Food Standards Scotland

For safe food and healthy eating

Science, Evidence and Information strategy

October 2022 (update)

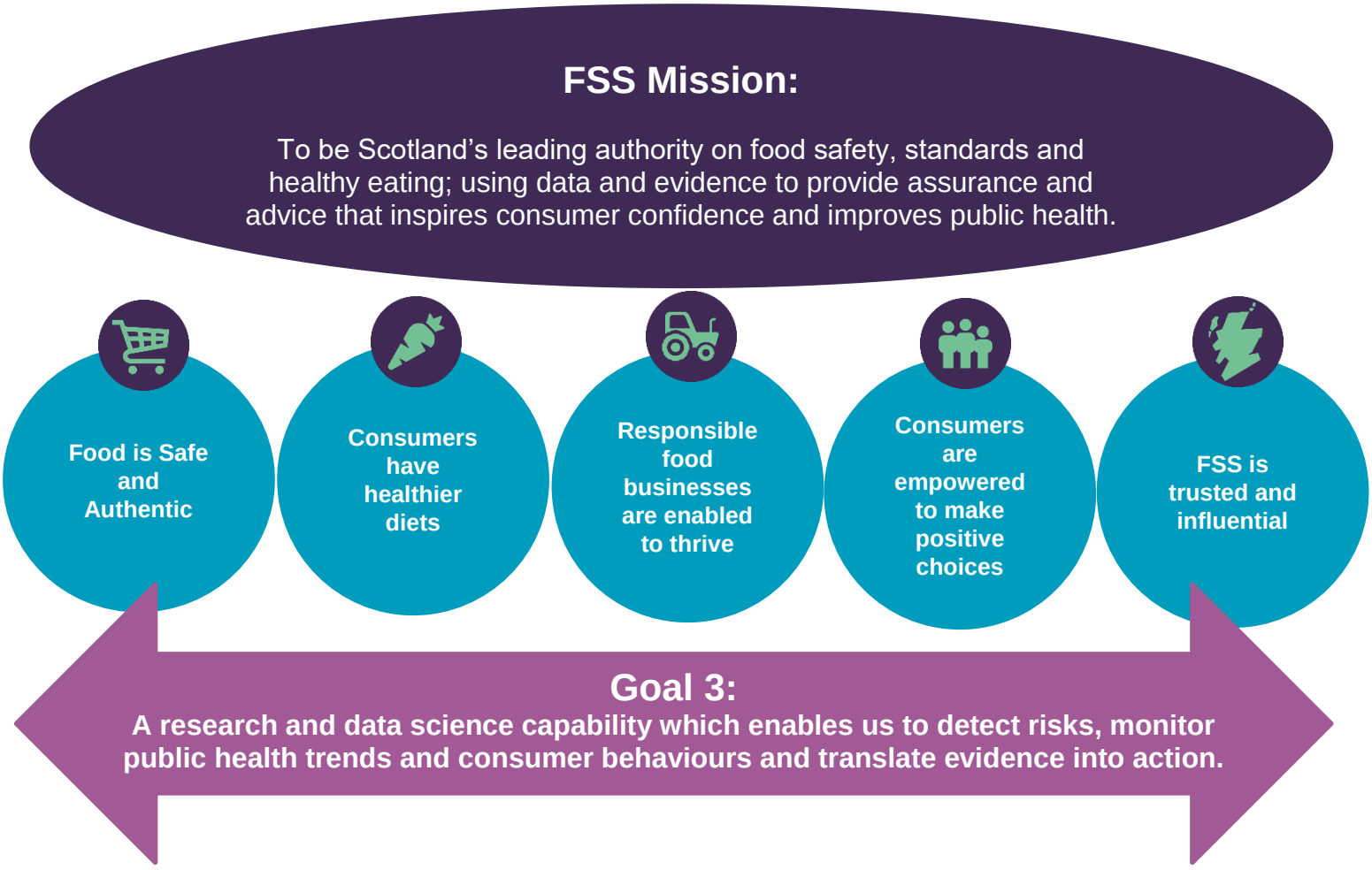
Contents

Introduction

Our second strategy to 2026; Healthy, Safe, Sustainable: Driving Scotland's Food Future[1] outlines our vision for a safe, healthy and sustainable food environment that benefits and protects the health and well-being of everyone in Scotland. We have set out five key outcomes which underpin our vision and contribute to the Scottish Government's National Outcomes. These are:

- Food is Safe and Authentic
- Consumers have Healthier Diets, Responsible Food Businesses are Enabled to Thrive
- Consumers are Empowered to Make Positive Choices About Food
- FSS is Trusted and Influential.

Our mission is to be Scotland's leading food authority, guided by a set of values which include our long standing commitment to be evidence based – ensuring all of our work is underpinned by robust science and data, and that the evidence used to inform our decision making is communicated effectively. Goal 3 of our strategy describes our aspirations for science and evidence in FSS, and how it will be used to achieve our five outcomes.



[1] Healthy, Safe, Sustainable: Driving Scotland's Food Future (foodstandards.gov.scot)

Our Science Evidence and Information Vision

Our Science, Evidence and Information (SEI) strategy aims to describe how FSS uses SEI to deliver our five strategic outcomes, to inform how we manage Scottish public health risks effectively and identify opportunities to improve our diet and food safety and standards.

" We will use science, evidence and information to develop, challenge and evaluate our policies, to tackle risk and promote opportunity in food safety, food standards and diet and nutrition both today and tomorrow."

Our definition of Science Evidence and Information

Our definitions of science, evidence and information, which can be quantitative and/or qualitative will comprise:

- **Science:** appropriate application of physical, natural and social science using both established and novel methodologies to test theoretical principles;
- **Evidence:** all of the data we collect and the outputs of its analysis;
- **Information:** facts, intelligence and insights generated through surveillance, monitoring, market research, and opinion (stakeholder, business, political, web analytics, observational data).

FSS will use ensure the use of SEI is robust and appropriate to inform the creation, development and evaluation of policy, ensuring an open and transparent approach which acknowledges any uncertainties, gaps and assumptions.

Our Guiding Principles for Using Science, Evidence and Information

Our SEI strategy is based on five key principles, against which we judge everything that we do, and by which all our staff will conduct their work, ensuring that SEI is gathered and used effectively and that it is fully aligned to our strategic priorities.

Targeted to our strategic priorities to reduce risks associated with food and feed: being informed by stakeholder, business and consumer participation and opinion.

High impact by contributing to those areas that will lead to improving public health: bringing maximum benefits and opportunities for stakeholders, business

Forward looking by utilising the latest science, evidence and information and building our capability to provide value.

Trusted and robust through rigorous peer review and consultation with stakeholders, businesses and consumers.

Integrated transparently through engagement with the wider science community and in our risk management decision making.

Prioritising our Science, Evidence and Information

Our aim is for all FSS staff to identify, prioritise and investigate the key SEI that we need to conduct or gather on an annual basis as part of the business planning process. This will balance work focused on our immediate priorities and knowledge gaps with more innovative and strategic work.

We will:

- Identify and make use of existing SEI which is relevant to our needs; ensuring resources are directed to evidence gaps and technologies which will have the greatest impact on our strategic priorities;
- Promote, across FSS, intelligent and shared use of data, information and analytics, to understand current and emerging risks, and optimise value from the data we collect through statutory surveillance and monitoring;
- Utilise data from a wide range of sources including our own scientific surveillance methods, information generated through our enforcement, operations, audit and food crime activities and our wider partnership working particularly with other Scottish Government regulators such as Marine Scotland and SEPA, with the food and drink industry and with Local Authorities;
- Be forward looking by considering the future food requirements of consumers to ensure that food trends, their interests and concerns are properly understood and protected by FSS (such as population growth, climate change, ageing population, and food behaviors);
- Publish our current research and surveillance projects and future evidence needs to promote collaboration, minimise duplication, and ensure best use of resources;
- Where possible, make our datasets and analysis available to the scientific community to support wider research needs.

Developing our People and Skills

The nature of food supply and emerging and re-emerging food risks are constantly changing. FSS must continually assess our capacity and capabilities to ensure that we can meet current and future challenges related to our strategic outcomes and achieve our goals. We will ensure that we have, or have access to, highly skilled scientific staff across a range of disciplines. We will also foster an environment for interdisciplinary team working across FSS.

We will:

Maintain and develop the science capabilities within FSS by:

- Providing opportunities for staff development and training, conducting regular skills audits to ensure the scientific expertise is in place to face future challenges (including emerging risks, uncertainties and incidents);
- Promoting engagement between our scientists and stakeholders to raise awareness of our science and ensure its relevance to Scotland’s food interests;
- Being receptive to new science based technologies, innovative approaches and transformational methods of information gathering and analysis;
- Using our skills to make our data and evidence easy to use and analyse;

- Building communication plans into the development of all of our evidence gathering activities, and developing the skills of all FSS staff to enable clear communication of the SEI on which we base our decisions and policies;
- Ensuring our scientists are appropriately trained in the appropriate application of Equality Impact Assessments (EQIA) in their work;
- Being well informed, skilled and professional in our approach.

Working with others

We will work with others to increase value and achieve the best outcome for consumers in Scotland through strategic partnerships which enable us to deliver ambitious objectives and cross-cutting impact.

We will

- Work with others to build the capabilities of the science community in Scotland (e.g. research institutes, universities, industry etc.);
- Work across the UK and elsewhere so that existing expertise, skills and knowledge in our areas of interest will be available now and in the future;
- Utilise a variety of communication techniques (e.g. blogs, twitter, wider media, public talks/education/science fairs etc.) to increase engagement and communication with consumers, the science community, industry and stakeholders;
- Build increased analytical expertise in Scotland, through partnership working, (e.g. with Public Analyst laboratories, Marine Scotland, and SEPA) to add value;
- Understand and work with consumers, food businesses, enforcement partners and others in the food chain to support behaviour change and build on spreading good practice;
- Build and maintain strategic scientific partnerships and networks, through existing collaborations (e.g. with the FSA and other partners across Scottish and UK Governments), through new scientific collaborations, partnerships with international food agencies and links with other science funders to add value to what we do.

Governance of our Science, Evidence and Information

We have developed a **science and evidence and information governance statement** to ensure that our staff is transparent in how we deal with uncertainty in our SEI and will support our risk analysis framework. Our governance statement outlines *the methods by which all our staff assure and demonstrate that science, evidence, information and analysis are obtained, interpreted, used and communicated appropriately and effectively by FSS.*

The key principles underpinning our SEI governance statement link to the values and guiding principles outlined in our strategy and corporate plan and are summarised in the table below. To support us in ensuring appropriate use of the SEI that we plan to collect, our staff use **a science and evidence checklist** at the beginning of any new work or project, to consider the appropriate use of the SEI that we plan to collect for example what will it achieve and how will it be communicated through the development of a communication plan and subsequent policy papers, guidance and proposals which deal with or include science-based issues. The checklist also deals with the application of SEI to risk assessment, using robust and appropriate SEI and consideration of the different sources of evidence.

Summary of our science, evidence and information governance statement

Science and Evidence Governance Principles	**We will achieve this by:**	
We will be open and transparent in identifying issues and defining our needs	Considering the appropriate use of SEI that we plan to collect and how it will be communicated. We will identify the evidence we need through the expertise of our staff and input from relevant Scientific Advisory Committees, other experts and stakeholders, through regular dialogue, attending workshops/meetings, and peer review of our research ideas and requirements.	Prioritising our evidence needs annually and publish a forward evidence plan setting out the work we plan to commission and inviting comments on existing data that may exist and can address the identified needs, opportunities for collaboration, and whether we have defined our evidence needs in the best way.
We will use quality assurance in commissioning and gathering science, evidence and information	Adhering to the *Scottish Government Pubic Sector Procurement in Scotland* which set out the guidelines that govern our purchasing of goods and services including science, evidence and information. We will procure our science, evidence and information, wherever appropriate and as determined by the financial cost of the project, through open competition.	Ensuring the quality of our commissioned science and evidence through appropriate quality assurance (including accreditation of methods). We require all scientific research we fund to comply with the *Joint Code of Practice for Research* which sets out standards for the quality of science and the quality of research processes that contractors use.
We will ensure evaluation of our science, evidence and information	Developing evaluation plans for commissioned science, evidence and information at the onset of the commissioning process.	Ensuring the quality, fitness-for – purpose and impact of the work we commission by peer review of research proposals, final reports and outputs.
We will welcome and seek challenge	Ensuring that our science, evidence, information and analysis is informed by input, scrutiny, challenge by experts and other stakeholders through direct liaison and appropriate consultation.	Inviting stakeholder input on our forward science, evidence and information needs.
Publication and Use of our science and evidence	Ensuring that we publish current details of the science, evidence and information that we are funding.	Publishing, wherever possible, all reports and results on our website at www.food.scot and promoting the publication of the research we commission in open access academic journals, as open data, or in data archives.

Using Science, Evidence and Information to Inform our Risk Analysis Functions

From 1 January 2021, Food Standards Scotland (FSS) and the Food Standards Agency (FSA) became responsible for the risk analysis functions that are undertaken by the European Commission and the European Food Safety Authority for EU countries. Our joint risk analysis process is used to assess food and animal feed safety in the UK. This process is based on international CODEX principles and definitions for risk analysis for food safety for application by Governments[2].

Both FSS and the FSA will use risk analysis to assess the risk associated with food and feed, including chemical, microbiological, radiological and allergen risks and provide evidence-based advice and recommendations to others including ministers, consumers and enforcement officers.

The risk analysis process is required to assess food safety in a wide range of circumstances, for example, if:

- bacteria (e.g. Campylobacter), contaminants (e.g. acrylamide), allergens (e.g. peanut) or radiological hazards are present in food;
- food is not labelled correctly;
- a business wants to bring a new regulated product to market (e.g. a food or feed additive, flavouring or novel food. In these cases the risk analysis process is applied to make recommendations to ministers for approvals or authorisations.

Risk analysis is the process of estimating the impact of these risks to human health, finding ways to control these risks, and communicating the risks and our recommendations for controlling them.

As well as food safety, the risk analysis process also takes into account other factors such as consumers' wider food interests, animal welfare, environmental and economic impacts. FSS has developed a social research programme to support us in working with the FSA to determine the 'Other Legitimate Factors' (OLFs) which may be relevant to the various issues which need to be considered through the risk analysis process.

What is risk analysis?

Risk analysis is a structured approach to the identification and management of public health hazards, where we assess the risk of hazards in our food and feed. We use this process to look at the risks from microbiological hazards (such as E. coli or salmonella), chemical hazards (such as heavy metals or chemical washes), physical hazards and allergens. The same process is also used to authorise new products that business want to place on the market, such as new types of flavourings, enzymes or additives in feed or food. It has three elements; risk assessment, risk management and risk communication, which are described below. A flow diagram summarising the process is also provided at **Annex 1**.

Risk assessment involves using a scientific approach to identify hazards and estimate the potential risk to human and/or animal health. Risk assessment evaluates the likely exposure to risks from food and other relevant sources. It is made up of two parts where we assess the severity of the risk (for example what kind of illness it may cause) combined with the likelihood it would make you ill (for example looking at how much contamination there is, who might be eating the product etc). These two components are combined into a risk

[2] http://www.codexalimentarius.org

characterisation, which also lists any uncertainties (e.g. we might not know how commonly eaten a new type of food is).

FSS scientists work closely with FSA risk assessors to deliver risk assessments, in consultation with external experts from our independent UK Scientific Advisory Committees and Joint Expert Groups. Risk assessments will generally be carried out on a four-nation basis, although in some cases, FSS may lead or commission specific risk assessments for issues which are considered to be a particular priority in Scotland.

FSS scientists use and develop their professional skills to support the risk assessment process by:

- maintaining an up to date awareness of current or potential hazards under our remit and the evidence base relating to how these risks may impact on Scotland;
- regularly engaging with relevant Scientific Advisory Committees (SACs), research funders and programs, individual scientists, with other Government departments, stakeholders (including industry) and consumers;
- ensuring Scottish interests are taken into account in the UK risk analysis process by supporting the framing of problem formulation statements and risk assessment questions for SACs and contributing data that is relevant to Scotland (e.g. specific industry information or data from consumer research) ;
- supporting the preparatory work for a SAC risk assessment e.g. sifting scientific papers for review or providing resource to help draft reports to deliver an assessment within a shorter timeframe.

In addition to the outputs of food safety risk assessments, it may be necessary to call on the advice of economists, operational researchers, social researchers and statisticians to support the evidence base through the identification and analysis of OLFs which may be relevant to the risk management decisions being considered to control the risk.

Our Chief Scientific Adviser (CSA) provides governance over the quality and integrity over the scientific evidence used to support risk analysis and for ensuring the necessary expert advice is available to us.

Risk management is the consideration of potential measures to either prevent or control the risk. It takes into account the risk assessment and OLFs related to consumers' wider interests in relation to food to identify an appropriate response.

FSS risk managers, working collaboratively with the FSA on UK-wide issues, consider which approaches could be implemented to manage and control the risk. They will consult with interested parties and take into account any factors relevant for the protection of consumers' health and their wider interests in relation to food.

The risk manager's advice can be used to make recommendations to Ministers on changes to legislation, or to develop guidance or consumer advice on issues affecting businesses and the public.

On more significant issues, our Board will be responsible for agreeing risk management recommendations in Scotland and providing advice to Scottish Ministers and others. The Board will also maintain oversight of how the risk analysis process is working in Scotland, to ensure it remains robust, transparent and based on the latest scientific evidence.

Risk communication is the exchange of information and opinions throughout the risk analysis process between risk assessors, risk managers, consumers, industry, the academic community and other interested parties.

It includes understanding the concerns of consumers and other stakeholders, the publication of risk assessment findings and other supporting evidence, and the distribution of final advice.

Dealing with Uncertainty

There is often an element of uncertainty in both science and decision-making. In the interests of protecting public health from emerging food safety risks, the precautionary principle allows us to take action even if there isn't time or data to undertake a full risk assessment. When this happens, temporary risk management measures can be put in place provided they are proportionate, feasible and no more restrictive to trade than they need to be.

Enhancing our risk analysis

As part of the joint FSS/FSA risk analysis process, we will continue to follow international best practice when considering food and feed safety risks. We've adapted and strengthened our approaches, for example in:

- ensuring a clear separation between risk assessment and risk management functions,
- an expanded role for the UK's independent Scientific Advisory Committees which have been strengthened by recruiting new experts and establishing three new joint expert groups, and
- a new process coordinated across GB for evaluating applications for regulated products such as food and feed additives, enzymes, flavourings, genetically modified (GM) food and feed, and novel foods.

Annex 1. The UK Risk Analysis Process

FOOD AND FEED SAFETY RISK ANALYSIS PROCESS

This process flowchart shows the UK's risk analysis process which is one of the ways we will ensure that the high standard of food safety and consumer protection we enjoy in the UK is maintained after the Transition Period.

Our **RISK ANALYSIS PROCESS** is open and transparent. We publish the advice we provide to others and the analysis and evidence on which that advice is based. The process is underpinned by collaborative working across FSA, FSS and other government departments as well as consultation with interested parties.

Our independent risk, science and evidence-based advice and recommendations are presented to Ministers and others for decision. Decisions are then implemented and reviewed as needed. This process operates on a four-country model and can deliver, where appropriate, unified food and feed safety risk management recommendations for the UK. It will form the basis of all risk analysis activities but individual stages are flexible and can be adapted on a case-by-case basis.

RISK COMMUNICATION

We will embed effective risk communication mechanisms, ensuring interactive exchange of opinions and options throughout the process.

We will provide clear explanations of the findings of risk assessments and the analysis of other legitimate factors, and the basis of risk management decisions, using effective evidence-based and outcome-focused methods to communicate with consumers, industry stakeholders and other interested parties.

KEY

- Risk management
- Risk assessment and analysis of other legitimate factors

This diagram is for illustrative purposes.