to think about what the future of agriculture and food systems looks like – particularly in terms of who has the power to decide the direction in which we travel.

We argued that responsible innovation principles of anticipation, inclusion, reflexivity, and respon-

siveness, needed to be operationalised to help us explore future transitions in a way that highlights the inclusion and exclusion effects of new technologies. The normativity of transitions in agriculture 4.0 needs to be explicitly acknowledged (Rose et al. 2021). The literature continues to grow on the potential downsides of the fourth agricultural revolution. For example, in the case of digital agriculture, this ranges from issues of power and data ownership, to concerns over ‘algorithmic rationality’ and the creation of cyborg farmers, potential health and safety or cybersecurity threats of AI and robotics, as well as the potential to lead to further damaging intensification for the environment and animal welfare, and the creation of new stresses of data overload and the lack of ability to invest in, and adapt to, new technologies (see Klerkx et al. 2019 for an overview of critical literatures). The very fact, therefore, that some people will win and some people will lose from the disruptive effects of new technology, and that transitions towards one specific future has inclusion and exclusion effects on other technologies, forms of production, and actors in the AKIS, means that responsible visioning of futures is the only socially just way forward.

Inclusive methods of anticipation and reflection on the pros and cons of new agricultural technologies are emerging. From the use of foresighting techniques, the development of industry codes of practice, focus groups with AKIS actors and the public, there is a growing interest in including all sections of society in determining the future of agricultural production. Yet, such processes must be careful not to add legitimacy to future-visioning exercises that do not substantively include a wide range of stakeholders in the process. As in any co-design process, there is the potential for so-called inclusion exercises to favour the already engaged and powerful; larger farmers with more time and capacity to invest in new technology, well-known companies with the power to lobby policy-makers more effectively than SMEs and farmers, and other interest groups with the knowledge and experience of mobilising towards the realisation of their favoured futures. Ensuring that

the inclusion process is substantive is a pre-requisite for all forms of anticipation, reflexivity, and responsiveness, and the research community needs to play its role in mainstreaming better inclusion methods by policy-makers and funders alike.

References

- Barrett, C.B., Benton, T.G., Cooper, K.A., Fanzo, J., Gandhi, R., Herrero, M., James, S., Kahn, M., Mason-D'Croz, D., Mathys, A., Nelson, R.J., Shen, J., Thornton, P., Bageant, E., Fan, S., Mude, A.G., Sibanda, L.M., Wood, S., 2020. Bundling innovations to transform agri-food systems. In: *Nature Sustainability* 3, 974-976.
- Fielke, S., Taylor, B., Jakku, E., 2020. Digitalisation of agricultural knowledge and advice networks: A state-of-the-art review. In: *Agricultural Systems* 180, 102763.
- Klerkx, L., Jakku, E., Labarthe, P., 2019. A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. In: *NJAS - Wageningen Journal of Life Sciences* 90-91, 100315.
- Klerkx, L., Begemann, S., 2020. Supporting food systems transformation: The what, why, who, where and how of mission-oriented agricultural innovation systems. In: *Agricultural Systems* 184, 102901.
- Wigboldus, S., Klerkx, L., Leeuwis, C., 2020. Making Scale Work for Sustainable Development: A Framework for Responsible Scaling of Agricultural Innovations, in: Adenle, A.A., Chertow, M.R., Moors, E., Pannell, D.J. (eds.), *Science, technology, and innovation for sustainable development goals: insights from agriculture, health, environment, and energy*. Oxford University Press, New York, NY, 518-543.
- Rose, D. C., Wheeler, R., Winter, M., Lobley, M., Chivers, C-A. 2021. Agriculture 4.0. Making it work for people, production, and the planet. In: *Land Use Policy* 100, 104933.

Ethics and Justice in Times of Changing Environments

Ivo Wallimann-Helmer and Hanna Schübel



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Anthropogenic climate change, natural degradation, and loss of biodiversity, but also sustainable energy production, resource depletion, and waste disposal demand immediate action and governance. The management of these environmental challenges has already caused and will increasingly engender ethical concerns, dilemmas, and conflicts. The University of Fribourg Environmental Sciences and Humanities Institute (UniFR_ESH Institute) researches these challenges with a special focus on ethics, issues of justice and conceptual questions about the differentiation of responsibilities. The overarching objective of this research is to devise ethically viable and interdisciplinary implementable solutions to environmental challenges from a wide range of policy domains, spheres of life and scientific disciplines.

Our current research areas are:

- Environmental justice in interdisciplinary contexts: the distribution of environmental risks and burdens and the fair differentiation of responsibilities.
- Institutions for sustainable environmental policy: institutional structures aimed at ensuring sustainable, efficient and effective environmental policy.

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- Ethical decision-making for environmental practice: the ethically viable implementation of environmental and climate measures.

These research areas nicely fit with the theme of the 2021 Conference of the European Society for Agriculture and Food Ethics in Fribourg that will take place online. We focus on the ethical issues concerning food security in times of climate change. Even though the global community aims to end hunger and malnutrition in all its forms by 2030 the number of chronically undernourished people increases continuously, and ongoing climate change is expected to aggravate the situation even more. Consequently, there is a need for

mitigation and adaptation strategies that reduce global emissions and readjust human systems to changing climatic conditions. Such strategies, however, come with their own challenges and could possibly interfere with the goal of food security, as the space needed for implementing these new technologies directly competes with the need for agricultural land. The papers and presentations of the EurSafe 2021 Conference will discuss these potential conflicts and synergies between food security and climate policies from an ethical perspective. We will have 66 papers in the following four topics:

1. Climate mitigation, geoengineering and food security

2. Adapting agriculture to sustain food security
3. Animal ethics, veterinary ethics and food security
4. Methodology and further challenges to environmental ethics
5. Covid-19: New directions for ethics and food security

Reflecting on the ethical and social implications of climate change for food security is irremissible for informed decision-making within research and public policy. It is very timely since to date ethical research has not focused too much on challenges around climate change and food security. This is also the reason why we aim to establish a new research and competence area dealing with these issues.

While doing so, our research at the UniFR_ESH institute focuses on developing a framework for ethical decision-making in environmental practice by building upon the methodology of principlism well known from medical ethics. Our investigation starts from the basis that it is possible to define a core set of ethical principles forming common morality in the many diverse contexts of environmental governance and practice. This core set of principles determines how to decide ethical conflicts when implementing sustainability goals in various governance contexts. Principlism holds that, depending on the context, the core set of principles must be specified and weighted differently, leading to different moral duties. In order to verify whether principlism as a methodology can be a general tool for ethical decision-making in environmental practice and exactly what principles it stipulates, we will investigate three case studies.

We start our investigation from the hypothesis that four principles extensively discussed in environmental ethical literature and highly relevant in international politics form the core set of ethical principles in environmental practice: A) the polluter-pays principle, B) the ability-to-pay principle, C) the equal-per-capita principle, and D) the procedural-involvement principle, meaning the fair

democratic involvement of all those affected. We will apply and reformulate these four principles in two case studies and different fields of environmental ethics and policy:

1. Climate Adaptation / Loss and Damage: The first case study concerns adaptation and loss and damage policy in reaction to increased environmental risks due to climate change.
2. Biodiversity and Alien Species: The second case study investigates the challenge of alien species management and the preservation of biodiversity in Europe and globally.
3. Wildlife protection and conservation: The third case study deals with wildlife protection and conservation with a special focus on cases in Namibia, where several competing wildlife conservation practices potentially cause varying ethical conflicts.

Taken together, their analysis contributes to the final formulation of the framework for ethical decision-making.

We are very much looking forward to the EurSafe2021 conference on climate justice and food security. Even though it will not be held online, we have put together a very interesting program with lots of promising and thought-provoking papers, keynotes and workshops. We are also happy to host a 'People need People' online event during the conference, an exercise that will encourage all participants to make better sense of complexity surrounding the conference topic. Join us and if interested engage with us and our research. More events and projects will happen in the near future.

update

EurSafe Executive Committee Update

Within one year a lot has changed. While in Spring 2020 none of us could imagine what the impact of Covid-19 would be, we now are becoming familiar to the 'new normal' and starting to discuss the new future. That holds also for EurSafe. Let's start with the 'new normal': the team in Fribourg is working on the final steps toward the 2021 conference. It will be a conference with promising keynotes, many interesting presentations in the parallel sessions and a pre-conference day with nice workshops. It reads as business as usual. But it's not the case. On the one hand, developing such a program does not come by its own and shows the hard work and enthusiasm of Ivo Wallimann and Hanna Schuebel. On the other hand, due to the Covid-19 related restrictions we have to decide to turn the conference into an online event.

Although many of us have had a steep learning curve with regard to online meetings, it still is unique to have the EurSafe conference fully online. Therefore, I invite you all to join this experience and attend the conference 23-26 June 2021!

This brings me to the 'new future'. EurSafe has been a successful Society for the last 22 years, running 15 Congresses alongside a number of

additional and associated activities. We have a strong core community and it is still one of the few Societies which explicitly focuses on agriculture and food ethics. However, our Society needs care and attention to remain successful and attractive in the future. Therefore, in their meeting on 4 May, the Executive Committee discussed the concept of a new 5-year strategy document that aims to make EurSafe a community that is more attractive especially for young researchers and for professionals outside academia. The board discussed what this implies for the type of meetings and conferences we will organize, the way we communicate with you as our members and for a sustainable financial strategy. This all will be further developed in the next months and we will share our ideas with you for feedback and discussion in the near future.



Best regards,

Franck Meijboom
On behalf of the Executive Board,
 4 May 2021

New master's programme Human-Animal interactions

Vetmeduni Vienna will soon launch a new master's programme in Human-Animal Interactions, starting in the academic year 2021/22. The program provides a unique opportunity to study the human-animal relationship from an interdisciplinary perspective in a research-oriented manner. Teaching will be in English and span the disciplines of animal behavior and cognition, animal welfare science, animal ethics and philosophy, as well as comparative medicine. Students will be able to specialize in their field of interest and at the same time get an understanding of the other fields as well as relevant interdisciplinary links. Due to the low number of students (20 students only), intensive support by faculty is guaranteed and research projects will be closely supervised by senior researchers.

If you are an ambitious student aiming for an academic career in Human-Animal Studies, consider applying!

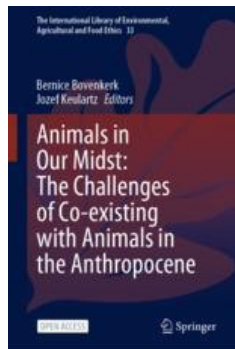
More information will soon be available on the homepage of the University of Veterinary Medicine Vienna (vetmeduni.ac.at) and on the homepage of the Messerli Research Institute (www.vetmeduni.ac.at/en/messerli/teaching). For questions concerning studies and admission, please contact zulassung@vetmeduni.ac.at once the call is out.

Call for Papers

Call for Papers for the [topical collection on 'Justice and Food Security in a Changing Climate'](#) in the *Journal of Agricultural and Environmental Ethics*. Extending the discussion of the theme of the EurSafe2021 conference, this topical collection aims at an in-depth deliberation on key concerns of ethics and justice for food security that are resulting from climate change. Submission date for abstracts is 11 July 2021

Books

Bernice Bovenkerk and Jozef Keulartz (eds) 2021, *Animals in Our Midst. The challenges of co-existing with animals in the Anthropocene*. Springer



This Open Access collected volume, published by Springer, brings together authoritative voices in animal and environmental ethics, who address the many different facets of changing human-animal relationships in the Anthropocene. As we are living in complex times, the issue of how to establish meaningful relationships with other animals under Anthropocene conditions needs to be approached from a multitude of angles. This book offers the reader insight into the different discussions that exist around the topics of how we should understand animal agency, how we could take animal agency seriously in farms, urban areas and the wild, and what technologies are appropriate and morally desirable to use regarding animals. This book is of interest to both animal studies scholars and environmental

ethics scholars, as well as to practitioners working with animals, such as wildlife managers, zookeepers, and conservation biologists. You can access the book [here](#).

Conferences

JUNE, 23-25, 2021 (ONLINE)

7th International Conference – Corporate Social Responsibility (CSR), Sustainability, Ethics and Governance

Lisbon, Portugal
[website](#)

JUNE 24-26, 2021

With pre-conference work-shops on June 23

EurSafe2021 Conference: Justice and Food Security in a Changing Climate

The 2021 Congress of the European Society for Agriculture and Food Ethics (EurSafe) focuses on ethical issues concerning food security and justice in times of a changing climate. The key topics are:

1. Climate mitigation, geoengineering and food security
2. Adapting agriculture to sustain food security
3. Animal ethics, veterinary ethics and food security
4. Methodology and further challenges to environmental ethics and – given the developments of the past year –
5. Covid-19: New directions for ethics and food security?

Alongside presentations on these topics, Workshops, keynotes presentations and an exciting exchange event are waiting for you online! Visit <https://events.unifr.ch/eursafe2021/en> for more information.

SEPTEMBER 7-10, 2021

MANCEPT Workshops

[website](#)

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