Report

Terms of Reference and Workshop for AI in Food Production Project

Artificial Intelligence Applications in Food Safety and Authenticity (2025)

Terms of Reference

AI in Food Production

Artificial Intelligence Applications in Food Safety and Authenticity

Artificial intelligence (AI) technologies are being developed and applied in business and civil society at an accelerated pace. It is an opportune time to ask how such technologies might impact the Food Standards Agency's (FSA) Strategic Goals: Food is safe; Food is what it says it is; Food is healthier and more sustainable. This Science Council project will focus on the implications of AI for the first two strategic goals, namely food safety and food authenticity.

The successful introduction of new technologies in the food sector will support, or be impacted by, several of the UK Government Missions as described in the Plan for Change.1 Artificial Intelligence is one of the five critical technologies identified in the UK Science and Technology Framework.2 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. It is proposed to examine assurance according to the need to assure the biological (including microbiological and allergenic hazards) and chemical safety of foods (aligned with FSA Strategic Goal No. 1) and the assurance that food is what it says it is (FSA Strategic Goal No 2). The project will not include an assessment of AI applications in the regulatory environment.

The working group will examine safety by design opportunities (e.g. PAS 440) 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 and Food Distribution/Retailing sectors.

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.

Governance/Leadership

Leader: Simon Pearson; Deputy Leader: Peter Gregory; Key Members: Clarie Nicholson, John O'Brien. All Science Council members are expected to make a contribution to the project.

Secretariat

Kathleen Mooney

Paul Nunn

Carol Scott

FSA participants

Robin May (Chief Scientific Advisor)

Julie Pierce

Resources/Funding

Workshop

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.

References

1. HM Government (2024), PLAN FOR CHANGE Milestones for mission-led government, 5 December 2024 assets.publishing.service.gov.uk/media/6751af4719e0c816d18d1df3/Plan_for_Change.pdf

2. HM Government, Department for Science, Innovation & Technology (2023), Science & Technology Framework, www.gov.uk/government/publications/uk-science-and-technology-framework