



## Webinar Report

### Food Import Risk Analysis

### The Canadian FIRE Model

*27 July 2026 | Organized by the Global Food Regulatory Science Society (GFRSS) | In partnership with the Canadian Food Inspection Agency (CFIA) and the AFRAF Academy*

**WEBINAR** GFRSS Canadian Food Inspection Agency Agence canadienne d'inspection des aliments

**FOOD IMPORT RISK ANALYSIS**

**SPEAKERS**

- Pamela MacDonald**  
DG Food Operations, CFIA
- Catherine Semple**  
Program and Policy Leader, CFIA
- Ashwani Tiwari**  
Leading Advanced data analytics & Risk modelling, CFIA
- Greg Paoli**  
C.E.O., Principal Risk Scientist at Risk Sciences International, Inc.

**FIRE**  
FOOD IMPORT RISK EXPLORER

27 JULY 2026 8:30 - 9:30 AM (EST/AST TIME)

SCIENCE-BASED. RISK-FOCUSED. WORLD-READY.

WEBINAR WEBPAGE

## Executive Summary

On 27 July 2026, the Global Food Regulatory Science Society (GForSS), in collaboration with the African Food Regulatory Authorities Forum (AFRAF) and the Canadian Food Inspection Agency (CFIA), convened a webinar on “Food Import Risk Analysis: The Canadian FIRE Model.” The session focused on the Food Import Risk Explorer (FIRE), a science-based analytical tool developed by the Canadian Food Inspection Agency (CFIA) to support risk-informed oversight of imported food.

The webinar brought together 161 participants from 56 countries across Africa, the Middle East, Asia, Europe, the Americas, and Oceania. Participants represented food regulatory authorities, standards bodies, research and academic institutions, international organizations, laboratories, and the food industry, reflecting broad international interest in science-based and data-driven approaches to food import control.

The webinar opened with remarks from Dr. Mamodou Bah, Director General of the Food Safety and Quality Authority of The Gambia and Chairperson of the FAO/WHO Coordinating Committee for Africa (CCAFRICA), and Professor Charles Aworh, Senior Mentor of the AFRAF Academy. They highlighted Africa’s considerable burden of foodborne illness and its continued dependence on imported food commodities, including wheat, rice, sugar, edible oils, vegetables, and dairy products.

Professor Aworh also discussed challenges related to food regulation and enforcement in parts of Sub-Saharan Africa, particularly in relation to traditional and informally marketed foods. He emphasized the importance of strengthening regulatory capacity, supporting domestic food production, and reducing post-harvest losses.

The Canadian speakers included Ms. Pamela MacDonald, Director General of Food Operations at the CFIA; Ms. Catherine Semple; Dr. Ashwani Tiwari; and Mr. Greg Paoli of Risk Sciences International. Together, they presented the conceptual development, design, methodology, and application of the FIRE model.

FIRE integrates information from more than ten data sources and combines bottom-up evidence such as food sampling, inspection, recall, and compliance data with top-down evidence derived from public health surveillance. The model is designed to estimate and compare food safety risks at the level of food–hazard combinations and countries of origin. Health impacts are expressed using disability-adjusted life years (DALYs), allowing different food safety risks to be compared through a common public health metric.

The presenters explained that FIRE was developed progressively over approximately two to three years. Its current applications focus primarily on fresh fruit and vegetables and microbiological hazards, with potential future expansion to other commodities and hazard categories, including chemical hazards and allergens.

The model supports regulatory decision-making by helping authorities identify emerging risks, prioritize food–hazard combinations, and better target inspection and sampling resources. It is intended to complement regulatory expertise and other sources of evidence rather than replace professional judgment or established food control procedures.

The discussion highlighted that the reliability and applicability of risk models depend heavily on the availability, quality, completeness, and timeliness of data. These are particularly important settings, where foodborne disease surveillance, outbreak reporting, inspection records, or laboratory data may be limited.

## 1. Key discussions

A total of seven questions were submitted through the webinar's dedicated Q&A function. Additional technical questions and comments were submitted through the chat function during the session.

The question-and-answer session addressed several important themes:

- ❖ Data sources used by FIRE and the frequency with which the information is updated.
- ❖ The time and institutional resources required to develop and operationalize the model.
- ❖ The model's ability to function where national public health surveillance or outbreak data are limited.
- ❖ The treatment of countries or commodities for which insufficient data are available.
- ❖ Sampling protocols and risk-based approaches to import clearance.
- ❖ Verification of model outputs and the role of expert review.
- ❖ The possible inclusion of chemical hazards, allergens, and other food safety risks.
- ❖ Recognition of foreign laboratory results and ISO/IEC 17025-accredited laboratories.
- ❖ The possible adaptation of the model by African national authorities or regional economic communities, including ECOWAS.
- ❖ The potential role of product registration and classification systems in supporting risk-based food import oversight.
- ❖ Communication of food safety alerts and regulatory information to the public.

## 2. Key Takeaways

The webinar generated the following key observations:

### 1. **Import controls should be preventive and risk-based.**

Greater emphasis should be placed on offshore controls and cooperation with competent authorities in exporting countries. Border sampling and testing should primarily support verification and targeted regulatory interventions.

### 2. **Import risk ranking should consider multiple factors.**

Risk prioritization should account for the localized public health impact of identified hazards, the compliance history of products and exporters, and the inherent risk profile of each food commodity.

**3. Effective import oversight requires multiple sources of evidence.**

Advanced import control systems combine bottom-up and top-down approaches, integrating commodity-specific, inspection, sampling, recall, trade, and compliance data with national public health evidence. This supports regulatory prioritization and the effective allocation of inspection, sampling, and testing resources.

**4. Data quality remains a central challenge.**

Limited surveillance and reporting should be treated as evidence of uncertainty rather than automatically interpreted as evidence of either higher or lower risk.

**5. Analytical models should support, not replace, regulatory judgment.**

Model outputs require expert review, validation, and interpretation within the relevant regulatory and public health context.

**6. Adaptation requires national and regional calibration.**

Applying a FIRE-type approach in African countries would require consideration of local food consumption patterns, traditional and informally marketed foods, national surveillance systems, trade flows, laboratory capacity, and regional food safety priorities.

**7. Regional cooperation could improve feasibility.**

Regional economic communities could help pool data, technical expertise, laboratory resources, and regulatory experience, particularly where national datasets and capacities are limited.

**8. Capacity development is essential.**

Sustainable implementation would require technical training in data management, risk assessment, epidemiology, modelling, validation, and the interpretation of model outputs.

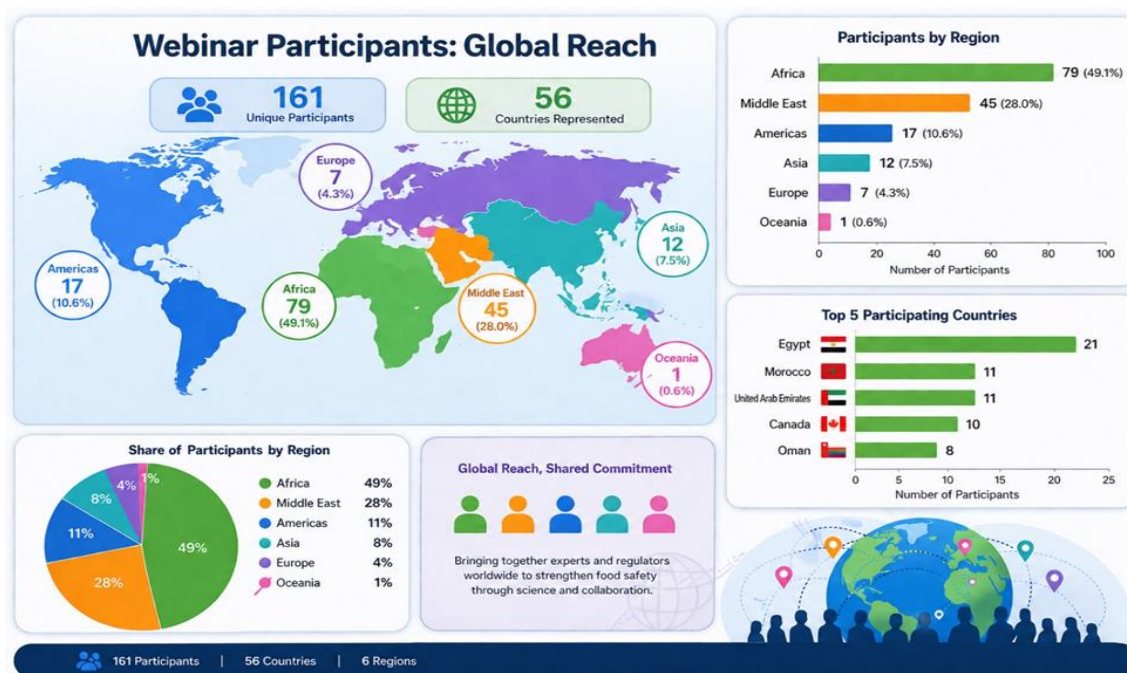
**3. Proposed Follow-Up**

Participants expressed strong interest in further technical exchange on the FIRE model and its potential relevance to African food regulatory systems. Possible follow-up activities may include:

- A more detailed technical workshop on the FIRE methodology and data architecture.
- Further discussion on data requirements and approaches for addressing data gaps.
- Exchange of experience between the CFIA and interested African regulatory authorities.
- Exploration of national or regional pilot applications, subject to available data, resources, and institutional interest.
- Continued discussion through the AFRAF community and its work on risk-based regulatory oversight.

## Overview of Webinar Participation

A total of 161 unique participants from 56 countries attended the webinar, demonstrating broad international engagement across six geographic regions. Africa (79 participants; 49.1%) and the Middle East (45 participants; 28.0%) accounted for nearly four-fifths of all participants, consistent with the webinar's regional focus. The largest national delegations were from Egypt (21 participants), Morocco (11), the United Arab Emirates (11), Canada (10), and Oman (8). A detailed breakdown of participants by region and country is provided in [Appendix I](#), while **Figure 1** provides a visual overview of webinar participation.



**Figure 1:** Overview of Webinar Participation

## 4. Conclusion

The webinar provided a valuable opportunity to examine how data-driven tools can support more systematic and transparent food import risk analysis. The Canadian FIRE experience demonstrated the value of integrating multiple data sources and public health metrics to inform regulatory prioritization and support more effective, risk-based import oversight.

The discussions also underscored that the successful application of such models depends on reliable data, appropriate technical capacity, institutional coordination, and continued expert

oversight. Participants expressed strong interest in the practical application of the FIRE model and its potential relevance to strengthening food import control systems in Africa and other regions.

The webinar further highlighted the importance of international collaboration in advancing science-based regulatory approaches. Building on the momentum generated through this event, GForSS, together with the Canadian Food Inspection Agency (CFIA) and the AFRAF Academy, will continue to promote technical exchange, knowledge-sharing, and capacity development to support the implementation of more effective risk-based food control systems.

## Appendix I. Participant Distribution by Region and Country

| Country              | Region      | Attendees |
|----------------------|-------------|-----------|
| Egypt                | Africa      | 21        |
| Morocco              | Africa      | 11        |
| United Arab Emirates | Middle East | 11        |
| Canada               | Americas    | 10        |
| Oman                 | Middle East | 8         |
| Nigeria              | Africa      | 7         |
| Uganda               | Africa      | 7         |
| Saudi Arabia         | Middle East | 6         |
| Yemen                | Middle East | 4         |
| United States        | Americas    | 3         |
| Madagascar           | Africa      | 3         |
| South Africa         | Africa      | 3         |
| Kenya                | Africa      | 3         |
| Lebanon              | Middle East | 3         |
| Indonesia            | Asia        | 3         |
| Jordan               | Middle East | 3         |
| India                | Asia        | 2         |
| Somalia              | Africa      | 2         |
| Kuwait               | Middle East | 2         |
| Bangladesh           | Asia        | 2         |
| Malaysia             | Asia        | 2         |
| Senegal              | Africa      | 2         |
| Malawi               | Africa      | 2         |
| Botswana             | Africa      | 2         |
| Togo                 | Africa      | 2         |
| Syrian Arab Republic | Middle East | 2         |
| Qatar                | Middle East | 2         |
| Germany              | Europe      | 2         |
| Ghana                | Africa      | 2         |
| Tunisia              | Africa      | 2         |
| Bahrain              | Middle East | 2         |
| Philippines          | Asia        | 1         |
| Zimbabwe             | Africa      | 1         |
| Ireland              | Europe      | 1         |
| Namibia              | Africa      | 1         |
| Algeria              | Africa      | 1         |
| Tanzania             | Africa      | 1         |
| Brazil               | Americas    | 1         |

| Country        | Region      | Attendees |
|----------------|-------------|-----------|
| Mauritius      | Africa      | 1         |
| Chile          | Americas    | 1         |
| Austria        | Europe      | 1         |
| Lesotho        | Africa      | 1         |
| Suriname       | Americas    | 1         |
| Malta          | Europe      | 1         |
| Afghanistan    | Asia        | 1         |
| Romania        | Europe      | 1         |
| Japan          | Asia        | 1         |
| Sudan          | Africa      | 1         |
| New Zealand    | Oceania     | 1         |
| Rwanda         | Africa      | 1         |
| Iraq           | Middle East | 1         |
| United Kingdom | Europe      | 1         |
| Cameroon       | Africa      | 1         |
| Palestine      | Middle East | 1         |
| Argentina      | Americas    | 1         |
| Libya          | Africa      | 1         |



## **Appendix II. Questions Submitted through the Q&A**

The webinar generated seven technical questions during the live Q&A session, reflecting participants' strong interest in the practical implementation of the Canadian Food Import Risk Evaluation (FIRE) model. The questions focused primarily on data management, model implementation, laboratory recognition, software and analytical tools, and the application of the model in countries with limited surveillance data.

### **Key Themes Raised by Participants**

#### **1. Laboratory Recognition and Acceptance of Test Results**

Participants sought clarification on whether laboratories accredited to ISO/IEC 17025 in exporting countries could obtain formal recognition from Canadian authorities to facilitate acceptance of laboratory test results for imported food products.

#### **2. Data Sources and Model Updating**

Questions explored the sources of information used by the FIRE model and the frequency with which datasets are reviewed and updated to maintain the accuracy and reliability of risk assessments.

#### **3. Implementation of the FIRE Model**

Participants were interested in the practical aspects of implementing the FIRE model, including the time required for development, deployment, and operational use within the Canadian food import control system.

#### **4. Data Gaps and Public Health Information**

Several questions addressed how the FIRE model functions when important public health information—such as outbreak surveillance or Ministry of Health data—is unavailable, and how such data gaps influence risk assessment and prioritization.

#### **5. Software and Analytical Tools**

Participants requested further information on the software platforms, analytical tools, and large language models (LLMs) used to support the FIRE model and whether these technologies are commercially available.

#### **6. Emerging Food Safety Events**

Questions examined how the FIRE model responds to emerging food safety incidents in countries where outbreaks or contamination events may not yet have been officially reported, particularly in developing countries that are major food exporters.

## 7. Risk Assessment Under Limited Information

Participants also asked whether countries with limited available data would automatically be considered higher risk by the FIRE model, and how uncertainty is incorporated into the overall risk evaluation process.

### Appendix IV. Selected Technical Questions from the Chat

A total of **124 chat messages** were exchanged during the webinar, reflecting active engagement and discussion among participants. In addition to the formal Q&A session, participants used the chat to seek clarification on the implementation of the Canadian Food Import Risk Evaluation (FIRE) model, exchange experiences, and discuss broader aspects of risk-based food import control.

The technical questions submitted through the chat are summarized below according to their main themes.

| Theme                               | Question or contribution                                                                                                                                         | Participant(s)                         |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Recognition of foreign laboratories | Can an ISO/IEC 17025-accredited laboratory in an exporting country obtain recognition from Canadian authorities so that its test results are accepted in Canada? | Mochammad Fajar                        |
| Coverage of different hazards       | Does the FIRE model cover chemical and physical hazards and allergens in addition to microbiological hazards?                                                    | Usman Ahmed<br>Madaki; Astou<br>Ndiaye |
| Risk-based import clearance         | To what extent does Canada apply risk-based import clearance, and what criteria are used to determine the level of control                                       |                                        |