

FSA Science Council Annual Report

1 April 2024 - 31 March 2025

Foreword



This report provides a summary of the Science Council's activities in its eight year (1 April 2024 - 31 March 2025) and reflects on its successes and challenges over the past year, as well as a forward look into future activities.

In November 2024, we published the final report on the project Wider Impacts Beyond Food Safety Risk Assessment. This topic did not benefit from an extensive literature or knowledgebase. We employed a dedicated stakeholder expert workshop structured around case studies, in which wider impacts were considered against food safety considerations. It was evident during our workshop that there is growing expectation among stakeholders to see a move away from isolated assessments limited to a single dimension or question toward a more holistic application of the risk assessment output. Such considerations are facilitated in the UK by the Food Standards Act (1999) and by government policies but there is little published guidance on how such wider impacts might be incorporated in practice in the context of food safety. We underlined the importance of culture change and cross-government collaboration to arrive at optimal regulatory decisions especially in the context of wider impacts in public health and environmental impacts. It was noted that transparent decision making is especially important in the context of wider impact assessments to protect stakeholder trust in the process. Science Council members provided ongoing ad hoc advice and suggestions in response to FSA requests. Priority activities in the coming year will include an evaluation of the application of artificial intelligence in

food safety and authenticity, and work to better understand why the rates of foodborne infections (specifically looking at campylobacter as an example) are not falling.

I am most grateful to my Science Council colleagues for their continuing commitment and enthusiasm. Our work would not be possible without the support and encouragement of the FSA Team, especially the Chief Scientific Advisor, Professor Robin May, and the Secretariat, in particular Dr Kathleen Mooney and Paul Nunn.

Prof John O'Brien, Chair of the FSA Science Council

Introduction

This report provides a summary of the Science Council's activities in its eighth year (1 April 2024 – 31 March 2025) and reflects on its successes and challenges over that period as well as a forward look into future activities.

The Science Council is an independent expert committee of the Food Standards Agency (FSA), which consists of (at full membership) 10 to 12 expert members, including one Chair across a range of specialisms.

It provides high-level, expert strategic insight, challenge, and advice to the FSA's Chief Scientific Adviser and to the Board and executive of the FSA on the FSA's use of science to deliver FSA objectives.

The purpose of the Science Council is to help ensure that the FSA identifies, sources, integrates, and uses the best scientific evidence and expertise from all relevant disciplines to inform and deliver its work. FSA defines science in a broad and inclusive way, including the life, social and economic, digital and data sciences. This means the Science Council takes a multidisciplinary approach to deliver and inform its recommendations.

The Council meets four times a year in full plenary as well as ad-hoc meetings to project manage science reviews.

This year the Council completed a project on the "Wider Impacts Beyond Food Safety Risk Assessment" to explore the practicalities of how the FSA might include non-food safety risk impacts (such as animal welfare, the environment) in its decision-making process.

It also established its future work portfolio of projects on areas of interest for the FSA:

- artificial intelligence applications in food safety and authenticity.
- recent trends in foodborne disease.
- novel food contact materials.
- safety implications of using waste derived products in the food production.

These will run in series and the first started during the reporting period and is evaluating AI's implications for assuring food safety and authenticity.

The Science Council was part of a wider Tailored Periodic Review of FSA's Science Advisory Committees (SACs) during 2022 and 2023. Science Council was chosen for an independent review ([Published in June 2023](#)) to provide assurance to the FSA that its role and purpose is appropriate in addressing the future needs of the FSA, consumers and wider Government, and it is operating effectively.

The terms of reference for Science Council were updated in line with the recommendations from this Scientific Advisory Committee (SAC) review. They can be found on the Science Council website at <https://science-council.food.gov.uk/SCToR>.

Changes in Membership

There were no changes in Science Council membership up to the end of the reporting period (31 March 2025).

Science Council Work Programme

This section sets out the reviews and workshops which have been ongoing for the Science Council over the period of this report.

Considering Wider Impacts in Food Safety Risk Assessment

This project explored what the FSA would need to consider if it included wider impacts (environmental, nutritional etc) outside of food safety risk assessments when making a risk management decision (for example in approving regulated products). The project provides the FSA with an understanding of what would be required in future to factor these wider impacts into risk management decisions in a meaningful, consistent, and transparent way.

The Science Council Wider Impacts Project was established 16 November 2023 with the Terms of Reference being agreed by the Council February 2024.

The final report of this review was submitted by the Science Council Chair, Professor John O'Brien, to the FSA 12 September 2024 and the report was published on the Science Council website 25 November 2024.

[FSA Science Council Report of Working Group on Wider Impacts Beyond Food Safety Risk Assessment](#)

FSA response

The FSA Chief Scientific Adviser Professor Robin May responded to the Science Council Chair 15 October 2024.

[Chief Scientific Adviser Response to the Science Council report on 'Wider Impacts Beyond Food Safety Risk Assessment.'](#)

The FSA responded to the recommendations in the report 25 November 2024.

[The FSA response to the recommendations in the report.](#)

Artificial Intelligence Applications in Food Safety and Authenticity

The FSA has tasked the Science Council with evaluating AI's implications for food safety and authenticity. Specifically, the Council will explore how emerging AI technologies intersect with these areas, identifying key concerns for industry practitioners, civil society, and regulators.

While AI applications will have impacts across many industries and in society, this project will focus only on food safety and food authenticity implications arising from use in food production, manufacturing, distribution, and retail systems. In particular, the FSA seeks to develop an understanding of the assurance aspects of AI applications in such systems. The project will not include an assessment of AI applications in the regulatory environment.

The working group will examine safety by design opportunities associated with new technology introduction as well as the potential for unintended consequences (benefits and risks). A one-day workshop to gather and assess the available evidence, to be held in June 2025, will harness expertise in artificial intelligence technology and invite perspectives from food safety and authenticity application specialists in Food Production, Food Processing/Manufacturing, Food Distribution/Retailing, and the AI technology providers.

Phases

1. Scoping phase based on identification of technical experts and a survey to identify the major AI tools, current and potential future applications in food production, manufacturing, distribution, and retail including safety assurance, regulatory compliance, and validation verification processes. (March-May 2025).
2. Workshop to ascertain the current evidence and identify gaps in understanding associated with AI applications in food systems from production to retail. (June 2025).
3. Final report preparation. (June-July 2025) Timing The project duration will be 6 months from kick-off to final report.

Anticipated Outputs: The final report will identify the implications (food safety and authenticity; risks and opportunities) of artificial intelligence technology in food production, manufacturing, distribution, and retail that will impact UK food systems. The report will present a critical appraisal of the available evidence including the identification of gaps in understanding. While it may be possible to attach a level of importance to the findings including potential food safety and authenticity scenarios, the report will not propose solutions or policy options.

Science Council member advisory work

This included:

July 2024

- Offering to arrange a vertical farm visit for the FSA Board.

- Being consulted via a GO-Science survey on how academics engage with the UK Government to respond and share with their networks.

August 2024

- Responding to Strategic Insight Team (SIT) request for help in understanding what the future might look like for the FSA.

September 2024

- Amplifying the call for SAC applications through their networks.

October 2024

- Participate in an SIT exercise to produce the biannual FSA Business Delivery Group (BDG) which helps plan FSA strategy over the following 12 months.

March 2025

- In response to an SIT request actively participating in an FSA foresight workshop on radiological safety.

Future Work

Science Council has consulted the FSA Board in October 2024 to establish 3 key priority areas of work for Science Council and since then have refined this in discussion and the Chief Scientific Advisor, Chief Executive and FSA Chair to four key projects moving forward. Each project will last about 6-9 months, and they will run one after another.

- **artificial intelligence applications in food safety and authenticity:**
This has already been started and is expected to report in summer 2025.
More details can be found on page 7.

- **recent trends in foodborne disease:** This will start in the summer and will answer the question “Why are food-borne infections in the UK not going down?.”
- **novel food contact materials:** This is currently being developed but will focus on the emergence of new food contact materials including smart materials that can indicate the condition of food packed in them.
- **safety implications of using waste derived products in the food production:** This will investigate the potential food safety implications associated with utilising former waste streams into inputs to food and feed manufacture.

Annual Costs

The operation of the Science Council is funded by the FSA. For the financial year 1 April 2024 to 31 March 2025 – covering project costs, members’ expenses (travel, subsistence, and accommodation) and fees and administrative costs for meetings– total costs:

Total Science Council spend (rounded to nearest pound) **£46,095**

As of 1 October 2024, the Science Council moved from a fee system that remunerated members for work completed on Council business (as is the case for other FSA Science Advisory Committees) to an honorarium equivalent to 10 days work per financial year. Information on fee rates and expenses guidance which applied before 1 October 2024 is available in the [FSA SAC Guidance on Committee Fees and Expenses](#). Guidance on the Council’s honorarium is contained in the [Science Council Code of Practice](#).

Appendix I: Who are the Council Members?

The FSA’s Science Council is an independent expert committee comprising up to 10-12 members including a Chair. It was established in April 2017 and its role is to provide high-level, expert strategic insight, challenge, and advice to the FSA’s Chief Scientific Adviser (CSA), the Board and Executive on the FSA's use of science to deliver its objectives. The members during this reporting period were:

Prof John O'Brien (Chair)

[Prof J O'Brien](#) is Founder of the Food Observatory, UK and a Visiting Prof at Ulster University, Coleraine. In his previous career to 2018 he led the Nestlé global competence centre for Food Safety & Quality and the company's Food Safety and Integrity Research Programme in Lausanne, Switzerland.

Claire Nicholson

[Claire Nicholson](#) is the Science Council member representing the consumer interest and has held a range of roles representing consumer interests including having been an Independent Director to represent Consumer Interests on the Board of Red Tractor.

Prof Jonathan Wastling

[Prof Wastling](#) is Deputy Vice-Chancellor at Brunel University, London. He is a Prof of Infection Biology specialising in human and animal infectious diseases with a long-standing interest in food security.

Prof Peter Gregory

[Prof Gregory](#) is Emeritus Prof of Global Food Security at the University of Reading having previously been Prof of Soil Science at the same university. He is chair of the Recommended List Board for the AHDB and the board of Crops for the Future UK CIC.

Prof Michael Tildesley

[Prof Michael Tildesley](#) is a Prof in the Zeeman Institute for Systems Biology and Infectious Disease Epidemiology Research at the University of Warwick. His research focuses upon the development of models of infectious diseases and their utility as predictive tools.

Prof Simon Pearson

[Prof Simon Pearson](#) is Prof of Agri-Food Technology and Founding Director of the Lincoln Institute of Agri-Food Technology at the University of Lincoln. He specialises in interdisciplinary research that spans the agri-food system, including agri-food robotics, use of digital systems in food manufacturing, the application of AI across the food chain and data governance in complex systems.

Prof Peter Borriello CB

[Prof Peter Borriello](#) CB has had a long career in research and has led human and veterinary national institutions. These have included the Public Health Laboratory Service Central Public Health Laboratory, the Health Protection Agency Centre for Infections, the Veterinary Laboratories Agency, and most recently Chief Executive of the Veterinary Medicines Directorate.

Prof Tom Oliver

[Prof Tom Oliver](#) is the Research Dean for Environment at the University of Reading and a Prof of Applied Ecology. He has advised Defra in the UK government, helping them to set up a '[Systems Research Programme](#)', and the Cabinet Office on '[chronic risks](#)' to complement the UK National Security Risk Assessment.

Prof Richard Smith

[Prof Richard Smith](#) is Prof of Public Health Economics and Deputy Pro Vice Chancellor for the Faculty of Health and Life Sciences at the University of Exeter. He was previously the University's Deputy Vice-Chancellor for Strategy Integration and Resources, and prior to Exeter was Dean of the Faculty of Public Health & Policy at the London School of Hygiene and Tropical Medicine.

Jacqueline Healing

[Jacqueline Healing](#) is a Food scientist with over 40 years' experience directing and leading food safety programmes for food retailers globally.

Prof Emily Burton

[Prof Emily Burton](#) is Prof of Sustainable Food Production and co-lead for Nottingham Trent University Sustainable Futures Research Theme. She has worked alongside the poultry industry on research programmes for 25 years and now leads the University's Poultry Nutrition Research Unit.

Members' interests are recorded in the Science Council register of interests which can be found on the Science Council website at <https://science-council.food.gov.uk/Rol>. The register of interests for December 2024 is attached as Appendix III.

Appendix II: Science Council self-assessment against good practice guidelines for the

independent scientific advisory committees

Twenty-nine principles of good practice in the FSA [Good Practice Guidelines for Science Advisory Committees](#) (SACs) have been developed by the Chairs of the SACs that advise the FSA. These were reviewed and updated in 2012.

Different committees have different duties and discharge those duties in different ways. Therefore, not all the twenty-nine principles set out below will be applicable to all of the committees, all of the time. This list of principles is considered by each committee annually as part of the preparation of its annual report and is attached as an Appendix to it.

Response by the FSA Science Council for the period of its Annual Report (from 1 April 2024 to 31 March 2025)

The role of the Science Council is to provide high-level, expert strategic insight, challenge and advice to the FSA's Board and executive of the FSA and Chief Scientific Adviser (CSA) on the FSA's use of science to deliver FSA objectives. Its role does not require it to carry out risk assessments or detailed investigations of scientific dossiers on specific risks, products, or processes.

It did, however, engage with experts to consider the requirements to assess wider impacts in risk-based food safety assessment, and in doing so, sought to abide by the principles of good practice developed by the FSA and Government Office of Science.

SAC Principles

Defining the problem and the approach

1. The FSA will ensure that issues it asks a SAC to address are clearly defined and take account of stakeholder expectations in discussion with the SAC Secretariat and where necessary the SAC Chair. The SAC Chair will refer back to the FSA if discussion suggests that further iteration and discussion of the task is necessary. Where a SAC proposes to initiate a piece of work, the SAC Chair and Secretariat will discuss this with the FSA to ensure the definition and rationale for the work and its expected use by the FSA are clear.

Complies: The FSA's CSA attends most Science Council meetings and discusses the rationale for the questions posed to or by the Council with them. The Science Council Chair also has regular meetings with the FSA's CSA, Chair, and the Chief

Executive where any questions from the FSA or initiated by the Council are considered further. FSA contributions to Working Groups (such as meetings with staff who lead on relevant policy/science areas and contributions to meetings) enables ongoing discussion and clarification.

Seeking Input

2. The Secretariat will ensure that stakeholders are consulted at appropriate points in the SAC's considerations. It will consider with the FSA whether and how stakeholder views need to be taken into account in helping to identify the issue and frame the question for the committee.

Complies: Science Council engages consults expert communities where required for its work (and especially where that work takes investigations outside the range of expertise represented by Science Council members. Specifically for the review of wider impacts in food safety risk management Science Council engaged with key experts in a workshop scenario to discuss factors that needed consideration using three case studies. This had been agreed in discussion with the FSA Chair and CSA.

3. Wherever possible, SAC discussions should be held in public.

Complies: Science Council plenary meetings over this reporting period were not held in public, although external experts were invited to a workshop for the wider impacts review. The majority of meetings held by Science Council are closed but relate to projects which have their final reports published online (such as the report of the wider impacts review on the Science Council website).

4. The scope of literature searches made on behalf of the SAC will be clearly set out.

Complies: The Science Council's work over the last year has not required comprehensive literature searches as this has largely been workshop based. Statements of fact or evidence are all supported by literature sources where appropriate and the full list of references is provided at the end of these reports.

5. Steps will be taken to ensure that all available and relevant scientific evidence is rigorously considered by the committee, including consulting external/additional scientific experts who may know of relevant unpublished or pre-publication data.

Complies: The Science Council does not routinely consider detailed primary scientific documents, but it does rigorously examine the evidence that is presented. Members and the Secretariat are expected to bring relevant additional materials to the attention of the Council. During the initial stages of the Wider Impacts Project experts in the three case study topics were consulted and they provided insight and guidance on key publications for consideration and were also brought into a workshop environment to take a deeper dive into relevant issues.

6. Data from stakeholders will be considered and weighted according to quality by the SAC.

Complies: The Science Council weighs all relevant information according to quality, irrespective of its source. Experts engaged with for the Wider Impacts Project and “Future of Food Safety” workshop were selected based on their type and degree of expertise, consulting with Science Council and FSA officials to find the best fit. For the wider impacts project all participants were asked to provide a declaration of potential interests before participating in the review.

7. Consideration by the Secretariat and the Chair (and where appropriate the whole SAC) will be given to whether expertise in other disciplines will be needed.

Complies: The Science Council kept this principle under review, and it has the option to co-opt or invite external input where necessary, through mechanisms such as the FSA’s Register of Specialists.

As the Wider Impact Project covers a diversity of food issues the Science Council has consulted with external experts in many fields including animal feed, aquaculture, novel proteins, and sustainability.

8. Consideration will be given by the Secretariat or by the SAC, in discussion with the FSA, as to whether other SACs need to be consulted.

Complies: Science Council consults the FSA SACs as appropriate when carrying out its work. The Council has regular engagement with other FSA SACs and, as well as the Council Chair attending the regular workshops of SAC Chairs and the cross-government Chairs of SACs, Council members are paired with a SAC relevant to their expertise, for regular updates and cross-engagement. The ACSS has been frequently consulted on the social science aspects of Science Council work, including their Chair Julie Hill who observes plenary meetings of Science Council and participated in the wider impacts review.

Validation

9. Study design, methods of measurement and the way that analysis of data has been carried out will be assessed by the SAC.

10. Data will be assessed by the committee in accordance with the relevant principles of good practice, e.g. qualitative social science data will be assessed with reference to guidance from the Government's Chief Social Researcher.

11. Formal statistical analyses will be included wherever appropriate. To support this, each SAC will have access to advice on quantitative analysis and modelling as needed.

12. When considering what evidence needs to be collected for assessment, the following points will be considered: the potential for the need for different data for different parts of the UK or the relevance to the UK situation for any data originating outside the UK; and whether stakeholders can provide unpublished data.

13. The list of references will make it clear which references have been subject to external peer review, and which have been peer reviewed through evaluation by the Committee, and if relevant, any that have not been peer reviewed.

9-13. Science Council complies, to the extent these criteria apply to its work: The Science Council does not generally consider the type of detailed risk assessment and analyses of scientific data that are the primary focus of these criteria. However, it does advise on foresight, best practice, governance, and assurance of the FSA's use of science.

Uncertainty

14. When reporting outcomes, SACs will make explicit the level and type of uncertainty (both limitations on the quality of the available data and lack of knowledge) associated with their advice.

15. Any assumptions made by the SAC will be clearly spelled out, and, in reviews, previous assumptions will be challenged.

16. Data gaps will be identified and their impact on uncertainty assessed by the SAC.

17. An indication will be given by the SAC about whether the evidence base is changing or static, and if appropriate, how developments in the evidence base might affect key assumptions and conclusions.

14-17. Science Council complies to the extent these criteria apply to its work: The Science Council does not generally consider the type of detailed risk assessment and analyses of scientific data that are the primary focus of these criteria. However, it does advise on foresight, best practice, governance, and assurance of the FSA's use of science. In reporting the results of its strategic reviews, the Science Council always seeks to be clear about limitations on data informing conclusions and any caveats on their conclusions.

Drawing Conclusions

18. The SAC will be broad-minded, acknowledging where conflicting views exist and considering whether alternative interpretations fit the same evidence.

Science Council complies to the extent these criteria apply to its work: This is implicit in the Science Council's role to provide high-level, expert strategic insight, challenge, and advice to the FSA's Board and executive and CSA on the FSA's use of science to deliver FSA objectives. For the wider impacts project, the Council sought several perspectives where it was felt necessary to get a rounded view of each case study.

19. Where both risks and benefits have been considered, the committee will address each with the same rigour, as far as possible; it will make clear the degree of rigour and uncertainty, and any important constraints, in reporting its conclusions.

Science Council complies to the extent these criteria apply to its work: The Science Council does not carry out formal assessments of risk and/or benefits as such. It would consider the advantages and disadvantages of different options in making its recommendations. The Science Council will always make clear any caveats or limitations on its advice.

20. SAC decisions will include an explanation of where differences of opinion have arisen during discussions, specifically where there are unresolved issues, and why conclusions have been reached. If it is not possible to reach a consensus, a minority report may be appended to the main report, setting out the differences in interpretation and conclusions, and the reasons for these, and the names of those

supporting the minority report.

Science Council complies to the extent these criteria apply to its work:

This is covered explicitly in the [Science Council Code of Practice](#).

21. The SAC's interpretation of results, recommended actions or advice will be consistent with the quantitative and/or qualitative evidence and the degree of uncertainty associated with it.

Science Council complies to the extent these criteria apply to its work:

Science Council aims to follow this principle. When reporting Science Council clearly caveats its recommendations, setting out the uncertainty and limitations on the conclusions it has reached given the evidence (qualitative or quantitative) it used to reach them.

22. SACs will make recommendations about general issues that may have relevance for other committees.

Science Council complies to the extent these criteria apply to its work:

This is implicit in the Science Council's role to provide high-level, expert strategic insight, challenge and advice to the FSA's Chief Scientific Adviser, the Board and the executive of the FSA on the FSA's use of science to deliver its objectives.

Communicating SAC's conclusions

23. Conclusions will be expressed by the SAC in clear, simple terms and use the minimum caveats consistent with accuracy.

Science Council complies to the extent these criteria apply to its work:

Given the high-level strategic advice the Science Council provides; this tends to lend itself to minimal use of jargon and technical terms and it aimed to make its reports clear and concise to the lay audience. The Science Council's published papers and reports are reviewed against accessibility criteria so that the Council's work is inclusive.

24. It will be made clear by the SAC where assessments have been based on the work of other bodies and where the SAC has started afresh, and there will be a clear statement of how the current conclusions compare with previous assessments.

Science Council complies to the extent these criteria apply to its work:

Science Council reports, meeting papers and minutes made clear the origin of issues under discussion. It puts its conclusions in the context of other work where

appropriate.

25. The conclusions will be supported by a statement about their robustness and the extent to which judgement has had to be used.

Science Council complies to the extent these criteria apply to its work:

The Science Council made clear the basis for its recommendations and any assumptions and caveats.

26. As standard practice, the SAC Secretariat will publish a full set of references (including the data used as the basis for risk assessment and other SAC opinions) at as early a stage as possible to support openness and transparency of decision-making. Where this is not possible, reasons will be clearly set out, explained and a commitment made to future publication wherever possible.

Science Council complies to the extent these criteria apply to its work:

The Science Council did not carry out risk assessment or assessment of detailed scientific data of the type that is the focus for this criterion. However, it does include a list of references in its review reports (e.g. wider impacts review).

27. The amount of material withheld by the SAC or FSA as being confidential will be kept to a minimum. Where it is not possible to release material, the reasons will be clearly set out, explained and a commitment made to future publication wherever possible.

Science Council complies to the extent these criteria apply to its work:

The Science Council followed this criterion.

28. Where proposals or papers being considered by the FSA Board rest on scientific evidence produced by a SAC, the Chair of the SAC (or a nominated expert member) will be invited to the table at the Open Board meetings at which the paper is discussed. To maintain appropriate separation of risk assessment and risk management processes, the role of the Chairs will be limited to providing an independent view and assurance on how their committee's advice has been reflected in the relevant policy proposals, and to answer Board Members' questions on the science. The Chairs may also, where appropriate, be invited to provide factual briefing to Board members about particular issues within their committees' remits, in advance of discussion at open Board meetings.

Science Council complies to the extent these criteria apply to its work:

This did not apply directly, since the Science Council did not carry out full risk assessments or detailed reviews of scientific evidence. This is because the Science Council reviews topics of strategic science interest and presents recommendations based on those reviews but does not carry out risk assessment or assessment of detailed scientific data.

However, the Science Council Chair does normally present at an Open Board meeting an annual report of its activity. Also, final reports of Science Council projects (where commissioned by the Board) are presented to the Board by the Science Council Chair and the Project Lead (usually).

During this reporting period, however, no review final report commissioned by the FSA Board was produced.

The Science Council Chair (Prof. John O'Brien) reported Science Council activity for the previous reporting period (FY23/24) to a closed FSA Board retreat on 15 October 2024. For this reporting period (FY24/25) this Science Council Chair will discuss this Annual Report with the Board at their closed retreat on 16/17 September 2025.

29. The SAC will seek (and FSA will provide) timely feedback on actions taken (or not taken) in response to the SAC's advice, and the rationale for these.

Science Council complies to the extent these criteria apply to its work:

The FSA typically provides an initial response and action plan once it has received recommendations at the end of a Science Council review and provides feedback on delivery against that action plan (typically 12 months from the review report being presented to the FSA). The wider impacts report was published during this reporting period and the FSA provided its response to the recommendations in that report.

Appendix III: Science Council register of interests during December 2024.

[SC Annual Report FY 24-25 - Annex III - Register of Interests \(10 December 2024\)](#)