

Annual Chief Scientific Advisor Science, Evidence and Information (SEI) update.

1 Purpose of the paper

1.1 This paper is for **information** and **discussion**.

1.2 The Board is asked to:

- **Note** progress with implementation of the SEI strategy; and
- **Discuss** future SEI in the context of the new 2018-19 programme structure.

2 Strategic Aims

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

3 Background

3.1 FSS was formed in 2015 following [a review of food standards and safety in Scotland](#) to allow more flexibility to respond to Scottish needs. The appointment of an independent 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).

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 the FSS vision, policy and strategic priorities. The SEI strategy helps provide a link for our staff between organisational and SEI values under three key themes by providing underpinning approaches and assurance of our SEI for the FSS CSA.

3.3 In developing the SEIS strategy, two workshops were held with FSS staff and comment sought, through stakeholder consultation and from a number of critical friends who are involved in developing science strategies or risk management for their organisations or Government departments (Food Standards Agency (FSA), Scottish Environmental Protection Agency (SEPA), Scottish Government (SG) RESAS, SG CSA office, European Food Safety Authority (EFSA)).

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

3.5 The FSS Board agreed the FSS SEI Strategy at their meeting on the 08 March 2017 and it was published on our website in April 2017.

4. Discussion

4.1 Since taking up my post at FSS, I have observed that FSS has a highly committed and passionate staff that help achieve 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. It is also clear that SEI within FSS plays a key role in informing decisions at strategic, tactical and operational levels. It is vital 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 outwith FSS.

4.2 I have selected highlights of progress made during the last year against the three SEI themes below and selection of indicators against these are 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.

Theme 1. Prioritising our science, evidence and information needs;

4.4. At the start of 2017, FSS lacked economic and statistical expertise to support development and evaluation of policy and robust analysis of the operational datasets we generate. In collaboration with the Marine Scotland Analytical Unit an economist and a statistician/operational researcher have been appointed. Since September 2017 they have provided staff talks on the use of data and analysis and held workshops with staff to identify data collections, gaps and future analysis requirements. They have been involved in providing analytical expertise and advice on our meat charging model, analysis of operational (meat and shellfish) data, investigation of Scottish import and export data, and are now beginning to consider how we put economic values on policy interventions that we may consider in our future work e.g. on out of home pricing strategies. They have also provided advice on a number of Business Regulatory Impact Assessments (BRIA) which are required to be submitted to the Scottish Parliament to accompany either new legislation or legislative changes in Scottish Statutory Instruments.

4.5 Alternative ways to use the data FSS generates or has access to is now being utilised in the Nutrition Science and Policy, Enforcement, Food Protection, Science and Surveillance, Operations, Communication and Marketing and Scottish Food Crime branches. An Economic and Social Research Council (ESRC) policy demonstrator project, with the University of Aberdeen, is looking at data analytics of social media feeds through utilisation of "policy sprints" in the following areas: Food Hygiene Information Scheme, food safety incidents and food crime/fraud, this work has been reported to the UKG Cabinet Office Policy Lab team. Analysis of spatial data employing geographical information systems (GIS) has started and this has potential for future applications across FSS including in diet and nutrition (particularly our work on the out of home

environment), shellfish monitoring and in visualising Scottish imports/exports product flows.

- 4.6 One of the major challenges facing all Food Agencies around the world is identifying emerging threats and taking a risk based approach to decide which to investigate further and act on. An FSS tactical assessment prioritisation process, informed by methods developed by the police, has been developed that covers the areas of food crime and food safety. In the coming year, this will start to help deliver the FSS surveillance strategy by starting to direct food surveillance data and intelligence obtained via the newly formed FSS horizon scanning group into positive interventions.
- 4.7 FSS has now published two SEI forward looks which have invited comment on our proposed projects for the coming financial year. An external review has been funded to identify the priority chemical contaminant risks to food production and consumer diet in Scotland. This will report shortly and will help to focus work in this area in the coming years. Our tracker survey provides six-monthly reports on consumer views on FSS, food safety, diet, food trends, consumers concerns etc. and much of that information has been used over the last year to construct the six-monthly outcomes indicator report for the FSS Board.

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

- 4.8 One of the first things that a scientist learns is about communicating the science you do. Communicating science within in the particular field is relatively easy because scientists generally all use the same vocabulary. However, there is a challenge to communicate science between disciplines and this is even greater when communicating to the public and stakeholders.
- 4.9 Our FSS science advisers regularly explain the evidence behind our policies and campaigns to the media across our remit and provide the underpinning advice to our communications team when we run media campaigns*. This year a CSA blog has been established as an additional route of communicating our SEI*. A number of consumer forums have taken place to ascertain perceptions on food authenticity and food safety risk. These findings will be used to inform, in future, how we explain risk assessment and the relevant SEI during a food incident. Worthy of note this year is the work we commissioned and managed to update previous folate intake modelling to produce a policy options paper for the FSS Board and thus advice to SG Ministers.
- 4.10 It is pleasing to report some of the developments in expanding the SEI capability within FSS. Our staff have been undergoing a series of in house training sessions to enhance our risk assessment capability to respond to food and feed incidents. Our staff have also had the opportunity to keep abreast with current scientific developments by attending relevant scientific conferences and meetings*. There has also been the opportunity for staff to visit and learn from other organisations including the US Centre for Disease Control (CDC), Food and Drink Administration (FDA) and European Food Safety Authority (EFSA), British Nutrition Foundation (BNF) Cancer Research UK, the Nutrition Society and the Food Industry Network (FINN). 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.

- 4.11 FSS is part of the SG Science leadership Network, chaired by the CSA for Scotland (Prof. Sheila Rowan). The network has financed and appointed an SG Head of Professional Development for Science (Dr Carey Fraser). Dr Fraser has developed an SG professional development strategy for scientists with inputs from across the SG's science profession, including through two workshops with FSS scientific staff. This will help scientists in FSS to plan their career development and facilitate their engagement with peers across other organisations.

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

- 4.13 It is essential to provide assurance that the SEI used by FSS and communicated to the FSS Board is obtained, interpreted, and communicated appropriately and effectively. Progress has been made this year, with FSS Board paper authors being asked to complete the SEI checklist as part of this assurance process. We will continue to advise and provide examples for FSS staff to help them complete the SEI checklist in the coming year.

- 4.14 All FSS business cases have to be signed off by the CSA which ensures independent SEI challenge can be carried out before committing budget. All FSS work (£>20k) 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. 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 not so that lessons can be learnt. This year we are piloting an evaluation instrument for FSS and will report on its progress to the Board as part of our next yearly update. The instrument is modified from one used by the UK Research Councils and captures application of the SEI to policy and practice, capacity and capability building, collaborations and partnerships and further funding.

- 4.15 We have proposed to draw up a formal register of external scientific experts that FSS may draw upon either when we don't have the expertise in question in-house, or if we seek a further external perspective on a SEI issue. This has been more complex than originally foreseen due to the need to work within current HMRC tax rules, but this can now get underway and help to provide links to other scientists beyond FSS to help with peer review and risk assessment. We encourage the publication in the scientific literature of all the SEI that we fund and final SEI reports are available on our website. This year 15 SEI reports have been published*. We encourage data to be shared openly - currently FSS has published approximately 20 FSS datasets* either on our or partner websites such as [Scotland's aquaculture](#) and our contractors have already put whole genome sequencing data of *Campylobacter* and *E. coli* O157 onto the relevant data archives. In the coming year, we plan to deliver a new data portal that ensures compliance with open data standards and a timetable for future publication of FSS datasets.

5. 2018-2019 FSS Work programs

5.1 Looking forward I have selected some examples of the development of SEI in the FSS Programme based approach using the identified priorities for 2018-19 of:

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

BREXIT

5.2 Brexit will not change SEI in itself but is expected to change the way we trade, the standards and regulations that we adhere to and the structures that both assess and manage food and feed standards and safety risks in our food system.

5.3 At the European level scientific risk assessment is largely carried out by EFSA, and supported at the UK level by the Scientific Advisory committees (SACs) (e.g. Advisory Committee on the Microbiological Safety of Food (ACMSF), Advisory Committee on Toxicity (COT) and Scientific Advisory committee for Nutrition (SACN)). 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. It is as yet unclear what the UK's future relationships will be with EFSA, or what FSS's role might be. I have recently visited the Norwegian risk assessment authority (VKM) which provides a model of how risk assessment is carried out by a European country that is a member of the European Economic Area (EEA), but not a member of the EU. VKM carries out risk assessments for food and the environment that are specified by Mattilsynet (the Norwegian Food Safety authority). Norway can attend meetings but not direct the work of EFSA.

5.4 There are a number of ways by which risk assessment may be done in the UK in future, and we are in discussion with other parts of government, both in the SG and UKG about possible future arrangements. Whatever approach is decided, it is expected that more resource will be required in this area to ensure that there is sufficient risk assessment capability to fill any potential gap if the UK no longer has access to expertise within EFSA, and that the work can be done in a timely basis for the future food system that will develop.

5.5 If and when the UK develops and agrees new trade deals, it will be important that we can assess any potential new or additional food and feed safety risks associated with this. The risk assessment arrangements within the UK more widely will play an important role in this but it will also be the case that FSS will have to be ready to compile the evidence to provide advice to the Board for policy decisions, so we must ensure availability of or access to the relevant scientific capacity and capability to deal with the future challenges that will arise.

Diet and Nutrition

5.6 Our recent update on The Scottish Diet: it needs to change is underpinned by SEI, and provides an updated evidence-based commentary on the current Scottish Diet. FSS's evidence base was also a key part the SG's consultation on a Healthier future. Our SEI program will underpin ongoing and future work to

support dietary improvement including actions contained within SG's Healthier Futures Delivery Plan. This includes:

- An Out of Home Strategy for public consultation by Autumn 2018;
- Provision of expert advice to SG on restricting HFSS promotions;
- Roll out of MenuCal to SMEs (with emphasis on early adopter sites); and
- Provision of advice to SG and stakeholders on Public Health England's (PHE) reformulation programme.

SEI will also underpin:

- Maintenance of a cost effective monitoring system and publish findings;
- Development of a set of dietary guidelines for Scotland; and
- Development of future proposals to tackle the obesogenic environment.

The use of our staff's analytical skills to provide the evidence base is critical to produce, model and monitor any future policy interventions. Consumer behaviour change towards a healthy diet must be seen as a key aspect- at all levels in those interventions and our recent campaigns to raise awareness of snacking and upsizing are part of that communication.

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 data and information arising from the Scottish National database, surveillance (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 (ECA)

5.8 As an evidence based organisation, the role of SEI remains critical across the ECA of the organisation. 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.), in the governance of SEI such as an SEI checklist for Board papers as well as in generation of key outcome indicators that are now presented to the Board every 6 months.

6 Identification of risks and issues

6.1 There is a risk of not having sufficient resources to carry out appropriate SEI 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. As

discussed in para 4.14, long term evaluation of our SEI will help identify which projects have been of greatest benefit or impact to FSS in terms of delivering our outcomes.

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. Mitigation is achieved for (b) by completion of SEI checklist for board papers, peer review of SEI projects and independent challenge by the FSS CSA.

7 European Union considerations

7.1 See above section 5.2- 5.4 on Brexit.

8 Conclusion/Recommendations

8.1 The last two years has seen the development and rolling out of the FSS SEI strategy. This 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, it is what it says it is and the availability of a diet to support good health. It is recommended that FSS continues along this path and where appropriate carries out external reviews/workshops to ensure that the appropriate SEI has been identified and is being used appropriately.

8.2 It will be important to look forward beyond the next few years to identify what success may look like. There are tools available that can be adapted from the Government Office for Science futures toolkit to carry out “futures analysis” that consider how we have the history behind a current situation, the current situation and help explore or identify future solutions. We will investigate the use this toolkit in the coming year to help confirm existing or identify new performance indicators and also identify gaps in our SEI in specific policy areas.

8.3 The role of the CSA in the coming year will be to continue to champion the use of SEI in the programme structure and to provide independent challenge of its use within FSS.

8.4 The Board is asked to:

- **Note** progress with implementation of the SEI strategy; and
- **Discuss** future SEI in the context of the new 2018-19 programme structure.

Norval Strachan
FSS Chief Scientific Advisor
07 August 2018

Prioritising our Science Evidence and Information needs



Science, Evidence and Information Strategy

Developing GIS



Tactical
assessment

22

FSS
Scientists/
analysts



Foodborne disease
strategy

FSS Horizon
Scanning
Group



FSS Board
outcomes
report
developed



Digital Strategy



Enhanced FSS
analytical skills



Communication and
Marketing Strategy



Open
data
Strategy

Regulatory
Strategy

Surveillance Strategy



The Scottish Diet it
needs to change
2018 update



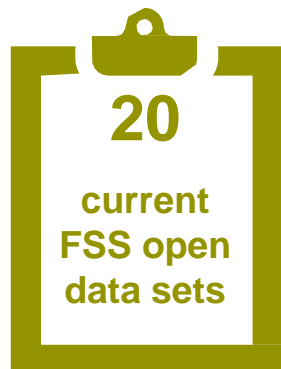
Enhancing and communicating the science, evidence and information we use

5,104 visits to
eatwell guide



&

3,745 visits to the
healthy eating
tutorial



20

current
FSS open
data sets

12 SEI web advice
statements
produced



7,493

visits to our schools resources web
page



2 SEI based consumer
campaigns supported
with media
interviews



c. 400 meetings
with SEI
stakeholders



c. 25 external
science talks
given



5 CSA blogs
produced



21 SEI training
courses
attended



15 SEI reports published



19 Scientific
conferences
attended by
FSS staff



Providing governance of our science, evidence and information

SEI governance statement placed on website



Public contract Scotland used for all SEI commissioned over £20k



4 SEI internal seminars

SEI peer Review guidance for staff



SEI checklist for FSS board papers



Managing risks for food and feed safety food standards or diet and nutrition



6 Internal SEI workshops held for staff



15 SEI reports peer reviewed or evaluated



SEI forward look 17-18 published...

and comments invited

£1.13 million

spent on SEI projects