

SFI Public Service Fellowship 2023

1. Name of Governmental Department or Agency
Food Safety Authority of Ireland (FSAI)
2. Title of the Project
FSAI1 Data analytics for chemical risk prioritisation
3. Description of the Project
<p>The Food Safety Authority of Ireland (FSAI) has national responsibility for coordinating the enforcement of food safety legislation in Ireland. One aspect of enforcement is sampling and analysis of products on the Irish market and comparison of analytical results with legislative maximum levels.</p> <p>National chemical monitoring programmes are reviewed on an annual basis and agreed between the FSAI and its official agencies involved in the programmes. The programmes incorporate a broad range of chemical parameters, including mycotoxins, plant toxins, heavy metals, food processing contaminants, food contact materials, food additives and flavourings, as well as some compositional and quality parameters.</p> <p>Due to the ever-increasing number of chemical hazards included in the sampling programmes annually coupled with the finite resources available to fulfil Ireland's requirements for sampling and analysis, a formalised approach to prioritise the chemical hazards and food commodities which should be included in the sampling programme is needed. In 2019, the FSAI's Scientific Committee published a report on a "Risk Ranking Model for Chemical Contaminants in Food". The report established a risk ranking approach which was initially piloted on four contaminants: cadmium, acrylamide, aflatoxin B1 and fumonisin B1. The report recommended that the approach should be piloted for two years, followed by a review and that the risk ranking should be expanded to the other substances in the sampling programme.</p> <p>This project aims to make use of statistical tools and available chemical hazard databases to expand the risk ranking model to those substances which are listed in the sampling programmes and identify other potential chemical hazards which could be considered for inclusion.</p>
4. Project Scope
<p>Task 1: Mapping of available databases on chemical hazards: The fellow will map out data sources on chemical hazard and occurrence that are available to the FSAI, including internal databases and those which are publicly available, and which can be used as inputs to the risk ranking model.</p> <p>Task 2: Collation of datasets: The fellow will collate the datasets necessary to expand the risk ranking model to those substances included in the sampling programmes.</p> <p>Task 3: Data processing and classification: The fellow will develop a tool (e.g. RStudio code) which can be used to clean and classify the available occurrence and hazard datasets so they are compatible and can be used in an exposure assessment programme.</p>

Task 4: Update of the risk ranking model: The fellow will complete an update of the risk ranking model using the most up-to-date data on occurrence, hazard and legislation.

Task 5: Statistical analysis of chemical data to inform the sampling programmes: If appropriate, the fellow will develop a dashboard which would include a statistical trend analysis of the FSAI's monitoring data and food incidents database with respect to chemical hazards and other sources where deemed appropriate.

Task 6: Reporting and Evaluation: If appropriate, the Fellow will produce a report or peer-reviewed publication on the findings from the expanded risk ranking.

The Fellow would work closely with members of the Chemical Safety team on this project. The fellow would liaise with the FSAI data team, where required.

5. Skills/Expertise Required

The skills required are as follows:

- Data analytics. Proficiency in R would be an advantage.
- Ability to review and collate data from multiple sources, e.g. online databases, peer-reviewed and grey literature, etc.
- Science communication (written and oral)

The following skills would be advantageous:

- Risk assessment approaches for chemical hazards
- Knowledge of food consumption databases and the European Food Safety Authority's Standard Sample Description (SSD2) terminology

6. Expected Outputs of Project

The outcome of the project will be a chemical hazard risk ranking which has been expanded to all substances covered by Irish chemical monitoring programmes and takes into account exposure. A report or peer-reviewed publication would provide the FSAI with a means to disseminate the findings of the risk ranking project.

7. Working Arrangements

If a candidate prefers to be based at the FSAI offices in Dublin's IFSC area then this could be accommodated. However, the candidate need not be based permanently in Dublin and could work from any location but must be prepared to attend the FSAI offices in Dublin's IFSC as required. They will report to the Chief Specialist in Chemical Safety and members of the Chemical Safety Team who will be responsible for directing the work. Arrangements would have to be made for access to the FSAI IT systems and this would depend on the location of the candidate. The candidate would be required to sign confidentiality agreements and any other relevant documents as determined by the HR department.

8. Expected Timeline

The Fellow will be expected to start in Q1 2024 and work for 12 months full-time.

9. Contact Details

Ms. Emer O'Reilly - Acting Chief Specialist, Chemical Safety Team