

FFI Report

Review of GFSI Food Fraud Technical Document: Tackling Food Fraud through Food Safety Management Systems May 16, 2018

John Spink, PhD

SUMMARY

The Global Food Safety Initiative (GFSI) published the GFSI Food Fraud Technical Document titled “Tackling Food Fraud through Food Safety Management Systems.” This publication supports the previous reports on GFSI food fraud position paper (2014) and GFSI Benchmarking Document (2017). This new document reinforces the previous statements and supports the efforts to “just get started.” This new document is a key for confirming the definition, scope, starting point, and the expectation for the first compliance requirements. While HACCP is 20+ years in development, the GFSI food fraud requirements have only been in effect for 20 weeks. The new food fraud requirements help move the risk assessors from “point A” to just “point B” and not all the way to a full HACCP-type plan which would be “point Z.” While “Point Z” is the ultimate goal, we must get to “Point B” before

moving on. This new technical document reviews the previous statements and clarifies the near path forward.

CONCLUSION

- 1. Holistic scope – all fraud and all products:** The scope is all types of fraud (from adulterant-substances to counterfeits and stolen goods) and all products (from incoming goods through to product in the marketplace including counterfeits). All types of fraud and all products can cause health hazards and lead to economic harm.
- 2. Just get started:** There is continued emphasis on starting the process that will be supported by continuous improvement and sharing of best practices.
- 3. Auditors are to confirm the process not judge the plans:** To begin the compliance, the scope is to confirm the process is started.



Contact

Dr. John Spink

SpinkJ@msu.edu

517-381-4491

FoodFraud.msu.edu

Introduction

On May 9, 2018, the Global Food Safety Initiative (GFSI) published the GFSI Food Fraud Technical Document titled “Tackling Food Fraud through Food Safety Management Systems.” This new document reinforces the previous statements and supports the efforts to “just get started.” This new document is a key for confirming the definition, scope, starting point, and the expectation for the first compliance requirements.

While HACCP is 20+ years in development, the GFSI food fraud requirements have only been in effect for 20 weeks. The GFSI report is clear that the expectation is NOT for food fraud prevention to be as thorough or detailed as a HACCP plan... at least not yet. The new food fraud requirements help move the risk assessors from a “point A” to just “point B” and not all the way to a fully HACCP type plan which would be “point Z.” While “Point Z” is the ultimate goal, we must get to “Point B” before moving on.

This new technical document reviews the previous statements and clarifies the near path forward.

- Reference:
- GFSI, Global Food Safety Initiative (2018). Food Fraud Technical Document, Tackling Food Fraud through Food Safety Management Systems, May 9, 2018, URL: http://www.mygfsi.com/files/Technical_Documents/201805-food-fraud-technical-document-final.pdf

Background

This section will review the background on GFSI, the impact, and their foundation in food fraud prevention.

GFSI Certification

The GFSI requirements are presented in a hierarchy of roles presented as A Domino Effect (Figure A). To review the GFSI role in food safety management, GFSI published a Benchmarking Document that lays out the expectations for a thorough Food Safety Management System (FSMS). GFSI only creates the vision whereas Certification Program Organizations (CPO, formerly referred to as Scheme Owners) creates the actual standards. The CPO works to become a “GFSI-Recognised Certification Program.” Next, to provide overall controls, a food company implements a standard. Finally, a Certification Body (CB) conducts an accredited third-party audit to confirm and certify compliance to the standard which is recognized by GFSI.

[Note: When “GFSI compliance” is mentioned, this really means compliance with a GFSI-recognized Certification Program such as BRC, FSSC 22000, SQF, IFS or others. The “GFSI-compliance” is achieved through certification under one of those recognized programs.]

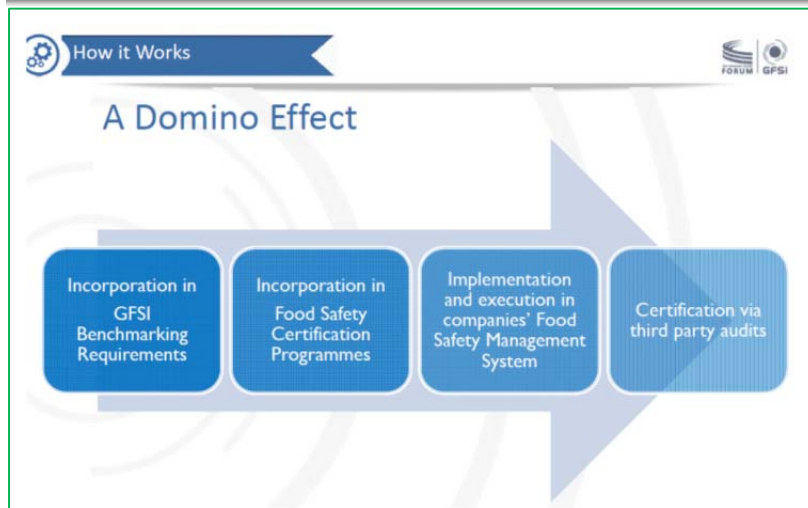


Figure A: GFSI Hierarchy of Components presented as A Domino Effect (GFSI at Food Safety Summit 2018)

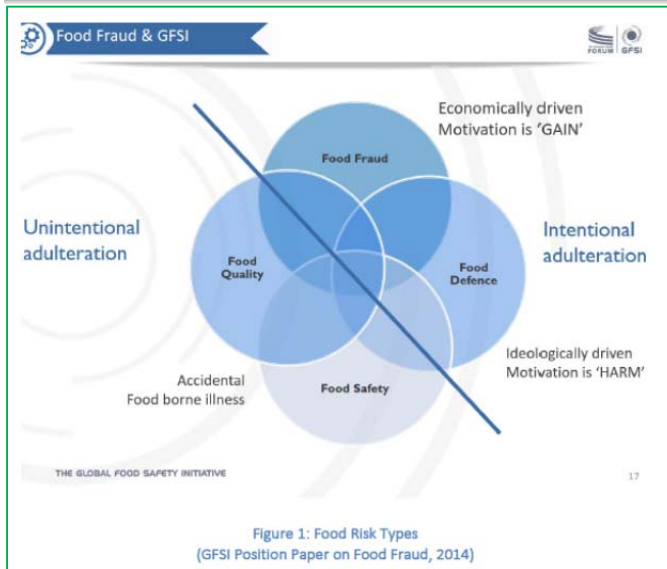
The Impact of GFSI - Worldwide

It is reported that 65% of the world food trade is GFSI compliant. For many retailers and food manufacturers, they require their suppliers to be GFSI compliant. While this type of program and certification may seem to be a luxury only for large companies, there are many resource and support for smaller companies. One example is the GFSI Global Markets Program. The first steps to GFSI compliance are very accessible. GFSI has followed this mission to the new food fraud requirements.

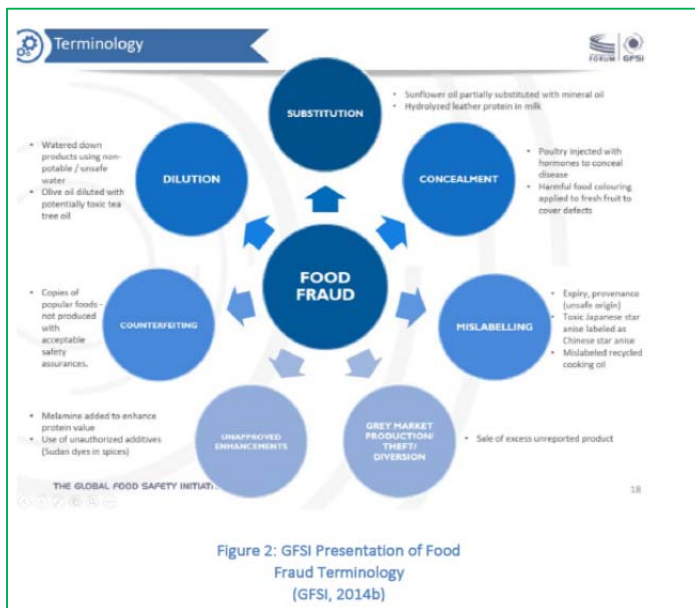
This GFSI Food Fraud Technical Document is a formal statement by the GFSI Board of the expectations and requirements are to meet the new food fraud compliance requirements. The food fraud requirements are NOT optional and not completely addressing food fraud could lead to an audit non-conformance the losing the overall GFSI certification.

GFSI Food Fraud Foundation

The GFSI document began by reviewing the definition and scope of food fraud. To start, food fraud was reviewed regarding all food risks including: food quality, food safety, food fraud, and food defense (Figure 1).



Next, GFSI reviewed the definition of food fraud types that include: substitution, dilution, concealment, mislabeling, gray market/ diversion/ theft, unapproved enhancements, and intellectual property rights counterfeiting (Figure 2).



The GFSI document included an Appendix entry that expanded on the definitions with examples (Table 2).

APPENDIX: DETAIL OF TYPE OF FRAUD, AND EXAMPLES

Table 2: Table: Food Fraud Types, Definitions, and Examples (adapted from (Spink and Moyer 2011, Spink 2013, SSAFE Organization 2015, PWC PriceWaterhouseCooper 2016, GFSI 2017, Spink, Ortega et al. 2017))

GFSI (1) Type of Food Fraud	Definition from SSAFE (2)	Examples from GFSI FTTT (3)	General Type of Food Fraud
Dilution	The process of mixing a liquid ingredient with high value with a liquid of lower value.	<ul style="list-style-type: none"> Watered down products using non-potable / unsafe water Olive oil diluted with potentially toxic tea tree oil 	Adulterant-substance (Adulterant)
Substitution	The process of replacing an ingredient or part of the product of high value with another ingredient or part of the product of lower value.	<ul style="list-style-type: none"> Sunflower oil partially substituted with mineral oil Hydrolyzed leather protein in milk 	Adulterant-substance or Tampering
Concealment	The process of hiding the low quality of a food ingredients or product.	<ul style="list-style-type: none"> Poultry injected with hormones to conceal disease Harmful food colouring applied to fresh fruit to cover defects 	Adulterant-substance or Tampering
Unapproved enhancements	The process of adding unknown and undeclared materials to food products in order to enhance their quality attributes.	<ul style="list-style-type: none"> Melamine added to enhance protein value Use of unauthorized additives (Sudan dyes in spices) 	Adulterant-substance or Tampering
Mislabelling/ Misbranding	The process of placing false claims on packaging for economic gain.	<ul style="list-style-type: none"> Expiry, provenance (unsafe origin) Toxic Japanese star anise labeled as Chinese star anise Mislabeled recycled cooking oil 	Tampering
Grey market production/ theft/diversion	Outside scope of SSAFE tool.	<ul style="list-style-type: none"> Sale of excess unreported product, Product allocated for the US market appearing in Korea 	Over-run, Theft, or Diversion (4)
Counterfeiting (IPR)	The process of copying the brand name, packaging concept, recipe, processing method etc. of food products for economic gain.	<ul style="list-style-type: none"> Copies of popular foods not produced with acceptable safety assurances Counterfeit chocolate bars 	Counterfeiting (IPR)
<p>Notes:</p> <p>(1) GFSI – Global Food Safety Initiative (2) SSAFE – Safe Secure and Affordable Food For Everyone (3) GFSI FTTT – Global Food Safety Initiative: Food Fraud Think Tank (4): Gray Market -- a market employing irregular but not illegal methods; Theft -- something stolen; Diversion/ Parallel Trade -- the act or an instance of diverting straying from a course, activity, or use</p>			

These are managed under the food safety management system in three sections that cover food safety, food defense and food fraud (Figure 3). The requirement is for a separate assessment and prevention strategy for each of the three components and then coordinated under the overall system. The single system allows for decision-making and sharing of best practices across all components.

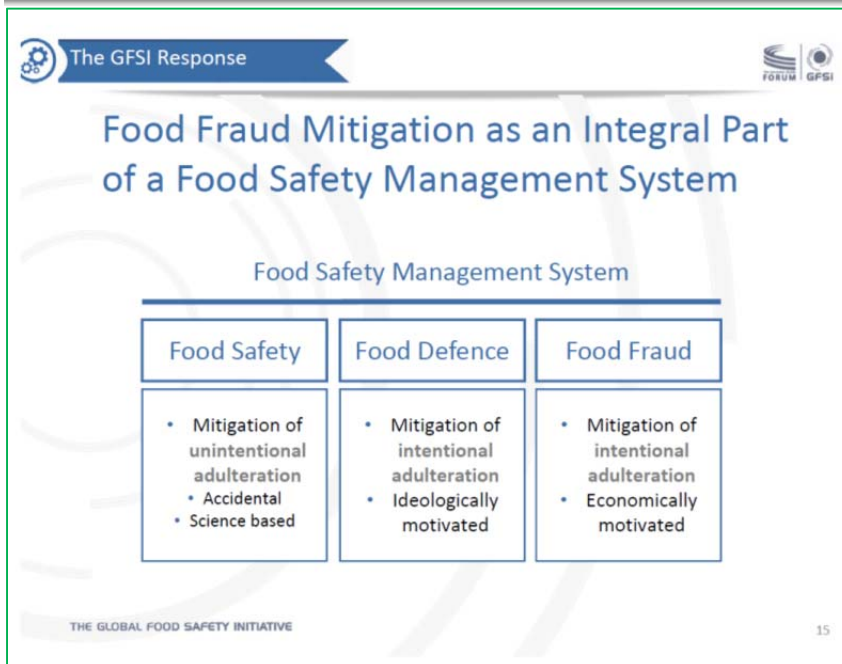


Figure 3: Food Safety Management System Umbrella with Separate Components of Food Safety, Food Defense, and Food Fraud (from GFSI presentation at the Food Safety Summit 2018)

While not explicitly addressed and with no figure, the GFSI document mentioned the scope to include “all products,” “consider an entire company’s activities,” and “including some that may not be within the traditional food safety or even HACCP scope.” Also, there was a focus not only on a manufacturing site but on “the organization” where “The requirements refer to “The Organization”: While the traditional HACCP-type food safety approach is applied at manufacturing facilities, these operate within the overall organization.” Also, “The food fraud vulnerabilities are company-wide, and thus the food fraud scope is company-wide.”

Thus, although NOT presented in the GFSI documents, a consideration for the entire supply chain could include: incoming goods, manufacturing, outgoing goods, technology transfer and contract manufacturing, and products outside the proprietary and legitimate supply chain such as counterfeits (Figure 4). Food fraud can across the entire supply chain and even products outside the legitimate channel could be the root-cause of health hazards and economic impacts.

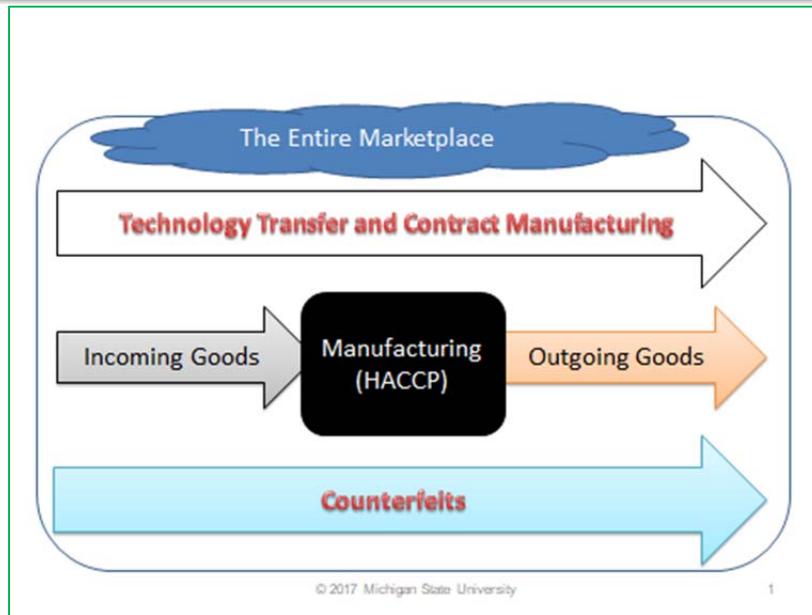


Figure 4: The Food Supply Chain Vulnerabilities (Spink 2011)

These general principles were included in the GFSI document. Next, a point-by-point detailed review will be conducted of the new GFSI Food Fraud Technical Document.

Detailed Review

This is a point-by-point review of the new GFSI document. The presentation here includes quotes from the document and then commentary.

1) ***“Both [the GFSI food fraud position paper and the GFSI Benchmarking Document] definitions cover all types of fraud and all products and highlight that the motivation behind food fraud is intentional and economically driven, i.e., potentially linked to criminal activities and at least aiming to avoid detection. ... “This implies that any plans and activities to mitigate, prevent or even understand the risks associated with food fraud should consider an entire company’s activities, including some that may not be within the traditional food safety or even HACCP scope, applying methods closer to a criminal investigation.”***

- a) FFI Insight: GFSI considers the full scope of all fraud and all products because these are root-causes of problems for an entire company. It is recognized that this is a challenge and expanded scope for a traditional food safety early warning system may be seeking only adulterant-substances or contaminants. The GFSI scope addresses the root-cause for all food safety hazards.
- b) FFI Insight: The new GFSI document emphasizes the broad definition and scope of food fraud that is the same as their earlier 2014 and 2017 reports.

- 2) ***“While a Food Fraud Manager is “accountable” for the full compliance they may not be “responsible” for each of the individual tasks. For example, managing and monitoring stolen goods may already be conducted by a supply chain logistics or corporate security staff.”***
- a) FFI Insight: The GFSI document provides more detailed insight into compliance through explaining some details of the implementation. A concern by industry has been that a new food fraud task force would require many new staff members. This GFSI statement emphasizes that all the topics must be covered, but they can be implemented by other current staff.
 - b) FFI Insight: It is significant that GFSI uses a non-traditional food safety example such as stolen goods that are not usually under the accountability of a food quality assurance team.
- 3) ***“The requirements refer to “The Organization”: While the traditional HACCP-type food safety approach is applied at manufacturing facilities, these operate within the overall organization. The food fraud vulnerabilities are company-wide, and thus the food fraud scope is company-wide.”***
- a) FFI Insight: GFSI is clear that the food fraud vulnerability assessment and prevention strategy is to cover the entire organization not just the facility that may be the location of an audit. A traditional food safety audit focuses on HACCP so would focus on the operations of a facility or manufacturing location. For food fraud, the overall vulnerability and control plans may be completely and competently addressed at the enterprise-wide level. Thus, a manufacturing site audit could rely on a company-wide assessment. Unless there is a unique operational activity, each manufacturing facility would usually not be required to conduct a separate review.
 - b) Note: From the GFSI document, the Benchmarking Document requirements are included (Table 1)

<i>Food fraud vulnerability assessment</i>	The standard shall require that the <u>organization</u> has a <u>documented food fraud vulnerability assessment</u> procedure in place to identify potential vulnerability and prioritise food fraud mitigation measures.
<i>Food fraud mitigation plan</i>	The standard shall require that the <u>organization</u> has a <u>documented plan in place</u> that specifies the measures the organization has implemented to mitigate the public health risks from the identified food fraud vulnerabilities.
<i>Food fraud mitigation plan (Scope)</i>	The standard shall require that the organization's Food fraud mitigation plan shall be supported by the organization's Food Safety Management System.

Table 1: Food Fraud Requirements in the GFSI Benchmarking Document Version 7.0 (Emphasis added)

4) *“The different steps required should be “Documented”: Like other quality management and HACCP-type programs, the activities must be documented to both support continuous improvement and confirm compliance.”*

a) FFI Insight: The requirement for this to be documented is consistent with HACCP, ISO31000, and other quality management systems.

5) *“There is a requirement for a separate “vulnerability assessment” and a “mitigation plan” for food fraud. Under the overall food safety management system, this requires separate assessment for food safety, food fraud and for food defence.”*

a) FFI Insight: It is important first to understand that food fraud is an “inherent risk” that is already present and already requires controls. So, while conducting the first new assessments will be challenging since they are new, in the end, it is easier to update and manage separate programs. Underlying root-causes for food fraud and food defense are so different from food safety that it is easier to separate the programs.

b) FFI Insight: Food fraud has been reported since ancient times, it has often addressed as a traditional food safety issue. The production and manufacturing controls focus on the proprietary or known supply chains. The control plans include detecting a set of pretty well-known root-causes. Also, the adversaries (e.g., E. Coli to chemical contaminants) respond the same way to new conditions such as kill-steps. To address food fraud, there is a human-adversary that is intelligence, resilient, often well-funded, stealthy and actively seeks to avoid detection. The separate vulnerability assessment and prevention strategy help shift the paradigm to social science and criminology.

c) FFI Insight: For food fraud prevention, detection is a reactionary step to remove the product. A prevention approach would include criminology (specifically Situational Crime Prevention), supply chain management (to understand the complex flow of goods), business decision making (to provide a resource-allocation decision-making mechanism) before considering the actual detection technologies and frequency of testing. The goal is not to catch food fraud but to prevent it from occurring in the first place.

6) *“It is, therefore, relevant to base the approach to build a vulnerability assessment plan and a mitigation plan on risk management methods such as described in ISO31000.”*

a) FFI Insight: It is helpful to consider the fundamentals of ISO 31000 Risk Management or other systems such as the COSO Enterprise Risk Management principles required by the Sarbanes-Oxley Act. These basic risk assessment systems begin with comprehensive and basic reviews BEFORE going into more detail.

7) *“Regardless of the tool or guidelines one may choose to build their plans, it is most important to:*

“(A) Be exhaustive in the first steps of the vulnerability assessment analysis and ensure a wide range of hazards are considered. As demonstrated earlier, food fraud can cover across all activities of a business, and so the scope of the hazard identification step should cover them all;”

- a) FFI Insight: GFSI reinforces a position consistent with ISO31000 and ERM/COSO, it is important to consider as many vulnerabilities as can be imagined. Considering a “Risk Analysis” system, this is the “hazard identification” step. If a hazard is not identified it would not be monitored on an ongoing basis. At this point, it is not a “risk-based approach” since “hazard identification” is before “hazard assessment.”
- b) FFI Insight: The COSO Enterprise Risk Management systems are based on financial or securities based regulatory compliance requirements. The COSO systems refer to a “two-stage” approach to risk assessment including and “initial screen” and then a “detailed assessment” as needed. Thus, to build upon those ERM/COSO management methods, a starting point could be for a company-wide assessment for broad product groups BEFORE conducting a more detailed assessment. The initial screen is a formal, documented assessment that can reduce the number of items that required a more detailed assessment.

8) *“(B) Understand the difference between hazard (a potential source of harm¹), risk (the probability of loss or injury from a hazard¹) and vulnerability (susceptibility to a risk¹): many hazards will have a low or very low likelihood and therefore not represent a risk; likewise, the susceptibility of a company or system to a risk is not only linked to the severity of this risk but more to the company’s awareness of their weakness and how they manage it.” (Reference 1 is to ISO 31000 Risk Management.) ... While an “all hazards” assessment approach is important, all vulnerabilities are not risks, all risks are NOT hazards, and all hazards are NOT hazards that require a preventive control. The final mitigation plan must focus on those vulnerabilities that require a preventive control as identified through a carefully and documented analysis of the risks, likelihood and fraud opportunities.”*

- a) FFI Insight: GFSI calms an industry concern that each and every identified vulnerability would require a control plan. Thus, this all-hazards approach allows for a broad lens to monitor possible root-causes while including a clear method to narrow the focus to only the worst problems. The GFSI requirements are for “a” method to conduct this assessment with no prescribed or required approaches.

9) *“Many regulatory and industry standards compliance systems require the assessment of a hazard “regardless of the outcome.” Identifying those hazards to then conclude that many of them have a “low” or “very low” likelihood can be a sufficient assessment as long as the assessment is carefully conducted and clearly documented.”*

- a) FFI Insight: It is a good reminder that the U.S. Food Safety Modernization Act addresses this – the law not just the final rules. FSMA requires a “hazard analysis must be written regardless of the outcome” that specifically is recognized to be applied “for purposes of economic gain.”
- b) Reference: FSMA in 21 CFR 117.130 & 507.33, Hazard analysis: “(a) (1) you must conduct a hazard analysis to identify and evaluate... known or reasonably foreseeable hazards...”, “(2) The hazard analysis must be written regardless of its outcome”, “(ii) The hazard may be unintentionally introduced; or, “(iii) The hazard may be intentionally introduced for purposes of economic gain.” Note: a separate Food Fraud assessment is NOT required. Note: an assessment of all vulnerabilities IS required.

10) *“AUDITING A VULNERABILITY ASSESSMENT PLAN AND A FOOD FRAUD MITIGATION PLAN: During a food safety certification audit, conducted against GFSI recognised [Certification Programs], the auditor will review the documentation related to the vulnerability assessment process and confirm that a comprehensive control plan, as outlined in the [position paper] Appendix, has been developed and implemented by the company.*

- a) FFI Insight: In the previous and current document, GFSI has made efforts to understand the auditor challenges on this new and different topic. This GFSI position has been consistent in their previous 2014 and 2017 documents.

11) *“A recent concern has been that a food safety HACCP inspection should not be diluted by addressing other issues, including food fraud. An audit against a GFSI-recognised certification programme is not a HACCP inspection but rather an evaluation of systems and practices contributing to food safety; it is usually organised around three key themes: HACCP, food safety management systems, and good industry practices. The debate whether food fraud should be considered in a food safety management system was addressed favourably, considering the potential additional burden for food safety auditors but eventually acknowledging that food fraud can significantly jeopardise food safety.”*

- a) FFI Insight: GFSI has been clear that food fraud is a root-cause of organization-wide food safety problems. While the initial efforts to meet the food fraud compliance will include new methods and ideas, the ongoing time and effort requirements should be minimal at the manufacturing site level. Most of the food fraud prevention management will be at the company-wide level.

12) *“With this in mind, there is an awareness that addressing food fraud is new and different for those being audited as well as the auditors: “The auditor is not expected to detect fraud or affirm that an anti-fraud program is capable of “preventing fraud.” This approach is very much in line with the verification of a HACCP plan during the food safety audit.”*

- a) FFI Insight: GFSI includes a practical and pragmatic approach that emphasizes the auditors be “not expected to detect fraud or affirm the anti-fraud program.” The audit is intended to confirm that a food fraud vulnerability assessment is in place, and there is a food fraud prevention strategy, and it covers the relevant GFSI scope. Industry-wide compliance with these first efforts will be a key advancement from “point A” to “point B.” As time goes on, there will be more advanced programs that will provide insight for more advanced audit requirements.
- b) FFI Insight: To reinforce this point, the key and optimal first role of the auditor – especially now only 20 weeks into the food fraud requirements not 20 months or 20 years – is to confirm the requirements are being addressed, documented, and cover the relevant GFSI scope.

13) “GFSI is aware that the harmonization and best practices are just now being developed and refined. A new system that is less than a year old in implementation cannot be expected to be as robust, thorough, or detailed as a system such as HACCP that has been implemented for more than 25 years. The most important step for the food industry is to start addressing food fraud, and for auditors to start asking the basic questions on how vulnerabilities were assessed and identified, and a strong mitigation plan thought through.”

- a) FFI Insight: As reviewed above, GFSI recognizes that the food fraud prevention plans developed at 20 weeks will be very different from plans such as HACCP that have been implemented and refined over 20 month or 20 years. It would be logical that the audit compliance requirements become more detailed over time.

14) “The focus of the auditor should be in assessing the approach taken by the company (is it company-wide? Is it built by a multi-disciplinary team? Is it clearly documented and reviewed regularly? What’s the source of information used to support the assessment?).”

- a) FFI Insight: GFSI reinforces that the audit is focused on confirming the methods are in place, they are followed, and the cover the full GFSI scope of all types of fraud and for all products.

FFI Insight Summary

GFSI has provided more detail on the expectations for meeting the food fraud prevention compliance. The Food Fraud Technical Document provides insight on the expectation – and some detailed examples. The new document is an excellent resource to refine the scope and components of a food fraud vulnerability assessment and food fraud prevention strategy.

Conclusion

The new GFSI Food Fraud Technical Document reinforces the previous statements and supports the efforts to “just get started.” This new document is key for confirming the definition, scope, starting point, and the expectation for the first compliance requirements. Next will be “how to start” then “how much is enough.” At least there is a firm and clear starting point. FFI.

Appendix: MSU resources for capacity- and capability-building:

- Food Fraud Overview and History [includes the history of the GFSI Food Fraud Think Tank, Position Paper, and inclusion in the GFSI Benchmarking Document], Presented by John Spink, Food Fraud Session, GMA Annual Conference, Tokyo, 2018, URL (5-minutes): https://www.youtube.com/edit?o=U&video_id=mg67m5c3ITE
- Food Fraud Update and Terminology Survey, Presented by John Spink, GMA Science Forum 2018, URL (21-minutes): <https://www.youtube.com/watch?v=lZNwilEz6fM&feature=youtu.be>
- **Food Fraud Prevention Strategy Development [SQF] – Intro to Vulnerability Assessment**: A presentation at the 2018 SQF Conference. ***This covers*** the basic audit requirements than the “how to start” and how to conduct the first stage of a Food Fraud Vulnerability Assessment (35-minutes): <https://www.youtube.com/watch?v=MU7dQ-xUUNE>

Other MSU Courses:

Open Online Course (MOOC – free, open, online): <http://foodfraud.msu.edu/mooc/>

- Free, open, online, open to everyone, includes a ‘certificate of completion.’
- **Food Fraud Overview MOOC** – May & November
- **Food Fraud Audit Guide MOOC** – Monthly
- **Food Defense Audit Guide MOOC** – Monthly

Executive Education (Short-Course):

- Food Fraud Strategy, Quantifying Food Risk with Vulnerability Assessments

Graduate Courses (Online, Three Credits): <http://foodfraud.msu.edu/resources/programs-courses/>

- Anti-Counterfeit & Product Protection (Food Fraud)
- Quantifying Food Risk (including Food Fraud)
- Global Food Safety (including Food Fraud)
- Food Protection and Defense (Packaging Module)
- Packaging for Food Safety

Graduate Certificate (Online, Four Courses Each)

- Certificate in Food Fraud Prevention (Food Safety)

Master of Science in Food Safety (Online)

- www.online.FoodSafety.msu.edu

MSU's Food Fraud Initiative will continue to inform global stakeholders as to the relationship between Food Fraud and Economically Motivated Adulteration, Food Crime, Food Integrity, and Food Authenticity to encourage a global set of terms and definitions that are consistent.

Note: MSU's Food Fraud Initiative (FFI) conducts a wide range of teaching, research and outreach projects. The "FFI Report" series was created to review specific emerging topics or recent laws, regulations, certifications, standards, or best practices. The summary and insight is not legal advice and is not intended to replace the counsel of a food law expert.

Contact Information:

www.FoodFraud.MSU.edu, spinkj@msu.edu. (517) 381-4491