Food Standards Scotland
Inbhe Bìdh Alba

Food Standards Scotland (FSS)

Science, Evidence and Information Checklist

October 2022 (update)

Aim

This science, evidence and information (SEI) checklist aims to support Goal 3 of FSS's Strategy[1]: ***A research and data science capability which enables us to detect risks, monitor public health trends and consumer behaviours and translate evidence into action.*** It is intended for use as an aide memoire for the points which should be considered by all our staff when they are commissioning SEI work or using SEI in the development and communication of policy papers and proposals for the FSS Executive and Board.

Not all of the questions and points in the checklist will be relevant for all proposals and papers. **Using questions 1-4 to define the problem and the approach and questions 5-7 on gathering and assessing the evidence at the planning stage of all our work** will help to ensure that all relevant points are identified and considered at an early stage. **Questions 8-23 are only relevant where a risk assessment is required or being considered.**

Introduction

FSS has defined science, evidence and information governance as "*the methods by which all our staff assures and demonstrates that science, evidence, information and analysis are obtained, interpreted, used and communicated appropriately and effectively by FSS"*

Our definitions of science, evidence and information, which can be quantitative and/or qualitative, will apply:

- **Science:** appropriate application of physical, natural and social science using both established and novel methodologies to test theoretical principles;
- **Evidence:** all of the data we collect and the outputs of its analysis;
- **Information:** facts, intelligence and insights generated through surveillance, monitoring, market research, and opinion (stakeholder, business, political, web analytics, observational data).

This checklist is one of the tools to support our SEI governance, to provide a checklist of the points to be considered by all FSS staff when using SEI for the development of business cases and communication of policy papers and proposals, including commissioning of work, preparation of Board papers, other papers and submissions for the FSS Executive which deal with science-based issues and those which may draw on risk assessment advice from scientific advisory bodies. It addresses:

- the processes to be followed and whether these are comprehensive;
- what the current science, evidence and information says and what are the limitations (e.g. gaps, uncertainties, applicability, assumptions, how these affect the overall conclusions, whether there are controversies and what weight to give to alternative views); and
- whether those providing the risk assessment have clearly set out their conclusions and recommendations.

Governance of evidence gathering is outlined in **our FSS science, evidence and information governance statement** and **our science, evidence and information strategy.**

[1] Healthy, Safe, Sustainable: Driving Scotland's Food Future (foodstandards.gov.scot)

How to Use the Checklist

- The checklist should be used as a recordable guide by all our staff. It provides a framework for discussion and a record of the approach to ensure proposals and papers are evidence based, including any input from scientific advisory bodies, and that this is clearly set out in communicating conclusions and recommendations.

- It also provides a framework for the assurance and challenge of this work, by the FSS Chief Scientific Advisor (CSA), Executive and ultimately by the Board.

- Not all of the points in the checklist will be relevant for all proposals and papers. Use of the checklist questions 1-7 at the early planning stage of all our work will help to ensure that all relevant points are identified, and that plans to address them are considered in the proposed approach. If it is not clear whether any issues arise, this can be discussed and agreed at an early stage with the FSS CSA.

- The checklist is intended to highlight the points that need to be considered, rather than to provide detailed guidance or instructions on the specific answers in all individual cases. Staff will need to be aware of and refer to principles and guidance in specific areas. Some important examples are listed in the science and evidence governance statement (for example Codex principles).

Criteria for Success

Success criteria for the checklist are that:

the CSA and the Board are assured that the specified work has been done, and to an acceptable standard;

- the CSA and the Board have confidence that the FSS assessment and use of the science-base is comprehensive and has been interpreted correctly;
- trust is maintained within the Board about the FSS collection and interpretation of scientific evidence;
- the FSS approach to and use of evidence is consistent, open and transparent to stakeholders; and
- the external perception and reputation of the FSS as a science-and evidence- based organisation is maintained.

FSS Science, Evidence and Information Checklist

Below are some of the questions that you may need to consider for your proposal, paper or policy. Using this checklist at the initial planning stages will help you ensure that all relevant points are identified (including other staff within the office who may need to provide input), that plans to address them are factored into the approach and that all work is evaluated. Not all questions will apply in each specific case.

Defining the problem and the approach

1. Has the problem and rationale been clearly defined?

☐ **Yes** ☐ **No**	**Comments:**

2. Has the current different strands of science, evidence, information and analysis needed to address the problem been identified?

- what are the outcomes and how do they link to FSS objectives and other team priorities?
- who should be involved in FSS and externally, to scope, deliver, co-fund, or evaluate the work, or as a stakeholder or end-user? Have the relevant expert inputs been identified and a clear plan defined to ensure they are brought in at relevant stages, from scoping on (this includes external experts and FSS experts)? How will interests be recorded and managed?

☐ **Yes** ☐ **No**	**Comments:**

3. Have different stakeholder views and opinions been taken into account when framing the issues and questions to be addressed? Does any of the required information exist already or could it be derived from existing sources?

☐ **Yes** ☐ **No**	**Comments:**

4. Has the approach been agreed at the outset (including: definition of any issues to be considered by scientific advisory bodies; the need for and the approach; statistically robust sample size for surveys; and any applications from the FSS framework for science and evidence governance)?

☐ **Yes** ☐ **No**	**Comments:**

Gathering and assessing the evidence

5. What steps have been taken to ensure that all available and relevant scientific evidence has been considered by the appropriate body (e.g. SAC, FSS, external experts)? This should consider the following:

- Have other sources of evidence such as surveillance or enforcement, or unpublished data from government, industry or other sources been considered?
- Has a comprehensive literature survey been undertaken?
- Have external scientific or other experts been consulted who may know of relevant unpublished data? What steps have been taken to ensure that these data are reliable?
- Has evidence been sought from appropriate stakeholders, and has this been assessed?
- Is further research required?
- Is there a need to consider different data sets for Scotland or for different groups of the population?
- Is the scientific evidence base transparent to stakeholders, and is it clear which evidence has been peer-reviewed.

Steps taken: **Comments:**

6. What steps have been taken to assess the individual pieces of evidence? This should include the following:

- Has an appropriate methodology been used?
- What is the strength of the quantitative scientific evidence; e.g. is it relatively weak such as anecdotal or from a single case study, or relatively strong such as from a large double-blind controlled experimental study?
- Is qualitative evidence robust?
- If evidence was collected outside the UK (or from contexts different from that under consideration), has the relevance to the UK situation and the current problem been assessed?
- How do the findings contribute to the overall evidence base? Are there any contradictions between findings?

☐ **Yes** ☐ **No**	**Comments:**

7. Are the conclusions consistent with the quantitative and/or qualitative evidence, both in character and emphasis?

☐ **Yes** ☐ **No**	**Comments:**

Application of a SEI checklist to Risk assessment

8. Is the evidence underpinning the risk assessment and the assumptions set out clearly? Is it clear how data have been treated or processed? Is the approach to any statistical analysis clear and appropriate?

☐ **Yes** ☐ **No**	**Comments:**

9. Has an assessment been made of the likely impact and probability of occurrence? Has the full range of likely impacts been considered?

☐ **Yes** ☐ **No**	**Comments:**

10. Are all key scientific uncertainties including gaps in evidence or analysis highlighted? Have margins of uncertainty been applied and explained?

☐ **Yes** ☐ **No**	**Comments:**

11. How have the areas of uncertainty including gaps in evidence or analysis been handled when reaching final conclusions and how do they impact on the advice?

☐ **Yes** ☐ **No**	**Comments:**

12. Did the risk assessment consider the views of experts in all relevant disciplines, either as members of a committee or other invited experts?

☐ **Yes** ☐ **No**	**Comments:**

13. Is it clear how the conclusion is reached, based on the evidence considered? In particular, is the extent to which judgment has been used clear?

☐ **Yes** ☐ **No**	**Comments:**

14. Are there any alternative interpretations of the same evidence? Have they been considered? Why were they rejected?

☐ **Yes** ☐ **No**	**Comments:**

15. How has the assessment committee (or other body) taken account of any conflicting views? Have any risk assessments carried out by others been cited? To what extent are there consensus/differing views on uncertainty, probability and impact?

☐ **Yes** ☐ **No**	**Comments:**

16. Has the SAC or FSS consulted on the draft conclusions? How have the results been taken into account?

☐ **Yes** ☐ **No**	**Comments:**

17. Are the conclusions/advice expressed in clear, simple terms? Do they include all important caveats and explanations necessary to properly understand the conclusion?

☐ **Yes** ☐ **No**	**Comments:**

Interpretation

18. Is the scientific evidence and analysis (including risk assessment advice, any other assessments of risk, and evidence and analysis on other aspects of the proposals) presented and represented correctly and clearly in the paper?

☐ **Yes** ☐ **No**	**Comments:**

19. Are significant limitations clearly explained?

☐ **Yes** ☐ **No**	**Comments:**

20. How has/will the assessment and conclusions been peer reviewed or otherwise assured? For example by peer review, opinion of SACs by FSS or FSA staff.

☐ **Yes** ☐ **No**	**Comments:**

21. What is the overall assessment of the quality of the evidence and the associated confidence in the decision?

☐ **Yes** ☐ **No**	**Comments:**

22. If both risks and benefits were considered, is the degree of rigour and uncertainty associated with each set out clearly? Does the conclusion indicate whether the evidence base is changing or static, and when it may need to be reviewed? Has a picture of the external environment been given so that the FSS Board (or other party being asked to make a decision on the basis of the proposals) knows the effect of any proposals or risk assessment, including ethical or sustainability issues, the responsibilities of all parties – government, enforcement and industry- or the need to educate consumers?

☐ **Yes** ☐ **No**	**Comments:**

23. What would trigger a review of the decision? Are there any priorities for further evidence or analysis which would inform this process?

☐ **Yes** ☐ **No**	**Comments:**