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CHAPTER

Protecting the international food supply chain from fraud

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Abstract

Global trade has both brought significant benefits to reducing hunger around the world, but it has also increased the complexity of the food supply chain. This complexity is a strong enabler for food fraud. The more links across the supply chain and the longer the distance between where food is originally grown or produced and finally consumed provides opportunities for fraudsters to act for their benefit. The role of the WTO is fundamental in helping to reduce fraud. The WTO's Trade Facilitation Agreement and the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) sit at the heart of global trade in food and help, along with other international agreements, standards and enforcement bodies, strengthen our global food supply while reducing cross-border food fraud activity.

This chapter argues that it is very important for all stakeholders of the food system to work together to keep the system resilient and safe from fraudulent activity, with the final responsibility for keeping consumers safe ultimately resting with the food producer.

Introduction

Food fraud is nothing new – it has been around for centuries. Going back as far as the early 1500s and the beer purity laws in Bavaria, government and producers have been working together to combat fraudulent activities by unscrupulous actors.

Collaboration between the public and private sector is fundamental to combat food fraud and ensure the safe supply and trade of food around the world. As we work to feed the growing global population while meeting consumer demand for different types of food, trade in food and the complexity of food supply chains continues to grow. This opens the food sector up to fraudulent activity along the food supply chain, and we need to work together to reduce fraud as much as reasonably possible by strengthening the food supply system.

International food trade and the impact of food fraud

The complexity and internationalization of food supply over the last 50 years has helped feed the world. However, this complexity also opens up the food sector to fraudulent activities. There are many high-profile examples such as the horsemeat scandal in Ireland and the United Kingdom in 2013 and the toxic vegetable oil scandal in Spain in the 1980s. Economic pressures, complex supply chains, consumer demand and unscrupulous actors all played a role in many of the food fraud scandals over the past decades. But why does this continue to happen and why is it so hard to detect?

One of the aspects that makes fraud so hard to detect is that fraudsters' greatest asset is time. The longer a fraud runs, the more return they make. Therefore, it is to fraudsters' advantage when the fraud remains undetected as long as possible. This is one of the key areas where preventing food fraud and maintaining food defence differ. In food defence, the aim is to protect food products from intentional adulteration from acts to shock the general population (i.e. a terrorist attack or the poisoning of a salad bar), cause harm and undermine

consumer confidence in the food system. In food fraud, the motivation is to maximize profit by disguising the act. Hence the complexity, at times, to identify fraud.

Another key challenge is testing for authenticity. Testing is a very valuable tool to identify fraud. However, the problem is that you need know what you are testing for. Furthermore, in some cases tests do not even exist. Therefore, testing alone is not a solution – “we cannot test our way out of the problem” as the saying goes. It is a very important tool in a regulator's toolkit, but it is part of a larger set of tools that needs to apply to combat fraud.

The impact of food fraud can be extensive and costly. Even though food fraud may not necessarily lead to a food safety risk or incident, the impact can be vast, resulting in financial loss, damage to brand reputation, loss of consumer trust, and inability to meet a number of the United Nations Sustainable Development Goals (including, but not limited to, SDGs 2, 3, 6 and 12).

Finally, global trade has both brought significant benefits to reducing hunger around the world but also increased the complexity of the food supply chain. This complexity is a strong enabler for food fraud. The more links across the supply chain and the longer the distance between where food is originally grown or produced and finally consumed provides opportunity for fraudsters to act for their benefit.

Therefore, it is very important for all stakeholders involved to work together to keep our food system resilient and safe from fraudulent activity. In the case of international trade specifically, when food crosses borders there is a great opportunity for intervention by national authorities. Customs authorities play a key function in helping keep our food system safe from fraudsters, as they are in a position to verify authenticity at national entry points (i.e. borders by land, sea and air). However, like with testing, customs officers cannot check every food shipment coming into a country – especially as just-in-time logistics continues to grow to improve efficiencies, ensure freshness of food products and meet customer demand for varied food products. Therefore, action is needed from all actors along the food supply chain, including the private sector.

Private sector responsibilities and action

The final responsibility for keeping consumers safe from food fraud and adulteration is the food producer. It is their responsibility to give customers what they say they are selling them. And that is true across all links of the food supply chain: whether from farmer to collection or distribution centres, ingredient suppliers to food manufacturers, or manufacturers to retailers, everyone along the food supply chain has a responsibility to ensure the authenticity of the food people consume. Customs authorities, law enforcement and regulators all have a role to play as well but the overall and final responsibility rests with the food company. And even though food fraud may not result in a food safety risk, there is a responsibility on all food companies to provide customers, irrespective of whether it is a business-to-business or business-to-customer relationship, with the food product they are being promised.

The private sector is very broad and different companies are at different stages of their journey to avoid, reduce, minimize or eliminate food fraud. Some of the actions taken by leading companies around the world include, but are not limited to, those listed in Table 1.

It is also important to recognize that food fraud does not sit in a silo. It is part of a bigger picture of food integrity (fraud, defense, safety, quality).

A great resource for information on food fraud prevention, analytical methods and food fraud incidents is the Food Authenticity Network (FAN).¹ Set up in response to the recommendation in the Elliott Review after the horsemeat scandal in the United Kingdom, FAN is a free open-source resources that both authorities and private sector companies can use as a one-stop shop for all their needs to maintain the authenticity of food products.



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Agreements, standards and compliance, and the WTO's role

Fraud is first and foremost a legal compliance issue. It is illegal and therefore interventions require police, the courts and other authorities to work with industry to identify, investigate, arrest and prosecute offenders. This becomes more complex in terms of trade across borders as mentioned earlier. Varying legal systems, corruption, language and cultural barriers all contribute to this complexity. Nonetheless, we cannot turn a blind eye to fraud.

The role of the International Criminal Police Organization (INTERPOL) and the European Union Agency for Law Enforcement Cooperation (Europol) joint operation OPSON,² the World Customs Organization and the WTO is very important, acting both as a deterrent and an intervention. Cooperation and collaboration between these organizations and the food companies that are targets of fraud can significantly reduce fraudulent activities across the food supply chain.

The role of the WTO clearly is fundamental in helping to reduce fraud. The measures in the WTO's Agreement on Trade Facilitation and the SPS Agreement sit at the heart of global trade in food and help, along with other international agreements, standards and enforcement bodies (e.g. customs, police), strengthen the global food supply while working hard to reduce cross-border food fraud activity. These two WTO agreements provide a key tool in the armour of national authorities to take action when food fraud is identified.

Beyond the legal interventions, standards play an important support role as well to reduce fraud. This starts with the Codex Alimentarius, which provides the basis for national regulatory requirements around the globe and is recognized by the WTO under the SPS Agreement as an international standardizing body. Beyond methods for sampling and testing, the Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) has set up an electronic working group to review other Codex texts and to create a definition and scope for food fraud, food integrity, food authenticity and related terms. This work is currently in progress, via the electronic working group, to which SSAFE provides technical input.

TABLE 1

Solutions to help combat and reduce food fraud

Solutions	Characteristics
Vulnerability assessments	A number of food businesses undertake regular assessments of their business to identify where they may be vulnerable to fraudulent activities, both within their own organization as well as along their entire supply chain (both up and down). The Global Food Safety Initiative (GFSI) – a non-profit association of industry experts committed to improving food safety along the value chain – has made this a requirement as part of its recognized certification programme. The GFSI approves a number of food safety certification programmes covering farming, packaging, storage and distribution. To help the food industry meet these new requirements, SSAFE developed a free science-based tool, in partnership with Wageningen University, to help any food business anywhere in the world conduct a vulnerability assessment to identify where their weak spots are in terms of protecting themselves against fraud.*
Mitigation plans	Once companies identify where they may be vulnerable, they need to prepare mitigation plans to close any potential loopholes. Offsetting opportunities and motivations to commit fraud against the controls a company has in place is one of the best ways to combat fraud, assuming the control that are put in place are effective.
Testing	Testing plays a key role to verify the authenticity of food and identify potentially fraudulent activity and is used widely by leading businesses around the world. With the acceleration of technologies such as whole genome sequencing, the ability to detect fraud is improving rapidly. Testing is a key tool in the anti-fraud toolkit but, as mentioned earlier, food business cannot and should not rely on testing alone. Food businesses cannot test their way out of the problem.
Supply chain management	Supply chains play a major role in the ability for fraudsters to operate. Leading food companies around the world have developed supplier quality programmes and implemented supply chain controls to help ensure food safety but also help reduce fraudulent activities within their supply chains. Working with suppliers to raise awareness of the food fraud problem and providing guidance, where possible, helps support smaller food businesses strengthen their food authenticity processes and systems. This is important as it helps not only disseminate knowledge but also strengthen the food system along the entire food supply chain, including for smaller businesses as well as those companies operating in countries where knowledge and resources may be more limited.
Governance and risk systems	One of the key internal tools that certain leading food businesses around the world implement are effective governance systems. There is anecdotal evidence (not scientifically studied or proven) that approximately two-thirds of fraud in the private sector (not exclusive to food) occurs within the direct influence and sphere of control of the company (i.e. employees and contractors). Effective governance systems developed based on international best practices such as the International Organization for Standardization series ISO 37000:2021, <i>Governance of Organizations</i>,** (which includes management systems for anti-bribery and whistleblowing) can be of great help to the private sector.

Data and technology

Data and technology are key tools to help both the public and private sectors combat fraud. Data analytics and emerging artificial intelligence technologies are being used by leading businesses to help identify potential areas of risk as well as solutions. The sharing of data between the public and private sectors can play a key role in combating fraud. There are many new and emerging technologies that can assist in the prevention of food fraud (e.g. blockchain, predictive diagnostics). SSAFE has developed a free guide, *Industry 4.0 for Food Safety*,*** which can be of assistance in the fight against food fraud.

Finally, technological advancements in testing methodologies and fraud identification systems help determine what we need to look for and identify fraudulent activity.

Education and training

Educating suppliers, employees and customers on food fraud is another tool in the toolkit to help combat fraud and is being done by leading businesses around the world. Education on how to identify fraud, spot internal weaknesses, set up mitigation systems, and how to communicate internally and externally regarding fraud can help prevent fraud from occurring or help it be identified.

Organizational culture

One of the strongest links in fraud can be found with the organizational culture – and leading businesses are working to change this culture. Since a significant amount of fraud may be caused within the direct sphere of influence and control of a food business, the stronger a food company's culture generally (and food safety culture in particular), the less likely that food fraud incidents will happen within the company itself (see Box 1).

Collaboration

Particularly in the case of trading food, collaboration between the public and private sectors is fundamental, and leading food businesses are trying to boost this collaboration. Borders provide a key opportunity for authorities to verify authenticity. Even though they cannot check everything, spot checks go a long way in helping to identify fraud. Furthermore, most companies (i.e. the good actors) appreciate the opportunity to work with authorities to help ensure their product remains safe from fraudulent activities.

* The SSAFE tool (which is available in ten languages) can be downloaded for free at <https://www.ssafefood.org/tools/food-fraud-vulnerability-assessment-tool>.

** See https://committee.iso.org/ISO_37000_Governance.

*** Available from <https://www.ssafefood.org/standards/industry-4-0-and-food-safety-guide>.

BOX 1

Resources available from SSAFE

To help strengthen food safety culture across the food industry, SSAFE provides a free assessment to measure the people element of a food business's culture.* Together with the British Standards Institution, SSAFE co-sponsored the development of PAS 320:2023, *Developing and Sustaining a Mature Food Safety Culture: Guide*, which is a free practical guide to implementing a strong food safety culture in a food business.**

Additional free resources from SSAFE include:

- *Food Fraud Vulnerability Assessment Tool****
- Food Fraud Vulnerability Assessment Training Modules⁺
- SSAFE Lecture Series in Food Crime Prevention⁺⁺
- *Industry 4.0 and Food Safety Guide****



* *Food Safety Culture Tool*, available at <https://www.ssafefood.org/tools/food-safety-culture-tool>.

** Available at <https://www.bsigroup.com/en-GB/standards/pas-320>.

*** Available at <https://www.ssafefood.org/tools/food-fraud-vulnerability-assessment-tool>.

⁺ Available at <https://www.ssafefood.org/capacity-building/food-fraud-vulnerability-assessment-training-modules>.

⁺⁺ Available at <https://www.ssafefood.org/masterclasses/ssafe-lecture-series-in-food-crime-prevention>.

⁺⁺⁺ Available at <https://www.ssafefood.org/standards/industry-4-0-and-food-safety-guide>.

Besides the Codex Alimentarius Commission, there are other standards-setting organizations that provide good practices and guides for small and medium-sized enterprises (SMEs), such as the International Organization for Standardization (ISO) and the European Committee for Standardization (CEN), the Global Food Safety Initiative and SSAFE. Most of the focus is on analytical methods, but there are good practice guides and tools available as well. These are very useful, especially for SMEs in the food sector in emerging markets, because by strengthening from the bottom up (e.g. smaller suppliers operating in developing markets), the greater is the opportunity to reduce the risk and exposure to food fraud.

Joint responsibility and public–private partnerships

Both the public and private sector have done a lot of work over the past decade to strengthen food supply chains and combat food fraud. It is important to recognize the efforts of all key stakeholder groups in the fight against food fraud:

- regulators;
- intergovernmental organizations (Codex Alimentarius Commission, Food and Agriculture Organization of the United Nations, WTO);
- law enforcement (customs, police);
- food businesses;
- suppliers;
- retailers;
- standards setters (Codex Alimentarius Commission, ISO)
- consumer groups and media.

Legal interventions play a key role in reducing food fraud. Customs and law enforcement are fundamental to the

food authenticity system. A close working relationship between law enforcement and the private sector is very helpful in ensuring fraudsters, especially those operating across borders, are arrested and prosecuted, which in turn can serve as a deterrent. The higher the risk that a fraudster may be caught, the less likely they are to try to commit fraud in the first place.

Many different organizations around the world continue to work either directly or indirectly on combating food fraud. The interlinkages between many of these organizations are fundamental to help reduce the problem and impact of fraud in the food sector, and many of these organizations already work together.

Conclusion

There are many organizations working to combat food fraud around the world. The more often and the better these stakeholders work together, the more likely it is that fraudulent activities across the food sector will be reduced. This especially includes the WTO when it comes to matters of international trade. We believe the WTO can, should and does play a fundamental role alongside other key stakeholder to strengthen the supply of authentic food.

Through its Agreement on Trade Facilitation and the SPS Agreement, the WTO has an opportunity to bring together governments, the private sector, law enforcement and technical experts from around the world to work together on identifying gaps and proactively develop the necessary tools (both legislative and otherwise) to combat food fraud across international borders. Stakeholders need to work together to develop fraud prevention methods and tools that help reduce fraud because a problem for one is a problem for all. We have a joint responsibility and together we are stronger.

Endnotes

1. See <https://www.foodauthenticity.global> (SSAFE is a funding partner of FAN).
2. Operation Opson – which means food in ancient Greek – is an annual law enforcement operation coordinated jointly by Europol and INTERPOL that aims to remove counterfeit and substandard food and drinks from the market and dismantle the organized crime groups involved.