

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 1st April 2019 until 31st March 2020;
- **Note** SEI use in the current FSS COVID-19 response from 1st April 2020 until 30 June 2020; and
- **Consider and discuss** progress of SEI in our programmes and essential core activities and the reflections of the CSA.

2 Strategic Aims

2.1 This work supports all six of FSS's Strategic Outcomes but in particular outcomes 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 Science Evidence and Information Strategy](#) (SEIS). The SEIS helps to ensure that FSS takes decisions based on evidence, in line with the wider FSS Strategy. This paper provides an overview of progress on SEI over the last year and shines a light on some areas where there is the opportunity for more to be done.

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 summary of the impact of our SEI led research and campaigns](#) published on our website each year to inform stakeholders and consumers of our SEI investment. 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.

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 19-20 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 performance reporting and outcome indicators presented to the board at six-monthly intervals and used as the basis for the last two annual reports.
- 4.2 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 outwith FSS.
- 4.3 At the time of writing we are in the middle of a COVID19 pandemic which has provided a public platform for the role of scientists and the use of science in the formulation of policy and [guidance for consumers, food businesses \(FBOs\) and Local Authorities \(LAs\)](#). As part of this report I have provided a brief overview of some of the activities that our science teams have contributed in dealing with this pandemic.
- 4.4 This report is in three main sections. The first section provides examples of the progress of our SEI strategy by theme. The second section gives examples of how we are using SEI in our three programmes (Brexit, Diet and Nutrition and Regulatory Strategy) and in essential core activities. I have also added COVID19 which is in effect an additional recent programme for FSS. Finally, I provide a short section on two areas which I wish to highlight. One where some progress has been made but there is more that can be done (Social Science and Behavioural change) and the second where there has been excellent progress across the organisation (Integration of SEI into the wider activities of FSS).
- 4.5 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.

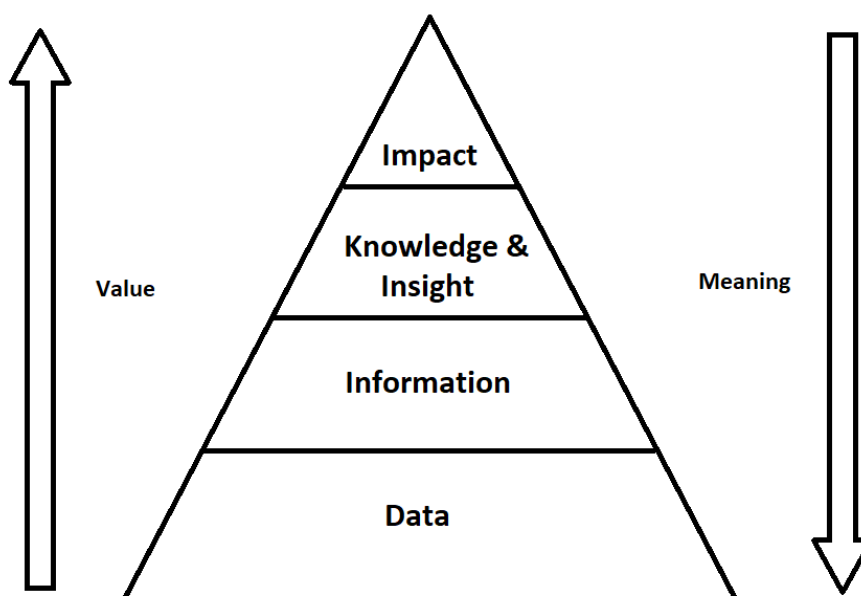
Listed below are some examples of progress during 19-20 under the three themes.

Theme 1 Prioritising our science, evidence and information needs.

- 4.6 In previous reports I have highlighted how economic and statistical expertise has been embedded into FSS. This year our analysts have provided advice on sustainable charging, Business Regulatory Impact Assessment (BRIAs), participated in the International Food Safety Economic Working group and in the

cross UKG group to explore updating the value of a life year used in Government appraisals and hosted an intern project to provide a review of the market indicators of food safety risks. Significantly, with Public Health Scotland (PHS) the first direct costs to the NHS in Scotland of gastrointestinal infection, due to campylobacter, were modelled and [published](#).

- 4.7 Science and evidence are dependent on the data upon which they are based. The field of data analytics has expanded considerably during the last 20 years with increases in electronic data storage, computing power, software and database tools, connectivity through the internet and the way that data is generated via the internet of things and social media. The need to analyse this data has spawned the field of Data Analytics and is being used for example to suggest items on our online shop or to provide advertising on products that we have shown a previous search interest.
- 4.8 The data pyramid below shows how impact can be created from collecting and analysing the appropriate data. A simple example could be an electronic temperature sensor, connected to the internet, which monitors the temperature in an oven of a food company. The raw data would be the temperature measurements. Information would be obtained by processing the data to determine for example the peak temperature, when this occurred and how long it was at that temperature. Expert advice (e.g. time-temperature combination required to ensure thorough cooking of the food product) enables knowledge and insight to be generated about the success or otherwise of the cooking process. Impact then follows by allowing the product for sale if the cooking process is successful or by stepping in to remove the product if the process fails.



The data pyramid¹

¹ Modified from Rowley, J. (2007) The wisdom hierarchy: representations of the DIKW hierarchy. *Journal of Information Science*, 33(2), 163-180. The data pyramid¹

- 4.9 At FSS we have been developing our data analytics capability. We already have data analyst expertise in our Scottish Food Crime and Incidents Unit (SFCIU) who acquire information and data from a number of sources (e.g. industry, LA's, the [Scottish Food Crime Hotline](#), etc.) and turn this into actionable intelligence (knowledge and insight) to achieve impact to detect and reduce the incidence of food crime. We have now recruited two further members of staff with expertise in data analytics. The first sits in the Science Strategy and Information Analysis branch and is currently reviewing data analytics needs across FSS and helping expand capacity and capability in this area by upskilling staff to clean, amalgamate and visualise data. The second is in the Food Protection, Science and Surveillance branch working on the Scottish Food Sampling Database (SFSD) and contributing to horizon scanning under our Surveillance and Regulatory strategies. FSS has recently been successful in securing a place on the Scottish Public Sector [Data Science Accelerator Programme](#) which will run from 01 July 2020 until 31 September 2020. This will be an opportunity for staff to develop and enhance their data science skills by interacting with a number of experienced data scientists. The program will provide access to state of the art data analytics software and aims to develop an interactive dashboard prototype that will report on SFSD sampling data obtained from the 32 LAs across Scotland in real time. The experience of developing a prototype dashboard for data that we collect, can then be used across FSS.
- 4.10 Scottish consumer and stakeholder views on FSS and our public health remit have been collected through three tracker Waves [7](#), [8](#) and [9](#) during 2019-20. [We engaged with consumers and scientists to scope the need for Scottish Dietary guidelines](#). The views of [consumers relative to COVID-19](#) were collected in May and June 2020 and will be repeated in July. This year, FSS has completed 6 formal public consultations collecting Scottish consumer and stakeholder views on proposed policy and legislative changes e.g. Consultation on official controls regulation and on allergens which formed the basis for the [May Board paper](#) and recommendations to Ministers.
- 4.11 Cannabidiol (CBD) is a cannabinoid which can be extracted from the cannabis plant and added to foods, but which has no psychoactive properties. There has been a rapid growth in food products containing CBD oil in recent years and in January 2019, the EU Commission classified food products and supplements containing CBD as “novel foods.” The Committee on Toxicity has published a preliminary background paper on the toxicity of CBD oil. FSS prioritised surveillance activities to undertake a pilot survey of food products containing this extract available for purchase in Scotland. The survey is also looking for other possible contaminants including the psychoactive compound tetrahydrocannabinol (THC).

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

- 4.12 This year a number of our scientists have moved to positions within other teams such as SFCIU and operations (shellfish) and this is helping enhance the use of

SEI across FSS, whilst giving our scientists the opportunity to be involved at the forefront of operational delivery and communication with LAs and FBOs.

- 4.13 The allergens working group comprises individuals from across the organisation (science, policy, enforcement, communications, audit, incidents, veterinary and field operations). Evidence from [FSS tracker surveys](#) show approximately one in every ten households has a food allergy and evidence from incidents shows that the presence of undeclared allergens is one of most common reasons for [product recalls](#). A project is underway with FSA that is developing an anaphylaxis registry for Scotland. An [online training tool](#), informed by the SEI, primarily intended for FBOs and accredited CPD for LA Authorised Officers, has been developed to improve awareness about food allergens in manufacturing and catering settings.
- 4.14 Consumer fact sheets on all of the main causes of foodborne illness have been developed this year (STEC, *Listeria monocytogenes*, Salmonella, Campylobacter and foodborne viruses) and are available on the [website](#). The factsheets were developed following a series of [consumer forums](#) which we ran to explore their perceptions of food safety risks.
- 4.15 In Scotland, the CSA represents FSS across Scottish Government (SG) in the Environment, Natural Resources and Agriculture (ENRA) network which includes the CSAs from environment, marine, the Chief Veterinary Officer and Chief Plant Health Officer to ensure coordination of advice and evidence, particularly across areas of mutual interest, the CAMERAS [Board](#), the Science leadership Network run by Sheila Rowan the SG Chief Scientist.
- 4.16 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 meet regularly to discuss and collaborate on mutual areas of scientific interest and learn from academic institutes and other organisations including, Food Safety Authority of Ireland, Public Health England, Campden BRI, Health Protection Scotland (now Public Health Scotland), FSA, British Nutrition Foundation, the Nutrition Society, the Food Industry Intelligence Network, SEPA and International Food Safety Regulatory Economics Working Group. 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.

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

- 4.17 This theme aims to ensure that the evidence we use is trusted and robust by:
- being open and transparent about the SEI that we need and where we get it from (e.g. universities, research institutes, science advisory committees etc.) For example in the last year we have used advice from the Science advisory Committees on vitamin D (Scientific Advisory committee on Nutrition (SACN)), [safety of cannabinoids](#) (Committee on Toxicity (COT)) and [Salmonella in eggs](#) (Advisory Committee on the Microbiological Safety of Food (ACMSF))

- using quality assurance in commissioning our SEI by using external peer review of tenders;
- establishing its impact ([impact paper online](#) –Board papers in May on [Campylobacter](#) and Allergen [information for consumers](#), August on [tracking FSS's reputation](#) and [Out of Home \(OOH\)](#), November on [The Future capacity of food and feed laboratories](#));
- being open to challenge. For example this year we commissioned 13 pieces of SEI and had 11 final reports published, all of which were peer reviewed by independent external experts.

4.18 Every 6 months, SEI based, key performance indicators are presented to the board through outcomes and performance reporting papers. In [June](#) the FSS board discussed the development of the new strategy. A new strategic plan for the organisation will also be developed and alongside this there will need to be a review of key performance indicators for the organisation moving forwards.

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.
- COVID 19

Brexit Programme

5.2 The UK left the EU on 31 January 2020 and is currently in the transition period which is scheduled to last till 1 January 2021. At the time of writing it is unclear what the exact terms of leaving will be (i.e. some sort of trade deal or a deal based on the Withdrawal Agreement). As part of the new risk analysis process, that has been [agreed by the Board](#), FSS needs to have the scientific capacity and capability in a post EU world as well as the relevant SEI to inform its policies. Additional funding allocated to FSS from SG for BREXIT has been used to develop the risk assessment capacity and capability. This will be used to focus on specific issues that will be relevant to Scotland and support the UK risk analysis process. The recruitment of the new Head of Risk Assessment post is currently underway. This post is important because best practice in risk analysis requires separation between the objective science based risk assessment and values based risk management processes. The team has also been strengthened in both microbiological risk assessment and chemical contaminant expertise. Discussions are ongoing with FSA and other government partners on the operationalisation of the risk analysis process.

5.3 Official control laboratories have a critical role to play in the investigation of food incidents, surveillance, import checks and assurance of exports-all of which are critical functions for ensuring the safety and standards of the Scottish food chain post EU Exit. The four Local Authority funded Public Analyst laboratories in Glasgow, Edinburgh Dundee and Aberdeen carry out testing to support these official controls. A review of

the system for delivering official control laboratory services has been undertaken and this was reported to the Board [last year](#). It is important that a robust and sustainable laboratory infrastructure is in place post EU exit.

5.4 FSS has sought the views of consumers on food issues related to Brexit and is cognisant of other sources of evidence in this area (e.g. from consumer groups such as Which).

Diet and Nutrition Programme

5.5 Three key pieces of evidence were published in 2019 to inform our strategy on out of home food consumption in Scotland. The first, [The Out of Home Environment in Scotland](#), commissioned Kantar Worldpanel to provide data on the Out of Home food and drink landscape in Scotland between June 2015 and 2018. This report provides evidence on how this environment has changed over time, including the types of businesses and the most popular foods and drinks purchased OOH. The second was carried out by Jump/RedTree/SMG research consortium that performed [qualitative research with consumers](#) to explore their views on eating outside the home (OOH) and to provide an independent report of their findings. The third [reported](#) on an FSS public consultation on 'Proposals to improve the out of home food environment' which ran between November 2018 and February 2019. This body of evidence together with other published research in the area informed the principal and action based approach and recommendations in the [August 2019 board paper](#).

5.6 We explored support for [Dietary Guidelines in Scotland](#). This new resource would provide practical, pragmatic advice to support consumers making steps towards a healthier balanced diet as shown by the Eatwell Guide. This research involved engagement with a wide range of stakeholders and consumers. The findings showed that stakeholders would welcome consistent dietary messaging and consumers would welcome simpler messages, as well as practical resources to help them move towards a healthier diet. In Scotland in the coming year we will continue to work closely with our partners across Scotland, including Public Health Scotland to ensure that dietary messaging is consistent, helps to minimise health inequalities and, continues to help contribute to SG national outcomes.

Regulatory Strategy Programme

5.7 The regulatory strategy programme 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](#).

A key area where SEI contributes is the surveillance Work Stream. This Work Stream has been re-structured to build on the progress that has already been made to develop a strategic surveillance capability for FSS and to introduce a number of targeted activities which aim to generate the evidence needed to inform our future regulatory approaches. The key areas for this Work Stream include Horizon Scanning (see below), Information Sharing, Improved Use of Data, Business Profiling, Understanding Business Compliance, and Understanding Consumer Preferences. SND/SFSD

development is also part of this Work Stream and is part of the Digitalisation and Technology Transformational Work Stream.

Essential Core Activities

5.8 This year we have made significant progress in developing the scientific evidence base to support our [strategy for reducing foodborne illness in Scotland](#).

5.9 Scotland continues to have one of the highest rates of Shiga toxin producing *E. coli* (STEC) infection in the world. Part of this is foodborne, with the remainder arising from environmental exposure, water or foreign travel. FSS has continued to fund research that monitors the incidence and epidemiology of this disease through an epidemiologist at Public Health Scotland. We recently commissioned the Scottish *E. coli* reference laboratory (SERL) to sequence its archive of clinical non-O157 STECs. Non-O157s represent around one third of STEC infections in Scotland, but far less is known about their genetic make-up and ability to cause severe illness. The [final report](#) details the resulting database which presents a unique and valuable resource which will be able to be used to compare isolates from any future outbreaks as well as surveys from food and animal populations to get a better understanding of the sources of this disease. FSS has [additional ongoing research](#) in foodborne STEC infection. This includes a study of the risk of STEC in venison, led by the Moredun Research Institute, the work comprises an investigation of the prevalence of STEC in deer faeces and an analysis of the risks of contamination through the venison production chain. We have also commissioned a [survey of STEC and other pathogens in retail beef mince](#), led by the Scotland's Rural College and Public Analysts. Both projects are due to report shortly.

5.10 A key milestone has been the [publication of our programme of research on factors affecting variations in *Campylobacter* disease rates in Scotland](#), and [the burden of these infections on the Scottish population](#). This work was undertaken by the University of Aberdeen and Health Protection Scotland, and enabled us to derive, for the first time, [direct healthcare costs associated with *Campylobacter* infection in Scotland](#). It also provided a detailed insight into the burden of *Campylobacter* infection, including the fact that overall 14% of cases require admission to hospital and that the factors associated with hospitalisation include age, deprivation and underlying medical conditions. It is notable that hospitalisation rates in the elderly have trebled since 2005 and that they have higher rates of hospital visits compared to the rest of the population and these visits tend to be of longer duration. The results were presented to the [FSS Board in May 2019](#) who agreed to further work aimed at identifying avenues for ensuring at risk groups, particularly those in the older population, are appropriately informed about the risks of *Campylobacter* infection and how to avoid it.

COVID-19

5.11 The COVID-19 outbreak has raised the profile of scientists and the role of scientific advice. [EFSA](#), were able to state early in the European phase of the outbreak, that “there is currently no evidence that food is a likely source or route of transmission of the virus.” This was underpinned from experience of previous coronavirus outbreaks involving SARS-CoV and MERS-CoV. This position was

reinforced by the FSA [risk assessment](#), which said that the risk of acquiring COVID-19 from food was negligible to very low but that there was high uncertainty in these estimates predominantly due to gaps in the data. FSS have developed evidence based [guidance](#) for food business operators and their employees during the outbreak. This also covers take-away and delivery food services and a risk assessment tool has been developed which will help food businesses restart as lockdown restrictions are relaxed.

5.12 The coronavirus outbreak will have changed the behaviours of the public in relation to food. For example, food eaten out of the home will have changed due to closure of restaurants, whilst take-aways remained open and there has been expansion in supermarket deliveries. It is unclear how these changes of behaviour will have affected the diet and any effects on obesity and food poisoning rates. FSS have sourced retail purchasing data during COVID-19 which will provide information on how food purchasing behaviours have changed compared with previous years. Also, the team are working with Scottish Government and others to explore the potential of using Intake24 to collect dietary intake data to provide additional information on the diet of the Scottish population. Work with epidemiologists at Public Health Scotland is investigating the impact of COVID-19 on reported cases of the main gastrointestinal pathogens that cause food poisoning. In addition, a handwashing tracker, partnered with FSA, is investigating handwashing behaviours in the population.

5.13 The diet and nutrition team have re-issued current [advice](#) on vitamin D supplements during the COVID-19 pandemic when people may have been spending more time than usual indoors and may not be getting enough vitamin D from sunlight exposure. This advice is given to support musculoskeletal health, based on the [review](#) of the evidence provided by SACN in 2016. More recently SACN conducted a rapid [review](#) on Vitamin D and respiratory tract infections which concluded that there was no evidence to support taking supplements to reduce the risk of these diseases but this would be kept under review. However, they reiterated the need to maintain vitamin D levels within the population to maintain musculoskeletal health.

6 Opportunities and Considerations for SEI

6.1 There are two areas which I would like to highlight. One where FSS has made progress but perhaps there is more that can be done and the second where I have seen excellent progress during my time as CSA. I have chosen generic areas, which are likely to be important no matter what the format of the future strategy or plan.

6.2 Social science and behaviour change – it has become clear during my time working as CSA that human behaviour is intimately connected with the purpose of FSS to ensure food is safe, food is what it says it is and consumers have diets conducive to good health.

6.3 Achieving the goal that food is safe is dependent on the behaviour of food businesses and retailers preparing and implementing relevant food safety management systems. Consumers need to undertake appropriate food hygiene behaviours whilst transporting, storing and preparing meals. Also, those tasked with enforcing food safety have the appropriate behaviours to ensure successful implementation. Ensuring a healthy diet is not only dependent on the behaviours of consumers in selecting the food that they eat but also that of retailers and businesses

who create the [food environment](#). Whilst food crime arises because of the final behavioural choice of the individual or business to go along that path of action.

6.4 There are a number of social science based approaches that can be used to encourage a behaviour. These include the behaviour change wheel², nudge³ and the [EAST framework](#). It should be noted that some of the same ideas are shared across these approaches. The behaviour change wheel is based on US criminal law which to prove that a person is guilty there is a need to demonstrate three things: capability, opportunity and motivation. By targeting one or ideally all of these characteristics it is possible to encourage a behaviour – for example providing guidance to ensure consumers have knowledge of appropriate storage temperatures of raw meats enables capability in making informed choices but of course there needs to be opportunity to do this (e.g. access to a fridge) as well as motivation (e.g. to reduce risk of food poisoning). Nudge is basically an intervention that alters a person's behaviour in a predictable way but it must not be compulsory. For example putting fruit at eye level to encourage healthy eating is a nudge. Whereas banning food high in salt, sugar and fat is not.

6.5 The EAST framework encourages a behaviour by making it Easy, Attractive, Social and Timely (e.g. using smaller plates for food buffets). This has been piloted by the communications team when evaluating how the Kitchen Crimes campaign may have effected behaviour change. Easy, Attractive, Social and Timely measurements are made using a series of questions as part of a consumer survey. This showed that the campaign was easy to act on, attractive at a personal level, and important socially. However, it was not generally found to be timely (21%), as the perception is that despite the majority of people (84%) already claiming to follow best practice, on average people are committing 9 out of 20 kitchen crimes. This subsequently suggests people think they know it all already.

6.6 The SFCIU use the framework of [Divert, Deter, Detect and Disrupt](#) around the use of interventions to reduce food crime. For example, the [recent publicity campaign](#) that warns consumers to lookout for “tell-tale” signs of food crime during the COVID-19 pandemic (e.g. the price of a food or drink product is low when offered from a mobile van or an online service operating from home). This aims to Deter criminals by supporting the public to protect themselves.

6.7 The behavioural frameworks being made operational by the different branches are selected because of the applicability to the problem at hand and also based on best practice from their relevant disciplines. It is likely that as FSS becomes more experienced with these methodologies that they will be extended further across the organisation.

6.8 Integration of SEI into the wider activities of FSS. One of the main roles of scientists is to communicate the findings to individuals/groups who are able to act on them. I have mentioned above some examples of this when working with external organisations and the public. Here I want to concentrate on an example where SEI is communicated and used across different parts of the organisation. I could have

² Michie S, Atkins L, West R. (2014) The Behaviour Change Wheel: A Guide to Designing Interventions. London: Silverback

³ R. Thaler and C. Sunstein. (2008). Nudge. Penguin Books

selected cross office working on for example allergens or *Campylobacter* but on this occasion, I will select horizon scanning.

6.9 Horizon scanning is a process to identify potential trends, new technologies or risks that could impact on the Scottish food chain. FSS set up a formal group in October 2017 which has cross office membership. Every branch contributes issues that arise, and these can originate from a variety of sources including from contacts in industry, research organisations, technical and academic literature, the press etc. Examples of issues that have originated from the Horizon Scanning Group (HSG) which have resulted in action by FSS includes identification in March 2019 of saffron adulteration reported in Spain together with intelligence from SFCIU which led to authenticity testing in our 2019/20 sampling programme undertaken by LAs. This identified some examples of non-compliance which are currently under investigation. Another example involved consumers bringing reusable packaging to butchers shops. This was initiated by the Scottish Federation Meat Traders Association and came through to the HSG via the Scottish Food Enforcement Liaison Committee. This resulted in FSS guidance on reusable packaging being [published](#) which was fed back to the originators of the issue. The HSG also produce a report for LAs on issues to be aware of which is included in the monthly enforcement report. During the COVID-19 outbreak the horizon scanning team is also actively considering issues associated with the effect of the pandemic on the food chain. The HSG is an excellent example of where evidence from across FSS can be recorded and assessed which can lead to appropriate action being taken.

7 Identification of risks and issues

7.1 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. In the longer term FSS may have a challenge of continuing to fund an appropriate level of external research and surveillance if budgets become frozen.

7.2 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 checklists where appropriate and peer review of SEI projects.

8 Conclusions

8.1 The SEI strategy has helped to focus activities to ensure that FSS has the expertise and capability to use SEI to develop, challenge and evaluate our policies, to tackle food safety risk, food standards and diet and nutrition.

8.2 The last 2 years have been punctuated by dramatic changes. In particular, the additional challenges caused by BREXIT as well as the COVID-19 pandemic. Consequently, it has been more important than ever for FSS to prioritise and gather the relevant scientific evidence on which to inform its policy decisions. The enhancement of the science teams, the opportunities for scientists to work across the organisation as well as the cross office/field working enables SEI to be embedded and FSS to continue being a science and evidence-based organisation. Looking forward, these changes put FSS in a strong position to deal with the challenges that it faces. However, as mentioned above there are more opportunities for FSS to progress further in the areas of data analytics and behavioural science which should be applicable across the programmes and essential core activities. This will be my last report as CSA and I wish my successor every success in the role.

8.3 The Board is asked to:

- **Note** progress with implementation of the SEI strategy from 1st April 2019 until 31st March 2020.
- **Note** SEI use in the current FSS COVID-19 response from 01 April 2020 until 30 June 2020; and
- **Consider and discuss** progress of SEI in our programmes and essential core activities and the reflections of the CSA.

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