

## Annual Chief Scientific Advisor Science, Evidence and Information (SEI) Update

### 1 Purpose of the paper

1.1 This paper is for **Discussion**.

1.2 The Board is asked to:

- **Note** progress with implementation of the SEI strategy from 1<sup>st</sup> April 2018 until 31<sup>st</sup> March 2019.

### 2 Strategic Aims

2.1 This work supports all six of FSS's Strategic Outcomes but in particular Outcome 5 – FSS is a trusted organisation and 6 – FSS is efficient and effective.

### 3 Background

3.1 The appointment of a Chief Scientific Adviser (CSA) to FSS in April 2016, together with the formation of a Science Strategy and Information Analysis branch, has enabled the development of an [FSS SEI strategy](#) (SEIS). The SEIS helps to ensure that FSS takes decisions based on evidence, in line with the wider FSS Strategy.

3.2 The SEIS supports the FSS statement of performance of functions, including how FSS operates, to ensure that appropriate science governance arrangements are in place to aid the delivery of FSS's vision, policy and strategic priorities. The SEIS helps provide a link for staff between organisational and SEI values under three key themes by providing underpinning approaches and assurance of our SEI for the CSA.

3.3 The SEIS is supported by a number of operational documents including an [annual current and forward evidence plan](#), [a summary of the impact of our research projects and campaigns](#) published on our website each year to inform stakeholders and actively to seek comment from external experts and potential partners. To support our staff a risk management guidance document, [a science governance statement](#) and a science checklist help to assure SEI and help staff to be efficient and effective in project and program management.

3.4 The Board agreed the SEIS at their meeting on the 08 March 2017 and it was published on our website in April 2017.

### 4 Discussion

4.1 This has been another year where FSS has used SEI to inform and underpin delivery of the organisation's main objectives to ensure that food is safe, it is what it says it is and that consumers have healthy diets. This can readily be seen in the 18-19 and [17-18 FSS annual reports](#) where SEI has been used to inform decisions. It is also clear that SEI within FSS plays a key role in informing decisions at tactical and operational levels with performance reporting and outcome indicators presented to the board at six-monthly intervals. It is important

that FSS continues to nurture a culture of using and communicating SEI in everything that it does; ensuring the best available SEI is gathered, appropriately interpreted and openly accounting for any knowledge gaps and uncertainties. In following these principles our SEI should continue to be open to challenge both from within and out with FSS.

- 4.2 At the time of writing this update last year it was anticipated that an FSS “futures analysis” would be carried out. This was overtaken by Brexit events and the need for FSS to be prepared for a potential no deal and in particular how SEI would be factored into a risk analysis process (see sections 5.2 - 5.4).
- 4.3 The three SEI themes are listed below and a selection of indicators against these is shown in an infographic attached as Annex A:
- Prioritising our science, evidence and information needs;
  - Enhancing and communicating the science, evidence and information we use; and
  - Providing governance of our science, evidence and information.

Listed below is progress during 18-19 under the three SEI themes, with examples of the use of SEI by our 3 Programmes of work alongside essential core activities.

### **Theme 1 Prioritising our science, evidence and information needs.**

- 4.4 Economic and statistical expertise has been embedded in FSS to support development and evaluation of policy and robust analysis of the operational datasets we generate e.g. advice on our meat charging model, Business Regulatory Impact Assessments (BRIAs), analysis of operational (meat and shellfish) data, investigation of the frequency of Local Authority (LA) inspections, investigation of Scottish import and export data, and how we put economic values on policy interventions that we may consider in our future work (e.g. on possible out of home interventions).
- 4.5 Identifying emerging threats and taking a risk based approach to decide which to investigate further and act on, is a current and future challenge for FSS. The FSS horizon scanning group, which was set up through our surveillance strategy as a priority area [presented to the Board in March 2017](#), is a key part of this process and identifies potential issues in the areas of emerging food safety, fraud and standards such as Salmonella in frozen sweetcorn and raw pet foods. One of the future challenges now is how to integrate the functions of the horizon scanning group and the tactical tasking group with the FSS risk analysis process that has been identified as part of the Brexit programme and was discussed at the [Board in March 2019](#). Emerging issues will be included in the FSS LA sampling grants program for 19-20 and will be communicated to Scottish LA's via the FSS monthly enforcement update.
- 4.6 Scottish consumer and stakeholder views on FSS and our public health remit have been collected through two tracker Waves (6 and 7) during 2018-19. The views of consumers relative to Brexit from Wave 6 of our tracker was presented

to the [Board in November 2018](#). This year, FSS has completed 8 formal public consultations collecting Scottish consumer and stakeholder views on proposed policy and legislative changes (e.g. out of home environment in Scotland and the Food Law code of practice).

## **Theme 2. Enhancing and communicating the science, evidence and information we use.**

4.7 FSS science advisers regularly explain the evidence behind our policies and campaigns to the media across our remit and provide underpinning advice to our communications team. During the last year, four consumer focussed campaigns and ten web statements have used SEI to support them. These external communications have all provided a route to communicate our SEI to help Scottish consumers make positive changes in their food safety and dietary behaviours. We continued our blog series from our CSA, and, as part of activities to mark Year of Young People, published a series of three blogs by young people (aged 26 and under) on their role at FSS. This year for the first time we published a [public interest statement on STEC](#) which was informed by current evidence much of which was generated by FSS funded research, existing expert scientific evidence and reinforced by a recent report from the World Health Organisation and United Nations.

4.8 FSS has continued working with others in developing our SEI. For example the Centre of Expertise for Waters developed recommendations for delivery of a scientifically robust, efficient and [cost-effective sanitary survey and environmental monitoring programmes for shellfish](#). This has informed commissioning of sanitary surveys and closer working with The Scottish Environmental Protection Agency (SEPA) and the Scottish Government (SG) water quality team. Also, FSS involvement in the Value of Life Year project, led by the Health and Safety Executive, which applies monetary values for life and health impacts in economic appraisal. This will help ensure the use of common approaches across government departments (Department for Environment and Rural Affairs, Department for Health and Social Care, Department of Transport, Food Standards Agency (FSA), HSE and the Cabinet Office). The CSA now participates in the Environment, Natural Resources and Agriculture network which includes the SG CSAs in environment and marine and the Chief Veterinary Officer and Chief Plant Health Officer to ensure coordination of advice and evidence, particularly across areas of overlap.

4.9 Once again this year FSS staff have had the opportunity to keep abreast of current scientific developments by attending relevant national and international scientific conferences and meetings. There has also been the opportunity for staff to visit and learn from other organisations including, Food Safety Authority of Ireland, Public Health England, Campden BRI, Health Protection Scotland, FSA, British Nutrition Foundation, Cancer Research UK, the Nutrition Society, the Food Industry Intelligence Network, SEPA, International Food Safety Regulatory Economics Working Group, European Food Safety Authority and the New Zealand Food Safety Authority. These are important opportunities for the staff within FSS to develop their skillsets and to both work with other SEI providers, as well as with colleagues from other organisations who use SEI and discuss new and emerging technologies and analytical approaches.

4.10 FSS is part of the SG Science Leadership Network, chaired by the CSA for Scotland (Professor Sheila Rowan). The network runs an annual conference led by SG's Head of Professional Development for Science (Dr Carey Fraser) for scientists and engineers working across government in Scotland which our staff can attend and for which this year we provided support for career development and mentor sessions. The conference aims to help scientists plan their career development and facilitate their engagement with peers across other organisations.

### **Theme 3. Providing governance of our science, evidence and information.**

4.11 It is essential to provide assurance that the SEI used by FSS is obtained, interpreted, and communicated appropriately and effectively. We have continued to use SEI in key strategic outcome indicators, in our six monthly reports with the Board in order to allow an identification of trends and use this information in our annual report.

4.12 All FSS business cases to commission gathering SEI are signed off by the CSA which ensures independent SEI challenge can be carried out before committing budget. All FSS work over £50k is commissioned through Public Contracts Scotland according to SG procurement standards. A peer review of SEI projects, by external experts, both at the procurement and final reporting stages is carried out. As mentioned in last year's [SEI Board paper](#), it is important that the impact of our SEI is evaluated, not only when the work is complete but also reviewed into the future to identify what has worked well and what has been less successful, so that lessons can be learned. This year we have produced [a summary of the impact of our research and campaigns](#) modelled on the types of impact recorded by universities and research councils to evidence the impact of the work. This was presented to the Board in December 2018 and refined and placed on the website in February 2019. This will be updated annually.

4.13 This year six SEI peer reviewed reports have been published. FSS has delivered [a new data portal](#) on our website that ensures compliance with open data standards and we encourage data to be shared openly. Currently, FSS has published 10 open datasets some of which are included on partner websites such as [Scotland's Aquaculture](#), and our research contractors continue to put whole genome sequencing data of *Campylobacter* and *E. coli* O157 onto the relevant data archives. In the coming year FSS will continue to encourage staff and support them to publish more open data sets.

## **5 Work programs**

5.1 I have selected some examples of the development of SEI from the FSS Programmes:

- Brexit
- Diet and Nutrition
- Regulatory Strategy
- Essential Core Activities.

## Brexit and European Union (EU) Considerations

5.2 The current regulatory system for food and feed in Scotland - and the rest of the UK - is drawn largely from an extensive body of law that is harmonised at EU level. On the assumption that the UK will leave the EU, there will be impacts on the domestic system, the scale and detail of which will depend on the nature of the UK's exit.

5.3 Risk analysis is a fundamental part of food safety regulation, and comprises three main components: risk assessment; risk management and risk communication. At the European level scientific risk assessment is largely carried out by EFSA, and supported at the UK level by the Scientific Advisory committees (e.g. Advisory Committee on the Microbiological Safety of Food, Advisory Committee on Toxicity and Scientific Advisory committee for Nutrition). There is also a considerable amount of risk assessment done locally, for example with FSS carrying out this task for feed and food incidents in Scotland. With the potential repatriation of powers that will occur should Brexit take place, the risk assessment process is expected to change and this is outlined in the recent [Board paper on Food and Feed Safety Risk analysis](#).

5.4 In March 2019, the Board agreed the proposed approach to future risk analysis, with FSS working collaboratively with FSA in the rest of the UK in the context of the proposed UK-wide framework on food and feed safety and hygiene, and that the executive should continue to work on the method of implementation with FSA. The Board also agreed to the proposed Advisory Forum on Food and Feed as a mechanism for agreeing advice on risk management interventions, subject to us agreeing various elements, and that work is underway. FSS and FSA will require to compile evidence to inform risk management recommendations, which will need to be supported by appropriate science and evidence. Hence, we must ensure availability of, or access to, the relevant scientific capacity and capability to deal with the future challenges that will arise. This will include the SEI required for risk assessment as well as SEI relevant to allow us to consider the other legitimate factors (e.g. animal health and welfare, health and safety, economic impact, environmental impact, economic impacts, impact on consumer choice, socioeconomic factors, consumer perceptions, acceptability and preferences, including the wider interests of consumers). The work to increase capacity and capability in this area is ongoing.

## Diet and Nutrition

5.5 This year a key achievement was the consultation and engagement with stakeholders and the public on proposals for an Out of Home Strategy, an element of the SG's *Healthier Future: Scotland's diet and healthy weight delivery plan*, which was [informed in part by recommendations from FSS](#). The public consultation was issued from November 2018 to February 2019, and was supplemented with extensive engagement with consumers and stakeholders. The consultation received widespread coverage across print, online and broadcast media in Scotland with public support from key stakeholders including Diabetes Scotland, NHS Scotland and Obesity Action Scotland. The Board is due to discuss the findings from this work at this meeting, and consider recommendations to the SG.

5.6 FSS also needs to understand consumers' dietary intakes in order to decide how best to influence dietary health. This year FSS commissioned a pilot of INTAKE24 in

the Scottish Health Survey. INTAKE24 is a fully automated online 24 hour recall system which can provide comprehensive and cost effective dietary data to monitor dietary intake. The results of the pilot will be reported on in 2019/20

## **Regulatory strategy**

5.7 The regulatory strategy program aims to shape the future of food and feed regulation in Scotland in line with FSS's wider Strategy, whilst meeting our obligations as a regulator operating in line with the Scottish Regulators; Strategic Code of Practice. SEI is required to inform policy decisions around our regulatory functions and to monitor their implementation and impact, for example, via appropriate information and data sharing with other regulators. In future we will need to use SEI to provide data assurance in terms of legislative requirements, assessing its integrity and developing mechanisms how to use, inform and monitor risk based regulatory interventions. The work links with the overarching themes of the Regulatory Strategy arising from the Surveillance work-stream (e.g. the FSS horizon scanning group) and food crime (e.g. FSS tactical assessment) strategies as well as activities covered under the three themes in the SEI strategy.

## **Essential Core Activities**

5.8 As an evidence based organisation, the gathering, analysis and use of SEI remains critical across the organisation's core activities. For example: in the analysis of trend data as discussed in para 4.4 (e.g. abattoir welfare data, carcass contamination data and shellfish official controls data); submissions to Ministers (e.g. on allergens and the presence and use of nitrites and nitrates in food production) and guidance for Local Authority Enforcement Officers (e.g. on the Production of Cheese from Unpasteurised Milk and the risk associated with Shiga-toxin-producing *E. coli*).

## **6 Identification of risks and issues**

6.1 There is a risk of not having sufficient resources to gather or use SEI in appropriate ways to support decision and policy making. To manage and mitigate this risk, FSS carries out an evidence prioritisation exercise on an annual basis as part of our business planning cycle to ensure that SEI needs are identified and resourced. The long term evaluation of how we have used SEI and its role in the success or otherwise of various interventions will help identify which projects have been of greatest benefit or impact to FSS in terms of delivering our outcomes. This year the publication, in February 2019, of an annual summary of the impact of our research and campaigns to evidence the impact of the work will start to help FSS openly record this.

6.2 There is a risk of (a) not having relevant SEI or (b) mis-interpreting existing or new SEI. Mitigation is achieved for (a) by either filling gaps by resourcing and procuring appropriate SEI or by recognising the gap and treating it as an uncertainty if the gap cannot be filled, as well as developing an understanding of what types of SEI have been most informative in the past. Mitigation is achieved for (b) by independent challenge by the FSS CSA, completion of SEI checklist for Board papers and peer review of SEI projects.



## 7 Conclusions/recommendations

7.1 The FSS SEI strategy helps to position FSS to face the challenges ahead, ensuring we determine what evidence we require to underpin the requirements of being a national food body for Scotland, working to protect consumers and help responsible businesses to flourish resulting in food and feed that is safe, authentic, and that consumers understand what constitutes a diet to support good health. Looking forward, a future challenge for FSS is to find alternative ways to analyse the data FSS generates using the emerging discipline of data science. This would allow us to extract greater value from the data we hold and apply it more widely. In the coming year, FSS intends to recruit a senior data scientist to provide a scope for specific projects which may help to identify potential interventions and to use analytics (economics, social science, data science and statistics) to measure their future impact. FSS already has a close working relationship with SG and it will be important for FSS to develop this further, alongside the work to create Public Health Scotland which will incorporate Health Protection Scotland, SG Information Services Division, NHS Health Scotland and the Scottish Health Boards. FSS has a role to ensure that Scottish consumers receive consistent evidence-based information about a healthy diet and any potential food safety and standards risks, but we need to work effectively with other organisations who have an interest in diet and nutrition.

7.2 The role of the CSA this year will continue to ensure external challenge of SEI, and also to focus on FSS's input to the risk analysis process agreed with FSA, to ensure that risk assessment and SEI associated with enabling consideration of the other legitimate factors in risk management is carried out appropriately.

7.3 The Board is asked to:

- **Note** progress with implementation of the SEI strategy from 01 April 2018 until 31 March 2019.

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