Net Zero measures and implications for food safety: Summary of workshop discussions

Background and introduction

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Context

The UK has a legal commitment to reach Net Zero Carbon (NZC) emissions by 2050. This is a topic that has recently been building momentum, with clean growth being one of the four Grand Challenges set out by the UK Government.

The FSA Science Council is conducting a review to understand the extent to which some of the UK Net Zero Carbon measures could have implications for food safety over the next decade. They commissioned independent researchers Ipsos MORI and ADAS to support the delivery of the first two phases:

- Analysing the findings from a survey of experts ran by the Science Council. A document summarising the findings from the survey was shared with the Science Council at the end of Phase One of the research.
- Delivering a hybrid workshop with experts in different areas of the food system to understand the potential implications of Net Zero activities on food safety (Phase Two). This workshop was chaired by an independent facilitator, Andrew Curry.

This report will feed into the Science Council’s wider review of Net Zero measures and associated implications on food safety.

Research methodology

Following in depth interviews with five experts to identify key themes, **Phase One** consisted of an online survey which sought to canvas expert opinion regarding the UK's transition to a net zero carbon economy over the next decade. Thirty-one participants with expertise in sustainability/climate change, the food system, livestock/seafood, food safety, food manufacturing, research and development, nutrition, packaging, food science/engineering and other areas of expertise, responded to the survey.

A list of forty-one key Net Zero related activities to (or affecting) the food system was created using the findings from the survey. This list of activities was used as a basis for discussions in a hybrid workshop with experts during **Phase Two** of the review (see Appendix 1). During the workshop, activities were discussed in relation to eight food safety themes identified by the Science Council (see Appendix 2). The workshop took place on the 18 November 2021.

Workshop design

Thirty-one participants took part in the workshop. This included thirteen participants from the FSA and the Science Council, and eighteen external experts comprising academics as well as practitioners from agriculture and industry. This group brought together expertise ranging from food science, allergy and immunology, human and animal infectious diseases, zoonoses, food safety and nutrition, food sustainability, environmental impact of livestock and livestock management, veterinary, meat and livestock industry, meat and seafood industry, land use systems, soil and crops, agriculture and horticulture development.

The complete session plan for the workshop can be found in Appendix 3. The workshop started with general introductions, followed by the Miro board[1] exercise, where participants were introduced to the **forty-one activities** list and were asked to consider the potential food safety implications of each of the activities. During the workshop discussions, participants identified an additional activity bringing the number of activities with potential food safety implications to forty-two.

Fourteen activities which received the most interest during the Miro board exercise were shortlisted and divided into four groups for the breakout sessions that followed (see Table 1). These activities were explored in more depth

following this prioritisation exercise. This list is not a reflection of the importance given to each activity and is likely a result of the type of expertise in the room and participant awareness of each activity.

Participants were allocated to four individual breakout groups, each comprised of seven to eight participants. They were asked to discuss three or four activities associated with the themes identified by the Science Council. A list of the activities allocated to each breakout group is provided in Table 1.

Table 1. Net zero activities

Group No.	Net Zero activities
1	• Changed fertilizer practices including new formulations and more organic systems of production • Conversion of and reuse of food waste • Mixed rotations including livestock
2	• Development of circular economy principles to utilise waste streams • Land use change: Balance between for agriculture and for carbon storage • Reduced plastic packaging • Novel proteins in consumer diet: insects, cultured meat, meat and dairy substitutes
3	• Ocean farming and harvesting of seaweed • Novel animal feed: insect protein, soy replacement, new proteins • Vertical farming systems • Impact of bad harvests causing price and supply volatility
4	• Improving nutrient management • More plant-based diets • Reduction of inputs

Of the remaining twenty-eight activities, eighteen were briefly explored in plenary discussions based on the comments from the Miro board exercise. Due to the focus on high-risk activities, ten activities were not discussed during the workshop and did not receive any comments on the Miro board. However, it should be noted that this does not necessarily mean these activities pose no risk to food safety and may be a reflection of participant knowledge and expertise in specific areas. The activities that did not receive any comments are listed below:

- Activity 11 - Encouragement to protect soil biodiversity
- Activity 14 – More hedgerows, woodland and forests
- Activity 15 – Investment in Anaerobic Digestor plants
- Activity 18 – Greater integration of arable and livestock farming
- Activity 24 – Livestock and rumen microbes as part of the pangenome approach
- Activity 29 – Abstraction of slurry (to allow use of low emission slurry spreading machines)
- Activity 33 – Decarbonisation of crops grown in polytunnels
- Activity 37 – High-tech production systems (glasshouses, Controlled Environment Agriculture (CEA), hydroponics)
- Activity 39 – Energy use reduction measures
- Activity 40 – Land-based renewables and energy storage for on-farm and export

This report captures the views of participants who took part in the workshop, in the form of detailed notes. It represents a summary of notes and transcripts of the discussions from the workshop.

[1] A Miro board is an online tool similar to a whiteboard platform that allows different users with access to the platform to interact, share ideas and collaborate during live sessions.