



FOOD STANDARDS AGENCY

SCIENCE, EVIDENCE AND INFORMATION STRATEGY 2015-20

DELIVERY PLAN

1. INTRODUCTION

The FSA's Strategy and Strategic Plan make clear that effective use of science will be crucial to achieving our ambitious goals protecting consumers' interests in relation to food.¹

The Plan sets a strategic objective that:

We will use science, evidence and information both to tackle the challenges of today, and to identify and contribute to addressing emerging risks for the future.

This Delivery Plan sets out how we will do this. We have developed this Plan working across the FSA and with external stakeholders and partners, including government and other research funders. It was agreed by our Board in November 2015.

¹ <http://www.food.gov.uk/about-us/about-the-fsa>

SCIENCE EVIDENCE AND INFORMATION STRATEGY 2015-20 DELIVERY PLAN

FSA'S STRATEGY: WORKING TOWARDS FOOD WE CAN TRUST

In 2014 the Board approved the strategy for the FSA for 2015-2020. In developing the strategy they reviewed a large amount of evidence and engaged with consumers, colleagues within the FSA, stakeholders² to identify the key themes that the FSA would use to inform its planning for the period 2015-2020. A number of critical themes emerged that inform our strategic plan. The most important relates to our legitimacy and our unique role within government as set out in our founding legislation:

"The main objective of the Agency in carrying out its functions is to protect public health from risks which may arise in connection with the consumption of food (including risks caused by the way in which it is produced or supplied) and otherwise to protect the interests of consumers in relation to food."

(From Section 1 Food Standards Act 1999)

Focusing on this purpose, set for us by Parliament, and having considered the likely environmental factors that face the UK over the next strategy and in the longer term, the Board agreed to refresh and reinvigorate the FSA pledge:

We will put consumers first in everything we do.

In consultation with consumers we identified three consumer rights to underpin our work:

- The right to be protected from unacceptable levels of risk.
- The right to make choices knowing the facts.
- The right to the best food future possible.

In formulating our strategy, the Board recognised that the food system is going to come under increasing pressure over the next decades, and that we cannot be sure at what pace changes will happen. The agreed plan for 2015-2020 focuses on dealing with the challenges of today while seeking to build our readiness for the threats and opportunities of the future.

Our Strategic Plan sets out our activities against a series of strategic outcomes, against which we will measure our impact. These are aligned to the definition of consumer interests in relation to food, as set out in the Strategy:

- Food is safe.
- Food is what it says it is.
- Consumers can make informed choices about what to eat.
- Consumers have access to an affordable healthy diet, now and in the future.

² Academic and scientific, consumer organisations, industry representatives, local authorities, and other government departments and NGOs.

USING SCIENCE, EVIDENCE AND INFORMATION TO DELIVER FOOD WE CAN TRUST

The Strategic Plan makes clear that we will continue to develop, apply and openly communicate a robust evidence base to underpin our work to protect consumers' interests. This is reflected in an overarching strategic objective which establishes the **vision** for our Science, Evidence and Information (SEI) Strategy:

We will use science, evidence and information both to tackle the challenges of today, and to identify and contribute to addressing emerging risks for the future.

The SEI Strategy and its Delivery Plan set out what we will do to ensure we meet this objective.

The FSA has a good record as a science- and evidence-based organisation, but to meet these new challenges we will need to raise our game. To do this we will ensure our SEI work follows these **principles**: it will be

- **focused** on the most significant risks and challenges to consumers' interests and how we can maximise our impact by our own activity and by supporting consumers and others to act
- **forward-looking and innovative** to identify new issues and build our capability to do more and better with less
- **connected** across disciplines and data and to the FSA's strategic objectives to maximise impact from our evidence and its use in all our work
- **outward-looking** to harness the power of working with and through others
- **proactive** in developing our own skills and capabilities and our engagement across the FSA and with the wider science community.

The key questions, challenges and opportunities

To **put consumers first** we have to understand where the optimum balance lies between the risks, detriments, benefits and the other interests of consumers which arise in the food system, and how these factors differ for different consumers in different contexts.

To ensure that **food that is safe and what it says it is** we need to understand which risks and detriments to target and which approaches are most effective, underpinned by robust, evidence-based risk assessment of where and how risks and detriments arise, and how they affect different groups. Alongside this technical understanding of risk we will need evidence on what different groups of consumers, food businesses and others feel about what risks are acceptable and about the types of tools and measures that might be used to manage these risks, and how these views change both for groups and for individuals. We will need to understand and to test which measures are most effective in practice to reduce or to control risks, and how their availability and effectiveness change for different groups and contexts. We will need to combine these strands of evidence with understanding of the behaviours of consumers, businesses, regulators and others in the food system, and how the food system itself behaves. This includes understanding the wider drivers and influences in the system, so that we can exploit opportunities where interests and incentives align to benefit consumers and others, and understand and seek to address tensions and trade-offs between interests and incentives, and how these can

be reflected in our discussions and decisions in an evidence-informed way. Together, our evidence and analysis in these areas will inform our policy and regulatory activity by allowing us to focus on the best outcomes and to take an open-minded, evidence-based approach to identifying and promoting the mechanisms that work best to achieve those outcomes.

To help support the specific objective that **consumers can make informed choices about what to eat**, we need to continue to work with consumers, businesses, regulators and others in government and outside to understand what helps people make informed decisions, and to develop the information and other tools which are needed to support this.

We will also need to develop and consider the wider evidence about which approaches are effective in influencing behaviour - whether by consumers themselves, by industry, by regulators and those working in enforcement - and which of these work best to support practices that lead to benefits for consumers. We need to understand which combinations of approaches work best to deliver our desired outcomes - from formal regulation to approaches based on behaviour change and supporting informed decisions.

To help to ensure that **consumers have access to an affordable healthy diet, now and in the future**, we need to understand what food futures might look like, informed by effective horizon scanning and strategic analysis, and by building our capability to be more anticipatory and predictive in identifying new and emerging risks, and understanding which changes or signals in the food system could be useful in helping us do this. Alongside this we need to work with consumers and other stakeholders to understand how different food futures might affect consumers' interests, and what we and they would want to try to support, or avoid, in influencing those. We need to work with others to exploit the potential of new technologies and innovations to deliver new and better ways to benefit consumers and the food system. And we will need to build our understanding of the food system as a system, and how to use this to gain insights that can help us target our work effectively.

Making the most of science, evidence and information

We will take an inclusive view of science, evidence and information, drawing on any and all disciplines and sources that can be useful - including the natural, physical and social sciences. This includes using types and sources of data and information which may not be 'scientific' in the traditional sense but to which we can apply data science and structured analyses to provide useful insights and benefits, both for ourselves and for others.

We will make use of existing data wherever it can be useful and will make our own data available in ways that allow ourselves and others to access and use it, wherever we can.

We will seek and use the best evidence, information and analysis to inform our policy and delivery, wherever it comes from. We will gather and reflect evidence on geographical or other differences, where they are relevant to effective segmentation or targeting of policy, delivery or advice to consumers. We will also seek to exploit the potential for different countries to be effective test beds to pilot new approaches (building on experience such as the introduction of mandatory display of Food Hygiene Rating Scheme ratings in Wales).

In drawing on a diverse and inclusive range of types and sources of evidence and information, we will need to understand its quality and its limitations, so that we can ensure it is fit-for-purpose for the uses we put it to (and make this clear to others who may wish to use it) and that in using evidence we properly appreciate and reflect in our decisions and in our communication the confidence we can place in the evidence and its interpretation, and the nature and implications of the associated uncertainties.

We will continue to develop our quality assurance and governance as we use more diverse sources of information and analytics, building on well-established procedures in our core areas (such as risk assessment) and our pioneering work in establishing a Social Media Analytics Review and Innovation Group to advise us and government partners in this developing area.

Priority themes and activities

We have developed a framework for the SEI Strategy using two 'lenses':

- the areas of science we will need to develop and apply (the 'what'); and
- the way we develop and conduct our science (the 'how').

Two sets of themes emerge from this analysis:

The science we need to develop and apply

1. Understanding **risks** and how to evaluate and compare them, so that we can target our work on effective consumer protection
2. Intelligent and shared use of **data**, information and analytics, to understand existing risks, identify new and changing risks, and to develop targeted and effective surveillance and regulation
3. Understanding **consumers, food businesses enforcement partners and others in the food system** and how we can work with them to support behaviour change and build and spread good practice
4. Learning from **what works** and what doesn't, to maximise positive impacts and value for money, through our own work and our work with others

The way we conduct our science

Four themes will underpin all our work to ensure that our use of science is fit-for-purpose, effective, efficient and open, and has integrity:

1. Building and maintaining the **skills and capabilities** we need
2. Assuring the **quality** of our science, evidence and information and their use so they have value for us and utility and legitimacy for others
3. **Use, communication and knowledge transfer** of science, evidence and information, for openness, engagement and effective use and impact by FSA and others
4. Delivering ambitious objectives and cross-cutting impact through **strategic partnerships**

The objectives and headline activities we will undertake in each of these themes are set out below.

OUR SCIENCE EVIDENCE AND INFORMATION PROGRAMME FOR 2015-20

We have used the framework and analysis above to develop a programme of work over the next five years. For each of the themes we have identified the key questions and objectives we want to achieve, and some principal 'headline' activities we will undertake.

Building on this, we have developed a detailed programme of work which we will publish, and update each year to reflect our own and others' progress and wider developments. This will serve both to inform stakeholders on our plans and to solicit input from external experts and potential partners before we finalise our commissioning to identify better ways to formulate our needs, existing evidence that might meet our needs, and opportunities to work together. We will also publish and seek this input on individual pieces of new work as they come forward, before they are commissioned.

Setting and reviewing priorities

Our science programme needs to address and to balance the immediate with the longer-term, and work to address specific issues with work which is more cross-cutting, as well as work we are required to do. It will also need to be proactively alert and responsive to new developments in the issues and in our ability to respond to them. We will build strategic partnerships to ensure we are ambitious and connected in shaping our work and that it achieves cross-cutting impact.

We have identified four principal types of work with criteria for success, outlined below, which will be used to priorities and assess the balance of our programme of work.

Supporting policy and operational priorities

Science, evidence and analysis to inform and evaluate specific policy, regulatory and operational work. Focus on relevance, timeliness and effective route to impact.

Building future capability

Strategic and longer-term, focused on developing future capabilities, better or radically different ways of doing things in the future, and high-risk/high gain projects.

Statutory

Work we are required to do by statute (such as surveillance and monitoring). Focus on doing this in the most efficient way and adding value by exploiting links to other work and sharing and use of data.

Core and cross-cutting

Core data and capabilities that underpin our work - such as data on food consumption and people's behaviour and to assure governance, quality and impact. Focus on relevance, value for money and effective use by us and by others.

Building strategic partnerships will be central to all our work

Innovation and the Strategic Evidence Programme

Our programme will balance work focused on our immediate priorities with innovative and strategic work looking more to the future. We will manage the majority of our strategic work in a new Strategic Evidence Programme, led and directed by the FSA Chief Scientific Adviser, with a focus on building strategic partnerships and future-oriented work. This programme has a distinct budget and a strong element of working in partnership with other funders.

Evaluation and review

All projects and programmes will have a clear rationale, a pathway to impact and a plan to realise this (reflecting the relevant success criteria outlined above) built in and agreed at the start.

Linking to strategic objectives

The diagram below shows how the SEI Strategy themes and activities reflect and support the FSA's Strategic Plan objectives.

Science Evidence and Information Strategy themes reflect and inform FSA Strategic Plan outcomes

		Food is safe and what it says it is	Empowering consumers	Aligning incentives	Being the best we can be
Gathering +using science, evidence + information	Risks	Evidence on current and new risks and detriments Effectiveness and acceptability of risks and options for their control	Tools and approaches help to support informed decisions	Evidence to define the outcomes for regulation to deliver Testing approaches in practice to optimise impact	Developing technological and other innovations to identify and control risks and to deliver our work better
	Data	Better ways to baseline and track existing risks and detriments and identify and anticipate new ones	Making our data available and useable by us and others New and better ways to engage with consumers and support informed decisions	Finding ways to use our own and others data and to work with businesses for better regulation	Developing new + better ways to work with data, for the FSA and with others Governance and assurance of data and information
	Consumers, businesses, enforcement partners and the food system	Understanding consumers, businesses and enforcement partners and their views and behaviours Understanding the food system and what drives/signals changing risk	Citizen science Understanding what works to influence consumer behaviour	Understanding what works to influence business and regulatory behaviour	Understand the wider food system and where and how we and others can make the most effective impact
	What works	Evaluating policy Comparing impacts of unlike risks and detriments and our effect on them	Evaluating communications and engagement Testing new ways to engage and influence consumers	Testing current approaches and models Developing and testing new models and approaches	Building tools to understand and measure impact across all our work to inform priorities and drive improvement

HOW we conduct our scientific work

Building and maintaining science skills and capabilities
Communication and knowledge transfer for use and impact

Assuring the quality of our science and its use
Cross-cutting impact through strategic partnerships

UNDERSTANDING RISKS AND HOW TO TARGET THEM

Work in this theme will help us to understand risks and how to compare and evaluate them, so that we can target our work on effective consumer protection to where it will have the most impact. This will:

- support our objective to ensure **food is safe and what it says it is** by providing robust, up-to-date evidence on existing and new risks and detriments from food, how these are interconnected and how they may be controlled, and what consumers and others feel about risks and potential controls. This includes work on priorities on *Campylobacter*, vulnerabilities to food risks, allergy and intolerance, food chemicals and food crime.
- support work to develop **effective, efficient regulation and delivery** by providing a sound basis for proportionate, risk-based outcomes, against which regulatory options and delivery models can be compared and tested (see WHAT WORKS).
- inform our work on **food futures** by providing evidence on how risks may change and new risks and opportunities may emerge in the future.
- **build future capabilities** by developing innovative uses of technology and other new approaches to identify and control risks and deliver our operations in more efficient ways.

Headline activities
Holding a workshop in partnership with the European Food Safety Authority (EFSA) on foodborne viruses in February 2016 (Year 1), and follow-on work to address the key evidence needs and gaps identified (Year 2 and beyond).
Commissioning a systematic review of the contribution of food system to antimicrobial resistance (underway in Year 1) and follow-on work to address the priority evidence gaps and needs identified in the review (Year 2 and beyond), working closely with the Advisory Committee on Microbiological Safety of Food (ACMSF) and other experts and stakeholders.
<p>Working with scientists, regulators, consumers and businesses to develop, apply and evaluate transparent, evidence-based approaches to our decisions on risk. Over the five years of the Strategy this will address:</p> <ul style="list-style-type: none">• relative measures of risk and impact, and comparing unlike risks and detriments;• work with consumers and others to understand their views on acceptability of different forms of consumer detriment in relation to food and options for their control• frameworks, tools and data to support decisions that balance risks, benefits and other factors in consistent, evidence-informed and transparent ways• a clear and consistent approach to uncertainty in decision-making• effective tools to engage and communicate on risks that support informed decisions.

DATA

Work in this theme will develop intelligent use and sharing of data, information and analytics, to help us identify new risks and support targeted, effective surveillance and regulation. This will:

- develop and test ways to improve the efficiency and benefit of our **regulatory work and operational delivery** through better access and use of data, to provide more effective and efficient information and assurance in the food system, including through opportunities for joint approaches where incentives align.
- build **future capabilities** by developing new sources and ways to analyse data to inform our understanding on current **risks** and baselines and how risks may change and new risks emerge in the future, and how food futures may develop.

Headline activities
Integrating data from the Food Hygiene Rating Scheme (FHRS) with other platforms (such as, for example, Yelp, TripAdvisor and Google) to maximise the visibility and use of these data and their impact on awareness and behaviour of consumers and businesses.
Testing the application of the tools for the use of social media for Norovirus early warning in real application in Winter 2015/16, working with Public Health England, NHS Choices and the Department for Education (Year 1).
Building on our work on FHRS as a recognised leader in government open data, working over the course of the Strategy to find ways to make all of our data open in ways that people can and do access and use them to generate added value and innovation, for example to target and test the impact of inspections (Year 2 on).
Developing an open and collaborative approach to surveillance that allows us to target, collect and analyse useful data about the food system and things that impact on it, and use this to inform risk assessment and risk management and to further refine surveillance.

UNDERSTANDING CONSUMERS, BUSINESSES, ENFORCEMENT PARTNERS AND THE FOOD SYSTEM

Work in this theme will focus on understanding consumers, food businesses, enforcement partners and other actors in the food system, how we can best influence and work with them to support behaviour change and build and spread good practice, and how these things may change and develop in the future. This will:

- provide the basis for **supporting behaviour change** through robust and up-to-date evidence on the diversity of UK consumers, their views, concerns and behaviours, including what approaches work best to **support consumers to make informed decisions**
- support our work on **effective policy and efficient regulation** by providing evidence on the views and behaviours of consumers, businesses, and those working in regulation and enforcement, and what will work best to influence their behaviours and achieve benefits for consumers - reflecting the diversity that exists within these groups
- **build future capability** by advancing our understanding of behaviour change in relation to food and the wider food system

Headline activities:
Gather supporting evidence and analysis and hold a stakeholder conference on food futures and consumer interests in February 2016 (Year 1), and develop and implement a programme of activities in Year 2 on, drawing on outcomes of conference and other work in government and more widely
Scope and commission a review of behaviour change models (Years 1 and 2) to identify those which have the most potential to support FSA objectives and pilot and evaluate the use of selected models in real FSA projects (from Year 3 on)
Scope the potential for use of citizen science to help deliver food we can trust, and implement a programme of citizen science (from Year 2 on), building on an early project to develop an online tool for structured capture and analysis of citizen reports on food safety issues (Year 1).

WHAT WORKS

Work in this theme underpins all our work and helps us to test and improve its impact and effectiveness. It will focus on testing and learning from what works (and what doesn't) to maximise positive impacts, through our own work and our work with others. This will:

- **underpin all our work** and help us to understand, demonstrate and continually improve the impact, benefits and value for money of our work
- **build future capabilities** by developing and testing new and better ways to assess and compare the impact and benefits of our work to inform prioritisation, review and improvement.

Headline activities
Evaluating the impact of the FHRS in order to understand and maximise its impact now and what would work best to maintain and build on this
Developing our use of data and analysis tools, including economic analysis, to assess the impact and benefits of our work and to compare the impacts of unlike risks (for example: microbiological food safety and food allergy; or acute microbiological risks from pathogens, and chronic risks from chemicals such as acrylamide), so that we can better understand and build confidence in our prioritisation of issues and our impact on them.
Testing and reviewing the effectiveness of our current implementation of Official Controls to identify improvements to effectiveness and efficiency (Year 1 and 2), and scoping and testing new approaches, including innovative uses of technology, which could deliver significantly different and better approaches in the future (Year 2 on).
Scoping and piloting new ways to achieve policy and regulatory outcomes (for example through shared assurance and use of third party information), and to understand how effective different enforcement tools and approaches (and combinations) are, and using this to develop, test and improve our performance as a regulator.

HOW

Work in the four HOW themes will focus on ensuring that our use of science is fit-for-purpose, effective and efficient, open, and has integrity. These are underpinning conditions for success that apply across all our work, but link particularly to WHAT WORKS as they will help us to understand and do what works for our science evidence and information.

The headline activities in these four themes are set out below.

Quality

Assuring the quality of our science, evidence and information and their use so they have value for us and legitimacy for others:

Reviewing our Quality Assurance framework to ensure it remains fit for purpose across all our science, evidence and information, including in newer areas such as use of data and information (Years 1 and 2)

Supporting and assuring the application of frameworks for effective and transparent use of evidence in decision-making

Use, communication and impact

Use, communication and knowledge transfer of science, evidence and information, for openness, engagement and effective use and impact by FSA and others

Developing and implementing a consistent approach to ensure we identify and realise clear pathways and plans for use and impact for all our science, evidence and information work (Years 1 and 2)

Sharing our data and information in ways others can use (initial projects and trials Years 1 and 2; consolidating and applying them from then on)

Establish a series of regular CSA Quarterly Reports to communicate FSA science and its impact in ways that are accessible to a wide audience and allow those who want to drill down to the detail (Year 1)

HOW

Our use of science is fit-for-purpose, effective and efficient, open, and has integrity.

Skills and capabilities

Building and maintaining the science skills and capabilities we need, within the FSA and externally

Complete a Review of the FSA's Scientific Advisory Committees to ensure we have the right structures and sources of independent expert advice to meet our needs (Year 1) and implement recommendations (Year 2 on)

Analyse skills needs and gaps and develop a science skills strategy

Work across government to support science professions, starting in Year 1 with co-ordination and support for toxicologists

Strategic science partnerships

Strategic partnerships are core to all of the activities above and are highlighted in the other parts of the Plan. Among these the following will be particularly important:

Maintaining and building our access to and use of expert networks

Building and extending our partnerships, including with Defra and Public Health England (and equivalents in Wales and Northern Ireland), Food Standards Scotland, Devolved Governments, Local Authorities and enforcement partners, industry, and consumers and groups that represent them

Joint programmes with Research Councils, Innovate UK and other funders, including the Wellcome Foundation

Partnerships to develop thinking and deliver work with those working at the cutting edge of innovation (including ITAAU+, Alan Turing Institute, AIMS, KTN, Digital Catapult, the EU and Horizon 2020)