



### Colophon

#### WHAT IF?

Ways forward based on the 2025 START Green Minds Gather Conference for an accelerated, research-based green transition in European agrifood systems

#### YEAR OF PUBLICATIO

202

#### **LARLISHED B.**

START – Centre for Sustainable Agrifood Systems, a research-based collaboration jointly founded by Denmark's eight universities. For contact information go to **start.uni.dk** 

The contents of this publication are based on speeches and debates at the 2025 START Green Minds Gather Conference, held on 29–30 April 2025 and supported by **Novo Nordisk Foundation**.

#### EDITORIAL BOARD

#### START Steering Committee

**Andreas de Neergaard**, Associate Dean for Education, University of Copenhager

Brian Vinter, Vice-Dean, Aarhus University

Eskild Holm Nielsen, Dean, Aarhus University

Hanne Harmsen, Vice Dean, Green Transition, Copenhagen Business School

Henrik Zobbe, University Director, Roskilde University

Jens Ejbye Schmidt, Professor, Head of Department, University of Southern Denmark

Jonas Valbjørn Andersen, Associate Professor, IT University of Copenhagen

Kim Lambertsen Larsen, Head of Department, Aalborg University Ole Hertel, Vice-Dean, Aarhus University

Tine Rask Licht, Professor, Institute Director, DTU National Food Institute

#### EDITO

Publicer.dk, science journalist Marianne Bom

#### LAYOUT

Kiberg & Gormser

#### PHOTOS

Dominik Pietzko, Marc van Woudenberg, Marianne Bom, MediaSpektrum, Unsplash

#### PRIN'

**GSB** Grafisk

Download this publication and an appendix containing background reading related to track session reports start.uni.dk/about-start/publications
DOI 10.5281/zenodo.15687994





What if we told you that transforming the agrifood systems in Denmark and Europe is within reach? That we can make significant changes for a sustainable future if policymakers, researchers, farmers, retailers and industry join forces and align with civil society and consumers?

Would you like to join us in action?





### Contents

- 3 VISION
- START Green Minds Gather vision: Would you like to join us in action?
- 4 Contents
- 5 LETTER TO READERS

Let's unleash the untapped potential of research-based knowledge

- 7 KEY POLICY INSIGHTS
  - Key policy insights from 2025 START Green Mind Gather Conference: We need collaborative solutions for interconnected challenges in agrifood systems
- 8 Research policy input
- 9 Recommendations for action at universities
- 10 CONFERENCE REPORTAGE

About START Green Minds Gather Conference

- 11 Call from the main stage: "Optimism is essential"
- 14 Opinions on START Green Minds Gather Conference
- 15 Danish Green Tripartite Agreement can inspire researchers and governments abroad
- 16 Unlocking the potential of biosolutions
- 17 The role of citizens and consumers
- 18 TRACK SESSION REPORTS

Multifunctional land use and nature-based solutions

- 20 Innovative biomass utilization and side-stream management for a sustainable agrifood future
- 23 Blue solutions for a sustainable future
- 24 Developing a sustainable and resilient primary production
- 25 Transforming food processing, manufacturing and distribution for a sustainable future
- 27 Developing localised food systems and short food supply chains
- 28 Shifting to healthier and more plant-based food production and consumption
- 30 Leveraging digital technologies for sustainable agrifood systems
- 33 Consumers and markets: Myths, realities and future pathways
- 34 Democracy and inclusion in agrifood systems
- 36 Mission-based research and agrifood
- 39 Impact investment for accelerating the transition to sustainable food systems
- 42 Integrating a food system approach in higher education teaching
- 43 Accelerating learning in agrifood systems
- 44 CONFERENCE PROGRAMME

START Green Minds Gather Conference programme



# Let's unleash the untapped potential of research-based knowledge

#### What would you say if we told you that ...

- Throughout the entire cycle of food-related resources, we can make significant changes for a sustainable future? Untapped potential abounds, from how we produce food, to what we eat, to how we manage side streams and waste.
- By working together farmers, industry, research communities and policymakers, in alignment with civil society and consumers we can address some of the grand challenges of our times? This includes the climate and biodiversity crises, nutrient pollution of soils, freshwaters and seas, the task of feeding a growing global population, and the spread of lifestyle-related diseases.

You may say we are dreamers.

Well, fortunately, we - the START Steering Committee - are not the only ones.

Participants shared these visions with us at the 2025 START Green Minds Gather Conference in Copenhagen held on 29–30 April 2025.

The conference brought together 450 researchers, industry representatives, NGOs and policymakers interested in examining how research-based knowledge can become more available to policymakers, industry and civil society – and how collaboration among these stakeholders can support the development of strong, impactful research projects.

The conference addressed two core questions on speeding up the green transition in agrifood systems:

- What are the most impactful research policy initiatives that politicians in Denmark and the European Union can pursue?
- · What are the most impactful actions that research communities and universities can take?

Based on the 2025 START Green Minds Gather Conference, this policy input paper presents key research policy input targeted policymakers and recommendations for actions that universities can take to support the green transition in agrifood systems.

The START Steering Committee fully supports the intentions of the key policy insights generated at the conference. We agree that there is a crucial need for research-based knowledge to bolster the green transition in »

#### AGRIFOOD SYSTEMS - DEFINITION

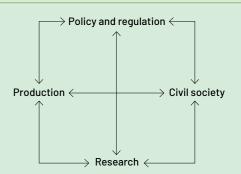
When we refer to agrifood systems, we mean the entire supply and value chain, from farming to the management of food-related waste, including:

- Primary food production and land use
- Food processing, distribution and retail
- Value creation using biological residues and side streams
- Development of new environmentally and climate friendly alternatives in areas such as biogas, materials, chemicals and animal feed

#### UNITING THE FOUR KEY DRIVERS OF THE GREEN TRANSITION

To drive a faster green transition, it is essential to foster interactions between four key groups, connected through public debate, fact sharing and co-creation:

- Research and innovation carried out through integrative, inclusive and interdisciplinary collaboration
- Policymakers informed by research-based knowledge and innovation
- Production and business innovation involving the implementation of new technologies and knowledge, and the scaling up of sustainable solutions
- Citizen cultures and behaviours actively considered and integrated into transition strategies



### 4

# Let's unleash the untapped potential of research-based knowledge

agrifood systems. We also wish to highlight the untapped potential of integrating such knowledge into agrifood-related policies, regulations and practices in Denmark and across the European Union.

#### So what is START's responsibility?

Founded in 2022 by Denmark's eight universities, START – Centre for Sustainable Agrifood Systems is a research-based powerhouse working to accelerate the green transition in agrifood systems.

We facilitate knowledge sharing across academic disciplines and organisations, offer tools for interdisciplinary research projects and arrange talks and PhD courses.

We manage nine topic-specific **research hubs** where researchers come together for interdisciplinary discussions on research challenges, needs, interests and opportunities within the agrifood area.

Going forward we will intensify our commitment to engaging in dialogue with key stakeholders from industry, policymaking and civil society regarding all our activities.

In particular, our 2025–2027 strategy represents our commitment to speeding up the development of integrative, inclusive and interdisciplinary research (Triple I), which we believe is necessary for the research community to have a stronger impact in society and deliver research results that work to accelerate the green transition of the agrifood sector.

START has established a strong platform in Denmark, and one of our goals in the coming years is to strengthen our collaboration with international stakeholders in research, industry and policymaking.

We hope that we have piqued your curiosity. Please visit start.uni.dk to reach out to us and stay up to date with our latest news.

Let's continue the dialogue.

START Steering Committee

June 2025

### \*

# We need collaborative solutions for interconnected challenges in agrifood systems

There is an urgent need to create closer collaboration across key stakeholders in the agrifood sector to speed up the green transition. Neither citizens, farmers, industry, policymakers nor research, innovation and technology can independently solve the many interconnected challenges.

The START Green Minds Gather Conference call is clear: Come together to untangle the knot of interconnected challenges and dilemmas in European agrifood systems.

Farmers, industry, policymakers and research communities have long been aware of the need for closer collaboration; however, insights from START Green Minds Gather show that the green transition of agrifood systems is happening too slowly at the expense of nature and people.

Additional incentives, regulations, innovations, knowledge creation and interactions are needed to reduce the negative footprint of food systems, such as climate impacts, environmental degradation,

health risks, biodiversity loss and natural resource depletion.

The 2025 START Green Minds
Gather Conference attracted
450 participants, boasted 31 keynote speakers on the main stage
and 30 leaders of 14 separate
topic-specific track sessions, all
of whom contributed to policy
input addressing the conference's two core questions on
speeding up the green transition
in agrifood systems:

- 1. What are the most impactful research policy initiatives that politicians in Denmark and the European Union can pursue?
- 2. What are the most impactful actions that research communities and universities can take?

In addition to providing policy input in their presentations, debates and workshops, conference attendees were asked to do an online poll and two digital ranking sessions by the end of each conference day to allow prioritisation of incoming policy suggestions.

Based on this input the START

Steering Committee then synthesized key policy insights for this policy input paper.

### CHALLENGES IN AGRIFOOD SYSTEMS

Current methods for producing food, using land and managing side streams can have a negative impact on people and the planet. For example:

- 26% of global greenhouse gas emissions are linked to food production
- 85% of the 28,000 endangered animal species are threatened due to farming, with the global food system being the primary driver of biodiversity loss
- 16% of EU greenhouse gas emissions are from food waste
- 78% of global ocean and freshwater pollution is linked to agriculture

Despite decades of regulation, a regular phenomenon in the seas around Denmark is oxygen deficits caused by nitrogen emissions that kill fish and seabed fauna.

#### SPECIFIC SUGGESTIONS FOR DENMARK

Strengthen the involvement of Danish research communities in the planning of future national research and innovation strategies and programmes to ensure optimal value for money in producing research-based knowledge.

Observe the need for a balanced distribution of public research funding that aligns with the large proportion of research that private funds support today to ensure a robust, independent and diverse research landscape that addresses public interests and long-term societal challenges.





# Research policy input

START Green Minds Gather Conference proposes that investing in agrifood research and innovation at national and European levels must:

Strengthen the role of research communities in interactions between farmers, industry, policymakers and citizens to enhance timely and research-based regulations, support sustainable and innovative businesses and farming, implement new technologies, and foster citizen engagement and acceptance of the green transition.

Keep developing a mission-driven approach aimed at advancing the green transition in agrifood systems, strengthening food security and enhancing business competitiveness in Denmark and Europe. Currently, mission-driven programmes face difficulties in delivering expected outcomes, which is why future mission-driven programmes should include:

 Co-creational programme development involving state-ofthe art research when planning programmes

- A strong mandate for programme management that allows leaders to adopt an agile approach to developing programmes and associated projects in line with the highest expectations for impact
- The promotion of an integrative, inclusive and interdisciplinary approach (Triple I) to maximise the research impact
- A balance between short-term impact, which is currently the aim of many mission-based programmes, and long-term pipeline research projects

Extend the involvement of research-based knowledge in policy development and implementation to secure science based policies. By this bridging the gap between policies enacted at national and European levels and the opportunities identified by research communities for the transformation of agrifood systems. To achieve this, policymakers and research communities need to strengthen collaborative platforms that provide stronger incentives for interaction.

Uphold principles of trust and minimise bureaucracy in research programmes. Excessive time is currently spent on reporting and seeking approval for minor issues – such as changes in methodology – in research programmes. This diverts valuable resources from advancing the research in an impactful direction.

Maintain a willingness to take risks to realise the benefits of high-risk, high-gain research and innovation, and continue investing in fundamental, curiosity-driven research to provide scientists with the opportunity to pursue groundbreaking work of potential future value to the green transition.

Foster a long-term perspective in prioritised research and innovation, enabling research communities and their partners in industry and society to plan and invest with confidence.



KEY POLICY INSIGHTS FROM 2025 START GREEN MIND GATHER CONFERENCE

# Recommendations for action at universities

START Green Minds Gather
Conference proposes that when
universities and research communities govern with the aim of
supporting the green transition in
agrifood systems they must:

Promote knowledge sharing beyond academia by engaging with farmers, industry, policymakers and civil society. There is a need to accelerate integrative, inclusive, and interdisciplinary (Triple I) collaboration with these stakeholders to support more decisive action in the green transition, while also creating opportunities for research communities to gain

inspiration for future research development. Secure databases are required when sharing data and quality control of data is essential to provide a trustworthy foundation for analyses.

Help translate research-based knowledge into impactful policies and regulations by engaging further in policy and regulatory dialogue, contributing to policy development and offering evidence-based recommendations.

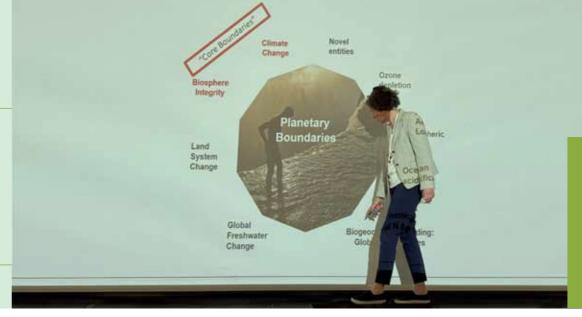
Encourage further collaboration beyond narrow disciplinary silos. Create incentives that encourage a Triple I approach, including supportive leadership, appropriate incentive structures and recognition of merit for researchers engaging in this type of work.

Adopt new methods to prioritise research scopes that contribute to the green transition of agrifood systems. Time and resources should be directed toward fields of research likely to deliver societal value, based on a holistic systems approach that balances interests across agriculture, nature, health and the climate.



#### **FACTS ON THE 452 PARTICIPANTS**

Participants	National	International
Researchers	204	25
Industry Representatives	44	15
Policymakers	27	6
NGOs	26	6
Administrative staff from universities	65	-
Other	34	-
Total	400	52



Professor Katherine
Richardson: "I think ever
since pictures of the Earth
from space were released,
a new phase began, where
we're realising that we're a
part of the system."



# About START Green Minds Gather Conference

START - Centre for Sustainable Agrifood Systems invited participants from all areas of the agrifood sector to attend the START Green Minds Gather Conference on 29–30 April 2025 at Copenhagen Business School in Denmark.

The conference brought together more than 400 key stakeholders, primarily Danish and international researchers and decision makers in academia, as well as professionals from the agrifood sector, NGOs and policymakers from Denmark and other European countries.

In an interactive and experimental setting, participants had the opportunity to present various per-

spectives and voices on how to tackle the challenges and opportunities of the green transition, and to promote the development of sustainable agrifood innovations.

The conference programme included 31 speakers on the main stage and 14 participatory track sessions focused on how to address specific challenges in agrifood systems.

Track session reports, pp 18-43 Conference programme, pp 44-46





# Call from the main stage: "Optimism is essential"

Despite frustration over the slow pace of change in agrifood systems, optimistic and reassuring messages also came across on the main stage of START Green Minds Gather, prompting the question as to whether a positive social tipping point is within reach.

Policymakers, food producers and researchers have known for years, if not decades, that the way we, as humans, manage land and bioresources is unsustainable. Nevertheless, key stakeholders have not developed sufficiently effective means of transforming agrifood systems.

Systemic and fundamental change is essential to securing the food supply in Europe, feeding a growing global population, promoting a healthy population, reducing agricultural pollution and slowing climate change and the loss of biodiversity.

During the conference, some of the reasons presented for the slow transition were that:

- The slow-moving nature of the climate and biodiversity crises hinders generating a sense of urgency strong enough to prompt necessary political regulation, unite stakeholders and drive profound systemic change
- The wicked nature of the challenges means that attempts to solve one issue may lead to unintended ed consequences that must also be addressed
- Structural and cultural barriers, including power-

ful lobby organisations, insufficient progress in farming regulations and reforms, deeply rooted cultural traditions around food and limited incentives for stakeholders, make initiating meaningful change difficult

However, the genuinely positive trends that support constructive development must not be overlooked. In her address from the main stage, University of Copenhagen Professor Katherine Richardson, who developed the planetary boundaries framework, stated that we may be approaching a social tipping point that involves a shift in thinking or behaviour that will bring about positive change.

#### ■ WE'RE REALISING THAT WE'RE PART OF THE SYSTEM

"I think ever since pictures of the Earth from space were released, a new phase began, where we're realising that we're a part of the system. It's a slow process; it's a journey that we're all on, and not everybody is in the same place. But I think many more are coming on board, and we may be seeing a tipping point, to be perfectly honest," stated Richardson, continuing:

"We're going to have to use resources as efficiently as possible, but we're also going to have to make some really, really hard decisions on what we're going to spend those resources on. Land is an obvious, ultimate, limited resource." Richardson also pointed out that a proper discussion about land use has yet to take place. »







### Call from the main stage: "Optimism is essential"

"We're in a position where we actually have to manage where we're going [regarding the green transition]. We have to have a vision of where we want to go, and we have to stimulate social tipping points, or whatever other tools we can have, to make it there," she concluded, putting her very much in alignment with other conference participants.

In a policy input poll, conference participants highly ranked prioritising the need for a sustainable farm to fork vision that clearly defines the specific tipping points to be reached and that is supported by research that underpins the vision's goals.

#### ■ NEED FOR INTEGRATIVE THINKING

The call for closer cooperation between academia, industry and government was a recurring feature of conference discussions and highlighted as a key policy input in Copenhagen Business School President and Chair of the Danish Council on Climate Change Peter Møllgaard's address.

"By fostering an environment of cooperation we can accelerate the green transition – particularly in sectors like agrifood, which are crucial for both environmental sustainability and food security," explained Møllgaard, who emphasised that:

"In this changing world, at the heart of implementing a smart climate policy lies the need for integrative thinking – an approach that employs diverse perspectives and disciplines to address complex issues. Collaborative efforts between academia, industry and government are essential."

#### ■ CHALLENGE AND CHANGE-DRIVEN INNOVATION

Efforts are being made to strengthen collaboration between academia, industry and government, but there is no such thing as a quick fix. As soon as one challenge appears to be solved, new changes and challenges will appear, explained Louise O. Fresco, former President of Wageningen University & Research:

"Challenges and changes are on a continuum. It's not even just a cycle of trade-offs; it's a road with conflicting and unforeseen bifurcations, and that drives an adaptive innovation coping with dilemmas. The comprehensive awareness that we have change, challenge and change again creates a push for an openminded innovation that is very important," she said in a historical review of global agrifood systems transformations and the various political and technological determinants at play.

She referred, for instance to the innovations that emerged in response to severe challenges around 1970, when 40% of the population in the Global South suffered from malnutrition. This led to the Green Revolution, which increased yields and reduced hunger by technical means such as the use of fertilisers, pesticides and irrigation. »



### Call from the main stage: "Optimism is essential"

"But, of course the Green Revolution came at a high cost, not only did food prices decrease, which left certain farmers out of business, but we also had chemical pollution, inappropriate irrigation, and large-scale land use changes. So actually, in many ways, it was a mess," she clarified.

#### ■ TAKE RESPONSIBILITY TO BE OPTIMISTIC

"We can learn that every change also entails new challenges. Just like the fact that food is so cheap today that it has led to the current crisis of obesity in Europe because things like sugar and fatty acids have become much cheaper than they were," Fresco added, continuing.

"So my last comment is actually a recommendation not about Europe, not about policy, not about science, but a recommendation to all of us who are jointly responsible for shaping a just transition."

At a time when dystopian, pessimistic views proliferate, she believes that optimism is essential. She warned that when pessimism and dystopia are translated into the philosophy that a catastrophe is required or the world will never transform itself, a dangerous breeding ground arises for undemocratic forces.

"We don't need optimism in a simplistic sense. It's not about leaning back and thinking, okay, I'll be all right," Fresco said, before adding, "We need to invest in

that particular thing that makes us as human beings unique, which is that we can think and rethink, we can frame and reframe; we can learn from our trials and mistakes from generation to generation in an overriding cycle along the multiple and interlinked pathways from challenge to change and from change to challenge."





I regard the Danish ecosystem as extremely strong. I think you can be very proud of what you're building. This open mindedness, this ability to talk about the challenges ahead, to be positive, to dare to also express your frustrations. It's incredible for such a big group.

Marian Geluk, Executive Director, Next Food Collective

This is about the big overview. Here we meet and get an idea about what is at the top of the agenda for other people in other disciplines, at other universities and also in other countries beyond Denmark.



Peter Karlskov-Mortensen
Associate Professor, University of Conenhage



I really wanted to see a multitude of people in the same spot who had the same mindset as me. It's about: "Oh, hey, you're doing something great!", "How about this idea?" and "We're working on this too!" We have networking and collaboration, and I see so many like-minded people who represent the ideal.

Maria Ahmad, PhD Student, Aarhus University

There's a community emerging here, a real research community, where we're starting to see the synergies. We're also starting to understand what each other is saying, to arrive at solutions for a more sustainable future.

Jonas Valbjørn Andersen, Associate Professor, IT University of Copenhage





# CONFERENCE

# Danish Green Tripartite Agreement can inspire researchers and governments abroad

A panel of experts discussed the potential of exporting the Danish Green Tripartite Agreement, an initiative that involves converting 140,000 hectares of agricultural land, introducing a  $\rm CO_2$  tax on agriculture, regulating fertilizer use, planting one million trees and creating natural habitats.

The panel debate at START Green Minds Gather concluded that, since all countries have their own unique set of prerequisites and conditions, directly applying the Danish Green Deal – also known as the Danish Green Tripartite Agreement – to other nations is not feasible. Multiple aspects of the agreement, however, can serve to inspire governments abroad on how to regulate agrifood systems.

Applying a carrot-and-stick approach is a useful tool for motivating change. The Danish government promised public investment in the green transition and compensation to farmers while simultaneously introducing an emission tax and the threat of future taxes if targets were not met.

During the panel discussion, Jeppe Bruus, Minister for Green Transition, Peder Tuborgh, CEO at Arla Foods, and Peter Møllgaard, President of Copenhagen Business School and Chair of the Danish Council on Climate Change advocated the use of such motivating principles abroad when suitable.

■ NEED FOR ALIGNED AND OPEN MINDSETS

To make the green deal a reality, several pivotal

stakeholder groups will have to align their actions: the government, the association of municipalities, the food industry, farmer's organisations, environmental NGOs and trade unions.

"For stakeholders to come together mindsets needs to be open to change and to accept a common ground – and we do not talk enough about this issue: The mindset of farmers and the mindset of researchers. We need to align our thinking, firstly on the need for the transition, and secondly, to stop viewing the transition as something to be resisted, and instead see it as an opportunity," said Jørgen E. Olesen, panel member, Professor and Head of Department of Agroecology at Aarhus University.

■ RESEARCHERS MUST DOCUMENT AND COMMUNICATE Olesen also noted that, in the Danish case, the groundwork for alignment among actors had already been laid before the deal, but this is far from the case in other countries.

"Many stakeholders – including colleagues I speak to abroad – are more or less stuck in a zero-sum game. Nobody really sees the opportunities. So, I believe that researchers must document what we're doing in Denmark and communicate this to the rest of the world," explained Olesen in the hope that the Danish Green Deal would succeed in achieving its targets," Olesen said.

#### **EU INITIATIVES ON BIOSOLUTIONS**

The proposed Biotech Act slated for adoption in 2026 will set up measures to create an enabling environment to accelerate the transition of biotech products from laboratory to factory and to market while maintaining the highest safety standards to protect people and the environment, according to the European Commission.

Slated for adoption at the end of 2025 the new Bioeconomy Strategy proposes actions to unlock the potential of bioeconomy innovation to bring them to market and generate green jobs and growth while reinforcing circularity and sustainability.





## Unlocking the potential of biosolutions

A panel of leading experts discussed the transformative potential of biosolutions and how to accelerate their implementation.

"We need you. Please step forward and engage," rang out Senior Vice President of Biotech at Novo Nordisk Foundation Claus Felby's call to action to researchers during a panel debate on the transformative potential of biosolutions and how to unlock them.

According to Felby current biosolution regulations are overly restrictive, causing them to unnecessarily slow the green transition. He urged researchers to take part in the public debate on reforming such regulations, asserting that:

"Some politicians want clinical trials for normal food, as if it were medicine. This is too excessive – we need to ensure food safety but not create barriers for doing things in smarter ways."

#### ■ NEW BIOECONOMY STRATEGY

Felby's point about researcher engagement was supported by Sofie Carsten Nielsen, Director of the Confederation of Danish Industry and a representative of the European Biosolutions Coalition.

She noted that the European Commission is receptive to well-argued input. She also reminded the audience that changes may be underway. A new Biotech Act is on the agenda for 2026, and a revised EU Bioeconomy Strategy is expected by the end of 2025.

Klaus Berend, Director for Food Safety, Sustainability and Innovation at the European Commission's Directorate-General for Health and Food Safety pointed out that in some EU member states, governments are not particularly supportive of certain biosolutions in the food industry.

#### CONCERNED VOICES

"Ultimately, it's the governments elected by the people who determine a member states' position when we propose decisions on biosolutions – whether in relation to novel foods, pesticides or other areas," Berend said, adding, "And, indeed, in a number of member states we have governments and ministers who are not necessarily supporters of certain biosolutions when it comes to food."

"The most advanced biosolution in this area, cell-cultured meat is causing significant concerns as regards safety or sustainability, including in the academic and scientific community. So let's not forget that the academic and scientific community is not a uniform body. You have a diversity of views," emphasised Berend.

Jens Kolind, Senior Vice President at Novonesis, and Irina Borodina, Professor at the Technical University of Denmark and CSO of BioPhero ApS also participated in the panel debate.



# The role of citizens and consumers

Citizens need to be involved in the development of new sustainable food practices.

Of note, the main stage at START Green Minds
Gather did not prominently feature a once widespread notion that consumers would primarily drive
the transformation of agrifood systems. Instead, the
event focused more widely on the role of people as
citizens and voters who need to be involved, exert
influence and adopt new sustainable practices.



Track leaders Heather Swanson, Professor at Aarhus University, and Joshua Evans, Senior Researcher at the Technical University of Denmark guided the discussion on democracy and inclusion in agrifood systems during a track session that resulted in two main recommendations (read more on page 34):

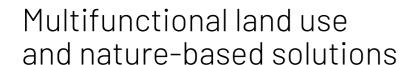
Prioritize participatory methodologies. Identify and engage relevant audiences at the start of the research and policymaking process - when questions are still being formed and throughout the study period - rather than primarily at the end, when the research has already been done. Including people in the actual process is a robustly documented way of increasing public acceptance of science and technology. Techniques for further improving participatory processes and building inclusive research designs should also be priority research areas.

Seek diverse representation in research and policy development processes. Proactively reach out to marginalised communities, minority groups, youth and sectors and institutions that are usually left out of research and policy processes and conversations. The more interests that are represented, the more acceptable, robust and resilient the outcomes. Funding programs for research infrastructure and research projects should be designed to facilitate diversity among researchers but also diverse participation within research initiatives.



#### **DEFINITIONS**

Nature-based solutions are actions that work with and enhance nature to help address societal challenges. Multifunctional land use is an approach that recognises the need to deliver multiple services from the same land area — such as food production, biodiversity conservation, renewable energy generation, climate mitigation, recreation and cultural value.



Integrating multifunctional land use with nature-based solutions provides a powerful framework for tackling urgent environmental and societal challenges.

#### ■ WHAT IF?

We envision a future where we have fostered dialogue among public and private actors, academics, policymakers and other relevant stakeholders to create a governance system that combines naturebased solutions, multifunctional land use and technological innovations. This will ensure sustainable management and restoration of ecosystems while also safeguarding biodiversity and the well-being of local communities.

#### ■ KEY CHALLENGES TO OVERCOME

- > Lack of connection among scientific insights to real-world systems thinking, helping decision makers navigate complexity faster
- > Cumbersome and slow regulatory governance systems leading to fragmented, contradictory policy solutions that inadequately address these challenges
- > Lobbying and power structures, alongside outdated regulatory frameworks, that remain barriers to action and that require restructuring with fairness and diverse representations in mind.

#### ■ SUGGESTIONS FOR WAYS FORWARD

> Political decisions that ensure stability over time and clear choices: long-term land use planning

- > New narratives and regulatory coherence regarding sustainable land uses nationally and in the EU
- > Better metrics and reward systems to scale innovative practices and validate multifunctionality
- > Adaptive, flexible and inclusive regulatory governance and policy structures that recognise local experimentation and cross-sector coordination while accepting uncertainty in technological innovations
- > Land sharing and land sparing supported by economically quantifying ecosystem services such as biodiversity
- > Research policies fostering inter- and transdisciplinary research as a key driver for the sustainability transition and societal transformation
- > Universities, public schools and vocational training better equipped to promote multifunctional land use and nature-based solutions. A long-term holistic and multifunctional perspective is needed within research communities. Nature-based solutions cannot stand alone as they are designed to complement, not replace, technological solutions.

#### ■ WHO WILL NEED TO TAKE ACTION?

Public and private decision makers and actors; academics; local communities (community-driven approaches - not just large landowners); farmers; indigenous people and manufacturers of conventional agricultural machinery (new technologies). »



### Multifunctional land use and nature-based solutions

#### ■ READ MORE

European Biosolutions Coalition (2024), Policy recommendations published: How biosolutions can strengthen Europe's sustainability, resilience and competitiveness,

Torma, G., Aschemann-Witzel, J. (2023), Social acceptance of dual land use approaches: Stakeholders' perceptions of the drivers and barriers confronting agrivoltaics diffusion, Journal of Rural Studies

#### SPEAKERS

Bjarke Nielsen, CEO, Maybe Robotics Bruno Sander Nielsen, CEO, Biogas Denmark Chiara Fratini, Senior Researcher, Technical University of Denmark

Hans Ole Klingenberg, Vice President, Novonesis Henrik Vejre, Professor, University of Copenhagen Irini Angelidaki, Professor, Technical University of Denmark

Jóna Ólavsdóttir, PhD Student, Aarhus University Nikolai Friberg, Professor, Aarhus University Ole Green, CEO, Agrointelli Veronica Civa, Architect, Habitats



# TRACK SESSION REPORTS

#### REPORT BY TRACK SESSION LEADERS

#### Timothy John Hobley

Associate Professor, National Food Institute - Microbial Biotechnology and Biorefining, Technical University of Denmark

#### Simon Bahrndorff

Associate Professor, Department of Chemistry and Bioscience, Aalborg University





### Innovative biomass utilisation and side stream management for a sustainable agrifood future

There is untapped potential in using biomass including waste, byproducts and side streams - as food. Innovative approaches to biomass utilisation and side stream management offer promising pathways toward a sustainable agrifood future.

#### ■ WHAT IF?

We envision a future where:

- > All waste streams that are unsuitable for food are used as feed for, e.g. insects for food in-
- > All byproducts are converted to food ingredients, e.g. by extraction, insects, fermentation or a combination of those
- > All side streams that are unsuitable for food (e.g. due to antinutritional factors or toxins) are redirected for other high-value uses such as animal feed, biomaterials, textiles or building materials, prioritised in a cascading manner before lower-value applications like biogas or energy production
- > Mineral recovery (nitrogen, phosphorus, potassium) and byproducts to be used as fertilizer for full circulation of nutrients
- > Consumers and other stakeholders play a key role in implementing a circular and sustainable food system.

- KEY CHALLENGES TO OVERCOME
- > Restrictive, cumbersome and expensive legislation and regulations, including the novel foods authorisation process, on what can be used as feed, e.g. for insects for food purposes
- > Tariffs and subsidy models that do not support sustainable food production
- > Low consumer acceptance and trust in upcycled or side stream-based food products, often due to perceptions of unnaturalness or safety concerns
- > Limited economic incentives for more sustainable food and feed, e.g. incentives for industry to innovate in applying side streams that also lead to consumer benefits
- > Status quo in companies where they keep on doing what they have always done (using side streams as animal feed or biogas) rather than exploring new solutions to make side streams into food
- > Side stream logistics and quantities, supply and demand, stability (microbial), experiencing competition for other uses (conversion to biogas, energy, animal feed).

#### ■ SUGGESTIONS FOR WAYS FORWARD Regulation:

> Initiating regulatory sandboxes, where companies can collaborate with authorities to receive guidance and assistance in the development, testing and validation of new products based on byproducts »



TRACK SESSION REPORTS

### Innovative biomass utilisation and side stream management for a sustainable agrifood future

Relaxing regulations on feed sources for insects and changing regulations to focus on insect properties that are used for food, e.g. finding inspiration in the practices of wild-grown shellfish, where instead of controlling what they eat, the safety is regularly monitored for use in food.

#### Capacity building:

- > Developing an instrument that supports assisting companies in novel foods authorisations, developing business cases and derisking investments
- Developing matchmaking between side stream producers and side stream users
- > Implementing novel technologies to avoid hazards and for harvesting/recovering resources from side streams.

#### Research contribution:

- > Cross-talk across various scientific disciplines to create a systemic understanding of whole food
- > Funding and instruments to support holistic approaches to tackle side streams
- > Funding for future-generation researchers (PhDs) embedded in transnational/cross-disciplinary PhD schools.

- > Developing clear, transparent communication strategies to help consumers understand the benefits, safety and sustainability of future foods made from side streams using novel tech-
- > Supporting consumer education and engagement campaigns to build trust and normalise circular food innovations as part of sustainable
- > Systems change regarding the education of what green and healthy food is and how to prepare it, focusing on the next generation and implementing changes to programmes in relevant subjects, such as cooking and health in primary school, and building on this in relevant subjects until completing upper secondary education.
- WHO WILL NEED TO TAKE ACTION? Politicians, universities, industry, NGOs, consumers and more. »

#### **DEFINITIONS**

**Future foods comprise innovative edible items** that can be produced in large volumes due to rapid technological developments with the potential to scale production levels up and/or reduce production costs based on concern for the environment (cf. Parodi et al. 2018).

**Side streams** include everything derived from any step in the food production process that can be repurposed that is not the main product of the process and that has not become waste.

Waste stream refers to the complete flow of waste from its domestic or industrial source to recovery, recycling or final disposal. Unsuitable for use in feed or as food.

**Byproducts** are a secondary result outside the principal product that derive from processing, rejected as inferior when graded or separated, or are produced via an industrial or biological process. Often suitable as feed or food.





# Innovative biomass utilisation and side stream management for a sustainable agrifood future

#### ■ READ MORE

Muurmann, et al. (2024), Framework for valorizing waste- and by-products through insects and their microbiomes for food and feed, Food Research International

Franquesa, et al. (2024), The food by-products bioprocess wheel: A guidance tool for the food industry, Trends in Food Science & Technology



#### SPEAKERS

#### Anna-Lovisa Nynäs

Postdoc, Swedish University of Agricultural Sciences

#### Betül Svensson

Senior Researcher, Technical University of Denmark

#### Hanne Bengaard

Senior Chief Consultant, Danish Food and Drink Federation

#### Jesper Givskov Sørensen

Professor, Aarhus University

#### Lars Henrik Lau Heckmann

Head of Business Development, Better Insect Solutions

#### Mads Koustrup Jørgensen

Associate Professor, Aalborg University

#### Marian Geluk

Executive Director, Next Food Collective

#### Marija Banovic

Associate Professor, Aarhus University

#### Mette Lübeck

Professor, Aalborg University

#### Morten Tønsberg Limborg

Associate Professor, University of Copenhagen

#### Simon Bahrndorff

Associate Professor, Aalborg University

#### Timothy John Hobley

Associate Professor, Technical University of Denmark

#### Vincent Brain

Managing Director, Bridge2Food



# Blue solutions for a sustainable future

Any plan that aims to achieve a sustainable agrifood system will remain incomplete without integrating aquatic products.

#### ■ WHAT IF?

We envision a future where food systems are diversified with sustainable marine-based sources, where incentive frameworks have been implemented to fully utilise marine side streams, prioritising food uses of side streams before other industrial purposes; where infrastructures are co-designed for multiple uses – such as wind-energy co-located with aquaculture – and policy frameworks align both land and sea transitions. This integrated approach can ensure that we stay within planetary boundaries while fostering innovation, economic resilience and ecological restoration. From a lunch plate perspective consumer-centred sustainability strategies have been implemented aligning food innovation and blue economy solutions with what people actually see, buy and eat.

#### ■ KEY CHALLENGES TO OVERCOME

- Lack of alignment across ministries and funding agencies (environment, food, innovation, economy), which delays marine innovation uptake
- > Barriers to market entry for novel marine foods, especially for small- and medium-sized enterprises without resources to complete regulatory dossiers
- Limited consumer awareness and value chain readiness for dietary shifts that include sustainable blue products and/or hybrid foods based on green and blue biomasses.

#### ■ SUGGESTIONS FOR WAYS FORWARD

- > Integrating blue and green economy approaches in national transition strategies
- Incentivising retailers and consumers to adopt sustainable blue and/or blue-green hybrid products via

- public campaigns and procurement policies
- > Development of regulatory fast tracks for novel marine foods and learning from land-based innovation models
- > Promotion of design for sustainability approaches and integrating environmental impact assessments early in marine food production planning
- > Facilitation of interdisciplinary research funding that bridges the biological, social and economic impacts of blue innovations.

#### ■ WHO WILL NEED TO TAKE ACTION?

Ministries of environment, food, economy, energy and education; regulatory bodies (e.g. European Food Safety Authority, Danish Veterinary and Food Administration); blue startups and small- and medium-sized enterprises; retailers and food service providers; research institutions and universities; NGOs working on sustainability and food systems.

#### READ MORE

EU publication from Directorate-General for Maritime Affairs and Fisheries (2025), **EU consumer habits regarding fishery and aquaculture products** 

#### SPEAKERS

#### Charlotte Jacobsen

Professor, Technical University of Denmark

#### Jamileh Javidpour

Associate Professor, University of Southern Denmark

#### Marianne Thomsen

Professor, University of Copenhagen

#### Linn Indrestrand

Port of Hirtshals and Danish Ocean Cluster

#### Marija Banovic

Associate Professor, Aarhus University

#### Hans Verhagen

Adjunct Professor, Technical University of Denmark



Polymeros Chrysochou and Milena Corredig Professors, MAPP Centre and Department of Food Science - Food Technology, Aarhus

University Lilia Ahrné

Professor, Department of Food Science -Ingredient and Dairy Technology, University of Copenhagen

### Developing a sustainable and resilient primary production

To reduce the climate and environmental impact of food production, developing sustainable and resilient primary production that focuses on circularity is of utmost importance.

#### ■ WHAT IF?

We envision a future that incorporates more strongly aligned animal and plant production in primary food production to achieve true circularity. Attaining true circularity for nutrients and energy in sustainable production requires cooperation between primary food producers, food processors, retailers, consumers, side stream/waste handlers and fertilizer producers.

#### ■ KEY CHALLENGES TO OVERCOME

- > Increasing nutrient utilisation, including a decrease in nutrient leaching
- > Balancing production of food, energy and ecosystem services
- > Achieving a whole system approach to food production.

#### ■ SUGGESTIONS FOR WAYS FORWARD

- Optimisation of the whole system and not just individual parts of the food production chain, including more collaboration between stakeholders
- Development of integrated, research based models that improve system level thinking and identify links. To increase momentum, researchers need to communicate more and exploit the general public's trust in science. Consider that:
- Researchers already have extensive knowledge from optimising in silos on specific issues but need to combine knowledge from different scientific disciplines to create whole system thinking to obtain the highest overall productivity and resource utilization in a resilient system

- > The most impactful action is for interdisciplinarity to understand and unravel the interconnectedness in the system as a whole
- > Research policies must foster a holistic approach to food production and utilisation of side streams/ waste to avoid suboptimal optimisation of individual processes
- > Provision of financial security by policymakers to reduce the high risks involved in modifying agricultural production systems for the industry and food

#### ■ WHO WILL NEED TO TAKE ACTION?

Farmers, food production companies, retailers, consumer organizations, waste stream handlers, commodity companies and governments.

#### READ MORE

Danish Centre for Food and Agriculture (2024), Climate and environmental effects of increased cultivation of pulses/protein crops

#### SPEAKERS

#### Søren Krogh Jensen

Professor, Aarhus University

#### Stefanie Lutz

Assistant Professor, University of Zurich and Agroscope Nick van Eekeren

Professor, Wageningen University & Research

Senior Researcher, Aarhus University and Viking Genetics



### Transforming food manufacturing and distribution

Achieving a more sustainable future in food production requires a holistic approach that considers the entire value chain.

#### ■ WHAT IF?

We envision a future where food and food packaging are designed as a unified, circular system. Packaging should no longer be perceived as litter and waste, but as a resource that is collected and reused or recycled, and it is safe and valued by consumers. Reuse and recycle systems are widely adopted across regions and make sense due to their economy of scale. The convenience of single-use plastic is a choice that comes with a higher cost and is not the norm. Supported by robust policy frameworks, this integrated approach will shift consumer attitudes away from seeing food packaging as litter to a resource that protects food.

#### ■ KEY CHALLENGES TO OVERCOME

Too often, food packaging is narrowly framed as a material science problem, rather than as an integral part of the value chain, despite its importance in protecting food from spoilage, reducing waste and facilitating its distribution and storage. Food packaging sustainability demands tremendous systemic transformation. This includes stakeholder collaboration, societal engagement and supportive regulatory frameworks. Key chal-

> Fragmented policy and funding ecosystems: Lack of alignment across ministries as well as fund-

- ing agencies on subjects such as environment, food, toxicology, behavioural science, innovation, economy - delaying collection of the necessary data for decision making
- > Technological uncertainties: There is a need for the development of safe, scalable solutions for reusing plastic, and for an understanding of which systems will contribute to a lower carbon footprint and that are scalable in cities, regions and states
- > Insufficient dialogue: Lack of open stakeholder discussions facilitating systemic changes
- > Policymaker knowledge gaps: Limited awareness among policymakers about which technological solutions can provide safe, scalable and economically viable solutions for food package distribution of safe and affordable food.

#### ■ SUGGESTIONS FOR WAYS FORWARD

- > Development of a robust understanding of which existing sustainable packaging technologies can be adopted and fast tracked to provide safe and sustainable food package units
- > Embedding the principle of reuse in research on new packaging materials - such as recognising that biodegradable materials may not be suitable
- Creating living laboratories, developing an understanding of regulatory fast tracks for novel marine foods, learning from land-based innovation models





#### Jacqueline Broerse

Professor of Innovation and Communication, Athena Institute, Vrije Universiteit Amsterdam and participant in the Food-CLIC, CLEVERFOOD projects

#### Mark Frederiks

Director, Amped and participant in the EU4Advice project

### Transforming food manufacturing and distribution

- > Advocating for national transition strategies
- > Understanding which food product and distribution chains are best suited for reuse, recyclable materials and industrial composting
- > Evaluation of which process and food-package combinations are most suitable, promoting design-for-sustainability approaches and integrating environmental impact assessments in decision making
- > Supporting interdisciplinary research funding that bridges biological, social and economic impacts on sustainable food packaging.
- WHO WILL NEED TO TAKE ACTION? Ministries of environment, food, economy, energy and education; regulatory bodies such as EFSA, Danish Veterinary and Food Administration; municipalities; retailers and food service providers; research institutions and universities; consumer

#### TOWARDS A SUSTAINABLE FOOD PACKAGING NORM

associations; NGOs working on sustainability and food systems.

READ MORE

New ERA (2025), The New European Reuse Alliance

European Commission (2025), Regulation on packaging and packaging waste

SPEAKERS

Polymeros Chrysochou

Professor, Aarhus University

Fernando Rodriguez-Mata

Director General, New European Reuse Alliance

Simon Smedegaard Rossau

Project Leader, City of Aarhus

Lilia Ahrné

Professor, University of Copenhagen

Milena Corredig

Professor, Aarhus University

Food packaging has value and protects food from spoilage, limiting food waste. Achieving circularity (reuse as the solution studied in the track session) is a clear example of a wicked problem in need of systemic change that will only happen if regulators and policymakers closely follow the results of pilot studies and living labs, and facilitate scaling them up based on a robust understanding of available technologies and a strong engagement with all stakeholders involved. From being a resource ending in waste (or recycling), food packaging will need to be included in a system that centres on being a service. Reuse will require all stakeholders (from production to consumption, and reverse logistics) to operate synchronously and to reinvent their roles. Ideally, reusable food packaging will be the norm in the future. According to the EU Packaging and Packaging Waste Regulation the clock is ticking in terms of meeting its goals to make all packaging in the EU recyclable in an economically viable way by 2030 to put the sector on track to climate neutrality by 2050.

### Developing localised food systems and short food supply chains

Collaborations that take advantage of interactive, common-source platforms can empower local changemakers to establish resilient and sustainable food systems.

#### ■ WHAT IF?

We envision a future where cities across Europe have succeeded in making sustainable, healthy food available, affordable and attractive to citizens. Where short food supply chains and strong urban-rural connections have been established and systemic barriers for scaling of food-related grassroot initiatives overcome. These changes are highly supported by collaborations that take advantage of interactive, common-source platforms, empowering local changemakers to establish resilient and sustainable food systems.

#### ■ KEY CHALLENGES TO OVERCOME

Fragmented networks and a lack of shared infrastructure restrict the impact and scalability of local food initiatives because of the:

- > Market not rewarding the value local initiatives create
- > Limited access to financing, knowledge and supportive policy frameworks
- Inadequacy of digital tools and platforms for transparent, trust-based collaboration and traceability
- Difficulties in engaging and retaining young talent and other stakeholders in food system innovation.
- SUGGESTIONS FOR WAYS FORWARD
- Developing and supporting common-source digital platforms for freely sharing knowledge and tools
- > Creating infrastructures based on backward engineering of value creation through a network of living labs and co-creation spaces for testing new ideas and rapidly scaling successful models

- > Fostering structures that support networks to connect changemakers across sectors, facilitating action, peer learning and mobilisation of resources
- > Investing in youth engagement and mentorship programmes to cultivate the next generation of food system innovators, e.g. providing training workshops and experience placements
- > Supporting the adoption of IT and blockchain solutions for supply chain transparency, trust and
- > Establishing co-creation platforms in digital hubs for ongoing exchange and co-development of solutions.
- WHO WILL NEED TO TAKE ACTION?
- > Local and regional policymakers by enabling frameworks and support structures
- > Cities by supporting food system transformation and building urban-rural connections
- > Research institutions by driving innovation and providing evidence-based solutions
- > Digital solution providers by developing and maintaining common-source platforms
- > Young professionals and grassroot organisations by co-creating and implementing new innovations
- > Networks and intermediaries by facilitating connections and knowledge exchange.

#### READ MORE

Booklet available in nine languages on the main findings of the SMARTCHAIN project that provides, for instance farmers and food producers with applicable solutions to sustainable business performance, "Insights & recommendations to support collaborative short food supply

#### Anant Jani

Senior researcher, University of Heidelberg and Coordinator of FEAST

#### Christian Bugge Henriksen

Associate Professor, University of Copenhagen, Coordinator, CLEVERFOOD



CLEVERFOOD - FOOD2030



# Shifting to healthier and more plant-based food production and consumption

A sustainable, resilient and equitable food system prioritising plant-based foods could be achieved within > 5-10 years.

#### ■ WHAT IF?

We envision a future where – if all stakeholders work together – a sustainable, resilient and equitable food system prioritising plant-based foods could be achieved within 5–10 years.

- Short-term (0-6 months): Financial initiatives, including subsidies for plant-based food producers, VAT reductions, public awareness and investment in processing technologies
- > Medium-term (6-24 months): Normalisation of plantbased diets, research funding, cultural shifts, new product development and changes in subsidies
- Long-term (>24 months): Plant-based diets as the norm, fair revenue distribution, advanced technologies, integrated legal frameworks and ecosystem restoration.

Positive impact gained. Nature: Improved soil health, biodiversity, reduced emissions. Citizens: Better health, reduction in non-communicable diseases such as type 2 diabetes, high blood pressure, obesity, cardiovascular disease, increased food security. Climate: Lower carbon footprint, climate change mitigation. Business: New markets, increased employment, fair revenue distribution. Society: Lower healthcare costs, greater equity, stronger communities.

- Key challenges to overcome
- > Political: Large private actors (including financial) have the most power at the expense of farmers, society, citizens and nature. This leads to corporate/regulatory capture, preventing progressive policy

- development (deny, delay, dilute)
- Economic: High costs and financial risks for farmers and food sector companies transitioning to plant-based foods. Lack of economic incentives and subsidies for plant-based production compared to animal-based foods
- > Technological: Existing technologies and infrastructure are optimised for animal-based food production, making it difficult to shift to plant-based systems. Need for investment in new technologies and infrastructure to support plant-based food processing and distribution
- Sociocultural: Strong cultural preferences and habits favouring animal-based diets. Lack of awareness and education on the benefits of plant-based diets, leading to resistance to change.

#### ■ SUGGESTIONS FOR WAYS FORWARD

- > Political: Increase and enforce stricter transparency and conflict of interest requirements; implement mandatory regulations instead of self-regulation; provide more equitable access to institutions for all stakeholders, not just powerful interest groups/lobbying firms
- Economic barriers: Provide subsidies, tax breaks and grants to offset costs; increase research and development funding; increase investment, including public-private partnerships
- > Technological and infrastructure challenges: Invest in infrastructure and new technologies; offer training programmes for farmers and processors
- Sociocultural resistance: Launch public awareness campaigns; incorporate plant-based foods in public institutions; engage communities through local initiatives.



# Shifting to healthier and more plant-based food production and consumption

Research communities can support progress through interdisciplinary collaboration for holistic solutions by:

- Developing innovations: Researching new, scalable, » cost-effective plant-based food innovations (including technologies) and sustainable agricultural practices tailored to local and global needs
- > Providing data: Conducting studies on the health and environmental benefits of plant-based diets
- > Educating stakeholders: Equipping students, farmers and professionals with the skills and knowledge to implement sustainable practices
- > Public engagement: Leading awareness campaigns and community-based projects to shift consumer behaviour and societal norms
- > Influencing policy: Advising policymakers on evidencebased strategies to support the green transition.

Policy initiatives can support research by establishing long-term, cross-sectoral funding programmes focused on sustainable, plant-based food systems.

- > Danish politicians: Create national research missions that link universities, farmers and food companies to co-develop scalable plant-based solutions; incentivise public institutions (schools, hospitals) to collaborate with researchers on implementing and testing sustainable food models. Support living labs and regional pilot projects that integrate research, policy and practice
- > EU politicians: Expand Horizon Europe funding specifically for plant-based innovation, sustainable agriculture and food systems transformation. Mandate interdisciplinary research frameworks that combine health, climate and food policy. Promote EU-wide knowledge-sharing platforms to scale successful national initiatives across member states.

#### ■ WHO WILL NEED TO TAKE ACTION?

- Government/policymakers: To create supportive policies, provide subsidies, adjust taxation, avoid corporate/regulatory capture and lead public procurement reforms
- > Financial world: To provide novel financial instruments to support farmers and food value chain to shift toward plant-based food systems
- > Farmers/food producers: To adopt sustainable practices and shift toward plant-based production
- > Food industry/retailers: To innovate, market and distribute plant-based products widely and affordably.
- > Research/Educational institutions: To develop new methods and technologies, provide data and support education and training; integrate sustainability and nutrition into curricula and influence future generations
- > NGOs, civil society, consumers: To advocate for policy change, raise awareness and support community engagement to drive demand through informed choices and lifestyle changes.

#### READ MORE

WHO European Office for the Prevention and Control of Noncommunicable Diseases (2021), Plant-based diets and their impact on health, sustainability and the environment; A review of the evidence

Prag, A. A., Henriksen C. B. (2020), **Transition from**Animal-Based to Plant-Based Food Production to Reduce Greenhouse Gas Emissions from Agriculture—The Case of Denmark, Sustainability

Anant, J, et al. (2022), **Transitions to food democracy through multilevel governance**, Frontiers in Sustainable Food Systems





Claus Grøn Sørensen Professor, Aarhus University Jonas Valbjørn Andersen Associate Professor, IT University of Copenhagen

CLEVERFOOD - FOOD2030



### Leveraging digital technologies for sustainable agrifood systems

The challenge of digitalisation is not incremental but represents a fundamental socio-technical and agroecological transformation of the entire food production system, its technologies and its practices.

#### ■ WHAT IF?

We envision a future in which technology and ecological principles are integrated to create sustainable and resilient food systems that benefit people and the planet. The following Smart Farming 2050 scenario presents a vision of a highly advanced, sustainable and resilient agricultural landscape that includes:

- > Fully autonomous farms embracing a high degree of automation in farming operations, with robots and artificial intelligence systems handling tasks such as planting, weeding, harvesting and monitoring crops and livestock. Would potentially lead to increased efficiency, reduced labour costs and more precise management of resources
- > Biodiversity and multifunctional land use to emphasise the importance of integrating biodiversity conservation into agricultural practices. Multifunctional land use allows farmland to serve multiple purposes, such as food production, carbon sequestration, water management and wildlife habitat provision
- Agroecological and crop diversity promoting the use of agroecological principles and practices that mimic natural ecosystems, such as crop rotation, cover cropping and integrated pest management, while also highlighting the importance of increasing crop diversity to enhance resilience to climate change, reducing reliance on synthetic inputs and improving nutritional value
- > Short production and supply chains, which refers to localised food systems where food is produced and

- consumed within a relatively small geographic area to reduce transportation costs, minimise environmental impacts and support local economies
- > Long data chains recognise the increasing importance of data in modern agriculture that is collected from various sources, e.g. sensors, satellites and farm management systems before being shared across the value chain to improve decision making and optimise resource use
- Data and robots managing complex agroecological systems to cover the need for advanced data analytics and robotics to manage the complexity of agroecological farming systems. These technologies can help farmers optimise crop combinations, manage nutrient cycles and monitor biodiversity in real time.

#### ■ KEY CHALLENGES TO OVERCOME

As digital technologies, infrastructures and data are prerequisites for a sustainable agrifood systems transformation, the challenge of digitalisation is not incremental but represents a fundamental socio-technical and agroecological transformation of the entire food production system, its technologies and its practices.

Digital transformation of agrifood systems requires a systemic approach to digitalisation that looks beyond individual technologies to explore interconnected technological systems such as the Internet of Things, sensor networks and data ecosystems, as well as how they interact with agricultural, ecological, economic and regulatory systems.

A systemic approach to the sustainable digital transformation of agrifood systems must be integrated across:

> User-level digitalisation: Changing the materiality of agricultural practices, including new digital objects, tasks and skills »



TRACK SESSION

### Leveraging digital technologies for sustainable agrifood systems

- > Farm-level digitalisation: Management transformation in the form of new production systems and processes, resource management practices and sustainable digital business models
- > Agrifood value chain digitalisation: Data-enabled transformation to shorten logistics and retail chains, bringing production, retail and consumers closer together
- > Policy-level digitalisation: Transforming agrifood systems to enable and incentivise innovation of sustainable and open technologies and to foster data-driven governance, incentive and accountability structures.

Main barriers for accelerating the green transition are:

- > Exacerbating unintended and unsustainable outcomes by incremental innovations sustaining existing food production systems
- > Failing to enforce regulations that set a direction for digital innovation toward sustainable food systems
- > Farmers losing their sense of closeness to the biological production system and identity as farmers, which may hinder their involvement in new tech-
- Relatively high initial investment in smart farming tools that discourages small and medium-scale farmers
- Frequent lack of technical knowledge and training among farmers that is required to operate and maintain smart farming systems effectively
- The critical role of social influence as farmers are more likely to adopt smart farming if their peers are doing so successfully.

### The policy input for Danish and European policymakers

is to:

■ SUGGESTIONS FOR WAYS FORWARD

> Ensure connectivity, interoperability and infrastructure for data and communications to foster trust and security in EU data spaces.

The foundational requirements for a successful digital transformation are:

- > Connectivity: Reliable and widespread internet access is crucial, particularly in rural areas, to enable farmers to use digital tools and access relevant data
- > Interoperability: Different digital systems and platforms used in agriculture – such as sensors, farm management software and supply chain tracking - must be able to communicate and exchange data seamlessly to avoid data silos and allow for a holistic view of agrifood systems
- > Infrastructure: Robust and secure infrastructure is needed to support the flow of data, including data storage, processing and transmission
- > Trust and security: Farmers need to trust that their data are secure, protected from misuse and used fairly and transparently. This requires clear regulations and governance frameworks for data sharing and usage in EU data spaces.

Enforce interoperability and data sharing between technologies and stakeholders in the food production system. The practical implementation of interoperability includes:

- > Standards: Establishing common standards and protocols for data formats, interfaces and communication to facilitate interoperability between various technologies and systems
- > Data sharing mechanisms: Policies should encourage and incentivise data sharing among farmers, suppliers, processors, retailers and researchers to improve decision making at all levels, leading to greater efficiency, sustainability and resilience »





### Leveraging digital technologies for sustainable agrifood systems

> Fairness and reciprocity: Data sharing agreements should be fair and equitable, ensuring that all stakeholders benefit from the exchange of information

Create incentives toward systemic change from industrial efficiency to smart farming. The need to shift from a purely efficiency-driven approach to a more holistic smart farming model that prioritises sustainability

- > Incentives for smart farming: Governments can provide financial incentives - such as subsidies and tax breaks - to encourage adoption of smart farming SPEAKERS practices that improve environmental performance, reduce resource use and enhance biodiversity
- > Systemic change: Policies should aim to transform all agrifood systems, not just individual farms. This requires a coordinated approach that addresses issues such as supply chain sustainability, consumer behaviour and regulatory frameworks
- > Beyond efficiency: While efficiency is important, smart farming should also focus on other goals, such as improving animal welfare, enhancing rural livelihoods and promoting healthy diets.

#### ■ WHO WILL NEED TO TAKE ACTION?

The European technology industry and providers such as CEMA - the European Agricultural Machinery Association; research and development institutions; policymakers (agriculture and digital infrastructure); farmers and food producers.

#### READ MORE

Myshko, A., Checchinato, F., Colapinto, C., Finotto, V., Mauracher, C. (2024), Towards twin transition in the agri-food sector? Framing the current debate on sustainability and digitalisation, Journal of Cleaner

Vahdanjoo, M., Grøn Sørensen, G., Nørremark, M. (2024), Digital transformation of the agri-food system, Current Opinion in Food Science

#### Claus Grøn Sørensen

Professor, Aarhus University Dionysis Bochtis,

Professor, Centre of Research and Technology-Hellas (CERTH)

#### Lars Frederiksen

Professor, Aarhus University

#### Jonas Valbjørn Andersen

Associate Professor at IT University of Copenhagen

#### Katrine Duus Terkelsen

Postdoc, Aarhus University

#### Martin Wurzer

Postdoc, Aarhus University



### Consumers and markets: Myths, realities and future pathways

Food environments need to encourage consumers to make sustainable and healthy choices.

#### ■ WHAT IF?

We envision a future where a shift in food consumption patterns has led to a large increase in the consumption of plant-based foods and a large decrease in the consumption of animal-based foods by 2030, which is in line with official Danish dietary guidelines.

#### ■ KEY CHALLENGES TO OVERCOME

Current food environments are dominated by unsustainable and unhealthy foods that do not encourage consumers to make sustainable and healthy choices. Key issues:

- > Large retails chains and food companies are changing their offerings too slowly. Business models are based on selling large quantities of animal-based and unhealthy foods
- > Large retail chains find it difficult to change current practices since they fear they will lose out against their competitors
- > Public and private canteens and restaurants largely do not provide attractive and delicious plant-based foods and meals.

#### ■ SUGGESTIONS FOR WAYS FORWARD

Concerted actions in multi-sector partnerships that include policymakers, companies, NGOs, public sector and researchers. All major retail chains should be included, not just individual ones.

A policy mix that makes use of the whole policy toolbox:

- > Changes in supermarkets, e.g., product placement, promotion and price
- > Changes in the food available in canteens, restaurants and public kitchens

> Advancements in recipe and product development to make plant-based foods and meals tastier.

Additional public policy measures should support any concerted actions, e.g.:

- > Fiscal measures, such as differentiated VAT and regulatory measures
- > Educational measures, such as teaching food literacy and skills in schools
- > Public campaigns.

The research community can contribute by providing insights into consumer food choices and the underlying drivers, preferably in large-scale longitudinal studies and field experiments that include evidence on the effectiveness and acceptance of policy interventions.

#### ■ WHO WILL NEED TO TAKE ACTION?

Policymakers; the food industry – including large food processors and supermarkets; the public sector; wholesalers and their suppliers; NGOs and researchers.

#### READ MORE

#### Final report of the PlantPro project (2025), Saving the world, one plate at a time

Berlin: SAPEA, Scientific Advice Mechanism to the European Commission (2023), Towards sustainable food consumption

#### SPEAKERS

#### Hannibal Hoff

Team Leader, Knowledge, Madkulturen

#### Nina La Cour

Corporate Affairs, Lidl

#### Rune-Christoffer Dragsdahl

Secretary General, Danish Vegetarian Society

#### Heather Anne Swanson

Professor, Department of Anthropology - School of Culture and Society, Aarhus University

#### Joshua David Evans

Senior Researcher, Sustainable Food Innovation, Technical University of Denmark





### Democracy and inclusion in agrifood systems

To accelerate a just and democratic agrifood transition while preventing polarisation, green transition research, policymaking and implementation actions need to include a wider range of stakeholders.

#### ■ WHAT IF?

We envision a future where a diversified and expanded range of stakeholders are included in green transition research, policymaking and implementation actions. Where different disciplines, scales, institutions, sectors, demographics and positions in the value chain are welcomed and become involved. This approach will help prevent polarisation by promoting and accelerating a just and democratic agrifood transition.

#### ■ KEY CHALLENGES TO OVERCOME

- > How can inclusion be viewed not as slowing things down but as fundamental for an effective green transition?
- > How can a green transition research better value and valorise the potential gains of working with new kinds of non-traditional external partners?
- > What techniques and practices can help to include more diverse voices in green research and action?
- > How can research communities reduce reliance on path dependency, i.e. with a continued focus on large-scale, well-established partners because they are already seen as important?

#### ■ SUGGESTIONS FOR WAYS FORWARD

Include more civil society groups, unions, cooperatives, youth organisations, scholars in the social sciences and humanities, and small-scale initiatives in green transition research, policymaking and implementation actions.

Consider a wider range of ideas and models of action – including those that do not seem immediately scalable at present - to build more robust solutions and generate real innovation in research contributions to the green transition. What sustainability looks like will vary for different people and contexts, and starting from their perspectives on the ground will aid in designing solutions that make more sense for given situations.

#### ■ WHO WILL NEED TO TAKE ACTION?

- > Universities and research foundations need to value, valorise and prioritise participatory methodologies for including different audiences in the research process
- > Policymakers need to recognise the importance of starting with on-the-ground knowledge by spending more time learning from people in a variety of communities
- > Governments need to more proactively design initiatives to involve and support citizens in local implementation actions for the green transition, while also supporting research to improve inclusive practices and initiatives. »



### Democracy and inclusion in agrifood systems

#### ■ READ MORE

European Environment Agency (2024), Delivering justice in sustainability transitions

World Economic Forum (2025), Why a local approach to the just transition is so important - and so effective

#### ■ SPEAKERS

#### Rebecca Leigh Rutt

Associate Professor, University of Copenhagen

#### Sarah Lund

Director of International Collaborations and Strategic Sustainability Initiatives, Klimatorium

#### Mathias Skovmand Larsen

Teaching Associate Professor, University College Copenhagen

#### Mads Ejsing

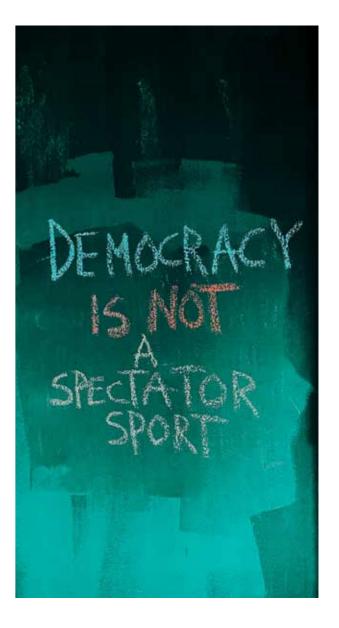
Postdoc, University of Copenhagen

#### Viola Capriola

Co-Founder and Chair of Grønt Marked, Food Policy and Local Food Systems Development Manager, World Farmers Markets Coalition

#### Morten Ryom

Professional Employee, 3F Aalborg



Anette Engelund Friis

Mission Director, AgriFoodture

#### Hanne Harmsen

Vice Dean, Copenhagen Business School, Mission Board Member AgriFoodture and Afkobling 2030





# Mission-based research and agrifood

While a mission-based approach to solving societal problems can be both inspiring and unifying, considerable challenges remain in reaping the potential benefits.

#### ■ WHAT IF?

We envision a future in which research communities have come significantly closer to realising the potential benefits of mission-based research to strengthen their contribution to the green transition of agrifood systems in interaction with government, businesses, foundations, universities and civil society.

#### ■ KEY CHALLENGES TO OVERCOME

Originating from EU and national research funding bodies, the focus on mission-based research is increasingly adopted independently by entire universities – such as Aalborg University in Denmark – as well as by research centres, such as START – Centre for Sustainable Agrifood Systems. While a mission-based approach can be inspiring and unifying, considerable challenges remain in reaping its potential benefits.

When defining the aim of a research mission, the green transition of European agrifood systems cannot be boiled down to a man on the moon statement. Multiple, sometimes conflicting, goals must co-exist, for example emission reduction, focusing on biodiversity, multipurpose land use, competitiveness and civil society acceptance. This is especially the situation in a complex, well-established, culturally embedded multi stakeholder industry like agrifood.

Moving from research project portfolio to a mission is a challenge because research funding still focuses on distributing as much funding to individual research projects as possible. This leaves very few resources and little room for: collaboration efforts, activities and processes that include harvesting synergies between projects, ecosystem development, stakeholder engagement planning and teaching activities. Industry involvement risks becoming a window dressing rather than real mutual commitment.

Mission-based research might make sense on a leadership level but must be relevant for the individual scientist. With academic career paths still primarily dependent on publishing scientific articles, the cross-disciplinary nature of mission-based research, and even spending time relating to projects from other disciplines, can be difficult to justify. Moreover, how is it possible to maintain integrity and scientific creativity as a scientist once committed to a real-world mission?

#### ■ SUGGESTIONS FOR WAYS FORWARD

To define the aim of a research mission, ongoing dialogue between funding agencies and academia on how to define, fund, execute and evaluate mission-based research is critical. Also, the kind and level of desired impact must be relevant for industry stake-holders to obtain their commitment as well as future co-funding. Disseminating and discussing »



TRACK SESSION REPORTS

# Mission-based research and agrifood

perspectives from international work in the area – such as the OECD Mission-Oriented Innovation PoliciesNetwork – is also important.

To move from research project portfolio to a mission, research missions must possess leadership capacity, portfolio management processes and a budget for mission activities.

Making mission-based research relevant for leadership and individual scientists must involve addressing the individual scientist's perspective by engaging principle investigators in the learning cycle and asking how the mission is relevant for them and their project teams. Incentives to participate in impactoriented and cross-disciplinary research might include adjustments on institutional or national level to academic career advancement requirements.

#### ■ WHO WILL NEED TO TAKE ACTION?

- > The academic community, research funders and industry
- Industry needs to engage in dialogue on how to participate in meaningful collaboration with research communities, for instance on balancing short- versus long-term perspectives
- Research communities and universities should engage in dialogue on research publication strategies, and how to provide space for crossdisciplinary »

#### MISSION-BASED APPROACH

The purpose of the mission-based approach is to accelerate the development of cutting-edge solutions to societal challenges, ranging from strategic, coherent research to implementation, with an equal focus on short-, mid- and long-term impact.

A mission-oriented approach involves setting ambitious, public purpose goals (or missions) to address significant societal challenges. These challenges are then tackled through a collaborative effort involving government, the private sector and civil society working together to achieve measurable, transformative results. This approach shifts focus from traditional, sector-based policies to tackling systemic problems requiring cross-disciplinary and inter-sectoral research and innovation.

The approach calls for strategic public investment, risk taking and long-term planning to stimulate inclusive and sustainable growth. It redefines the role of the state as a dynamic, entrepreneurial partner in innovation, not merely a regulator. This has inspired EU and national research policies in recent years. Source: Mazzucato, M. (2021). Mission Economy: A Moonshot Guide to Changing Capitalism, Penguin Books Ltd.



#### Marin Rose Lysák

Assistant Professor, University of Copenhagen, Co-Coordinator of the CLEVERFOOD project and FOOD2030 networks

#### Elisabeth Ofosuah Obeng

Researcher, Wageningen University & Research, Founder of Afropulse



# Mission-based research and agrifood

and mission-based projects along academic career paths, including designing PhD courses on mission-based research, emphasising the value of cross-disciplinary research and stimulating community building. They must recognise collaboration with industry and cross-disciplinary research efforts.

National and European funders should consider whether mission-oriented research instruments are flexible enough to encompass the new types of activities that are essential for mission-based research.

All parties need to engage in a continuous learning journey – we are not there yet.

#### READ MORE

Gry, S., Hjort, J. (2025), Navigating societal change through design, leading missions for a prosperous future, Policy Press

#### ■ PANEL MEMBERS

#### Antonio Fernandez-Guerra

Assistant Professor, Ancient Environmental Genomics Initiative for Sustainability, University of Copenhagen

#### Anette Engelund Friis

Mission Director, AgriFoodture

#### Hanne Harmsen

Vice Dean, Green Transition, Copenhagen Business School, Mission Board Member, AgriFoodture and Afkobling 2030

#### Hans Henrik Lombolt

Mission Officer Health, Aalborg University

#### Julie Hjort

Director of Sustainable Transformation, Danish Design Center

#### Marian Geluk

Executive Director, Next Food Collective

#### Sidsel Hougaard

Head of Missions, Innovation Fund Denmark

#### Rosie Collington

Postdoc, Copenhagen Business School

CLEVERFOOD/FOOD2030



TRACK SESSION REPORTS

# Impact investment for accelerating the transition to sustainable food systems

Public and private investments can drive the transition toward sustainable, healthy and fair food systems, while research and innovation can lead to recipes for change.

#### ■ WHAT IF?

We envision a future where all key stakeholders, including governments, investors, small and medium-sized enterprises (SMEs), researchers and citizens collaborate effectively to accelerate the green transition through strategic funding, impact-driven research and procurement reforms. Aligning these three aspects could unlock innovation, scale mission-led enterprises and embed sustainability, health and equity at the core of public and private food value chains.

Procurement policies could prioritise locally sourced, nutritious and climate friendly food, enabling SMEs and mission-driven enterprises to thrive environmentally, socially and financially. Crucially, this shift requires a rethinking of the metrics used to define success that moves away from narrow cost-efficiency models toward holistic indicators that capture long-term value, including health outcomes, climate resilience, social equity and biodiversity gains.

Investment frameworks could be realigned with these broader metrics, helping to de-risk innovation and bridge the valley of death for early-stage solutions. This can be further strengthened by developing support strategies and guidance to pilot-scale

procurement initiatives on navigating sustainable innovation funding.

To support this transformation, local adaptation and harmonisation of strategies across borders and municipalities is essential. Equally important is the establishment of cross-sectoral educational initiatives to deepen understanding of procurement and investment choices among all actors, ensuring shared language, clearer expectations and more inclusive participation in shaping the future of food systems.

Through this coordinated effort, we can build more resilient local economies, empower communities and deliver tangible, measurable benefits for people and the planet.

#### ■ KEY CHALLENGES TO OVERCOME

The key challenges that must be addressed to advance the green transition in this track are:

- > Fragmented and siloed funding mechanisms that hinder long-term, coordinated investment in sustainable food systems
- Rigid and risk-averse public procurement frameworks that fail to support innovative, local and climate friendly food solutions
- > Misalignment between research, investment and entrepreneurial ecosystems that results in a lack of translational support and difficulty in scaling impactful SME innovations. »





# Impact investment for accelerating the transition to sustainable food systems

### ■ SUGGESTIONS FOR WAYS FORWARD Potential solutions include:

- > Creating aligned and flexible funding architectures > that enable mission-driven, long-term investment strategies across sectors and levels of governance
- > Reforming public procurement rules to allow for greater flexibility, inclusion of sustainability criteria and value-based approaches that recognise the true costs and benefits of food
- Establishing translational support structures
   such as independent knowledge brokers or
  intermediaries that bridge the gap between
  research, investors and SMEs, facilitate access
  to capital and help innovators navigate complex
  regulatory and funding landscapes.

Universities can play a crucial role in contributing to these solutions by:

> Shifting evaluation and support mechanisms toward real-world impact and co-creation with SMEs. Universities could provide innovation support beyond technical expertise – such as entrepreneurship training, intellectual property literacy and market readiness assessment.

#### Researcher communities can:

- > Co-create with SMEs and chefs to enhance the relevance and usability of knowledge to ensure that innovations meet real-world needs
- > Translate food system complexity into accessible insights for policymakers and investors, helping

- to inform evidence-based decision making and investment strategies
- > Generate evidence on the effectiveness and societal value of sustainable food procurement and innovation, including environmental, social and health impacts
- Co-develop tools and methodologies with stakeholders to assess and communicate the true costs and benefits of sustainable food systems
- > Participate in or help set up impact accelerators and innovation ecosystems that guide SMEs through the valley of death, bridging the gap between research, practice and investment.

#### Research policymakers can:

- In the European Union, reform innovation funding and regulatory frameworks to enable earlierstage, impact-driven ventures to access capital and scale sustainably
- > In Denmark, support institutional reforms that incentivise and enable universities to more easily spin out socially and ecologically impactful businesses, not just those rich in intellectual property, by addressing restrictive tech transfer policies, and barriers within local ecosystems that often prevent new ideas from advancing beyond the university. Additionally, policies should fund cross-sectoral learning, promote co-creation and treat knowledge as a form of capital in research and procurement systems to bridge siloed communication, elevate practitioner insights and improve knowledge translation across sectors. »



# Impact investment for accelerating the transition to sustainable food systems

#### ■ WHO WILL NEED TO TAKE ACTION?

SMEs; public and private investors; policymakers at EU and national levels; universities; research institutions; food system intermediaries – such as chefs, processors and buyers; farmers and organisations supporting start-up ecosystems.

#### ■ READ MORE

Deliverable 4.1 CLEVERFOOD (2023), Impact investors living lab – Overview and roadmap for scaling impact investment in urban food systems

#### PANEL MEMBERS

#### Betina Bergmann Madsen

Category Manager for Food Procurement, City of Copenhagen

#### Cindie Christiansen

Co-Founder, Top 50 Farmers, Director and Co-Founder, Foodprint Nordic

#### Louise Beck Brønnum

Partner and Gastrophysicist, Kost Studio

#### Lena Marijke Wenzel

RisingFoodStars Support Manager, EIT Food

#### Matt Orlando

Co-Founder, Endless Food Co., Owner/Head Chef, Amass Restaurant

#### Niels Heine Kristensen

Professor, Roskilde University



#### Floor Geerling-Eiff

Senior Research Project Manager, Wageningen University & Research

Kelly Rijswijk

Researcher, Wageningen University & Research

CLEVERFOOD/FOOD2030



# Integrating a food system approach in higher education teaching

Food systems approaches need to be more effectively integrated into higher education to equip future professionals and stakeholders to engage holistically in transforming the agrifood sector.

#### ■ WHAT IF?

We envision a future where a food systems perspective is integrated into all educational levels and agrifood subjects. This means that all food systems professionals and academics would be equipped to apply food systems thinking at a fundamental level. We would build a strong network of food systems education programmes across Europe that collaborate to strengthen alumni networks and engagement as agents of change. These developments would enable future professionals and stakeholders in and around food systems to engage holistically in their transformation toward greater sustainability and fairness.

#### ■ KEY CHALLENGES TO OVERCOME

- General failure to highly prioritise food systems education accompanied by an associated lack of academic prestige and career progression
- > Weak structures and incentives for working together across institutions, educational levels and countries
- > Allocation of resources to engage with alumni from individual institutions and cross-institutions.
- SUGGESTIONS FOR WAYS FORWARD
- > Improving structures for cross-institutional collaboration

- Building international networks around food systems education, beginning with a clearer overview of the current landscape of educational offerings in the field
- > Engaging in project-based collaboration to explore the potential for working together across educational levels.

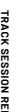
#### ■ WHO WILL NEED TO TAKE ACTION?

- Actors with all levels of education (e.g. higher education, professional programmes and vocational training), including management, administration, educators, students and alumni
- Policymakers within research and education should break down silos comprising the educational landscape – and remove structural barriers for collaboration across institutions around education
- > Universities should enhance incentives to engage in educational activities to give them the same level of importance as research activities. In collaboration with regulators they should also develop more dynamic processes for changing curricula and learning goals, especially for professional education programmes to enhance alignment with the newest research
- > Funders should prioritise education and especially new, exploratory collaboration through project opportunities and partnerships.

#### READ MORE

Food Systems Science Network Cleverfood

CLEVERFOOD/FOOD2030



# Accelerating learning and knowledge flows in agrifood systems

Transitioning toward sustainable agrifood systems requires the development of a food knowledge and innovation system and a Pan-European network of academics and non-academics that support knowledge exchange and learning.

#### ■ WHAT IF?

We envision a future where various actors, including food professionals, citizens and vulnerable communities are brought together to change how we use and produce knowledge to change how we use and produce food. To support the development of sustainable agrifood systems, we need to build a food knowledge and innovation system and a Pan-European network of academics and non-academics that support knowledge exchange and learning.

#### ■ KEY CHALLENGES TO OVERCOME

The complexities of collaboration and knowledge exchange, including:

- > Polarisation
- > Diversity of knowledge types
- > Various trade-offs between stakeholders when promoting United Nations Sustainable Development Goals on good health and well-being, sustainable cities and communities and responsible consumption and production

#### ■ SUGGESTIONS FOR WAYS FORWARD

One way forward is to foster a foundation for developing a new, inclusive and responsible knowledge and innovation system for Europe's food system.

The creation of inclusive and democratic food systems must be supported while also:

- Acknowledging and integrating diverse knowledge types (tacit-explicit, practical-academic), processes (co-creation, circulation and transfer) and the perspectives of various actors
- > Stimulating dialogue vs polarisation which takes a considerable amount of (extra) time if we are to truly listen to and understand each other
- > Focusing on joint learning synergies but also the trade-offs. Transitions cause winners and losers; there are no pain-free choices.

Research communities and policies promote the transdisciplinary co-creation of knowledge, with a focus on science for impact and communication.

#### ■ WHO WILL NEED TO TAKE ACTION?

All actors need to work together to realise change: citizens/consumers; NGOs; knowledge institutions and agricultural advisory services (academic, research, educational, advisory); businesses; practitioners; policymakers and politicians.

#### READ MORE

Foster – advancing societal food system knowledge and innovation Food Systems Science Network

### 29 April 2025

### START Green Minds Gather Conference

10:00-10:15 Welcome - Let's start the dialogue

Eskild Holm Nielsen, Dean, Aarhus University, and Hanne Harmsen, Vice Dean, Green Transition, Copenhagen Business School both are members of the START Steering Committee

Conference kick-off by moderator Marie-Louise Boisen Lendal , Co-Founder and Managing Director, Frej Think Tank

10:15-10:25 Navigating a changing world

Peter Møllgaard, President, Copenhagen Business School and Chair, Danish Council on Climaate Change, explores how the evolving geopolitical landscape impacts the green transition agenda, highlighting the challenges and opportunities for climate policies and sustainable developments

10:25–10:45 From challenges to change: Transforming global agrifood systems for a sustainable future

Louise O. Fresco, Former President, Wageningen University & Research, discusses how to integrate sustainable development principles into global agrifood systems to ensure food security for a growing population

11:00-13:00 Interactive track sessions

Parallel sessions focusing on how to solve challenges in agrifood systems based on research and innovation

13:30-14:45 The Good Food Institute workshop: Next-generation alternative protein research:

Priorities for breakthrough innovation

Bringing together leading researchers in alternative proteins to identify and prioritise urgent research needs to be shared with policymakers and funding agencies

15:00-15:15 Shifting consumer diets: Between individual and structural levers

**Sophie Nicklaus**, Deputy Scientific Director for Food and Bioeconomy, French National Research Institute for Agriculture, Food and Environment, on how to get society as a whole to embark on the green transition. Examples from France based on food systems thinking

15:15–16:00 From plates to planet: The consumer's role in the green transition

Panel debate challenging the understanding of consumer choices shaping the future of agrifood systems, highlighting the interplay between policy, research and industry in fostering sustainable development

Bente Halkier, Professor, University of Copenhagen and Deputy Chair, Danish Climate Council

Jens Stratmann, Former CEO, Lidl Denmark

Michael Minter, Program Director, CONCITO programme on food and consumption

Marja-Liisa Meurice, Director, EIT Food

16:00–16:55 Unlocking the potential of biosolutions

A panel of leading experts delves into the transformative potential of biosolutions and what is needed to unlock this potential, exploring how biosolutions can accelerate the green transition, ensure Denmark and the EU's competitiveness, and bridge the gap between industry, research and policy to drive sustainable innovation in food systems

SPEAKERS:

Claus Felby, Senior Vice President, Biotech, Novo Nordisk Foundation

Irina Borodina, Professor, Technical University of Denmark and CSO, BioPhero ApS

Jens Kolind, Senior Vice President, Planetary Health Europe, Novonesis

Klaus Berend, Director for Food Safety, Sustainability and Innovation in the European Commission's Directorate-General for Health and Food Safety

Sofie Carsten Nielsen, Director, Danish Industry, European Biosolutions Coalition

16:55-17:10 What if the best thing we can do is nothing at all?

Annette Sartvin Lendal, independent advisor and researcher on the regenerative movement and new economic paradigms, reflects on what a true transition of the agrifood sector might require

**30 April 2025** 



09:05-09:15 Solving planetary tipping points through social tipping points

Tim Lenton, Professor and Founding Director, Global Systems Institute, University of Exeter and Chair, Climate Change and Earth System Science, explores the intersection of natural and social sciences, sharing insights on how scientific discoveries have shaped political climate goals and actions, emphasising the critical need for collaboration between the natural sciences (planetary tipping points) and social sciences (social tipping points) to address our most pressing environmental challenges.

09:15–09:25 Interdisciplinary research as a key driver for societal transformation

**Katherine Richardson**, Professor of Biological Oceanography, Globe Institute, University of Copenhagen, leader of Research Centre ROCS, planetary boundaries framework developer, chair of expert group on the economic and societal impact of research and innovation, shares her pioneering work on advancing sustainability through the planetary boundaries framework and discusses how this framework has influenced, and is expected to influence, the efforts of industry, NGOs and policymakers

09:25-09:45 Fireside chat with Dr Steve Smith and Professor Katherine Richardson

- The evolving role of scientists in addressing wicked problems

Steve Smith, Dr and Research Fellow, University of Exeter, Co-Author, Global Tipping Points report, and Katherine Richardson (presented above) discuss the future role of science and research in tackling complex wicked problems, exploring how science and research can maintain their relevance amid shifting demands and evolving agendas

09:45-09:55 The nexus approach: Integrating water, biodiversity and agriculture for a sustainable future

Nienke Trooster, Kingdom of the Netherlands Ambassador to Denmark, highlights the critical importance of an integrated approach to water, biodiversity and agricultural challenges, including sustainable agricultural soil management

09:55-10:05 Driving sustainable change: Enhancing the impact of research

Joost De Laat, Professor of Economics, Managing Director for the Social Sciences Group, Wageningen University & Research 10:05–10:15 Innovative business models for regenerative agriculture: A path to sustainability

Wouter-Jan Schouten, Program Director, Next Food Collective, unfolds how pioneering policies in the Netherlands and its National Agricultural Soils Programme aim to ensure that Dutch agricultural soils are sustainably managed nationwide by 2030 10:30–10:45 From science to politics: Sustainable agriculture and food systems in France

**Jean-Francois Soussana**, Research Director, Vice-President for International Policy, Executive Board Member, French National Research Institute for Agriculture, Food and the Environment, Member, French High Council on Climate, addresses the pressing climate challenges facing sustainable agriculture and food systems

11:00-13:00 Interactive track sessions

Parallel sessions focusing on how to solve challenges in agrifood systems based on research and innovation

13:45-14:45 Workshop: Operationalising social tipping points in the Danish food system

Examines the positive social tipping points in a transition framework, including how Brøndby Municipality in Denmark operationalises these social tipping points and what must be done to move from theory to practice in other settings

**Steve Smith**, Tipping Points Research Fellow, Global Systems Institute, University of Exeter, and **Hoffmann Fellow**, World Fednamic Forum

Sebastian Tue Pedersen Ove, Officer, Networks at Queen Mary's Centre, University of Copenhagen

Rasmus B. Mikkelsen, PhD and Head of Unit, Democracy X

14:00–14:30 Healing the earth and the human spirit

John D. Liu, Chinese-American filmmaker and ecologist, provides insights into the global ecosystem restoration movement 15:00–15:10 Next generation innovators: Winners of the PhD and postdoc poster sessions





### **30 April 2025**



### START Green Minds Gather Conference

15:10–16:00 The challenges of matching future carbon use and biomass: We need a carbon strategy PANEL DEBATE

Claus Beier, Professor, Department of Geosciences and Natural Resource Management, Forest and Landscape Ecology, University of Copenhagen

**Jette Bredahl**, Professor, Department of Food and Resource Economics, University of Copenhagen, Scientific Expert, Danish Environmental Economic Council, Board Member, Green Reform Project (Danish Ministry of Finance)

Karsten Capion, Senior Analyst, CONCITO

16:00–16:50 The Danish Green Tripartite Agreement: Successful collaboration between industry, NGOs and politicians How did it become possible to make the agreement? Is it within reach to implement an agreement of this magnitude? PANEL DEBATE

**Jeppe Bruus**, Danish Minister for Green Transition

Jørgen E. Olesen, Professor, Head of Department, Agroecology, Aarhus University

Peder Tuborgh, CEO, Arla Foods

Peter Møllgaard, Chair, Danish Council on Climate Change, President, Copenhagen Business School

Vivian Kvist Johannsen, Head, Department of Geosciences and Natural Resource Management, University of Copenhagen

16:50-17:00 Key messages from START Green Minds Gather

Hanne Harmsen, Vice Dean, Green Transition, Copenhagen Business School



Throughout the entire cycle of food-related resources, all stakeholders involved can make significant changes for a sustainable future. Untapped potential abounds, from how we produce food, to what we serve on the plate, to how we manage side streams and waste.

The goal of START – Centre for Sustainable Agrifood Systems, a research-based collaboration jointly founded by Denmark's eight universities, is to help accelerate the green transition.

With this publication, START aims to draw the attention of politicians, industry and academia to the untapped potential of integrating research-based knowledge into agrifood-related policies, regulations and practices in Denmark and across the European Union.







CBS COPENHAGEN BUSINESS SCHOOL

