

Annex 1: Methodology employed in the collation of evidence for this report

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This project was undertaken in four phases using the following methodology:

Phase 1

The early scoping Phase 1 (interviews and survey) sought expert input on activities over the next decade to achieve net zero carbon which are being made to primary production practices and technologies and which may, in turn, affect the whole food system. For example, possible changes to animal feed,

changes/innovations in soil management for carbon capture, changes to crop growing practices, and restoration of wetlands.

Five experts were interviewed about the broad landscape of carbon emissions reduction for the food system in July and August 2021:

- **Prof Tim Benton** (Chatham House): Director, Environment and Society Programme and is an IPCC and CCRA author.
- **Prof Jonathan Scurlock** (NFU) who has over 30 years' experience as a specialist in environmental science and energy policy, with particular expertise in bioenergy and other renewable energy technologies, climate change and the global carbon cycle.
- **Prof/Dr Emma Piercy** (FDF): Head of Climate Change and Energy Policy at the Food and Drink Federation (FDF), which recently announced their roadmap to net zero by 2040.
- **Prof Bob Doherty** (University of York): Professor of Marketing and Chair in Agrifood at the University of York Management School.
- **Pete Smith** (University of Aberdeen): Science Director of Scotland's Climate Change Centre of Expertise.

The WG6 Chair (Mrs Claire Nicholson) and deputy Chair (Prof Jonathan Wastling) interviewed these experts with assistance from the Science Council Chair (Prof Sandy Thomas) and a Science Council Member with expertise in agronomy, Prof Peter Gregory. These interviews helped frame the questions used in the follow-up survey.

A **targeted survey of a diverse range of experts** was then carried out across a range of disciplines relevant to sustainability, carbon reduction and the food system. This survey asked the participants to identify specific changes that will be happening to (or affecting) the food system over the next decade in the move towards net zero carbon.

The survey was sent to nearly 90 individuals and organisations and was also forwarded to other experts by respondents. There were 31 responses which were summarised by means of categorisation (incl. occupation, sector etc) in the Ipsos/MORI report attached as Annex B of the interim report (<https://science-council.food.gov.uk/Online%20Survey%20Responses>; FSA 2022c). Note that the comments in this annex are those of the participants and not necessarily those of

the Science Council.

Phase 2

Phase 2 consisted of an in-person workshop that took place on 18 November 2021 and focused on mapping out the food safety implications of activities in primary food production over the next decade to help achieve net zero carbon. Thirty-one participants took part in the workshop; this included thirteen participants from the FSA and the Science Council, and 18 external experts comprising academics as well as practitioners from agriculture and industry.

The event brought together wide-ranging expertise in 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 and livestock industry, meat and seafood industry, land use systems, soil and crops, agriculture and horticulture development.

The Ipsos/MORI written record of the workshop was provided as Annex C in the Interim Report. Again, the views expressed are those of the participants and not necessarily those of the Science Council.

Phase 3

This phase had two main elements:

1. Further engagement with experts to both confirm understanding of outcomes, due to particular activities, and to build up knowledge about activities that had not been fully addressed by Phase 2.
2. A workshop with representatives from other UK Government Departments whose remit means they have joint policy responsibility with the FSA on some decarbonisation activities that had been highlighted in Phase 2.

1. The following experts were interviewed:

- Angela Booth (AG Agri) – Livestock feed
- Cath Lehane (Red Tractor) – Wider view of farming developments
- Simon Thorpe (Red Tractor) – Wider view of farming developments
- Prof Ilias Kyriazakis (Queens University Belfast) – Livestock feed
- Nigel Edwards (Hilton Food PLC) – Farmed Fish
- Dave Robb (Cargill) – Farmed Fish
- Paul Morris (Mowi Feed) – Farmed Fish

- Nina Sweet (Consultant and formerly technical advisor at the Waste and Resources Action Programme (WRAP)) – Waste to land and anaerobic digestion
- Prof Louise Heathwaite (Chair of the Defra Science Advisory Council) – Science and policy in sustainable agriculture
- Tim Ellis (CEFAS) – Farmed fish and aquaculture
- Eliza Capuzzo (CEFAS) – Farmed fish and aquaculture
- Keith Jeffery (CEFAS) – Farmed fish and aquaculture
- Tom Jenkins (Innovate UK) – Innovative agriculture technology
- Andrew McLay (Innovate UK) – Innovative agriculture technology

2. On 20 June 2022 FSA held a workshop to engage with other Government Departments with an aim to establish where cooperation is needed, as many of the activities to help decarbonise food production with a food safety aspect straddle the divides between departmental remits and necessitate joint investigation. Representatives from the following Departments were invited.

- Department for Environment, Food and Rural Affairs (Defra)
- Department for Business, Energy and Industrial Strategy (BEIS)
- Health and Safety Executive (HSE)
- Government Office of Science (GO-Science)
- Department for Transport (DfT)

The Chair of the FSA Advisory Committee on Social Science (ACSS) also participated. The Department for Health and Social Care (DHSC) were unable to attend but were consulted on the outcomes from the workshop afterwards.

Phase 4

This phase involved additional reading by Peter Gregory of some refereed papers and a wide range of grey literature (particularly reports from international and UK agencies) recommended by survey respondents and the experts interviewed. As writing of the final report progressed, sections were commented on and revised by member of the working group. Members of the Science Council had five formal opportunities to comment on drafts before the final report was approved.