



Beans as a vehicle for transforming food system outcomes

Bringing together a vision for achieving the shift towards bean-rich diets

27 to 28 September, 2023
University of Oxford

Why beans?

How do we promote a healthier diet which has a lower environmental impact, enhances biodiversity and local economies, and increases food security? Projects across the UK are recognising the potential for beans, and pulses more generally, to address all of these concerns.

Beans and other pulses offer a simple and affordable solution to financial, health, climate and environmental challenges. They are a rich source of plant protein and dietary fibre, and are nutrient-dense. They are low in fat and rich in a range of micronutrients including iron, potassium and B vitamins.

Increasing overall pulse consumption has been demonstrated to positively contribute to the prevention of all non-communicable diseases, which are now the largest cause of global mortality and ill-health. Their price point and nutritional profile also make them an affordable and healthy alternative to animal proteins, meaning they can play a pivotal role in reducing meat consumption. Equally, increasing the prevalence of pulses in crop production has numerous benefits for the environment through improving soil and water quality, reducing emissions intensive fertiliser use and increasing biodiversity and pollinator populations on farms. Not only will pulses significantly reduce the environmental impact of arable farming, but they could also rapidly improve the livestock sector footprint by replacing soybean feed, which is driving deforestation in biodiversity hotspots, with a locally grown alternative.

[Download the presentations](#)

“ Every one of the projects and ideas we’ve seen at this event have a role to play in raising bean consumption.”

Dr John Ingram, Food Systems Transformation Group Lead, University of Oxford

The UK currently produces more than

700,000

tonnes of pulses a year, almost all of which are either fed to animals or exported to the Middle East.



Case study: Raising The Pulse, University of Reading

Raising the Pulse starts from the premise that, in order for the environmental and health benefits of the pulses that grow readily in the UK (faba beans) to have national impact, they must be incorporated into foodstuffs that are familiar to the UK consumer.

The research uses white bread, an economical and convenient everyday food, to assess how UK pulse flour can replace imported soy in the loaf. The project brings together a consortium to understand the environmental and health outcomes this new product would produce at scale, as well as how the product could create a system shift, incentivising increased production and processing of faba beans in the UK.

[Find out more](#)

Case study: Soy No More, Hodmedod’s

Hodmedods works with British farmers to provide pulses and grains from fair and sustainable UK production. The company was established after the overwhelming success of a Norwich Resilient Food Project to stimulate and assess demand for indigenous pulses. As part of their ongoing efforts to improve the environmental impacts of the UK food system, Hodmedod’s co-authored the Soy No More report. The report raises awareness of the land-use change and deforestation associated with the global soy animal feed supply chain and explores agro-ecological alternatives for feeding pigs and poultry in the UK through increasing the consumption of pulses for feed and food.

[Find out more](#)

Case study: Nitrogen efficient plants for Climate Smart arable cropping systems (NCS), James Hutton Institute

This farmer-led research programme aims to increase pulse and legume cropping in arable rotations from 5% to 20% across the UK, reducing fertiliser use and minimising reliance on imported soya meal used in livestock diets. The project brings together 17 industry and research partners and over 200 farmers; the ambition is to bring about a reduction of 1.5Mt CO₂e per annum or 54% of the maximum potential for the industry. The pulses from this new farming process would be used to replace up to 50% of imported soya meal used in livestock feed.

[Find out more](#)

Key themes from the summit

“ Farmers are willing to take risks however they need to know there is a market for their beans.”

Dr Pietro Iannetta,
Agroecologist, James Hutton
Institute

The area of land used to grow beans in the UK has declined to 4% in recent years but has the potential to reach

20%
in the future.

- **Thinking in system.** Using systems thinking to map who is involved in UK pulse food systems, including identifying the drivers, winners and losers of interventions to increase the prominence of pulse.
- **Global trade vs. local security.** Developing data on the environmental, health and economic trade-offs between local and imported pulses, including the implications for food security, local economies and low-income groups.
- **Influencing the consumer.** Identifying champions and influencers, and using audience appropriate communication to make beans accessible and desirable, as well as to dispel myths and misconceptions.
- **Driving local production change.** Identifying how efforts to increase consumption of pulses in the UK can drive an increase in the production of pulses in the UK, rather than an increase in potentially problematic imports.
- **Food system equality.** Developing food system interventions that benefit low-income and marginalised communities. Ensuring that home grown pulses and new pulses products aren't limited to a premium market.
- **The role of policy.** Identifying and creating the appropriate evidence to support a shift in policy. Investing in science communication and dissemination to ensure that evidence reaches the right people and that it translates into action.

Next steps

- **Summit report** – This report is the first agreed output from the summit and will be circulated to attendees, as well as affiliated networks.
- **Topical Review Paper** – A literature review paper is currently being drafted to establish the state of research related to the environmental outcomes of increasing pulse consumption and production in the UK. This will inform future decisions into research priorities.
- **Steering Group** – A smaller group from the summit will assemble later in the year to establish the next steps including where the research priorities lie, what the primary purpose is and what funding opportunities are available.



About the event

“ Beans are a simple, affordable solution to our global financial, health, and climate problems.”

Paul Newnham, Executive Director, SDG2 Advocacy Hub / Beans Is How

The current average bean consumption in the UK is 14g per person per day. The national Eatwell guideline is 26g while the Eat-Lancet report recommends

75g

- The ‘Beans as a Vehicle for Food System Transformation’ summit was co-convened by Beans is How, the Agrifood4NetZero Network+ and BeanMeals.
- Ten case studies from projects working to raise the profile of beans were presented.
- Attendees were invited to plot their projects on a food system diagram.
- A system thinking Open Space exercise was run by Gerald Midgley, Professor of Systems Thinking, University of Hull. It allowed participants to define the agenda of the meeting and used an open and democratic process to develop ownership of issues and define solutions:
 - Participants were asked to develop a research proposal for increasing pulses in the UK.
 - Those who volunteered their proposal then pitched to the room.
 - Everyone else was given time to move from proposal to proposal, contributing ideas and considering where their knowledge was best applied.
 - Groups formed and proposals merged, resulting in four final research proposals.
 1. A national level project focused on evidence, policy and creating an enabling environment
 2. A local level project working with low income and minority groups to improve health, nutrition and local economy through pulses
 3. A pragmatic group working to valorise pulses that are already grown in the UK
 4. And an innovative group trying to establish the feasibility of scaling novel pulse cultivars
 - The research proposals were then compared to highlight similarities, differences and tensions.



Full list of case studies from the event

Organisers

- BeanMeals | John Ingram, Lisa Didier, Gerald Midgley
- Beans Is How | Alyson Greenhalgh-Ball
- Agrifood4NetZero Network | Marcus Horril, Research Assistant

Increasing consumption

- Transforming UK Food Systems | Guy Poppy
- Research Consortium for School Health and Nutrition – Planet Friendly School Meals | Silvia Pastorino
- Beans Is How – Menu Challenge | Paul Newnham
- Food for Climate League – Cities, Athletes Beans | Chhavi Jatwani
- Beantopia Game – BeanMeals | Joanna Craven

Novel ingredients and products

- Kraft Heinz – Beanz Liberation | Sophie Higgins
- PulseON | Cathrina Edwards
- Raising-the-Pulse | Julie Lovegrove
- Campden BRI – developing a bean-based snack bar | Craig Leadley

Agricultural Production Systems

- Hodmedods – Soy No More | Josiah Meldrum
- Nitrogen Climate Smart | Pietro Iannetta
- Warwick Crop Centre – Nurtural | Rosanne Maguire



About the organisers



Beans Is How

Beans Is How is a campaign to double global bean consumption by 2028. Joined by a coalition of stakeholders and bolstered by a Science and Innovation Advisory Council, the campaign released its Theory of Change in September, which identifies gaps in research and data as a key point to rally around. Their 'menu challenge' targets restaurants, caterers, schools, and other food providers, in order to make beans more visible and available, as well as to foster the idea that beans are a desirable food choice. The challenge focuses on how chefs and cooks can influence wider consumer behaviour and uses a variety of mediums including recipes card, media campaigns, merchandise, food labelling, influencers and restaurant collaboration to create a trend around beans.

[Find out more](#)



AFN Network+

AFN Network+ is a network that brings together key research leaders and stakeholders, their organisations and networks to shape the next decade of research and drive the UK agrifood system's progress towards net zero. This summit formed part of the activities of Theme 8 'System Interactions and Complexity in Supply Chains and Consumption', led by John Ingram and supported by Marcus Horril.

[Find out more](#)

BeanMeals

BeanMeals aims to understand what is required to transform a food system from producing undesirable outcomes, to one that is promoting beneficial outcomes for health, the environment and for local economies. The project starts with the premise that more locally sourced beans in UK diets would produce all of the above and works backward from 'fork-to-farm', collaborating with actors along the value chain including caterers, processors, farmers and breeders to understand what is need at every stage to create change and how this relates to other activities in the system.

[Find out more](#)

Get in touch

Want to find out more? Contact Marcus Horril, Research Assistant

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List of participants

- **Natasha Bayes** | Postdoctoral Researcher, University of Liverpool
- **Caspar Chater** | Research Leader, Crops and Global Change, Royal Botanic Gardens, Kew
- **Angela Dickinson** | Senior Research Fellow, University of Hertfordshire
- **Lisa Didier** | Engagement Officer, University of Oxford
- **Tracey Duncombe** | Knowledge Exchange Fellow, Transforming UK Food Systems Programme
- **Cathrina Edwards** | Research Group Leader, Quadram Institute Bioscience
- **Ocean Ellis** | Scientific Officer, Defra
- **Alyson Greenhalgh-Ball** | Founder, Conscious Impact
- **Ellie Harrison** | Senior Sustainability Consultant, Sustainable Restaurant Association
- **Saher Hasnain** | Researcher, University of Oxford
- **Sophie Higgins** | Head of Growth Platform, Kraft Heinz
- **Marcus Horril** | Research Assistant, University of Oxford
- **Pietro Iannetta** | Research Leader, Agroecology, James Hutton Institute
- **John Ingram** | Associate Professor in Food Systems, University of Oxford
- **Chhavi Jatwani** | Director of Research and Innovation, Food for Climate League
- **Laura Lane** | Doctoral Researcher, UK Food Systems Centre for Doctoral Training
- **Szymon Lara** | Lecturer, University of West London
- **Julie Lovegrove** | Director of the Hugh Sinclair Unit of Human Nutrition, University of Reading
- **Rosanne Maguire** | Research Fellow, University of Warwick
- **Josiah Meldrum** | Co-founder, Hodmedod's
- **Lucy Michaels** | BeanMeals Post-Doctoral Researcher, University of Hertfordshire
- **Gerald Midgley** | Professor of Systems Thinking, University of Hull
- **Gilbert Miki** | Researcher, University of Reading
- **Miro Mo** | Global Category Team, Kraft Heinz
- **Paul Newnham** | Director, SDG2 Advocacy Hub
- **Eleanor O'Kane** | Communications Coordinator, BeanMeals, University of Oxford
- **Silvia Pastorino** | Research Fellow in Nutrition, Sustainability and Health, London School of Hygiene and Tropical Medicine
- **Raghav Rajagopalan** | Research Associate, University of Hull
- **Roger Sykes** | Food Systems Programme Manager, University of Oxford
- **Ceanne Thompson-Deane** | Digital Communications Officer, SDG2 Advocacy Hub
- **Jackie Turner** | Communications & Engagement Officer, University of Oxford
- **Stavros Vlachos** | PDRA in Consumer Behaviour, University of Reading
- **Jing Zhang** | Researcher, University of Oxford
- **Monika Zurek** | Senior Researcher, University of Oxford

