

## A Food Surveillance Strategy for Scotland



A model for the collection, recording, analysis and interpretation of information and intelligence relating to the safety and authenticity of foods produced and sold in Scotland



## INTRODUCTION

1. FSS's Strategy to 2021 sets out a vision for a food and drink environment in Scotland that benefits, protects and is trusted by consumers. Ensuring foods produced and sold in Scotland are safe and authentic are key to delivering this vision. Outcome 1 (Food is Safe) and Outcome 2 (Food is Authentic) of our strategic plan describe the importance of effective food surveillance systems in enabling FSS to identify risks to the food chain. Surveillance plays a key role in generating the intelligence and insight needed to assess how interventions affect the safety and authenticity of foods placed on the market, and their wider impacts on consumers and the industry.
2. The Food Surveillance Strategy described in this paper considers **why** food surveillance is needed and the rationale for our proposed approach, **what** information needs to be collected, **how** that information should be generated and analysed, and **who** we need to work with to ensure intelligence is shared effectively and appropriate action is taken. It also considers timelines relating to **when** the strategy will need to deliver tangible outputs in order to be effective. These considerations have been used to develop a framework for a new food surveillance model, described in the following sections of this paper.

## WHY – The importance of food surveillance in the delivery of FSS strategic objectives

3. All of FSS's statutory functions and strategic objectives rely on the provision of a comprehensive, robust and up-to-date evidence base relating to the food and feed supply chain. Food surveillance<sup>1</sup> programmes contribute to this evidence base through the gathering of data relating to the safety, compositional standards and authenticity of foods produced and sold in Scotland. The analysis and interpretation of this data provides the intelligence which is needed to inform risk assessment, policy development and the targeting of enforcement activity, and therefore enables FSS to deliver its public health and consumer protection obligations.
4. Prior to its inception in April 2015, a programme of work was developed by Food Standards Agency in Scotland to address recommendations made by the Scottish Government's expert advisory review of the lessons to be learned from the horsemeat incident, led by Professor Jim Scudamore, which was published in 2013 (the Scudamore report)<sup>2</sup>. This paper, and the framework for future food surveillance in Scotland proposed here, is based on the definition of food surveillance provided in the Scudamore report, which is described below. It is worth noting that FSS's role goes beyond this in so far as it extends to the initiation and coordination of investigation based on insight generated by the surveillance process.

### ***What do we mean by food surveillance?***

*'the on-going systematic collection, collation, analysis and interpretation of accurate information about a defined food or feed with respect to food safety or food standards, closely integrated with timely dissemination of that information to those responsible for control and prevention measures.'*

5. One of the key workstreams for FSS's Scudamore programme was to develop a food surveillance strategy for Scotland<sup>3</sup>, the starting point for which was a review commissioned by FSS to benchmark the food surveillance capabilities of Scotland against internationally recognised systems in other countries ('Benchmarking Review')<sup>4</sup>. This review put forward a number of proposals to assist FSS in augmenting its existing food surveillance capabilities for

<sup>1</sup> For the purposes of this strategy, the term food surveillance will be used to cover food, drink and animal feed

<sup>2</sup> <http://www.gov.scot/resource/0042/00426914.pdf>

<sup>3</sup> <http://www.foodstandards.gov.scot/sites/default/files/Board%20Meeting%20-%202015%20September%2016%20-%20Scudamore%20Paper%20150906%20Final%20Sept%204.pdf>

<sup>4</sup> The comparator countries in the review were Canada, Denmark, Ireland, the Netherlands, New Zealand, Germany and the USA. In depth case studies were conducted for Canada and New Zealand.

food fraud and authenticity, which were also considered to be relevant to food safety. These proposals have been used to develop our new strategy and to identify the areas that will need to be strengthened in order for FSS to work towards the vision of the Scudamore report “*to ensure Scotland has a world recognised surveillance system in place.*”

## WHAT – Evidence required to support the surveillance strategy

### *Aim and scope of the strategy*

6. This strategy aims to address all of the recommendations made in the Scudamore report relating to the development of an effective surveillance system for food safety, food standards and food fraud<sup>5</sup> (presented in Annex B). It sets out an overarching framework for surveillance which can be applied to both food and animal feed, and approaches which are relevant to the investigation and assessment of both the safety and authenticity of products, and the identification of fraudulent activity in the supply chain. **Consumer protection is our key priority and the strategy therefore takes account of products which are both produced and sold in Scotland, including imported food and feed.**
7. The strategic aim proposed in this paper acknowledges the potential for Scotland, as a relatively small country, **to develop an internationally recognised surveillance model which aligns with both the size of its population and the nature and scale of its food economy.** Scotland’s governance arrangements offer a potential strength in terms of the practicalities of working with Local Authorities (LAs) and other bodies with local knowledge and close relationships with communities across the country. **A central plank of the strategy therefore centres on making best use of information collected by FSS and others for the common good.**

### *Data and information requirements*

8. The strategy will rely on the on-going collection of a wide variety of data and information sources in order to ensure it provides sufficient coverage of foods produced and sold in Scotland and is capable of identifying emerging risks and vulnerabilities across the whole supply chain. We will therefore design the strategy around 7 over-arching categories of data and information which will be used either alone or in combination to generate intelligence on risks to the food and feed chain:
  - Scientific data generated through sampling and analysis of the food chain and environment;
  - Official controls and enforcement data on regulatory compliance in the food industry and incidents reported both within and out with the UK;
  - Trends in public health;
  - Market signals suggesting changes in the food supply chain and consumer purchasing behaviours;
  - Internet and social media analytics;
  - Evidence relating to global issues which have the potential to impact indirectly on the food supply chain including environmental changes, new technologies, or socio-political factors;
  - Intelligence gathered and/or developed by FSS’s Scottish Food Crime and Incidents Unit.

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<sup>5</sup> This strategy does not cover dietary surveillance, although data on consumption patterns and the nutritional composition of foods will be used, where appropriate to inform prioritisation and the targeting of surveillance activities.

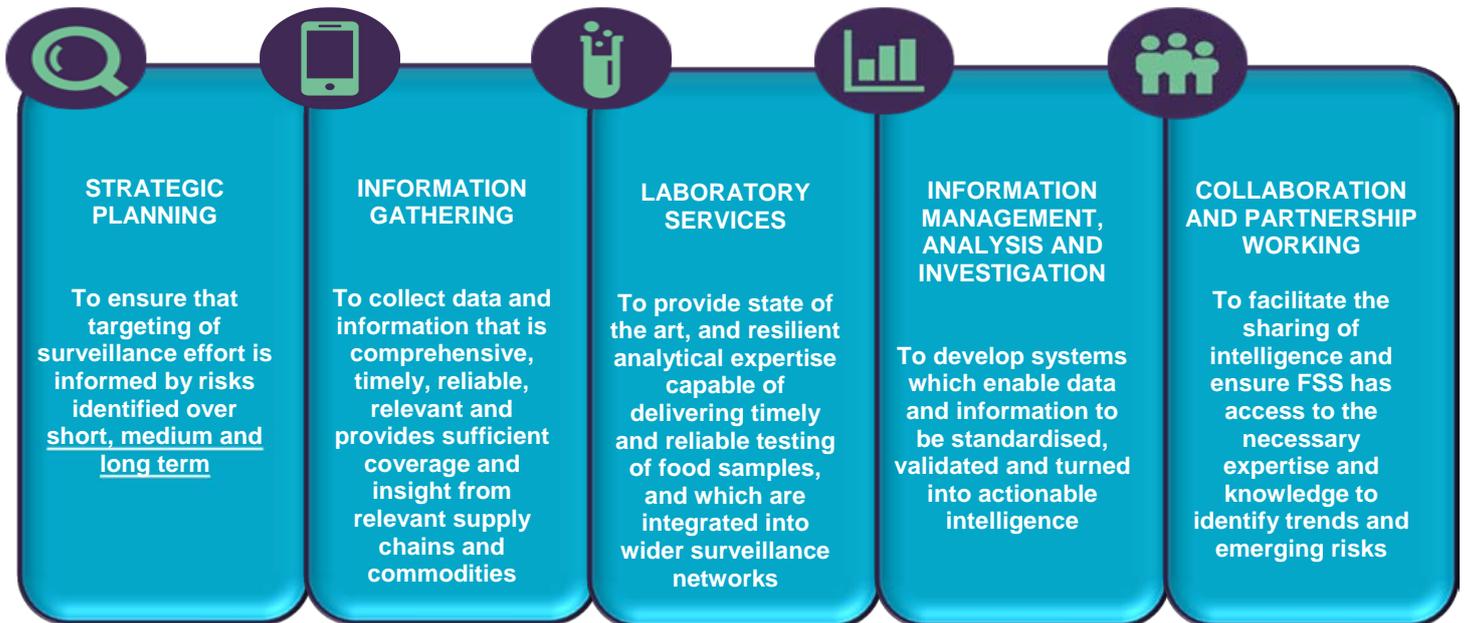
9. Data and information needed to underpin our strategy can be accessed from a wide range of different sources, as shown in the diagram below. Many of these are already available to FSS either directly or through existing partnerships with others, whilst other sources will rely on the ability of FSS to establish new relationships and collaborative working arrangements with external stakeholders.



10. There are currently a number of gaps in the data and information sources accessible to FSS, and limitations in the expertise which is available to support the analysis and interpretation needed to provide a fully comprehensive picture of the vulnerabilities that are associated with the food landscape in Scotland. An important part of this strategy will be to map existing sources of data and information that are available to underpin our surveillance activities in order to identify gaps and develop mechanisms for gaining access to relevant evidence streams and the necessary analytical expertise. **It has been recognised that there is considerable scope for FSS to develop new networks and skills which will facilitate access to the wealth of information that is available through the food industry, national and international trade markets, third party research and the media (including social media).**

## HOW – DEVELOPING A SURVEILLANCE MODEL FOR SCOTLAND

11. The surveillance model described for the strategy is underpinned by the findings of 'FSS's *Benchmarking Review*'. This identified that there were five essential components of an effective food surveillance system, which are shown below.



12. These components provide the basis of the surveillance model which we aim to develop over the next five years. It is important to note that whilst this strategy will have an important role to play in both identifying where support is needed for food businesses in Scotland to drive up compliance, and safeguarding Scottish export markets, **consumer protection will be the key driver for all of our future surveillance activities.**

### **Strategic Planning**

#### *Priority Setting*

13. A structured procedure for setting priorities is the key starting point for the design and implementation of our surveillance strategy. When identifying priorities it will be necessary to strike an appropriate balance between issues which cause most concern to consumers and those that affect the Scottish Food and Drink Industry, as these are not always aligned. Priorities will be informed through the development of existing FSS strategies such as the Food Crime Annual Strategic Assessment<sup>6</sup> and LA sampling programmes, to generate the evidence needed to ensure future surveillance activities are appropriately targeted.

**The strategy will develop a systematic, risk-based approach for setting priorities to ensure that interventions are effectively targeted to foods produced and sold in Scotland and are commensurate with the risks to Scottish citizens, giving particular regard to socioeconomic influences, and consumer choice.**

14. In cases where the priority setting process identifies potential risks and vulnerabilities to the Scottish Food and Drink industry, particularly with regard to food crime, **FSS will seek to develop partnership approaches to ensure the sharing of intelligence and the development of appropriate measures for protecting trade interests.**

<sup>6</sup> <http://www.foodstandards.gov.scot/news/national-food-crime-strategic-assessment> This report is published on an annual basis by FSA and FSS and it examines the scale and nature of food crime threats to the UK food industry. Work is currently underway to develop a parallel Scottish Control Strategy which will be more targeted to the interests of Scotland.

15. The integration of priority setting across all areas of FSS business will be essential to ensure that assessment is based on a comprehensive and up to date understanding of threat, risk and harm, and is sufficiently adaptable to take account of intelligence which identifies emerging risks. **The strategy will integrate FSS's food crime intelligence with other sources of information, as far as is compatible with our duties in relation to criminality.**

### *Horizon Scanning and Emerging Risks*

16. In order to ensure surveillance activities are prioritised and targeted effectively, it will be necessary for FSS to develop a structured procedure for horizon scanning which will enable the detection of emerging and future risks to the Scottish food chain. Horizon scanning has been defined by UK Government as: "**A systematic examination of information to identify potential threats, risks, emerging issues and opportunities.**"<sup>7</sup>
17. The 'Benchmarking Report' identified that one of the weaknesses of FSS's existing approach to surveillance was the lack of horizon scanning activities geared to the identification of emerging and long-term risks to the food chain. An objective for this strategy will therefore be the development of a structured process for horizon scanning that will equip FSS to make better use of data and information to detect signals pointing to vulnerabilities in the food supply chain. FSS has already piloted aspects of this process through the use of publically available and proprietary information networks including Horizon Scan<sup>8</sup> and INFOSAN<sup>9</sup> and market research providers such as Mintel, but will also need to develop further its work with other bodies across Scotland to access information collected by our partners. **The development of a structured horizon scanning approach over the following 12 months will be essential and, to operate effectively, the collation and assessment of information from diverse sources will require a dedicated and permanent resource.**

### **Information gathering**

#### *Sources of data and information*

18. A wide range of different data and information will be needed to support and direct our new surveillance strategy, some of which are held by FSS and others which will need to be accessed from external partners described later in this paper.
19. Food sampling currently provides the principal surveillance mechanism for assessing the safety and authenticity of foods placed on the market, and generates valuable evidence to support risk assessment and the targeting of further surveillance and enforcement activities. The use of IT platforms such as the UK Food Surveillance System (UKFSS)<sup>10</sup> will play a key role in maintaining access to LA food surveillance data, and it should be a long term goal for this strategy to ensure that the analytical and reporting capabilities of existing data management tools like UKFSS are further developed and integrated with wider intelligence systems. **Given the strategic importance of the UKFSS platform, priority should be given to ensuring that it is fully integrated into LA data capture and reporting procedures required by FSS.**

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<sup>7</sup> <https://www.publications.parliament.uk/pa/cm201314/cmsselect/cmsstech/703/703.pdf>

<sup>8</sup> Horizon Scan is an online subscription service managed by FERA that provides access to a rapid overview of potential and emerging food safety issues. It collects daily data of food and drink related notifications from a variety of sources enabling real-time searches relating to food recalls and incidents reported worldwide. It also allows searches for commodity-specific references to food safety issues and monitors global food integrity issues.

<sup>9</sup> INFOSAN is the the website of the International Food Safety Authorities Network. It comprises a global network of national food safety authorities, managed jointly by FAO and WHO and includes National authorities of 186 countries worldwide. Through INFOSAN, WHO assists members in managing food safety risks, ensuring rapid sharing of information during food safety emergencies to stop the spread of contaminated food from one country to another. INFOSAN also facilitates the sharing experiences and tested solutions in and between countries in order to optimize future interventions to protect the health of consumers.

<sup>10</sup> The UK Food Surveillance System (UKFSS) was developed by the FSA in Scotland in collaboration with Scottish LAs and Public Analysts, as a database for centrally recording, in a consistent format, all of the food and feed sampling information collected cross Scotland, and allows the reporting of trends in microbiological and chemical safety and compositional standards. The database was rolled out across the UK by the FSA in 2005.

20. The integration of LA sampling activity with FSS research and survey programmes plays an important role in directing enforcement effort, from which additional information can be collected and used as part of the overall surveillance programme. It has been recognised that the longer-term viability of LA sampling programmes may be at risk due to continued budgetary pressure and it will therefore be necessary to keep this under review as the Strategy develops. **FSS will work in collaboration with LAs to develop a sustainable food sampling model for the future. In the meantime, it is proposed that FSS continues to fund a sampling grants programme to ensure current levels of LA sampling in Scotland are maintained.**
21. A further aim of this strategy will be to develop proposals for a new FSS funded programme of targeted annual surveys aimed at generating statistically robust data needed to address evidence gaps and support risk assessment. **A new FSS survey programme will be developed as part of the strategic planning process and fully coordinated with relevant research and surveillance activities undertaken by FSS and others to ensure new sampling work is only commissioned in areas where data does not already exist.**

**The development of co-ordinated food sampling programmes will continue to play a key role in surveillance activities, taking full account of existing evidence to ensure resources are effectively targeted**

22. In addition to sampling, valuable intelligence leads for surveillance are also generated through enforcement activity and incident investigation. The Scottish Food Crime and Incidents Unit (SFCIU) has been working with LAs through the Scottish Food Enforcement Liaison Committee's (SFELC's) National Food Crime Advisory Unit to promote the reporting of suspected criminal activity and the sharing of intelligence. SFCIU is also developing improved systems for managing incidents<sup>11</sup> and the recording, analysis and dissemination of intelligence<sup>12</sup> generated by FSS and key partners, which will support the targeting of investigations and enforcement approaches. The launch, in 2016, of the Scottish Food Crime Hotline has provided an additional route for channelling whistleblowing and tip-offs into our intelligence systems.
23. A new element of observational surveillance will be added to existing information streams, designed to direct the collection of non-sampling information through targeted inspections and audits by LAs and FSS field staff. The development of new IT platforms that are equipped to collate this information represents a significant opportunity for FSS to make better use of observational data and further strengthen its intelligence base. **In particular, the development of the Scottish National Database (SND)<sup>13</sup> for accessing LA data sets will be essential to enable FSS to specify and capture observational data gathered during routine inspections and targeted surveys.** This stream of information is expected to be of increasing importance as a major high-value source of close-to-real-time information relating to food businesses across Scotland.
24. The use of geographic information systems (GIS) is currently being explored by FSS and it is expected that the spatial analysis and presentation of data will become an important component of the surveillance programme. The capture of location data by enforcement officials, using GNSS<sup>14</sup> receivers, should be explored as a means of linking official control activities and other observational information, with GIS systems. In the longer term there may be potential to explore the use of additional data capture technologies by officers during inspections and investigations, for example, by reading product tracking information through the use of barcode readers.

<sup>11</sup>FSS plans to implement Central Logging of Intelligence Operation (CLIO) for managing incidents. CLIO offers improved real-time recording of investigations undertaken by FSS and partner organisations.

<sup>12</sup> MEMEX is an intelligence recording database widely used by public sector agencies.

<sup>13</sup> A new Scottish National Database (SND) is currently being developed which will provide FSS with access to food premises inspection data held by all 32 LAs in Scotland.

<sup>14</sup> Global Navigation Satellite Systems e.g. GPS, GLONASS, Galileo or Beidou

The development of IT platforms which allow central recording of intelligence, sampling and observational data with linkages to GIS systems will be critical in identifying geographic trends and targeting surveillance activities and investigations

25. Data held by the food industry relating to food sampling and traceability has the potential to add significant value to our surveillance strategy, and gaining trust and developing safe spaces for exchanging information and ideas with the food industry will be key to our success. FSS has made good progress in establishing information sharing arrangements with a number of major UK food companies through its involvement in the Food Industry Intelligence Network (FIIN)<sup>15</sup>, and going forward, this will provide an important route for exchanging intelligence with the industry. It will be necessary to build on this work, particularly to explore opportunities for accessing intelligence collected by Small and Medium Sized Enterprises (SMEs), which dominate the food industry in Scotland.
26. This strategy also recognises that data and intelligence relating directly to food production is only part of the picture, and a key objective will be to assess how the monitoring and research activities undertaken by other parts of Scottish and UK government can be used to identify trends and emerging issues and support the targeting of food chain surveillance and investigations. **This will require FSS to gain a better understanding of the data collected across government and strengthen relationships with the relevant partners to facilitate access to the necessary data sets and identify how we can make better use of them to inform our work.**

As part of this strategy, FSS will continue to invest in the development of trusting and collaborative relationships across government and with the food industry to facilitate effective data sharing and support strategic planning.

### **Laboratory Services**

27. Access to resilient, sustainable, high quality laboratory services will be critical to the delivery of effective surveillance, and the strengthening and maintenance of food science capability will be a priority for FSS over the next 5 years. Scotland already has well established publically funded laboratory networks for food testing, in addition to world recognised scientific expertise in relation to public health and food safety. However, the fragmented nature of laboratory infrastructure across Scotland has hampered investment in the infrastructure needed to enable Scotland to develop world-leading analytical capability in key areas such as next generation sequencing and diagnostics for identifying food authenticity.
28. In order for Scotland to build capacity and resilience in these areas and other emerging technologies, it will be essential to establish more formalised and centrally co-ordinated surveillance arrangements between the Public Analyst (PA) and NHS laboratory networks and promote joint working with the wider scientific community in Scotland, including Scottish Government research providers and academic researchers. **In the absence of any other lead body being identified, FSS should provide a leadership and facilitation role to assist in the development of more integrated food laboratory services across Scotland.**

### **Information management, analysis and investigation**

29. The data and information sources required to support food surveillance activity are currently managed by a number of separate in-house or proprietary databases across different areas of FSS business. To date, there has been no strategic oversight of the information generated by these systems to facilitate the analysis of trends and emerging issues, nor any means of linking this with external sources of intelligence from proprietary systems or databases held by other

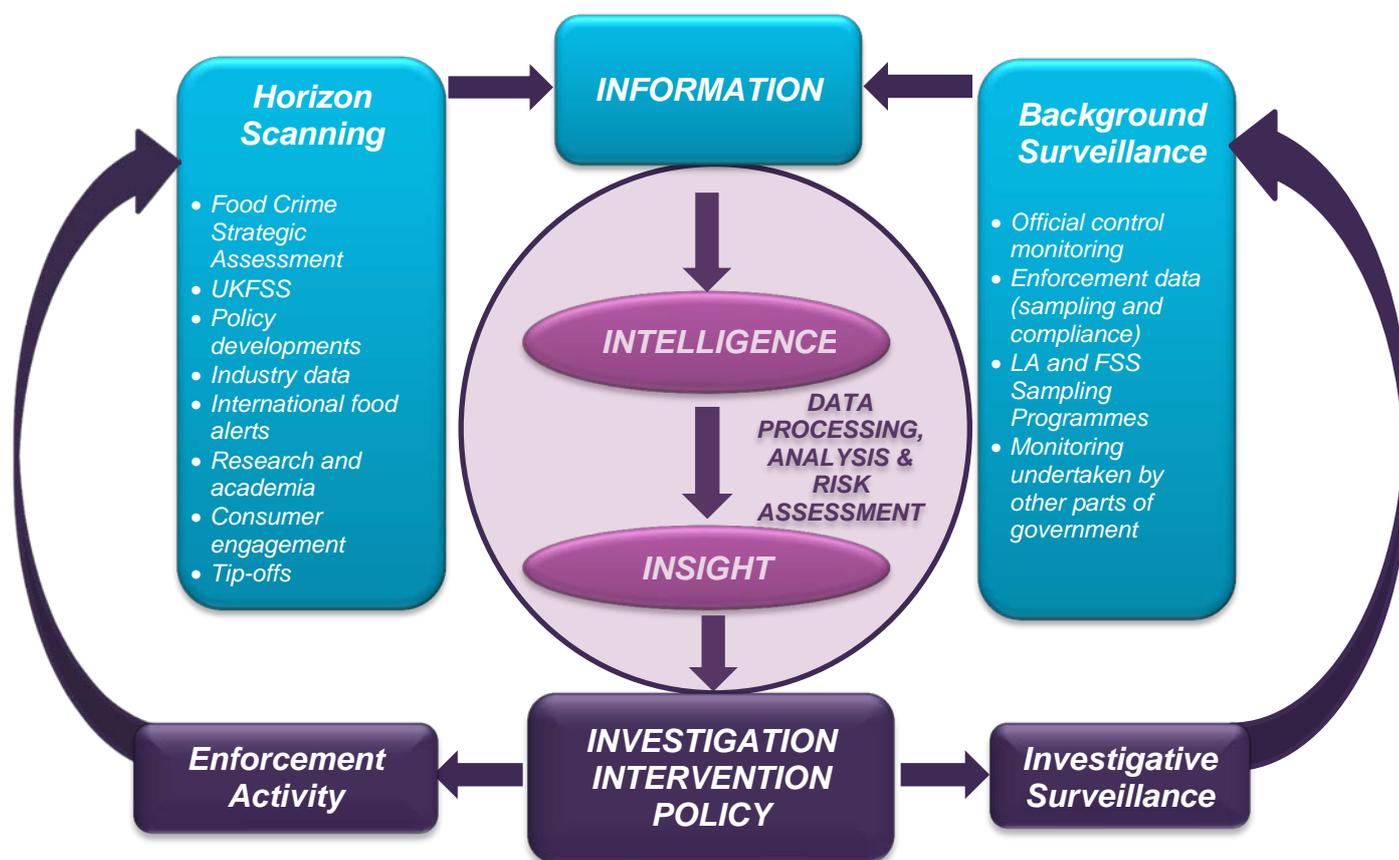
<sup>15</sup> FIIN currently includes representation from 21 major UK food companies.

government agencies. **A priority for this strategy will be to ensure that the analytical and reporting capabilities of existing FSS data management tools are developed and that, wherever possible, these are integrated with external intelligence systems, to facilitate effective data sharing and identification of emerging risks.**

30. In order to make effective use of the external data and information sources needed to underpin our surveillance strategy, it will be necessary to ensure that they are in an appropriate format which will enable us to undertake analysis which allows for linkage and comparison with FSS datasets. **The development of common data standards by FSS in collaboration with industry and other public bodies will be central to effective data sharing and comparison of data held by FSS and external sources.**

31. The development of a structured process for the collation, management and interpretation of intelligence will be necessary to ensure that the strategy is able to make the most effective use of data and information that is currently available to support and direct surveillance activity. As a starting point, it is proposed that the strategy is designed around the surveillance model presented below. The model is based on the capture of **information** from a defined set of sources as the basis for structured analysis which is capable of generating **intelligence and insight** (through processing, analysis, interpretation and risk assessment) required to establish the need for, and the form of, any further **investigation**.

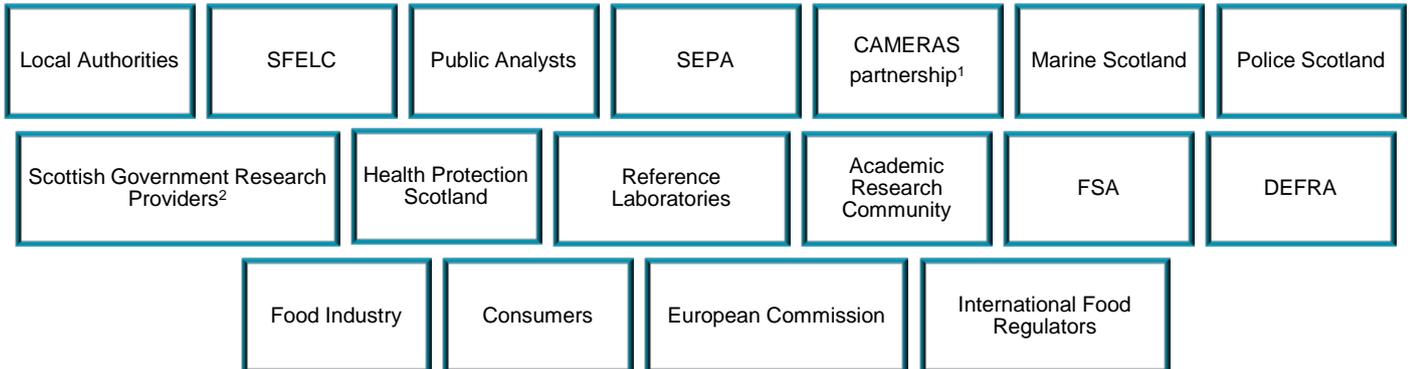
32. There is a recursive element to the model that will allow the stable streams of incoming information to be supplemented by information gathered during investigations that have been triggered by surveillance outputs. The model is designed to adapt to short and longer-term changes to take account of changing priorities and new sources of evidence which become available as the strategy develops. It will also be important to build a validation process into the model in order to assess its effectiveness in predicting issues and identify where it needs to be adapted and strengthened.



The FSS Surveillance Model

## WHO – COLLABORATION AND PARTNERSHIP WORKING

33. The vision for future food surveillance described by this strategy cannot be delivered by FSS in isolation, and effective communication and collaboration with external stakeholders will be critical to our success. FSS's existing consumer and industry engagement programmes, and strong working relationships with UK bodies described below are key strengths. **There will be a need to build on these partnerships to support efficient sharing of intelligence and surveillance outputs.**
34. This strategy also provides an opportunity for FSS to strengthen links with relevant partners out with the UK to support its surveillance activities. **The possibility of developing mutually beneficial arrangements with EU and 3rd countries should also be considered as a future area for development, particularly in light of Brexit.**

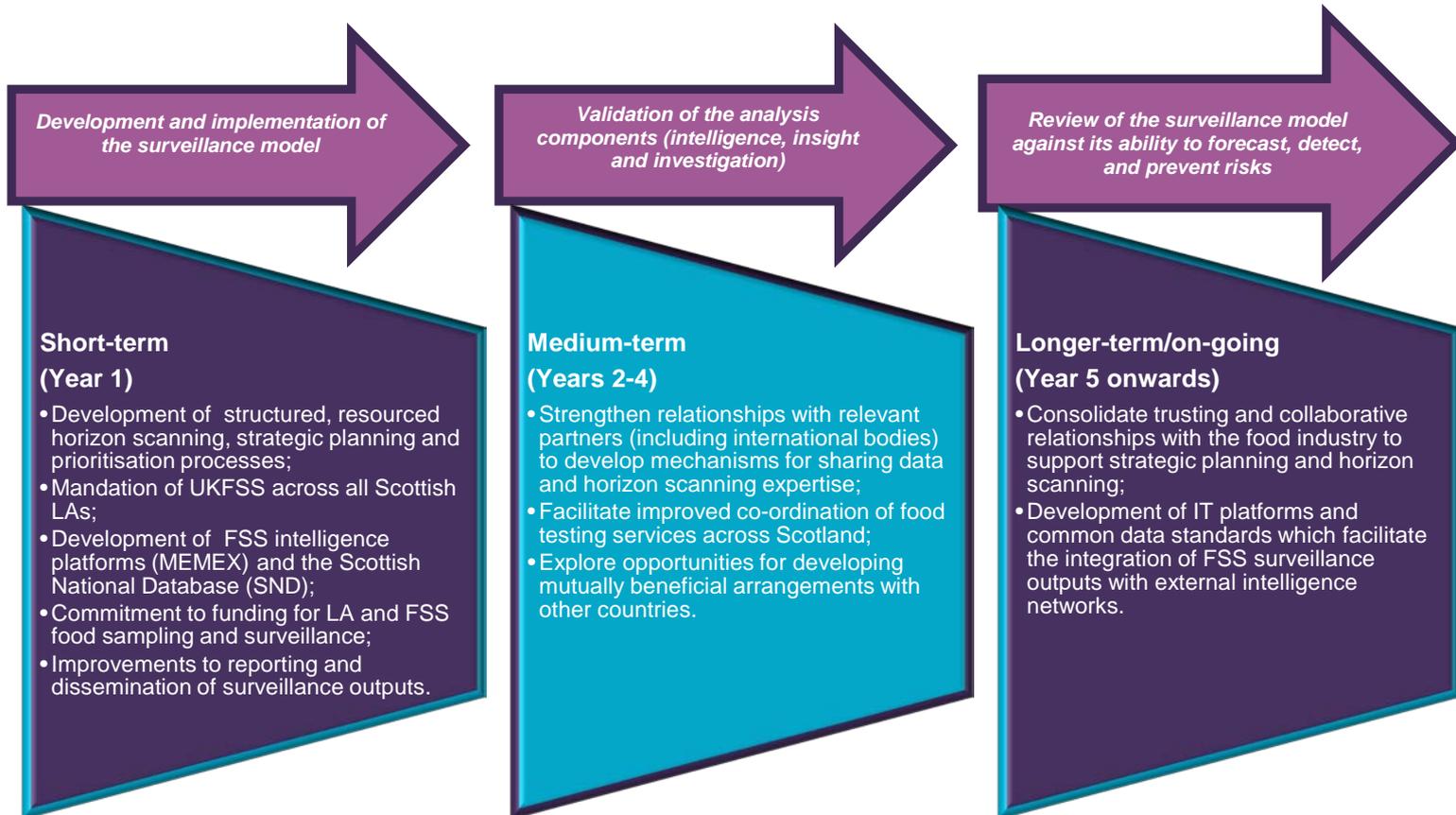


1. Coordinated Agenda for Marine, Environment and Rural Affairs Science  
<http://www.gov.scot/Topics/Research/About/EBAR/CAMERASsite/CAMERASboard>
2. <http://www.gov.scot/Topics/Research/About/EBAR/research-providers>

## WHEN – DELIVERING OUTPUTS AND REVIEWING PRIORITIES

35. The success of this strategy will be dependent on its ability to produce timely and tangible outputs, and it will therefore be necessary to ensure that it operates according to an established schedule for reporting and review. **Reporting arrangements will be incorporated into the strategic planning process based on the outputs of horizon scanning and surveillance activities.**
36. In parallel, FSS will continue to support the reporting of food surveillance data through UKFSS, in collaboration with SFELC. In line with Scudamore recommendations, annual reports of UKFSS datasets are produced 6 months prior to the end of the financial year, in order that they can be made available to LAs in time to inform subsequent sampling plans. **It is proposed that the annual schedule for reporting surveillance data is supplemented with more regular updates provided to LAs based on the outputs of the strategic planning process, in order that their sampling plans can be adapted in real-time to take account of emerging issues.**
37. Whilst it may not always be appropriate to widely publicise our priorities, particularly with regard to food crime, this strategy will review mechanisms for providing wider access to our surveillance outputs in formats which are suitable for consumers and stakeholders. **FSS will explore new reporting formats for presenting surveillance outputs, including infographics, and the suitability of open data approaches for promoting research and linkages to external data sources that could support horizon scanning.**

38. Achieving the vision for food surveillance described in this paper is a cross-cutting and long-term project which will be critical to the effective delivery of FSS's overall Strategy. It will therefore be necessary to manage delivery at a strategic level, and to ensure deliverables are monitored in a structured manner. Broad timescales for key deliverables are presented below to illustrate what we would expect to achieve in the short, medium and longer term. Key outputs will be reviewed on an on-going basis, with regular reporting of horizon scanning and surveillance activities as the Strategy develops.



## **ANNEX B Scudamore Recommendations which are relevant to the development of a food surveillance strategy**

- 12.** The New Food Body should consider how to improve the use and collation of information across food standards and food safety to ensure Scotland has a world recognised surveillance system in place.
- 17.** The New Food Body should develop annual monitoring programmes for Scotland in collaboration with the LAs covering a diverse range Food Safety and Food Standards issues.
- 18.** The New Food Body could implement additional surveys across a range of foodstuffs, such as the survey on the authenticity of meat products as an example based on risk assessment and general intelligence.
- 19.** The New Food Body should develop a risk assessment strategy for food safety and standards. This should ensure the development of Scottish capacity and expertise in horizon-scanning including economic analysis as well as speculatively looking for potential areas of risk, rather than just following an intelligence-led approach.
- 23.** The Scottish Government and the FSA Scotland should ensure the remaining 3 LAs in Scotland participate fully in the UKFSS.
- 24.** The New Food Body should ensure that LAs in Scotland continue to participate in the UKFSS.
- 33.** FSA Scotland and the Scottish Government must urgently identify the scientific capacity and capability it would require to deliver official controls in the future, so that decisions could be made about what needed to be available in Scotland and what needed to be available elsewhere. This should then be used to inform more strategic investment decisions.
- 40.** FSA Scotland and the New Food Body should determine the sample basis of any surveillance in order to provide statistically significant result.
- 41.** The New Food Body should ensure a co-ordinated sampling programme is in place across Scotland, with local sampling plans complementing Scotland and UK-wide sampling activity.
- 42.** The Scottish Government, the FSA Scotland and the New Food Body should ensure Food Business Operators share the detail and the results of their testing programmes in Scotland with FSA Scotland.
- 43.** FSA Scotland and the New Food Body should ensure that the Scottish Food Enforcement Liaison Committee publishes annual reports of UKFSS information relevant to Scotland within 6 month of the year end and contributes to the identification of priorities for surveillance of food safety and food standards in Scotland.