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International and national regulatory strategies to counter food fraud

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Acronyms and abbreviations

ASEAN	Association of Southeast Asian Nations
B2C	Business-to-consumer
CAC	Codex Alimentarius Commission
CCFICS	Codex Committee on Food Import and Export Inspection and Certification
CFS	Centre for Food Safety (Hong Kong)
CISG	United Nations Convention on Contracts for the International Sale of Goods
CSR	Corporate social responsibility
DLT	Distributed ledger technology
ECJ	European Court of Justice
EWG	Electronic working group
FAO	Food and Agriculture Organization of the United Nations
FBO	Food business operator
FDA	United States Food and Drug Administration
FPDI	Food Protection and Defense Institute (USA)
FRA	Food Regulation Agreement (Australia)
FSSC	Foundation Food Safety System Certification
GFSI	Global Food Safety Initiative
GMA	Grocery Manufacturers Association
IFS	International Featured Standards
ISO	International Organization for Standardization
HACCP	Hazard Analysis and Critical Control Point
MOU	Memorandum of Understanding
NFCU	National Food Crime Unit (UK)
NSF	National Sanitation Foundation
OECD	Organisation for Economic Co-operation and Development
RASFF	Rapid Alert System for Food and Feed (European Union)

UNCTAD	United Nations Conference on Trade and Development
UNIDROIT	International Institute for the Unification of Private Law
USC	United States Code
USD	American Dollar
USP	United States Pharmacopeial Convention
WTO	World Trade Organization

1. Introduction

This paper explores the different dimensions of food fraud. While, at the moment of publication, there is no agreed definition of food fraud, this publication follows the concept of food fraud which is described to occur when a fraudster intentionally deceives a customer about the quality and/or contents of the foods they wish to purchase, and such act is done to obtain an undue advantage, most often economic, for the fraudster. Food fraud has beset governments for centuries, and the legal responses to it have been uniquely suited to the sensibilities of the time, with no internationally recognized legal definition currently available. Effective regulation of food fraud today must account for modern complexities, including a growing global trade of varieties of food products and ingredients susceptible to fraud; the lengthening of opaque food supply chains; the international reach of public health threats; increasing sophistication in the commission of fraud; rapid advances in online marketing and e-commerce that multiply the opportunities for food fraud; the expanding media coverage of food fraud scandals; and heightened consumer interest in the authenticity and integrity of food. Food fraud scandals in some major food-producing economies in the not-so-distant past, such as the horsemeat-as-beef incident in the European Union in 2013, the fipronil in eggs scandal in 2017 in Asia and the European Union, or the melamine-tainted milk in China in 2008, evidence the complexities in regulating food fraud. No less complex is the regulation of smaller-scale food fraud, which can also include the replacement of key ingredients with lower quality alternatives, sale of conventional foods as organic, incorrect labelling of weight, and substituting expensive varieties of fish with low-value species (Reilly, 2018). Given these complexities in regulating both high-profile and common food fraud, it was understandably concerning when in May of 2020, the Food Authenticity Network Advisory Board, which includes more than 1 500 food science experts from around the world, predicted that the disruption to global supply chains caused by the COVID-19 pandemic and the diminished level of surveillance would likely lead to a rise in food fraud (Whitworth, 2020).

Addressing food fraud starts with determining the nature and the scope of harm of the problem. The dearth of organized information about the extent and scope of food fraud, especially in developing countries, makes it difficult to develop strategies and legal tools to regulate this fraud. What we do know is that fraud always concerns the quality of food and can be related to the product (hazelnut oil in olive oil) or the process (maturation period of cheese) and has the potential to impact the risk to public health and safety (melamine in milk). Unchecked food fraud encourages further malfeasance and inappropriate risk-taking with food. Moreover, food fraud can undermine the trust and confidence of consumers in the country's food supply chains even in cases where such systems are safe and getting safer, which in turn may contribute to consumers' negative perception about the food safety system.

To address food fraud and to preserve the integrity of food supply chains, many countries have highlighted the need for new methodologies and international guidelines to help authorities. Several international legal instruments and reference standards provide useful guidance for national governments to regulate food fraud. Due to the complexities of food fraud and its global reach, well-structured cooperation at both international and national levels is essential.

Countries have adopted different regulatory approaches to food fraud. Many countries regulate food fraud within the framework of food safety and quality legislation, including rules on standard-setting, labelling and quality control. Consumer protection legislation and strategies

offer a number of ways for governments and food companies to protect consumers from food fraud, while contract law provides entry-points for the private enforcement against fraudulent practices. Criminal and administrative codes can also define food fraud infringements and sanctions that complement the regulatory framework. Finally, some countries address food fraud within the specific regulatory provisions of specific trade practices, as is the case for food fraud that occurs within e-commerce of food.

Private regulatory strategies for addressing fraud in global food value chains, but also at domestic level, have also emerged, and there remains ample room for strategic use of private legal tools to control food fraud, especially transnational contracts. Self-regulation and co-regulation strategies, and private-public coordination opportunities for food fraud in global food value chains, including the development of best or good practices by food companies, are especially ripe for exploration and consideration.

The vastness and complexity of food fraud, and the versatility in regulatory approaches can challenge national governments in their attempts to develop a coherent, focused approach to food fraud.

In this context, this paper introduces the available international regulatory guidance and the potential legal solutions at the national and regional level. Focusing on legal strategies will help to build the coherency needed to address food fraud intelligently and will encourage food systems thinking – the understanding of the “behaviour of systems constituted or different components, and their interaction with context and other systems” (Kireziova and Luning, 2017) – and thereby facilitate the effective use of legal tools on this problem.

Regulating food fraud and choosing and implementing the optimal legal approach requires thoughtful analysis, process-orientation, and skilful implementation. It also requires consideration of the interrelationships between food fraud and public health, economic factors, and consumer interests. The optimal regulatory approach to food fraud also depends on the type of legal system that exist in a particular country (such as civil or common law), the existing legal and institutional framework and available resources. Above all else, successful international and national strategies to combat food fraud depend on strategic cooperation at all levels of governance and on all points along the food supply chains.

This paper addresses the regulation of food fraud in four major sections. Following this first introductory Section 1, Section 2 briefly describes the complexities of food fraud in order to illustrate the challenges of regulating the problem and identifies existing attempts to define food fraud within the international and national levels. Section 3 considers international legal approaches to food fraud, starting with a discussion on the most important *Codex Alimentarius* texts that provide the international backbone for national strategies on countering food fraud. Section 3 also considers the role of other international instruments, particularly related to international private law as well as consumer protection. Section 4 discusses the unique role of national governments in regulating food fraud by focusing on available legal strategies that emphasize prevention of food fraud and protection of consumers. It introduces the key regulatory areas that usually provide legal underpinning to food fraud: legislation on food safety and quality, consumer protection legislation, contract law, and criminal law. E-commerce of food has its own dedicated subsection, as does the variety of public-private approaches that governments may pursue. Section 4 ends with a discussion of the role of the private sector and introduces the potential role of self-regulation and co-regulation in addressing food fraud, noting the growing importance of transnational contracts in organizing global

food value chains and combatting fraud in them. This paper concludes that notwithstanding the complexities involved in regulating food fraud, national governments need to act and cooperate, if for no other reason than to maintain consumer trust in the safety of their food and in their government.

2. The complexities of food fraud: challenges for international and national regulation

The multifaceted complexities of food fraud make it difficult for governments to eradicate this problem. The complexities that present particular regulatory challenges are: 1) a lack of organized information about the types and scope of food fraud; 2) the elusive nature of harm caused by food fraud; and 3) the global dimensions of food fraud, including complicated global food supply chains. As this paper's primary focus is on legal strategies to combat food fraud, this section provides a cursory overview of each of these points only sufficient to highlight the regulatory challenges and the need for robust legal instruments and well-designed international and national regulatory strategies to deal with food fraud.

2.1. Organization of information

In the past years, food fraud has spurred considerable research interest, most likely due to its apparent surge in incidence and significance following the 2008 melamine in milk scandal in China. However, exact data on the prevalence and scope of food fraud acts in total and by type in global markets, is very difficult to capture. For example, although Brazil is one of the largest food producers, a study in 2018 on food fraud in the country noted the “lack of published reviews about food fraud and adulterations in Brazil, especially concerning adulterations in different categories of food products,” and the need for a fraud database in Brazil (Tibola *et al.*, 2018).

Researchers recognize that the available incident data may only represent the “tip of the iceberg” of global food fraud. There are multiple reasons why the true extent of food fraud events across the globe is unknown, and arguably unknowable – not the least of which is due to the varied, sophisticated, and clandestine nature of the nefarious practice. Food fraud is designed by actors to evade detection and overcome established food safety systems and quality assurance test methods.

Although information challenges can make it difficult for regulators to know where to focus precious resources to deal with food fraud, there are online databases that record food fraud events and news for different regions in the world that can help in the assessment. These databases can be grouped into two broad categories: a) rapid alert systems; and b) incident-based subscription databases.

- a) The premiere rapid alert system is the European Union Rapid Alert System for Food and Feed (RASFF), which shares information between European Union members, Switzerland, Norway, Iceland, and Europol about food and feed safety risks crossing European Union borders.¹ Additional rapid alert systems that capture food fraud events include the Hong Kong Centre for Food Safety's Rapid Alert System,² and the Association of Southeast Asian Nations (ASEAN) Rapid Alert System for Food and Feed.³

¹ In 2015, RASFF included a portal for reporting fraud cases by country via the Food Fraud Network. The Administrative Assistance and Cooperation Network for Food Fraud integrated with the RASFF in 2018 and data is accessible via https://ec.europa.eu/food/safety/rasff_en. See also, the Knowledge Centre for Food Fraud and Quality (European Commission, 2021).

² See CFS, 2021.

³ See ASEAN, 2021.

- b) Two notable subscription-based databases include those developed by the United States of America, under the Food Protection and Defense Institute (FPDI)⁴ and the United States Pharmacopeial Convention (USP).⁵ The FPDI compiles global historical and current food fraud incidents with economic motives from around the world in its Food Adulteration Incidents Registry. The USP developed a database of registered ingredients in suspected fraud events since 1980 under the Food Fraud Database (FFD), now operated by Decernis. Additional subscription online food fraud tracking databases around the globe include DigiComply by Société Générale de Surveillance, Safety HUD by Mérieux NutriSciences, HorizonScan by Fera Science and FOODAKAI by Agroknow.

Regulators in developing countries can also glean information from the European Union's *Monthly Summary of Articles on Food Fraud and Adulteration* that cover the world. For example, the Summary for May 2020 reported new cases in Jamaica and India, warning of increased food fraud activity due to the COVID-19 pandemic.⁶

Each of these databases has limitations. The FPDI, for example, reposit analytical detection methods and is therefore not a classic fraud incident database. Also, the databases vary in the total number of fraud incident mentions, mainly due to differences in recording and categorizing individual fraud cases. Notwithstanding the limitations, the availability of the compilations provides some insights into tools for prevention. For example, based on the data, several researchers and industry associations, such as the Global Food Safety Initiative, divide "food fraud" into seven categories: dilution; substitution; concealment; unapproved enhancements; mislabeling/misbranding; gray market production/theft; and counterfeiting (Global Food Safety Initiative, 2018).

2.2. Definition conducive for regulatory strategies

At the time of publication, there is no internationally agreed definition for "food fraud", and as will be discussed below in this section, national statutory definitions of food fraud remain rare. While a legal definition for food fraud is not strictly speaking necessary to combat food fraud – essentially all actions that would be classified as "food fraud" are already prohibited in most if not all national legal frameworks – an agreed definition may still carry significant benefits in clarifying the regulators' intent and be conducive to galvanizing action and support for the chosen regulatory strategies.

From a regulatory standpoint, a legal definition and specific offence of "food fraud" would carry additional benefits. As an example, without a definition of "food fraud" national courts would not be able to discuss the specific issue itself, as they are limited to only offences that are clearly defined in the national legislation. As such, they would be limited to analysing the defined individual offences, that as a whole, contribute to the phenomenon of food fraud, which may not be the most effective way to consider the problem at hand.

⁴ See FPDI, 2021.

⁵ See USP, 2021a.

⁶ See European Union, 2020.

2.2.1. Definitions at international level

In 2017, the Codex Committee on Food Import and Export Inspection and Certification (CCFICS) established an electronic working group (EWG). The EWG in turn prepared a *Discussion Paper on Food Integrity and Food Authenticity (CX/FICS 18/24/7)*, from herein referred to as the EWG Paper, which starts by referencing “the difficulty for consumers to assess the authenticity of food and need for new methodologies and Codex guidelines to help authorities to address the dramatic increases in food fraud” (FAO/WHO Codex Alimentarius Commission [CAC], 2018a, p. 1). The EWG then frames the Paper by proposing definitions for food fraud and related key terms and concepts including food authenticity, food integrity and economically motivated adulteration.

Assessing these definitions within the parameters of international instruments is challenging because the concepts behind the definitions are not easy to formulate. “Food fraud” is defined in the EWG Paper as: “any deliberate action of businesses or individuals to deceive others in regards to the integrity of food to gain undue advantage. Types of food fraud include but not limited to: adulteration, substitution, dilution, tampering, simulation, counterfeiting, and misrepresentation” (FAO/WHO CAC, 2018a, p. 2). This definition contains explicit examples of fraud, which operate as interpretative tools and give context, but also may confine its reach.

“Food authenticity” in the EWG Paper is defined as: “the quality of a food to be genuine and undisputed in its nature, origin, identity, and claims, and to meet expected properties.” This definition is novel because it presents a positive statement, but it could be argued that the terms “undisputed” and “expected properties” are open to interpretation. Furthermore, as discussed in a later discussion paper in 2020, “It was noted that care should be taken around the term food authenticity because if this incorporates geographic indicators, this is an intellectual property issue more in the realm of WTO” (FAO/WHO CAC, 2020, p. 4).

“Food integrity” is defined in the EWG Paper as: “the status of a food product where it is authentic and not altered or modified with respect to expected characteristics including safety, quality, and nutrition” (FAO/WHO CAC, 2018a, p. 4). This definition appears to be an “optimal” form of authenticity, although it offers the tightest definition of the four terms.

“Economically motivated adulteration” in the EWG Paper is defined as “the intentional substitution or addition of a substance in a product for the purpose of increasing the apparent value of the product or reducing the cost of its production, for economic gain.” This definition is narrowly ascribed as a “subset of food fraud” (FAO/WHO CAC, 2018a, pp. 2-3).

Until a definition emerges from Codex, the identification of the typical components of food fraud – intentionality, deception and undue advantage (as further elucidated in Section 4 in this report) – could build cooperation by providing a common frame of reference for international and national strategies to regulate food fraud.

2.3. Nature of harms from food fraud

The harms caused by food fraud are manifold and far-reaching. These harms include: economic harms to consumers, to honest purveyors of food, and to the food industry in general; direct and indirect potential public health harms; and systemic harms that undermine the confidence in the government’s ability to regulate food.

2.3.1. Economic

Ultimately, food fraud tricks money out of victims, and when discovered, causes significant financial losses from remediating actions, like recalls. In 2010, GMA and A.T. Kearney estimated the costs of “economic adulteration and counterfeiting of global food and consumer brands” at USD 10 billion to USD 15 billion annually worldwide (p. 1). The costs of food fraud to consumers are difficult to quantify but real to consumers. When consumers buy a product, they are entitled to receive the product they agreed to buy for the price they agreed to pay—the “benefit of the bargain” (Roberts and Turk, 2017). When a product is adulterated, consumers miss out on the full benefit of their bargain. This harm impacts all consumers who seek authentic food products for any reason, including for health benefits or pure enjoyment. The asymmetric information dynamic between consumers and food industry actors limits the capacity of consumers to make informed choices, particularly as it may be impossible for the consumer to ascertain whether the product is fraudulent or not. With no power to control food manufacturing activities upstream in food supply chains, consumers are the ultimate victims of the harms from food fraud (Roberts and Turk, 2017).

Food fraud carries also indirect costs for the industry. Responding to food fraud, either on the initiative of the private companies or in order to comply with new regulatory requirements, may require significant and costly measures, such as testing, mechanisms to control seals, or tamper proof packaging, among others. These costs are unlikely to be assumed wholly by the private companies themselves, which may consequently choose to recoup those costs by raising prices of the related food items.

The complexities involved in assessing the costs of fraud is illustrated by the case of fraudulent honey and the harm to honey producers in North America (and elsewhere). During a time when retail honey prices are increasing due to growing consumer demand and the increased utilization of honey in a diversity of products and applications (foods, pharmaceuticals, and cosmetics), there has been a steady erosion and a sharp downward trajectory in the price of raw honey paid to beekeepers by packers, importers, and exporters. This anomaly is due to increasing amounts of adulterated honey in the international and domestic markets, which artificially increases the supply of products that are marketed as honey. Against this backdrop, authentic honey accumulates in dead inventories, further compounding the supply problem that distorts the market. As stated by Roberts (2019), “As long as adulterated imported honey floods the market, domestic honey producers find it very difficult to build a sustainable business model predicated on authentic honey.”

2.3.2. Public health

Although the potential for economic harm from food fraud is well appreciated, the potential threat to public health and safety is comparatively less understood. Food safety and quality management programmes adopted by businesses have been based on controlling assessed risks from microbiological, chemical or physical hazards, and were not designed to respond to food fraud threats. Recently, there has been a move to include food fraud into these approaches, mainly on preventive measures to detect food fraud. However, because these programmes were not originally designed to respond to food fraud, they might not be the most ideal tools for the task. It could be stated that food fraud threats may be harder to detect, and in some cases even be of a higher public health risk due to the very nature of food fraud that aims to escape good management practices and thus any established mechanisms of

control. The unconventional nature of fraudulent ingredients and substances further makes it very difficult to know exactly what should be tested for (Spink and Moyer, 2011; GFSI, 2014). Fraud that results in the undeclared presence of an ingredient, additive, substance or food component presents an additional level of potential risks to the health of consumers (Elliott, 2014; Spink and Moyer, 2011).

Public health harms from food fraud can be grouped into direct and indirect harms. Direct threats to public health occur when one exposure results in immediate toxicity or illness. The most obvious example of a direct harm is the 2008 discovery of melamine in dairy-based infant food powders in China. This episode demonstrated vividly the potential for serious harm to health from food fraud when at least 6 infants died and approximately 294 000 infants suffered renal damage following the consumption of melamine-tainted infant formula (WHO and FAO, 2009). Another recent example includes the fraudulent addition of lead salts into turmeric and other spices in Georgia for artificial colour enhancement and to increase its profits, which has clearly defined adverse health effects, including impeding the neural development of children. Other studies have pointed to turmeric adulteration of spices as the leading cause for lead exposure in Bangladesh (Ericson *et al.*, 2020).⁷

Indirect threats to public health flow from the long-term consumption and repeated exposure to an affected food or ingredient, where discovery of the impact is delayed. Examples include the long-term exposure to a nutritionally defective food missing the claimed beneficial properties of the food; or a food with false or misleading health claims specific to the food, inducing the consumer to purchase the product under false pretences. The adverse health effects of indirect food fraud risks develop over time (Wheatley and Spink, 2013).

2.3.3. Trust

It stands to reason that non- or under enforcement against food fraud undermines the credibility of government authorities entrusted to ensure the integrity and safety of food (Kendall *et al.*, 2019). This erosion of authority contributes to a growing cynicism regarding the modern food system and may also encourage further malfeasance and inappropriate risk-taking with food. Food fraud stories are very topical, quickly spreading through social media globally, which intensifies effects and impacts. Moreover, consumer confidence in the food industry and marketplace wanes. People start to question the capacity of government to protect the public from food-related harm (Kendall *et al.*, 2019; Agnoli *et al.*, 2016).

2.3.4. Global dimensions

A concert of factors inherent to complex global trade introduces new sources of threats of harm from food fraud. Representatives of Iran, Canada and the European Union at the 2017 meeting of the CCFICS suggest that “the dramatic increase in food fraud” is due to modern-day factors including globalized competition and diverse and longer food supply and production chains (FAO/WHO CAC, 2017).

Lengthening of supply chains increases the range of fraud risks and vulnerabilities for foods, ingredients and food substances (Lotta and Bogue, 2015). For example, the modern processing

⁷ See also Ericson *et al.*, 2021; Forsyth *et al.*, 2019a; Forsyth *et al.*, 2019b.

of multiple-ingredient foods relies on supply chains where ingredient substitution at any point in the complex network can create many combinations of scenarios and cause health threats and economic losses (Kennedy, 2012). These complexities cannot be overstated. In an apt description, Alan Reilly, the CEO of the Food Safety Authority of Ireland at the time of the horsemeat as beef scandal, coined the phrase “global supply maze” to use in place of “global food supply chain” to avoid the implication that the trading food systems have a “line-of-sight from start to finish (Reilly, 2015).”

The harms from the sale of fraudulent food can also go global. One act of selling a fraudulent food ingredient in bulk can impact numerous lines of manufactured food. For example, a series of alerts and recalls of tonnes of food by the United States Food and Drug Administration followed after routine government sampling detected high levels of lead in turmeric and curry powders imported to the United States of America from India and were packaged and distributed under a number of different spice brands prepared by contract manufacturing plants (FDA, 2016a, 2016b). The addition of lead is motivated by the increase in profits from artificial colour enhancement and an increase in net weight.

Not surprisingly, regulators have sharpened their focus on the food supply chain or “maze” as a means to abate food fraud. As noted by the European Union’s *Resolution on the Food Crisis, Fraud in the Food Chain and the Control Thereof* in 2014, “signals indicating that the number of cases is rising and that food fraud is a growing trend reflect a structural weakness within the food chain.” As the Elliott Review (2014) later highlighted, the drivers of fraud specific to global supply chains include: the low probability of discovery, lean supply lines with weakened resilience, lack of visibility, lack of trust, lack of enforcement, documentary overload and complexity.

3. International regulatory frameworks

Due to the complexities and global nature of food fraud, it is imperative to consider the various international frameworks for the regulation of food fraud, as these set the structure within which national strategies may operate. Without being exhaustive, this section includes an analysis of selected international instruments including the *Codex Alimentarius* texts (in addition to the discussion papers related to definitions considered earlier in this report), international private law instruments, as well as the United Nations Guidelines for Consumer Protection.

There are a variety of these international instruments that provide a regulatory framework to respond to food fraud, even if all of them do not specifically mention food fraud. While the selected instruments are not all legally binding, they do provide guidance to the domestic regulators on how some aspects of food fraud can be addressed.

3.1. Codex Alimentarius texts

The *Codex Alimentarius* is a collection of internationally adopted food standards and related texts that aims to protect consumer health and ensure fair practices in food trade⁸. Adopted by the Codex Alimentarius Commission (CAC), Codex standards are considered as the international reference standards for the purposes of the *Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)* of the World Trade Organization (WTO), and as such, they can be used by countries as a benchmark for their food safety requirements (Article 3 and Annex A). In fact, national food safety requirements based on Codex standards are considered as not more trade restrictive than necessary for the purposes of the SPS Agreement. Codex standards and texts are voluntary. Member States need to incorporate Codex standards into their legislation for them to be legally binding and enforceable.

There is no Codex standard specifically on food fraud, but numerous standards include elements of process-based and product-based quality that are susceptible to being used in a fraudulent manner. Incorporation of these standards in national legal frameworks can thus increase the agri-food systems' resilience against food fraud.

Providing overall guidance, the *Codex Code of Ethics for International Trade in Food Including Concessional and Food Aid Transactions (CXC 20 1979)* contains the basic principles relating to the prevention of international trade of unsafe, adulterated, out of date, or otherwise unsatisfactory food.

Two groups of Codex texts are relevant to this inquiry: texts that involve control systems and those that involve the labelling of food.

⁸ All Codex Alimentarius standards, codes of practice, guidelines and papers can be found at: <http://www.fao.org/fao-who-codexalimentarius/en/>

3.1.1. Control systems

The EWG Paper, introduced in Section 2.2.1, concluded that the main pieces of CCFICS texts cover the prevention and control of food fraud in general terms, as their scope extends to the dual mandate of Codex “to protect the health of consumers and to ensure fair practices in the food trade” (FAO/WHO CAC, 2018b, p. 38). The EWG Paper noted that some texts can be more applicable than others and listed them in order of “greatest influence,” starting first with the *Principles and Guidelines for National Food Control Systems (CXG 82-2013)*. Dissection of this specific text shows both the range and a pattern of coverage for food fraud by other CCFICS texts.

The CXG 82-2013 text “is intended to provide practical guidance to assist the national government, and their competent authority in the design, development, operation, evaluation and improvement of the national control system” (Section 1). Three aspects of the CXG 82-2013 are germane to food fraud. The first aspect is public health. Although not emphasized by the EWG Discussion Group, it is worth noting that food fraud’s effects (direct and indirect) on public health extend coverage of the CXG 82-2013 broadly to food fraud. This means that the principles and guidelines in the text that pertain to the entire food chain, i.e. the “production, packing, storage, transport, handling and sale of foods within national borders”, apply to food fraud (Section 1, Para. 2). These expansive principles and guidelines include the principles that form the basis of national food control systems, including consumer protection, whole chain approach, transparency, coordination between multiple competent authorities and preventive measures – all principles that should be employed to counter food fraud.

The second aspect of the guidance specifically refers to fraud and deception, as noted in the following three provisions of CXG 82-2013:

Control programs should be based on risk and designed to take into account a number of factors including but not limited to: ... risk of unfair practices in the food trade associated with different products, such as potential fraud or deception of consumers ... (Para. 50, emphasis added).

Compliance and enforcement programs should be designed to: ... be proportionate to the degree of public health risk or potential fraud or deception of consumers (Para. 57, emphasis added).

Where a product or process is found not to be in conformity, the competent authority should take action to ensure that the operator remedies the situation. The resulting measures should take into account any repeated non-conformity of the same product or process to ensure that any action is proportionate: to the degree of public health risk, potential fraud or deception of consumers ... (Para. 81, emphasis added).

The guidance text does not delineate between fraud and deception, but consistent with common definitions of food fraud discussed in Section 2.2, it stands to reason that deception is included within the definition of fraud. This is certainly born out in the EWG Paper’s working definition of “food fraud,” whose inclusion of “deliberate action of businesses or individuals to deceive others in regard to the integrity of food to gain undue advantage” speaks to deception as part of fraud (CXG 82-2013, emphasis added).

A third aspect of the CXG 82-2013 that applies to food fraud is the reference to fair practices in trade. This aspect emphasizes the economic considerations involved with food fraud. Starting with Section 2, Paragraph 6, which couples fair food trade practices with protecting consumer health as the objective of a National Food Control System, numerous provisions in the CXG 82-2013 refer specifically to fair food trade practices that apply to food fraud concerns.

The competent authority has a pivotal role in the national food control system, in that the competent authority: ... Establishes, implements and enforces regulatory requirements supporting fair practices in the food trade ... (Para. 26, emphasis added).

National goals and priorities will ensure consumer protection by taking into account amongst other things food production and consumption patterns, risk profile and consumer concerns in relation to food safety and fair practices in the food trade and also the preparedness and capability of the country (Para. 33, emphasis added).

In order to reflect national policies and strategies legislation should, amongst other things: ... Clearly define obligations on food businesses to place only safe food on the market and apply fair practices in trade (Para. 38, emphasis added).

Where quality assurance systems are used by food business operators, the national food control system should take them into account where such systems relate to protecting consumer health and ensuring fair practices in the food trade. The competent authority should encourage, as appropriate, the use of Good Laboratory Practices (GLP), GAP, GMP, GHP and HACCP approach in accordance with *General Principles of Food Hygiene* (CXC 1-1969) (Para. 54, emphasis added).

In order to promote consumer confidence in food safety and ensure fair practices in the food trade, the competent authority should be clear and transparent in their communications relating to all aspects of the national food control system for which they are responsible, including the development, implementation and enforcement of the requirements (Para. 64, emphasis added).

These provisions concerning fair practices in trade in CXG 82-2013 confirm for National Food Control Systems that: 1) ensuring fair practices in food trade is a priority in addition to placing only safe food on the market (Paras. 33, 38); 2) unfair practices in food trade include food fraud (Para. 50); 3) regulatory requirements should be used to ensure fair practices in food trade (such as to eradicate food fraud) (Paras. 26, 64); and 4) the same controls and systems used in food enterprises to ensure safe food should also be used to ensure fair practices in food trade (such as preventing food fraud) (Para. 54).

The EWG Paper also refers to a number of other CCFICS texts that pertain to food fraud and that mirror much of the application to food fraud found in CXG 82-2013. These texts also recommend the use of various legal tools to be used in regulating food fraud. Again, although these Codex texts do not specify or define food fraud, they refer to fair practices in trade and couple deception with fraud, providing a strong inference of applicability to food fraud, in the following manner:

- *Principles for Food Import and Export Inspection and Certifications* (CXG 20-1995) recommends the use of food inspection and certification systems to protect consumers against “deceptive marketing practices” and by ensuring “accurate product description” (Para. 5 and other provisions).

- *Guidelines for Food Import Control Systems (CXG 47-2003)* – provides a framework for developing import control systems to protect consumers and facilitate fair practices in food trade (Para. 1).
- *Guidelines for the Design, Operation, Assessment and Accreditation of Food Import and Export Inspection and Certification Systems (CXG 26-1997)* – provides a framework through various provisions for the development of import and export inspection and certification systems consistent with the *Principles for Food Import and Export Inspection and Certifications (CXG 20-1995)*.
- *Guidelines for Design, Production, Issuance and Use of Generic Official Certificates (CXG 38-2001)* – provides guidance on the design, production, issuance and use of official certificates to attest that food presented for international trade has met the import requirements for “ensuring fair practices in the food trade.” Prevention of fraud and document fraud in the official certificates is referenced in various provisions in this text, as noted specifically in the EWG Discussion Paper.
- *Principles for Traceability/Product Tracing as a Tool within a Food Inspection and Certification System (CXG 60-2006)* – infers that the tool of traceability extends to food fraud coverage, again by way of considering “deceptive marketing practices” as a subset of fraud.

The EWG Paper concludes, as does this report, that because prevention of food fraud is encompassed in the goals of fair practices in food trade, including the avoidance of deception and misrepresentation in the marketing and conveyance of food, that these aforementioned texts, as well as other CCFICS texts listed in its EWG Paper are topical to food fraud: *Principles and Guidelines for the Exchange of Information between Importing and Exporting Countries to support trade in food (CXG 89-2016)*; *Principles and Guidelines for the Exchange of Information in Food Safety Emergency Situations (CXG 19-1995)*; *Guidelines for the Exchange of Information between Countries on Rejections of Imported Food (CXG 25-1997)*; *Principles and Guidelines for Monitoring the Performance of National Food Control Systems (CXG 91-2017)*; *Guidelines for the Development of Equivalence Agreements Regarding Food Import and Export Inspection and Certification Systems (CXG 34-1999)*; *Guidelines on the Judgement of Equivalence of Sanitary Measures associated with Food Inspection and Certification Systems (CXG 53-2003)*.

Notwithstanding the strong inferences in these control systems’ texts, a fair question is whether there could be an updated text to make a more direct and stronger case for Member States to deal with food fraud. Due to the elusive nature of food fraud, this type of question threads its way through various disciplines and concepts. Direct statements in guidance on regulating food fraud could help Member States confront more effectively and confidently this complicated and seemingly intractable problem. For example, as noted by CCFICS, international legal instruments could “identify specific characteristics of National Control Systems, such as preventive principles, information exchange, vulnerability assessments, and traceability/traceback to prevent and manage food fraud (FAO/WHO CAC, 2020).” Efforts could also be made for collaboration between CCFICS and the Codex Committee on Food Labelling (addressed immediately below) to develop guidance to assist in the control and inspection of food products sold online (FAO/WHO CAC, 2019a).

3.1.2. Food labelling

The Codex Committee on Food Labelling (CCFL) has adopted texts and guidelines on food labelling, which can provide elements for defining and prosecuting food fraud. The *General Standard for the Labelling of Prepackaged Foods (CXS 1-1985)* provides that “prepackaged food shall not be described or presented on any label or in any labelling in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character in any respect” (p. 3). Similarly, the *General Standard for the Labelling of Food Additives when sold as such (CXS 107-1981)* provides that “food additives shall not be described or presented on any label or in any labeling in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding their character in any respect (p. 2).” These two provisions combined, along with the thrust of guidelines, thus prohibit false, misleading, or deceptive labelling for foods and food ingredients. The relevant guidelines include: *General Guidelines on Claims (CXG 1-1979)*; *Guidelines on Nutrition Labelling (CXG 2-1985)*, *Guidelines for Use of Nutrition and Health Claims (CXG 23-1997)*; *General Guidelines for Use of the Term “Halal” (CXG 24-1997)*; *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods (CXG 32-1999)*; *Compilation of Codex texts relevant to the labelling of foods derived from modern biotechnology (CXG 76-2011)*; *General Standard for the Labelling of and Claims for Prepackaged Foods for Special Dietary Uses (CXS 146-1985)*.

As suggested in Section 4.2.4 of this paper on national legal strategies related to labelling, it should be considered whether the prohibition against false and misleading labelling is enough to cure food fraud or whether, for example, food products with valuable ingredients reduced or omitted for the sole purpose of reducing costs have an inherent capacity to deceive or mislead. This is important to avoid inflating the ability of labelling as a tool to regulate food fraud.⁹ Finally, it should be assessed whether labelling requirements to reduce fraud specifically for online food purchases, are necessary.

3.2. United Nations Convention on Contracts for the International Sale of Goods

Food fraud may occur within the sphere of the international sale of goods. The United Nations Convention on Contracts for the International Sale of Goods (CISG) (1980) applies to contracts of sale of goods between parties whose places of business are in different contracting states of the Convention (or if the rules of private international law lead to the application of the law of a Contracting State) (Article 1). The CISG generally excludes its applicability from goods bought for personal, family or household use (Article 2(a)).

The CISG does not cover cases of fraud nor interfere with the rights and remedies that domestic law gives to persons who have been induced to enter into a contract by fraud. This can be based on Article 4 that holds that the Convention governs only the formation of the contract of sale and the rights and obligations of the seller and the buyer arising from such a contract, but not the validity of the contract or of any of its provisions. Therefore, the criteria and consequences of fraud are regulated by domestic law. In light of this, the CISG has a neutral approach to food fraud, which is left to be covered by the applicable domestic legislation.

⁹ For example see Roberts, 2016.

Interestingly, the predecessors to the CISG of 1980, the *Convention relating to a Uniform Law on the Formation of Contracts for the International Sale of Goods* of 1964, still expressly addressed fraud, stating in Article 89 that: “In case of fraud, damages shall be determined by the rules applicable in respect of contracts of sale not governed by the present Law.” This provision was not included in the CISG (Schroeter, 2013).

3.3. The International Institute for the Unification of Private Law’s principles: international commercial contracts

Alternative to the CISG, the International Institute for the Unification of Private Law (UNIDROIT), an independent intergovernmental organization, in 1994 formulated the *UNIDROIT Principles* (herein known as Principles) in an effort to harmonize and coordinate private commercial law between Nations that have acceded to the UNIDROIT statute.

The Principles (revised 2016) can be applied to any international commercial contract when the parties assent to their application or if the rules of private international law would lead to their application. “Consumer transactions” are excluded from their reach (Preamble, Comments 1, 2). The Principles allow a party to avoid a contract when it has been led to enter the contract by the other party’s fraudulent representation, or by the fraudulent non-disclosure of circumstances, which according to reasonable commercial standards of fair dealing, the latter party should have disclosed. When a contract has been avoided, the party at fault is liable for damages (Article 3.2.16). The Principles do not prevent the parties from relying on any remedies that might be available under their domestic legal system. The Principles provide for general principles of contracts including their formation, validity, interpretation and termination. They also include provisions on assignment of rights, transfer of obligations and the law on agency.

Article 3.2.5 of the Principles deals specifically with fraud as grounds of avoidance of a contract. The Article provides that a party may avoid a contract where it had entered into the contract due to the other party’s “fraudulent representation, including language or practices, or fraudulent non-disclosure of circumstances which, according to reasonable commercial standards of fair dealing, the latter party should have disclosed.” The same Article distinguishes fraud from mistake and refines what it refers to as the “notion of fraud” by focusing on the intent of the conduct that prompts the party into error and allows the other party to gain an advantage to the detriment of the former party. This characterization of “fraud” is closely aligned with the EWG Paper on fraud, inclusive of elements such as deliberate action, deceit and undue advantage.

3.4. United Nations Guidelines for Consumer Protection

Domestic legal strategies on countering food fraud may rely on the guidance provided by the *United Nations Guidelines for Consumer Protection (UNGCP)* of 1985, which for the first time established a set of international consumer law principles” (Benöhr, 2020). The UNGCP were first adopted by the General Assembly in 1985, later expanded by the Economic and Social Council in 1999, and revised by the General Assembly in 2015. These revisions reflect a trajectory of international consumer law as developed by the UN guidelines that is favourable to the covering of food fraud. For example, as noted by Benöhr (2020):

An important novelty of the 2015 Guidelines include a section on good business practices, requiring that companies take direct responsibility for consumer protection. This represents a general shift from previous versions, which focused on national governments as promoters for consumer protection. Under the new framework the UNGCP aims to establish “benchmarks for good practices” to encourage “high levels of ethical conduct” in companies that produce or distribute consumer goods or services (Section IV, Guideline 1c).

This approach follows a broader trend that became evident during the last decade, and which inclines towards co-regulation and self-regulation methods for businesses (UN Manual on Consumer Protection 2017). Several international organizations have become particularly active in this regard, such as the ISO with the development of the Guidance on Social Responsibility (ISO 26000 2010) and the Organisation for Economic Co-operation and Development (OECD), which issued the Guidelines for Multinational Enterprises Recommendations for Responsible Business Conduct (OECD 2011).

Relevant key principles in the UNGCP include protection of consumers’ economic interests and access to adequate information (Para. 5 (d) and (e)), the corresponding responsibility for businesses to deal fairly and honestly with consumers (Para. 11) and the Member States’ responsibility to establish enabling legal and policy frameworks (Para. 4). The UNGCP also requires the Member States to encourage consumer organizations to monitor adverse practices, such as the adulteration of foods, false or misleading claims in marketing, and service frauds (Para. 21). The UNGCP calls for the development of an international framework for combating fraudulent and deceptive commercial practices (Para. 86) which should provide national consumer protection enforcement agencies with the authority to investigate, pursue, obtain, and where appropriate, share relevant information and evidence, particularly on matters relating to cross-border fraudulent and deceptive commercial practices affecting consumers (Para. 88).

It is within the context of these principles that the specific provisions concerning food fraud can be read. Referring directly to the economic interests of consumers, the UNGCP states that:

Member States should intensify their efforts to prevent practices which are damaging to the economic interests of consumers through ensuring that manufacturers, distributors and others involved in the provision of goods and services adhere to established laws and mandatory standards (Para. 21).

In the same paragraph, the UNGCP specifically provides that consumer organizations should be encouraged to monitor adverse practices, including “the adulteration of foods” (Para. 21). The UNGCP continues by noting that “consumer education and information programmes should cover such important aspects of consumer protection as the following: (a) Health, nutrition, prevention of food-borne diseases and food adulteration” (Para. 44).

Specifically, with regard to fraud, the UNGCP calls on Member States to improve consumer protection practices by cooperating to combat fraud and deceptive cross-border commercial practices (Para. 86), and by providing their consumer protection enforcement agencies with the requisite authority to investigate and share relevant information and evidence (Paras. 88, 90).

In sum, the UNGCP provides general and specific provisions on fraud. The UNGCP also sets the governance framework for addressing food fraud by encouraging best practices by companies to avoid consumer deception; by building a case for co-regulation, self-governance, public-private cooperation and soft-law approaches to protect consumers; and by encouraging

Member States to empower enforcement agencies with authority to investigate and share information.

For a domestic regulator, three general principles can be delineated from the UNGCP framework, applicable to addressing food fraud: 1) best or good practices by food companies; 2) co-regulation and public-private cooperation; and 3) empower enforcement agencies to investigate and share information. There are a number of ways for national governments to adopt these three principles in their respective jurisdictions to eradicate food fraud. Below are a few ideas on how these principles could be used by national governments.

1. *Best practices* – Governments could encourage food companies to adopt best or good practices by developing criteria on how to avoid food fraud to protect consumers, and by providing these criteria and additional guidance to the industry. It may be that these best practices, once implemented and proven to be successful, could be considered as prospects for policy formation. The adoption of best practices would also comport with the goal of prevention – food companies assuming primary responsibility – but would employ self-governance rather than state mandated responsibility. This approach would allow for a nimbler approach to addressing food fraud in the food supply lines. A best practice approach would also allow food companies to experiment with different self-governance or soft law approaches and would be conducive to the use of transnational contracts.
2. *Co-regulation* – Governments could also foster public-private cooperation in a variety of projects and programmes aimed to eradicate food fraud by focusing on the sharing of information to consumers (see Section 4.6 of this paper). The UNGCP in relation to the promotion and protection of the economic interests of consumers recommends Member States, in their national context, to encourage the formulation and implementation by businesses, in cooperation with consumer organizations, of codes of marketing and other business practices to ensure adequate consumer protection. The UNGCP also provides for the establishment of voluntary agreements jointly by businesses, consumer organizations and other interested parties (Guideline 31). These can take the form of either self-regulation or co-regulation, depending on the intensity of the involvement of the government (UNCTAD, 2017). This partnership approach can be styled or emphasized in a way most conducive to the legal and governance culture of the national government, including the norms of social governance applied in developing countries.
3. *Empowerment of enforcement agencies* – Governments could empower enforcement agencies to investigate fraud by coordinating the investigations and enforcement activities with the enforcement agencies of the other Member States (Guideline 83), and by making use of existing international networks and by entering into appropriate bilateral and multilateral arrangements and other initiatives to implement these guidelines (Guideline 85). The UNGCP also calls for the Member States to provide their consumer protection enforcement agencies with the authority to investigate, pursue, obtain, and where appropriate, share relevant information and evidence with other enforcement agencies (Guideline 88). Further, governments could task the enforcement agencies to share information to consumers – the ultimate victim of food fraud – by

enhancing communication for consumers about food fraud. An example of this enhanced communication will be discussed in Section 4, where consumers are warned of food fraud after surveillance data is delivered to national governments. Another example could be food labelling whereby information can be delivered to consumers about the authenticity of food via a text label, symbol, or electronic code on the labelling. Communication strategies should also encompass the indirect threats to public health that develop over time, examples of which are stated in Section 2 of this paper, as well as the more obvious direct threats.

4. Strategies to regulate food fraud at the national level

National governments and regional organizations are in a unique position to develop, monitor and control, and enforce measures against food fraud. The Codex texts and other international legal instruments presented in Section 3 provide an important framework from which governments can address food fraud. There is some government activity emerging to combat it, but it is rare that national governments have undertaken specific regulatory action to deal with food fraud. It is likely that the complexities discussed in this paper connected to food fraud – the elusive nature of food fraud and its harms, the dearth of organized information, the globalism and the web of world supply lines that hide the fraud, the sophisticated steps that comprise fraud and the economic pressures that lure purveyors of food to cheat – make it very difficult for national governments to regulate this seemingly intractable problem.

It is also possible that the complexity in defining food fraud has made it more convenient for the elements of food fraud to reside within the fluid dynamic between adulteration (food that is injurious to health) and misbranding (misrepresentations as to character and quality of food), resulting in a lack of focus on enforcement against the fraud. As difficult as it is to regulate food fraud, it is critical that national governments act. As previously mentioned, non-enforcement or under enforcement against food fraud undermines the credibility of governmental action, leaving economic and public health harms to reign unchecked.

In regulating food fraud, governments should pay attention to both, preventing food fraud from occurring, and monitoring, detecting and addressing food fraud. Many experts in food fraud widely believe that preventing food fraud is preferable to detecting and trying to remedy the damage after the fact (Spink and Moyer, 2014; Manning, 2016). Fraud prevention measures and incentives can be incorporated throughout the various regulatory areas addressing food fraud, from food safety to consumer protection legislation. Including food fraud in criminal legislation could have a deterrent effect that would directly contribute to prevent new fraud. Nevertheless, prevention alone cannot be enough, and there will always remain a need to also detect food fraud, as well as enforce the existing rules on those who intend to circumvent them. Market inspection and monitoring, and official food control, along with public-private collaboration and market surveillance would further contribute to identify and control potential food fraud. This section will discuss six overall strategies on regulating food fraud. It starts by considering the tools available under the food safety and quality legal framework, and finds that while they are necessary, they may not be sufficient when dealing with food fraud. Efforts are made to discuss strategies cornerstoned in consumer protection legislation – taking a consumer-facing focus; and contract law, which opens avenues for private enforcement of food fraud – as well as the criminal law framework, recognizing that fraud is often a crime and may attract criminal enforcement and penalties. The specific case of food fraud in e-commerce operations, which may employ tools under each of the other strategic approaches, is discussed in its own subsection, given the inherent complications and new opportunities for food fraud that online transactions can bring. At the end of Section 4, we return to the participation of the private sector, and analyse how self-regulation or co-regulation, as well as general cooperation can be used to combat food fraud. Finally, the specific role of transnational contracts in the regulation of global food value chains is recognized.

This grouping is simply intended to provide an orientation for developing national strategies that have common threads; however, there is considerable overlap and interdependence between each strategy. On a practical level, many of the legal, scientific, and technological tools, such as traceability, technology, standards and testing, can be used interchangeably in these strategies.

Implicit in this section is the recommendation that national governments cannot fully address food fraud by just enacting a single law or single strategy. Food-systems thinking about multiple strategies and coordinated effort amongst government agencies and with the private sector will be required for governments to move beyond the natural inclination of these agencies. It should not be a surprise that the main focus of national governments to date has been on public health consequences from food fraud because food regulatory agencies that operate under the authority of the national governments are generally public health agencies who have constitutional or statutory obligations to provide such protections. This is significant because while a public health agency may take a reactionary approach, only focusing on an incident whenever there is a human health threat, it may be that in some countries other agencies or enforcement bodies may be more interested in the fraud itself, regardless of the public health risks.

4.1. Food safety and quality frameworks

National food safety and quality legislation often provides an overarching framework within which food fraud is regulated, especially, but not limited to, where the fraud poses a health risk. Food safety and quality legislation that follows Codex texts usually also incorporates elements of essential food quality legislation, understood as the elements of a food product that makes that product pertain to a certain category (see for instance the Codex standards on specific types of cheese or chocolate).¹⁰ As such, food safety and quality legislation would contribute to preventing food fraud, and also to establish legal grounds for surveillance, control, enforcement, and even prosecution when applicable in the national legal framework. Operating within this framework comports with Codex texts which connect food fraud with public health, but there are limitations to this approach that should be recognized.

4.1.1. Historical and practical context

As noted in Section 3, Codex is responsible for developing standards, guidelines and other recommendations on the safety and quality of food to protect the health of consumers and to ensure fair practices in food trade (FAO and WHO, 2003).

Many Codex standards combine safety and quality elements, which leads to joint monitoring mechanisms, including food inspection (Randell and Whitehead, 1997). Understandably, then, national strategies and legislation have evolved over the years to focus on national controls for food safety and quality as unified concepts (FAO and WHO, 2003). Given this coupling of concepts between safety and quality and the lack of a structured independent framework for food fraud, it is no surprise that food fraud is often regulated within the regulatory framework of food safety and food quality.

¹⁰ Codex Alimentarius standards for specific foods can be found at <http://www.fao.org/fao-who-codexalimentarius/codex-texts/list-standards/en/>

Resource limitations may prohibit setting up mechanisms to monitor food fraud separate from food safety. This is especially true in terms of market surveillance. This reality has led many countries to conduct food safety and food fraud inspections together, under the same body of food safety-expert inspectors. It may help national governments confronted with resource constraints to understand a few of the challenges that can be prevented when regulating food fraud exclusively within a food safety control system.

4.1.2. Prioritization challenges

One such challenge in a food safety framework is when food fraud does not pose a direct safety risk. An example of an indirect safety risk is the adding of water to milk, which may not pose a health hazard, when water is drinkable water, but could reduce the nutritional and economical value of the milk. In contrast, adding colour additives to spices may simultaneously increase their apparent value by making the spices look more desirable, and create a health risk, if the colouring agents are harmful to humans. Both cases constitute food fraud, and the latter also presents a more obvious health risk. In some jurisdictions, especially when enforcement resources are limited, there may be a temptation not to enforce as vigorously where the fraud does not present a clear, direct food safety risk. Understanding the broader consequences of food fraud on public health, such as compromising nutrition and trust in the ability of public health authorities to control the integrity of the food supply, will guard against under-regulation of fraud (Barnard and O'Connor, 2017).

4.1.3. Food safety legislation

As stated in the Codex General Principles of Food Hygiene (CXC 1-1969), it is a general principle of food safety legislation that food operators should assume the primary responsibility for the safety and quality of their food. This primary responsibility is reflected in a number of legal obligations to be assumed by food operators that go beyond the obligation to meet food safety and quality standards and include: the obligation to keep records and share them with the food authority and to set up systems of self-control, often on the basis of the Hazard Analysis and Critical Control Point (HACCP) principles, among others. Food operators must also set up traceability and recall procedures to ensure the timely traceback and withdrawal from the market of products which are found not to be compliant with the reference standards.

Traceability requirements can be set up in the domestic legal frameworks for food safety and quality, and when adhered to, may both prevent food fraud as well as uncover cases where food fraud occurs. Traceability or product tracing is defined by the Codex Alimentarius Commission in the CXG 60-2006 Principles as “the ability to follow the movement of a food through specified stage(s) of production, processing and distribution”. In general, regulatory requirements of traceability require that food operators can identify who supplied the food product to them (“one step back”) and to whom they transferred it (“one step forward”). Traceability allows for greater control of not only food hazards but assists in providing reliable product information, as well as to help guarantee product authenticity. The actual tracing needs to be handled by the food business operators. National governments may adopt regulations and promote the use of industry standards for traceability processes that ensure agreement about the identification of the traceable items. This supports the visibility and continuity of information across the supply chain, shining light to prevent food fraud (FAO, 2017).

Intrinsically related to food traceability are food recall obligations. An effective system of food recall relies on a robust legal basis, effective pre-established protocols that clarify the role of the food operators and the competent authorities. Food should be recalled from the market in response to discovery in the marketplace of goods that do not meet the prescribed safety or quality specifications. Primary responsibility for product recall should lie on the food operator, who should also contribute to communicating risks to the consumers. Competent authorities should have a supervisory role and act in case of failure, notwithstanding their potential action against the food operator.

The national government could thus cultivate in the food sector a strong culture of self-control, in which the food companies can reasonably expect to be able to compete honestly without resorting to fraudulent behaviour. This will require strong legal frameworks, coupled with effective compliance monitoring, enforcement strategies, and cooperation, especially in emerging spheres of food delivery, such as e-commerce.

In this scenario, the national government would then have the corresponding role of establishing an effective and credible system of official controls to monitor and control the performance of food operators and ensure that they fulfil their obligations. Official controls can be undertaken by several governmental agencies (at the central and decentralized levels) and increasingly rely on innovative approaches (see Box 1).

Box 1. Using innovative approaches to detect food fraud

National governments can expand the types of solutions they use to support the food industry in order to avoid food fraud. These proactive solutions include horizon scanning measures that enable surveillance and analysis of environmental trend data. For example, food supply chain actors and consumers in the United Kingdom of Great Britain and Northern Ireland were warned about the possible risk of walnuts being substituted with cheaper peanuts following a series of walnut crop failures in Kashmir after heavy rains decimated crops (Bawden, 2015). These horizon scanning measures that deliver timely alerts for monitoring safety risks in supply chains are a product of HorizonScan, a program developed in the United Kingdom by the Food and Environment Research Agency.

Another more recent and heralded technology-led solution to food fraud is the use of blockchain technology, which emerged in 2008 as a core component of the bitcoin cryptocurrency (Bhardwaj and Kaushik, 2018; FAO and ITU, 2019). The promise of blockchain is to enhance traceability and transparency through the use of immutable ledgers (FAO and ITU, 2019).

Source: Bawden, 2015; Bhardwaj and Kaushik, 2018; FAO and ITU, 2019.

As mentioned above, in many countries the competent authorities that ensure food safety control, would also be responsible for ensuring food quality, including standard setting, inspections, traceability, and recall. Due to regulatory priorities and resource limitations, food safety and quality authorities may approach the inspections from a food safety perspective, rather than food safety and quality perspective that would fully capture potential food fraud. It would be important to be aware of the differences between methods to detect food safety risks, and those linked with food fraud. Food fraud in general may be harder to detect, as the only limitation on how to render food fraudulent is the imagination of the fraudster, and there is no incentive for the fraudulent food business operation to assist in uncovering their own fraudulent behaviour.

4.1.4. Food labelling

Labelling is used to provide both information regarding the product composition and nutritional properties, and production information that facilitates the traceability along the food supply chain. As such, it can increase transparency and support the effectiveness of controls along the food chain by committing the producer/processor to disclose information about the product and enabling the competent authorities to enact their oversight roles more effectively. While its effectiveness as a sole tool in controlling food fraud is limited, it is an important element for overall transparency and commitment for the different actors involved in food control and food protection. When regulating labelling, it is helpful to remember that labelling concerns information and how it is conveyed to consumers. Although national governments diverge in the manner of regulating food labelling, they “share the epistemological aim of increasing truth possession and reducing error.” (Roberts, 2016).

4.1.5. Deception and certification

The Codex legal instrument, the *General Standard for the Labelling of Prepackaged Foods (CXS 1-1985)*, described in Section 3 of this paper, states that labelling on a prepackaged food must not present any labelling “that is false, misleading, or deceptive or is likely to create an erroneous impression regarding its character in any respect.” Examples of descriptions or presentations to which this Codex Standard refers are given in the *Codex General Guidelines on Claims (CXG 1-1979)*. Consistent with these texts and guidelines, national food legislation commonly prohibits misrepresentation by placing requirements for the kind of information that can or must accompany food products. It is also interesting to note that deception is a common element of a misleading label in national legislation just as it is for fraud in the Codex texts referred to in Section 3 of this paper.

Arguably, if the information provided for a food item was always true (without deception) there would be no room for food fraud; however, national governments should be wary of simplistic thinking that food labelling by itself can resolve complicated food fraud problems, as food fraud may adopt different forms that are not directly reflected in the labelling. Imposing always stricter labelling requirements and demanding more and more information to prevent fraud would create unbearable difficulties for monitoring and enforcement. Additional labelling requirements should be justified in the need for consumers to receive the appropriate information to make their food choices, and not used as a strategy to prevent fraud. For example, in the United States of America, in response to a citizen’s petition for a standard of identity for honey in order to eradicate honey fraud, the United States Food and Drug Administration (FDA) denied the petition because it concluded that a standard of identity was not needed. The FDA expressly noted that “to the extent that consumers are confused about what honey is, what it contains, the food label provides the relevant information to alleviate consumer confusion” (Roberts, 2016). It goes without saying, however, that the United States of America labelling regime has not effectively resolved honey fraud (Roberts, 2019). If labelling is part of a strategy to regulate food fraud, control points should be implemented to ensure effectiveness.

Notwithstanding the shortcomings of labelling in resolving food fraud by itself, it should be clearly stated that accuracy of labelling, which is the primary mean of conveying information about the characteristics of the food to the consumer, is a crucial step in preventing food fraud by increasing truth and reducing error. It therefore has a role to play as a part of an overall

regulatory strategy to address food fraud; using labelling not as the sole means of regulating food fraud, but as an essential tool that can be applied strategically, can be helpful for national governments to consider in a broad range of situations (see Box 2).

Box 2. Italy and Alibaba together against food fraud

A collaborative approach on food labelling between government and a major food company to correct fraud involves geographical indications and a Memorandum of Understanding (MoU) between the Italian Ministry of Agriculture and China's Alibaba, the world's largest e-commerce platform. The MoU was first entered into in 2014 and then renewed in 2018. Geographical indications are a form of intellectual property that are used as labelling marks to connect food to a reputation or characteristic of a particular geographical origin. The MoU furthers Italy's battle against the infringement of geographical indications and counterfeiting on the web and protects consumers of Alibaba from fraud in online purchases. Italy's Central Inspectorate for Quality Protection and Fraud Prevention of Agri-Food Products reports to the e-commerce platform any irregular online sales that might infringe on an intellectual property right. This innovative strategy could be a model for governments in using labelling and coordination with a cross-border enterprise to address a form of food fraud.

Source: ItalianFOOD.net, 2021.

The content-based definition of food fraud, as discussed in Section 2, may also help national regulators to cast a wider net over fraudulent labelling practices, if they so choose (see Box 3).

Box 3. European Court of Justice: Case C-195/14 "Teekanne"

The European Court of Justice (ECJ) has elaborated the concept of misleading labels under the legal framework applicable in the European Union, through the construct of an average consumer in Case C-195/14 "Teekanne". The case revolved around the ability of packaging and labelling to mislead consumers, even if the list of ingredients itself was accurate. In this case, the packaging of a certain fruit tea had repeated eye-catching depictions of raspberries and vanilla flowers as well as the indication "with natural flavourings" and the depiction of a seal featuring the words "only natural ingredients", while the list of ingredients made clear that the tea contained natural flavourings with the "taste of vanilla" and the "taste of raspberries", meaning that there were no natural ingredients either from vanilla or raspberry, as was confirmed by the ECJ.

Given this fact pattern, Paragraph 36 of the case contains a list of factors that the national court must take into account in order to assess the capacity of labelling to mislead. These include the a) presumed expectations in light of the labelling which an b) average consumer who is reasonably well informed, and reasonably observant and circumspect has as c) the origin, provenance and quality associated with the foodstuff, with the critical point d) being that the consumer must not be misled and must not be induced to believe, incorrectly that the product has an origin, provenance or quality which are other than genuine.

The case also compounds on the fact that the impression given through labelling and methods used for labelling of the foodstuff must be taken as a whole. Therefore, if for example a package of tea contains prominent images of vanilla and raspberries even though the list of ingredients itself was accurate and makes clear that neither products are present in the tea, the labelling as a whole could be considered misleading. In Paragraph 43, the ECJ provides guidance on the factors related to labelling that the

Box 3. (cont.)

national courts must take into account in establishing whether this is the case including: the words and depictions used, location, size, colour, font, language, syntax, and punctuation of the various elements on the packaging.

While the “Teekanne” case is not necessarily about food fraud as understood through the four operative criteria – for e.g. the ECJ did not consider whether economic gain was a motivator, nor whether the labelling was done intentionally to mislead consumers – it does show the ECJ’s interpretation of when labelling can be considered to be misleading and thus deceiving consumers, shedding light on the requirement of deception.

Source: Authors’ personal elaboration of the ECJ Case C-195/14 “Teekanne”.

Certification schemes associated to labelling could also contribute to differentiating fraudulent products from authentic products. This approach would require standards of authenticity and would encourage the building of brand value around authenticity. The certification should have sufficient control points to ensure transparency and enforcement. Consideration should also be given to the extra costs and resources required for an effective certification scheme, which may make it unsuitable for small producers who might not be able to assume the costs of certification. Certification may be aimed at either the product or the process. Process-based certification would require the certifying agency to conduct inspections throughout the production process, to ensure that the required production methods, e.g. organic, are applied. Such inspections and compliance requirements may also be used to discourage food fraud, such as the use of inorganic fertilizers and pesticides in what is marketed as organic production.

4.1.6. Food identity standards

From its inception, Codex Alimentarius has set food identity standards (descriptive standards for foods; often referred to as a “recipe”) that over the years serve as the benchmark and bedrock for national food identity standards and are referred to as “essential quality”. Codex has set identity specifications for products highly susceptible to fraud such as honey (Standard for Honey – CXS 12-1981) and olive oil (Standard for Olive Oils and Olive Pomace Oils – CXS 33-1981). As with all food standards adopted by Codex, national governments should adopt the Codex identity standards or implement their own national standards as needed, to combat food fraud, while still basing them on the internationally agreed standards for increased harmonization.

In assessing the role of food identity standards, it is helpful to recognize the complexities involved in measuring the authenticity of food, which is often the stated goal for these standards. Given its value-driven nature, it is not surprising that the term is not easy to define, as demonstrated by the EWG Paper’s reference to the vague notion of “expected properties” in its definition of “authenticity.” The expected properties may also depend on cultural expectations of certain food products, as well as scientific parameters. As technology increases the level of sophistication in the manufacturing and processing of food, the challenge in establishing authenticity also increases, making the formulation of authenticity standards much more difficult.

Regardless, a standard of identity is the legal tool that comes the closest to establishing the authenticity of a food product or ingredient. In some countries with developed food regulatory systems, like in the United States of America, there is a rich history in using standards of identity to combat fraud and to regulate the growth of substitute foods (Roberts, 2016). However, more recently, in some of the countries with developed systems, the use of standards of identity has all but died for a number of reasons, including the cumbersome and time-consuming administrative process involved in the adoption of food standards. For example, in the United States of America, reports of hearings lasting decades to define peanut butter helped discourage their use (Roberts and Turk, 2017).

Australia presents an interesting model in the shift away from food identity standards, as a way to authenticate the nature or substance of a food for sale. In 2000, under the Food Regulation Agreement (FRA), Australia began to remove standards of identity for over 3 000 foods and instead implemented integrated standards applying generic principles. In addition, the term “adulteration” no longer had a defined legal concept and became prescribed in legislative examples of falsely described food – the main food fraud enforcement tool for Australia. One of the most common forms of food fraud, dilution or substitution of expensive ingredients with cheaper replacements, is exemplified as a type of false description of food in Australia, specifically for food represented as being of a particular nature or substance:

(a) ... for which there is a prescribed standard under the Food Standards Code and the food does not comply with that prescribed standard, (b) ... and it contains, or is mixed or diluted with, any substance in a quantity or proportion that significantly diminishes its food value or nutritive properties as compared with food of the represented nature or substance, (c) ... and it contains, or is mixed or diluted with, any substance of lower commercial value than food of the represented nature or substance ...” (FRA, Annex A – Model Food Provisions).

Underscoring the regulatory complexities afoot in different countries when it comes to technology and food fraud, it should be noted there is growing momentum in countries where standards of identity have been used to differentiate emerging substitution products such as plant-based products for meat and dairy (FDA, 2018). It is highly doubtful, however, that this regulatory effort will extend to foods that are historically fraught with fraud (Roberts, 2019).

Notwithstanding the loss of favour in developing identity of food standards, national governments may want to consider strategic approaches that avoid the constraints that disincentivize this type of standards making. Governments may consider developing standards of identity for high priority products – ones that are the most susceptible to fraud. These standards could be developed in the framework of public-private partnerships, where the government, partly to preserve resources but more importantly to get access to expertise, would cooperate with reputable scientific institutions that can be requested to support the development of the standards. For example, the USP convened a panel of experts who have been working since 2015 on a honey authenticity standard (USP, 2015) and in 2020 published its twelfth edition of the Food Chemicals Codex, a compendium of internationally recognized standards for the identity, purity, and quality of food ingredients (USP, 2021b). Governments may find that some domestic producers, particularly those of olive oil, spice, honey, and fisheries producers, would cooperate enthusiastically with the agency in the development of standards due to their concern over imported fraudulent food products. The corresponding risk is that only a subgroup of producers would engage in standard setting in an effort to secure market share and dominance, which is a possibility that the governments should be able to

guard against through sufficiently wide stakeholder consultation. By utilizing the best science available, the standards should be sophisticated enough to deal with the complexities of authentication, but also flexible enough to accommodate variants of imported product types.

4.1.7. Incorporating vulnerability assessments

A risk-based approach to food fraud regulatory control may be provided by regulatory administrators incorporating food fraud vulnerability assessments as mechanisms to determine which sectors and food companies are most vulnerable to food fraud. Food safety specific inspections, audits, and food safety monitoring based on microbial risk can be enhanced with specific methodologies, such as enhanced data accounting and processing aimed at food fraud prevention (Spink, 2014). Deterrence and prevention of food fraud cannot rely upon tools common in food safety regulation, as those are not designed to identify fraudulent products, nor can they rely on the laboratory, molecular and other authenticity science-based tests to detect fraud, as these may be too cumbersome to roll out widely enough. Food safety systems enhanced to consider threats related to food fraud would require additional controls found in forensic accounting and information processing. Fraud experts remark that the solutions exist in reviews of supplier prices against commodity prices and traceability exercises, responses that place a high demand on data, data analysis and data management (Jack, 2014a). The National Sanitation Foundation (NSF) *Fraud Protection Model* recommends that once food businesses and regulators have an assessment of fraud susceptibility, the control-type interventions should include:

- Increasing detection likelihood by increasing the frequency of or forensic quality auditing.
- Changing the nature of routine third party auditing to focus more effectively on fraud or introducing new Fraud Specific Audits.
- Enhanced frequency or sophistication of sampling and testing regimes.
- Making the insertion or replacement into the supply chain more difficult by enhanced security measures (NSF Safety and Quality UK Ltd., 2014).

4.2. Consumer protection legislation

When thinking of national regulatory strategies, it helps to remember that consumers are the uninformed, ultimate victims of food fraud. It stands to reason then, that strategies would be employed that focus on the conveyance of information to consumers about food fraud or food authenticity and on legal protections and remedies afforded to consumer victims. Consumer protection at the national level encompasses a broad spectrum of legal strategies that include hard law, soft law, and litigation.

National governments should consider how consumer protection is an umbrella term which encompasses all actions, omissions, and activities aimed at safeguarding consumers' rights and interests. The crux of the legal protection in this subject area is that consumers should have the right not to be harmed by unsafe and hazardous goods and services, and to be informed about issues such as quality, quantity and price, and to seek redress against fraud and other unfair trade practices (Vapnek and Spreij, 2005). Many actions which could be considered food fraud could fall under the definition of unfair trade practices, also phrased as "misleading or

deceptive conduct” and sometimes, depending on the factual account, false representations. In essence, a prohibited unfair practice misleads a consumer about the composition, value, or characteristics of a product, including food. Were consumers aware of the actual composition, value, or characteristics, they would not necessarily be willing to purchase the product at the quoted price, or at all.

An example of how consumer protection can extend to food fraud is in India where the Consumer Protection Act, 1986 contains provisions on the protection of consumers against unfair trade practices, which are defined as “trade practices, which, for the purpose of promoting the sale use or supply of any goods or for the provision of any service, adopt any unfair method or unfair or deceptive practice” (Article 2(r)). Examples given in the same article include falsely representing that the goods are of a particular standard, quality, quantity, grade, composition, style, or model; or making false or misleading representation concerning the need for, or the usefulness of, any goods or services. New legislation enacted by the Government of India in August 2019 made a key change in the 1986 Act: the Consumer Protection Act, 2019 in its definition of “goods” under Section 2(20) now expressly includes “food.”

Relying on consumer protection legislation, consumers may also try to remedy food fraud directly by suing the offending food companies. When consumers band together in some countries, and when the applicable regulatory framework allows it, class-action lawsuits may be particularly useful, as proving food fraud can be difficult and costly. In the United States of America, class-action lawsuits are commonly used, and multistate class-actions can even be transferred to the federal judiciary after the adoption of the Class Action Fairness Act of 2005 (see Box 4). As a reminder of the overlap in strategies to address food fraud, class-action lawsuits and consumer protection suits involving adulterated food products benefit from the existence of a standard of identity for the food product in question.

Box 4. Class Action case against “100% Grated Parmesan Cheese” labelling

A 2018 example of class-action on an alleged case of food fraud comes from the United States District Court, N.D. Illinois, Eastern Division, where the defendants of the multidistrict litigation were purveyors of grated parmesan cheese products with labels stating “100% Grated Parmesan Cheese”. The plaintiffs alleged that they were misled by the labels because the products contained ingredients other than cheese – in this case cellulose – in violation of various state consumer protection statutes. Cellulose was listed in the ingredients list on the label.

Based on these material facts, the judge found that “where a plaintiff contends that certain aspects of a product’s packaging are misleading in isolation, but an ingredient label or other disclaimer would dispel any confusion, the crucial issue is whether the misleading content is ambiguous; if so, context can cure the ambiguity and defeat the claim, but if not, then context will not cure the deception and the claim may proceed.” Thus, the judge found that as “100% Grated Parmesan Cheese” had multiple different possible readings (that the product is 100% cheese, that 100% of the cheese is parmesan cheese, or that the parmesan cheese is 100% grated), a reasonable consumer would have read the list of ingredients, which contained the mention of cellulose. As such, the label could not be considered a deception. A similar finding was arrived at in “Williams v Gerber Products” (2008) where “reasonable consumers expect that the ingredient list contains more detailed information about the product...”

Source: In re: *100% Grated Parmesan Cheese Mktg. and Sales Practices Litigation*, 2018; *Williams v. Gerber Products*, 2008.

4.3. Contract law

Food supply chains are normally composed of vertical and horizontal chains of contracts connecting various core value-chain actors from producers to consumers, as well as contractual relations among operators of support services (e.g. purchase of inputs, financial agreements). It is often within the context of these supply chain contracts, that the fraudulent behaviour occurs: one contractual party has no intention to follow the contract, but rather intentionally provides a product that does not match with its description in the contract and tries to mislead their counterparty as to this fact. As such, in addition to violating public law requirements of food safety and quality and consumer protection or its typification as a criminal offence, food fraud would most often also be a violation of the underlying contract, bringing the topic within the scope of domestic contract law and allowing for private enforcement.

In general, contract law regulates the fundamental elements of the agreements, such as their interpretation, formation, and validity either through voluntary or mandatory rules. The questions in relation to formation and validity tend to be formed as mandatory rules and may become applicable where the consent to participate in a contract is fraudulently (or misleadingly) obtained, as would be the case with food fraud. Food fraud would also constitute a breach of contract, by deviating from the established quality standards for the food product in the contract, thus allowing the aggrieved party to seek remedies either under the contract or as established in the applicable private law regime.

Food fraud is also against the general principles of law that underlie most domestic contract law regimes. In many legal systems, the parties' freedom to agree on the contract's terms, or the exercise of rights under the contract may be interpreted in accordance with principles or standards of conduct. More widely recognized principles would include: the principle of good faith; the principle of reasonableness; the preference for preserving the contract and its efficacy whenever possible, in accordance with its purpose and the original will of the parties; loyalty and fair dealing; behaving in a consistent manner; and the duty of information, transparency, and cooperation between parties (UNIDROIT/FAO/IFAD, 2015). The dishonest and murky practice of food fraud, designed to defraud the contracting party, would run counter to most of these principles and their crystallization in domestic contract laws.

It is the role of the government to establish these contract law regimes. Similarly, as with consumer protection legislation, once established, these frameworks would then allow for private enforcement of the violation of contractual obligations and rights by the honest counterparties to a fraudulent contractor.

4.4. Criminal law

Understanding how to prevent food fraud through criminal law interventions requires swapping well-understood food safety science for human behavioural science, including criminology, to decipher how food fraud offences are organized, in order to regulate for prevention. This involves conceptualizing food fraud offences using traditional criminological theory, predominately routine activity theory.¹¹ Preventing food fraud, however, is also about defining the nature and extent of the opportunities to commit food fraud, so as to reduce the

¹¹ For criminology theory literature see: Cohen and Felson, 1979; Felson and Santos, 2010; Spink and Moyer, 2011.

opportunities to offend. This focus is different from traditional criminological approaches, which traditionally aim at reducing motivations of offenders Spink and Moyer, 2011).

The inclusion of criminal law in the regulation of food fraud reflects the uniqueness and complexity of this problem. This strategy is focused on prevention but has numerous aspects to it that carryover to the other strategies and a few that are quite distinctive. While criminal law does prove a valid avenue for the prosecution of food fraud, which is often a form of fraud as criminalized in national criminal codes, care should be taken not to expand the use of criminal enforcement to other forms of infractions related to food safety and quality standards. Nevertheless, analysing the use of criminal law to counter food fraud also sheds additional light on the nature of food fraud, starting with the fraudsters themselves.

4.4.1. Typology of food fraud actors

It is important for regulators to understand the nature of the fraudster, as well as the type of fraud, when developing effective food fraud prevention and regulation strategies. Researchers using a behavioural approach to studying food crimes in the United Kingdom of Great Britain and Northern Ireland meat supply chain assert there are two basic types of food fraudsters: parasitical and insider criminal types (Manning, Smith and Soon, 2016). There are also crime groups involved in food fraud, as evidenced by the July 2020 operation referred to later in Section 4.6.3 as *Operation OPSON IX*, that led to the dismantling of 19 organized crime groups involved in food fraud, and the arrests of 406 suspects (EUIPO, 2020). However, recent research reiterates the importance of legitimate actors operating within, or “endogenous” to, food supply networks (Lord, Flores Elizondo and Spencer, 2017). These networks encompass many thousands of actors, ranging from highly sophisticated international companies to local sole traders. Although complex and global supply chains have been implicated in notable cases of food fraud, locally manufactured and sold foods can be as much at risk. Evidence suggests supply chain actors at different tiers of the supply chain (farmers, processors and retailers) present different fraud vulnerabilities depending on the type of food processed and other factors. For example, the Dutch organic milk supply chain is slightly more vulnerable to fraud than the traditional milk supply. Researchers of food supply chains have found the most significantly vulnerable point for fraud in supply chains is generally with wholesalers and traders, followed by retailers and food processing groups (van Ruth *et al.*, 2018). Other points of vulnerability reside with actors in food supply chains that have significant processing capabilities to mix extraneous materials, which may not be feasible at the retail stage.

A notable challenge in combating food fraud is that fraudsters are “clandestine, stealthy, resilient, intelligent, creative and actively seek to avoid detection,” often making food fraud a silent and invisible deliberate act (Moyer, DeVries and Spink, 2017). This makes food fraud control difficult within traditional food safety management systems alone. The honesty of food actors is a presumed element in traditional food safety-related harm controls. The unconventional and criminal nature of the intentional activity contrasts with unintentional food safety offences involving traditional microbiological, chemical, and physical hazards causing harm.

4.4.2. Criminalization of food fraud

Many activities that could be considered food fraud have also been criminalized in national criminal laws. Fraud itself is often criminalized and commonly has a definition in the criminal code wide enough to include food fraud. Adulteration may find a definition and related penalties also in criminal codes.

The definition of fraud in the *German Criminal Code* provides a good example on how criminal law can be applied to cases of food fraud. Section 263, paragraph 1 of the Criminal Code defines “fraud” as:

Whoever, with the intent of obtaining for himself or a third person an unlawful material benefit, damages the assets of another, by provoking or affirming a mistake by pretending that false facts exist or by distorting or suppressing true facts, shall be punished with imprisonment for not more than five years or a fine.

This requires that the offender has the knowledge to cause an error through deception and that this error leads to a financial loss. In addition, the offender must have the intention to receive a pecuniary advantage and the knowledge that this advantage is unlawful. In the case of food fraud, the offender would thus typically deceive over facts set out in Section 11 of the *German Food and Feed Code*, which refers to Article 7 of *European Union Regulation 1169/2011 on the provision of food information to consumers* and prohibits misleading food information creating a mistake over other characteristics of the food. Accordingly, most cases of “food fraud” as per the working definition of the European Union Food Fraud Network as well as the German Advisory Committee, would fall within the scope of the definition of fraud in the *German Criminal Code*. However, the Federal-States Working Group on Food Fraud has argued that food fraud as understood by the European Commission and the Committee goes beyond this criminal-law definition as it includes cases of deception where the criteria of fraud under the *German Criminal Code* are not met. Such a case could be, for example, where safe food is distributed with deceptive labelling, but the price is appropriate for the food; in such case, there is a deception but no damage to the assets of the consumer.

Adulteration, which is one type of food fraud, tends to be typified under national criminal codes only when the product becomes unsafe and would thus only be applicable to a subset of food fraud that coincidentally also poses a health risk in addition to the motivation of undue advantage. As an example, the *Indian Penal Code* in Section 272 criminalizes the adulteration of food or drink intended for sale and holds that whoever adulterates either so as to make such article noxious and intends to sell it as food or drink or knowing it to be likely that the same will be sold as food or drink, shall be punished with imprisonment and/or a fine. Similarly, in Uganda, Article 172 of the *Penal Code Act of 1950* criminalizes the adulteration of food and drink by holding that “any person who adulterates any article of food or drink so as to make the article noxious as food or drink, intending to sell that article as food or drink, or knowing it to be likely that it will be sold as food or drink, commits a misdemeanour.”

It is because food fraud occurs at the nexus of criminal and non-compliant business behaviours that conceptualizing it as a crime (regardless of regulatory approach) is important for effective control by jurisdictions. Following the European horse-meat-as-beef scandal, the Chief Executive for the Food Safety Authority of Ireland, Alan Reilly, remarked, “Criminal intent or opportunity and intentional violation of the law must be taken into account when assessing risk. Food inspectors have to learn the ways of the criminal and the criminal investigator”

(Reilly, 2014). Certainly academics are categorizing corporate crimes involving food offences as “food crime”.¹²

Beyond the literature, the term “food crime” is appearing in food regulatory frameworks to describe “serious” food frauds. For example, regulatory actors in the United Kingdom of Great Britain and Northern Ireland distinguish food fraud from food crime by a measure of “seriousness”, based on factors including scale, complexity and potential harms. The National Food Crime Unit (NFCU) states:

Food crime is dishonesty relating to the production or supply of food which is either complex or likely to result in serious detriment to consumers, businesses or the overall public interest ... when the scale and potential impact of the activity is considered to be serious ... the activity has cross-regional, national or international reach, that there is significant risk to public safety, or that there is a substantial financial loss to consumers or businesses (Food Standards Agency, 2021).

The NFCU, as a consequence, conceptualizes the relationship between food fraud and food crime by asking whether organized crime exists. Fraud because of regulatory non-compliance is defined by the NFCU as “more common – at their most serious, and where there is dishonesty, these may also constitute food crime” and food crime “predominantly consists of serious and complex food fraud”(Food Standards Agency, 2021). Further, the Elliott Review (2014) provides, “Food fraud becomes a food crime when it no longer involves random acts by ‘rogues’ within the food industry but becomes an organized activity by groups which knowingly set out to deceive, and or injure, those purchasing food.” Before distinguishing food crime from food fraud as a matter of enforcement strategy, however, governments should carefully evaluate the evidentiary, resources, and other complexities involved, especially if the aim is to build resilience across food supply chains to prevent food frauds of all types (Jack, 2014b).

4.4.3. Connection to food fraud vulnerability

Assessing a food fraud vulnerability has foundations in criminology, where food frauds are considered crimes of opportunity (Lord, Flores Elizondo and Spencer, 2017). Simply put, this means motivated offenders take advantage of opportunities presented in optimal environments where minimal controls create a low risk of detection (NSF Safety and Quality UK Ltd., 2014). Opportunities are subdivided to consider technical issues and opportunities of time and place. Technical issues involve assessing a food on how hard it is to dilute, substitute, and falsely describe or otherwise render fraudulent. For example, liquids and powders can be diluted easily and are thus more vulnerable. The requirement for complex analytical methods to detect any dilution or substitution increases vulnerability. Opportunities in time and place include legitimate access to food processing, storage areas, and distribution chains. Increases in complexity and supply chain lengths create mazes and decrease transparency, increasing vulnerabilities and opportunities for fraud. The evidence reveals that food fraud opportunities are constantly evolving, and can be triggered by seasonality and weather events, economic indicators, access to technologies, pandemics, as well as social and political events. New requirements therefore require any food fraud strategy to be regularly updated with emerging risks regularly assessed for relevance against a food company (NSF Safety and Quality UK Ltd., 2014).

¹² For example, Croall, 2001; Gray and Hinch, 2015. See also Jack (2014b) who states “The term ‘food crime’ needs to be used with care says Professor Lisa Jack”.

Motivations are subdivided into economic drivers, cultures and behaviours. For instance, economic drivers include the availability of supply and prices, value adding attributes, the economic health of competitors, and financial strains. When there is a gap between food supply and demand, and prices fluctuate based on global shortages, the motivation to commit fraud increases. Shortfalls in ingredients may not only lead to an increase in pricing, but also a failure to fulfil supplier contracts. Substitution can therefore be an act used for economic survival of the food company. Research indicates economic aspects influence motivations to commit fraud for not only profit maximization but loss minimization. Culture and behaviours such as business strategies, ethical cultures, history of offending, level of corruption in a country and any victimization by other supply chain actors are relevant considerations in the assessment. Corporate crimes reveal how individual employees may be influenced to commit fraud in response to internal performance goals and to save their position, they may resort to illegal activity (NSF Safety and Quality UK Ltd., 2014).

In assessing a food vulnerability, once the opportunity and motivation are assessed, the focus turns to prevention, which involves assessment of the control measure. Control measures include both technical measures (hard controls) and managerial measures (soft controls). Hard controls include proactive sampling plans and testing strategies, specific fraud detection methods and verification tools, demanding detailed product specification and authenticity-enhancing documents from suppliers and requiring mass balance controls and documented traceability systems. Soft controls for food business managers include codes of conduct, employee integrity screenings, systems of whistleblowing, self-regulatory guidance, contractual requirements with suppliers that specifically deal with fraud prevention, regulatory compliance monitoring, and effective enforcement (van Ruth, *et al.*, 2017).

4.5. E-commerce and food fraud

Electronic commerce (e-commerce) is defined by the WTO in their *Work programme on electronic commerce* (1998) as “production, distribution, marketing, sale or delivery of goods and services by electronic means”. As such, *food* e-commerce would then consist of distribution, marketing, sale or delivery of food and related services by electronic means. This could, for example, mean ordering food or food items online and have them delivered to the customer, or have the customer come to pick up the food items from a pre-destined location, such as a grocery store.

Food e-commerce can take place between all potential commercial linkages. This brief subsection on food e-commerce and food fraud focuses on the business-to-consumer (B2C) relationship, which is sufficient to highlight some of the peculiarities in relation to the e-commerce of food. Other types of relationships, such as business to business, may have other strengths and vulnerabilities when it comes to food fraud. Nevertheless, exploration of the B2C process shows why the e-commerce of food may still need some additional strategic thinking by the domestic policymakers.

4.5.1. Unique features of e-commerce of food

There are some inherent differences between regular commerce of food and e-commerce of food. As opposed to brick-and-mortar trade, food operator’s responsibilities in food e-commerce operations are more difficult to identify and enforce. The emergence of new operators in the distribution chain (such as internet platforms or delivery companies) as well

as the increase in transnational operations opens the door to new types of food fraud and fraudulent actions. These opportunities can arise from the fact that the consumers have no face-to-face contact with the traders, no real opportunity to inspect the food items before purchase, and typically are required to pay in advance of delivery. Essentially, the consumers must fulfil their contractual obligations at the beginning of the transaction, while trusting the trader, who may reside in another jurisdiction, to fulfil theirs at the end (Hunter and Riefa, 2017). Furthermore, even legitimate FBOs operating online may not be able to control the final delivery of the product (Comans, 2019), which is often posted to the final consumer or delivered via courier.

To minimize the associated risks, e-commerce of food ought to operate under an enabling legal framework. According to the United Nations Conference on Trade and Development (UNCTAD), an enabling legal framework for e-commerce in general includes six pillars: 1) legal framework for electronic transactions or e-signature ensuring equivalence between paper-based and electronic forms of exchange; 2) legal framework for data protection or online privacy; 3) legal framework for consumer protection for online purchases; 4) legal framework for cybercrime prevention; 5) legal framework for online content; and 6) legal framework for domain names (UNCTAD, 2015).¹³ Out of these, the third pillar – consumer protection – has the most direct relevance for food fraud in e-commerce, while all are necessary to facilitate e-commerce of food. To aid with the global mapping of legislation on cybercrime, UNCTAD in 2015 launched the *Global Cyberlaw Tracker*, which “tracks the state of e-commerce legislation in the field of e-transactions, consumer protection, data protection/privacy and cybercrime adoption in the 194 UNCTAD member states” (UNCTAD, 2015).

4.5.2. E-commerce, food safety and quality and consumer protection legislation

With increasing volumes of food being traded through e-commerce, there may be a need to consider how and if the evolving system of marketing poses food safety and quality risks to consumers, and if these are exacerbated by fraud. The food safety and quality risks may arise at any point of the food chain, including the final delivery from the food business operators (FBOs) to the consumer, which in e-commerce may take long and be poorly supervised. For example, certain online grocery delivery services may operate by leaving a bag of groceries outside the door of the consumer, waiting for the customer to return from work. This may leave perishable products in the outside temperature for hours, posing obvious challenges to temperature control and hygiene and making it more difficult to identify and prove a potential food fraud.

While existing food safety legislation, including rules on the hygienic and safe handling of food, apply to those FBOs and food operators that market through e-commerce, there are various aspects that may require specific attention. With the emergence of new actors, there is a need for the legal framework to ensure that all actors in the food e-commerce chain, including internet platforms, have well-defined responsibilities and that there is adequate surveillance and enforcement. This can also require the reviewing of specificities related to record-keeping and transparency requirements, such as to ensure the traceability of food. Considering the impact of cross-border e-commerce, the controls and import formalities (the differences in

¹³ While computer-related fraud is recognized as one aspect of cybercrime in the *Budapest Convention on Cybercrime*, the related explanatory report makes clear that it aims to “criminalise any undue manipulation in the course of data processing with the intention to effect an illegal transfer of property” (Council of Europe, 2001) and as such seems tangentially related to food fraud. Therefore, it is not extensively covered in this subsection.

terms of food certification, documentation and other food safety controls, between normal importations and internet-based purchases for self-consumption) must be equally effective for regular importation and individual e-trade imports.

As listed above, one key aspect of food safety and quality that plays an important role for combatting food fraud is the requirement of traceability for food sold online. Traceability is defined by the *Codex Procedural Manual* as “the ability to follow the movement of a food through specified stage(s) of production, processing and distribution” and was discussed in more detail in Section 4.2.3 (FAO/WHO CAC, 2019b). By facilitating global business through new and emerging operators, e-commerce may make traceability more difficult than in its brick-and-mortar equivalent, by making the supply chain more complex and less connected. One way of fulfilling the legal requirements could be by embracing new technologies, such as blockchain, to ensure traceability through a complex web of geographically dispersed actors. Using Blockchain has been discussed in the thematic brief, *Digitalization, food safety and trade*, stating “Blockchain technology is a form of distributed ledger technology (DLT) that acts as an open and trusted record of transactions among parties that is not stored by central authority. Instead, a copy is stored by each user running Blockchain software and connected to a Blockchain network – also known as a node” (FAO/WHO/WTO/AU, 2019).

Relating to consumer protection in a wider sense, taking into account not only safety and quality but also fair-trade practices protecting the economic interests of the consumer, the applicable legal frameworks should ensure the adequacy of information provided to the consumer at the point of purchase and assure the protection of consumer’s rights related to distance sales. This is illustrated in the OECD’s 2016 *Consumer Protection in E-commerce Recommendation* discussed at the end of this subsection. These requirements may be particularly hard to impose on sellers operating outside the jurisdiction of the buyer.

Thus, while e-commerce of food would mainly be covered by the same legislative requirements as regular food trade, the online nature of it can require explicit attention, even if the same basic requirements apply regardless of the mode of commerce. Providing accurate food information is a prime example for this. When a consumer decides to purchase a food item through electronic means, such as by using a dedicated website to have groceries delivered to their house, they are usually unable to confirm the quality of the item upon purchasing and must rely only on the information provided on the website (Kapadia, 2018). Following the food labelling rules, this information must be truthful and conform with other legal requirements. If the information turns out to be misleading, such as to the real value of the food, it could be considered to fulfil at least one of the commonly accepted requirements of food fraud. Some services are emerging, where the consumers are provided with a live feed of the available food items, and they are allowed to choose exactly the one they prefer. Nevertheless, only visual and audio media is transmitted, limiting the consumers information on the quality of the product (Kapadia, 2018).

The *European Union Regulation 1169/2011 on the provision of food information to consumers* contains requirements for the kind of information that must be provided for pre-packed food offered for sale by means of distance communication. “Means of distance communication” are defined in Article 2 as “any means which, without the simultaneous physical presence of the supplier and the consumer, may be used for the conclusion of a contract between those parties,” and this would include the e-commerce of food. Article 14 requires that, prior to concluding the purchase, the consumer in distance sales of pre-packed foods has access to all the same mandatory information as generally required for food labels, with the exception of

expiry dates, and that this information appears on the material supporting the distance selling or be provided through other appropriate means clearly identified by the FBO. All mandatory particulars, including expiry dates, shall be available at the moment of delivery. This mandatory food information must not be misleading (Article 7), thus prohibiting deception in distance sales of pre-packed food.

The level of consumer protection should not fall either, because the transaction takes place online. National consumer protection legislation ought to be construed in a wide enough manner to also cover online transactions. To assist countries as well as businesses to better consider the differences brought by the online environment, OECD in 2016 revised its *Consumer Protection in E-commerce Recommendation*, briefly mentioned above. This Recommendation applies to B2C e-commerce. The guiding principle is that countries should provide a framework for transparent and effective protection and that consumer protection in e-commerce should not be any less than the level of protection afforded in other forms of commerce (OECD, 2016).

While the Recommendation is for e-commerce in general, it does contain clauses with elevated relevance for e-commerce and food fraud. As with consumer protection requirements in general, the Recommendation requires that businesses should not make any representation, or omission, or engage in any practice that is likely to be deceptive, misleading, fraudulent or unfair. Importantly, the businesses should also not permit others acting on their behalf to engage in these kinds of practices and they should take steps to prevent such conduct. Finally, they should not exploit the special characteristics of e-commerce to hide their identity or location, or to avoid compliance with consumer protection standards and/or enforcement mechanisms (OECD, 2016).

4.5.3. Liability of online platforms for food fraud

Arguably thornier, and more unique to e-commerce, is the issue of liability of internet service providers in cases of food fraud. Online food trade has brought in new actors, for which there is no immediate analogue in brick-and-mortar retail. Specifically, for providers of online platforms where third parties can offer food to consumers. The provider of a platform may argue to be separate from the individual transaction, and even claim not to be an FBO, while facilitating online trading of food. If an offered food product is fraudulent, who and under which circumstances can be considered liable for the offered food; the food business offering their own food products online, or the provider of the online platform without which the former FBO would not have been able to conduct its business in the first place?

China has chosen to approach this issue in a unique manner. In 2015, it adopted an amendment specifically considering food e-commerce in its *Food Safety Law of 2009*, as well as two corresponding measures (*Measures for Investigation and Punishment of Unlawful Acts Concerning Online Food Safety*, 2016 and *Measures for Supervision and Administration of Food Safety in Online Catering Service*, 2017) that provide more detail on the new requirements. The amended Law differentiates between internet platform providers and online food business operators operating through these platforms. Article 62 establishes the obligations of internet platforms, including the duty to register the legal names of the food retailers admitted to the platform, define their food safety management responsibilities, and verify that those who are required to obtain permits have their permits. If the platform becomes aware of food safety violations, which could include actions definable as food fraud, the platform must stop the trader from irregular activities and report them to the local food and drug authority. For serious offences, the provider must stop providing the internet platform services. Failing to comply

with these obligations can lead to fines or closure of operations for the e-commerce platform, under Article 131 of the Law. For the online FBOs, the Law explicitly prohibits them from engaging in a range of prohibited acts, such as publishing information on the Internet relating to the food that is inconsistent with that shown on the food labels (Article 17). Essentially, the platform providers are made responsible to ensure that only legitimate FBOs can operate on their platform.

Importantly, based on the 2015 amendment, the *Food Safety Law* also allows any consumer whose lawful rights and interests are damaged due to purchase via a third-party platform to claim indemnification against the distributor or producer of such admitted food. If the third-party platform provider fails to provide the real name, address and valid contact for the admitted food distributor, such provider shall be liable for indemnification. In other words, in case of failure for supervising the food businesses on their platform, platforms can become jointly liable for any damages caused to consumers. Afterwards, the platform may recover the damages from the infringing FBO.

The European Union offers a different take on the responsibilities of intermediaries in e-commerce. As clarified by the Health and Food Safety Directorate-General in 2018: "Online platforms that act solely as third-party service providers are not considered FBOs operating online, since they never own or/and physically handle the product" (European Union, 2018, p. 12). Rather, they would be considered as information society service providers under the European Union *Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market*. This Directive in Article 15 prevents the Member States from imposing general obligations on information service providers to monitor the information which they transmit and store. These service providers are only obliged to take action when they are informed of any non-compliant offers made available by third parties via their platforms (DG Health and Food Safety, 2018). If these operators have a more direct role, such as storing or delivering the food products, they will have to be registered as FBOs and be subjected to the related obligations. Drawing the line between intermediaries providing information society services, and thus protected by the Article 15 above, and those that do not can be difficult. The European Court of Justice has clarified this demarcation in a 2017 *Case Judgment C-434/15* regarding whether Uber – a smartphone app connecting drivers to customers – was a mere intermediary service consisting of connecting third parties. The court found that because the intermediation service provided by Uber was based on the selection of non-professional drivers, to whom the company provides an application without which: (i) those drivers would not be led to provide transport services; and (ii) persons who wish to make an urban journey would not use the services provided by those drivers. As Uber exercised decisive influence over the conditions under which that service is provided by those drivers, the service was not to be considered as an information society service under the Directive, but rather a service in the field of transport, and thus not protected by Article 15. Applying the case to the e-commerce of food, can provide some guidance on the kind of influence a service provider must exert to no longer be considered a provider of information society services but rather an FBO. Essentially, the more control the internet platform has on any or all of the aspects of the transaction, the more likely they are considered to be an FBO and bound by the associated responsibilities.

4.5.4. Cross-border e-commerce of food

Thanks to the e-commerce of food, consumers have a much easier time in ordering food products from outside their own jurisdiction. While this has opened the market for the consumers, it poses a dilemma for the traceability of food as well for import and export control of food ordered for personal consumption. The food items often come through postal services as products for self-consumption and could subsequently be missed by official controls, in cases where the legislation recognizes the exception of import control for self-consumption products. This would limit the authorities' capability to perform official controls and requires that only consumers themselves can identify fraudulent products and report their suspicions to relevant authorities when needed. This implies an increased need to raise consumer awareness of the kinds of food frauds perpetrated in e-commerce as well as ensuring that they have access to sufficient remedies, either through private dispute resolution or, ultimately, through the use of a national consumer protection mechanism (public or private) or national courts.

There are ways in which the legislative framework can support the import control of food e-commerce. To control the safety and labelling requirements of imported foods, the *United States Code (USC)* requires all facilities that produce, store, or otherwise handle food products, to be registered with the FDA and to provide them with a prior notice of incoming shipments. This prior notice would also be required to be provided by the importing FBO, when the imported food product is bought by an individual consumer and shipped by the foreign FBO (USC Title 21, 381(l) and (m)).

One additional tool to counter to the difficulties in organizing official controls for food ordered online, is for the authorities to use the method of "*mystery shopper*", where the official is authorized to order a food product without identifying themselves. This allows them to inspect the offered products, as if they were sent to a regular customer, and take any necessary action on the basis of the inspection.

This power was included in the *European Union Regulation 2017/627 on Official Controls*, which in Article 36 holds that: "In the case of animals and goods offered for sale by means of distance communication, samples ordered from operators by the competent authorities without identifying themselves may be used for the purposes of an official control." Similar powers are included in the Chinese law from 2015 containing measures for online food controls, which allows the officials to be disguised as consumers and order food products over the Internet. Having received the items, they can then inspect the packaging and product to make sure that they meet the food safety standards (Article 25).

It is also possible to try to impose one's legislative framework on third countries, as is done by the European Union. There are two ways in which a European Union law can reach beyond its borders in e-commerce; either the online retailer has contractually agreed to apply the European Union law, or the law of one of the Member States, or the trader "targets" the consumer located in the European Union and that "a contract is concluded within the framework of its activities", as understood in the *Regulation (EC) 593/2008 on the law applicable to contractual obligations* (Hunter and Riefa, 2017).

4.6. Role of the private sector

Self-regulation and co-regulation, as well as other cooperative approaches, can help provide the framework for the operation of contracts in the regulation of food fraud and facilitate additional regulatory cooperative activities to abate fraud. Also specific to the private sector, transnational contracts used in the global food supply chains can be utilized to increase the chain's resilience against food fraud.

When opting for the use of public-private approaches, the government would need to ensure that the development of tools under such approaches are the result of a voluntary, participatory and transparent process, reflecting a wide array of interests.

4.6.1. Self-regulation

In the context of this paper, self-regulation refers to the various modalities in which the private sector actors, without the active participation of the government, agree on sets of rules and guidance to govern their own actions. Common examples of self-governance are various codes of conducts adopted for specific commodities, as well as corporate social responsibility initiatives. In the context of international trade, transnational contracts can prove a very effective avenue for the self-regulation of international food trade, and as such will be discussed separately at the end of this subsection.

For self-regulation to be a viable option, certain pre-conditions may need to be in place. The national governments need to understand well, the strengths and weaknesses of this approach, and be able to make sure that a self-regulatory approach does not end up promoting the interests of only the strongest private-sector actors. Similarly, consumers may need to be well educated and empowered to actively participate in the process of self-regulation, to ensure all relevant interests are represented in the discussions. Self-regulation does not release governments from their primary responsibility of ensuring safe and non-fraudulent food supply chains but may provide additional tools to reach that goal.

National governments may wish to encourage food companies to augment their food-fraud preventive strategies with corporate social responsibility (CSR) codes (UNCTAD, 2017). These codes would signify a food company's commitment to eradicating and reporting food fraud. The CSR codes could frame food fraud in a number of different ways, the most obvious one being consumer rights and protection. The CSR codes could also incorporate an equity commitment to ensure that authentic food products should be available to all consumers rather than just consumers who can afford to pay a premium for authenticity. In recognition of the complex relationship between food fraud, markets, social systems and eco-systems, CSR codes could note how ridding food fraud helps remedy environmental harms to which frauds can contribute, such as to fisheries and fish populations (through substitution, mislabelling and the related risk of overfishing).¹⁴ Finally, CSR codes could speak to how eliminating food fraud supports human rights by eradicating human rights abuses where markets are created for illegal food (Oceana, 2018).

In general, OECD (2015) has identified numerous benefits of industry self-regulation, as well as some important drawbacks that the regulators need to be aware of when considering to which extent to rely on self-regulation rather than co-regulation or hard law (see Table 1).

¹⁴ See also Roberts, 2019.

Table 1. Benefits and drawbacks of self-regulation

Benefits for consumers	Benefits for industry	Drawbacks
Improved information	Enhancing consumer confidence / improving the image of businesses	Strength of instruments may be limited
More effective dispute resolution mechanisms	Disciplining businesses that fail to meet commitments	Compliance and oversight difficult to organize
Combatting unfair or abusive practices	Improving complaint handling	Risk of regulatory capture
Enhanced consumer rights	Pre-empting government regulation	Free-riders
	Providing institutional resources	High market coverage may be hard to achieve
		Favouritism
		Distortions in competition
		Accountability
		Costs

4.6.2. Co-regulation

Co-regulation, one of numerous governance models and one that is used ever more frequently in the food sector, emphasizes a synergistic combination of self-regulation by the food industry (as discussed above) and government action. This hybrid form of regulation involves a regulation method or a strategy that includes both private and public actors' participation in the specific interests and objectives. The goal is to involve all stakeholders in the private food chain and make the food regulatory system more efficient and effective, thus enhancing rule compliance and reducing the cost to government (Chen, Wang and Song, 2015). The framework relies heavily on data sharing and information exchange between public and private players, as well as being responsive to changing risk profiles and food industry environs.

Co-governance strategies can provide a formal platform for collaboration between government and the food industry, often referred to as public-private partnerships.¹⁵ These partnerships leverage diverse expertise among governments, academics, non-governmental organizations, and researchers (Brackett, 2018). The development of public-private partnerships was a major part of the *Food Safety Modernization Act (2011)* in the United States of America, which involved a shift from the FDA's historic focus on enforcement of adulteration standards to verification of private food safety management systems (Taylor, 2014). These public-private partnerships have also become more prominent in China. For example, shortly after the enactment of

¹⁵ For example, Rowe et al., 2013.

China's newly amended *Food Safety Law* in 2015, three major public-private partnerships were announced between the Global Food Safety Initiative (GFSI) and the Chinese government and this concept was the subject of the GFSI conference in Tokyo in 2018 (Food Safety News, 2018). Additional public-private partnership initiatives in China and ASEAN include the Food Industry Alliance (FIA) that focus on safety capacity building.

These co-regulatory schemes do not need to be limited to the domestic sphere either. Governments, either individually or together, may also choose to collaborate with more global entities to try to establish co-regulatory efforts ranging across national borders (see Box 5).

Box 5: The Global Food Safety Initiative and food fraud

The Global Food Safety Initiative (GFSI), is a private sector initiative concerned with the development and convergence of private food standards. GFSI has a Global Regulatory Affairs Working Group, which is mandated to “actively engage governments in recognizing and accepting GFSI benchmarked schemes,” to further align industry and government efforts in food safety, and to integrate GFSI with requirements set under the *Sanitary and Phytosanitary (SPS) Agreement* of the WTO, and the *Codex Alimentarius* (Kirezueva and Luning, 2017).

Co-regulation has already positioned GFSI to engage in food fraud in the world food supply chains due to its comprehensive Food Safety Management System, which includes a certification system. Many retailers require that new suppliers are GFSI certified or are in the process of being certified. Certification programme owners earn GFSI recognition by adopting the requirements into auditable food safety schemes. Four of those schemes are specifically involved in certifying the absence of food fraud: British Retail Consortium Global Food Safety Version 8; Safe Quality Food Edition 8.1; Foundation Food Safety System Certification 22000 Version 5; and International Featured Standards Product Fraud (GFSI, 2021).

In 2018, GFSI released a publication on food fraud, giving guidance on how such fraud can be tackled through food safety management systems (GFSI, 2018). As demonstrated in its Benchmarking Requirements (2017), GFSI's definition of food fraud is limited: it is a “collective term encompassing the deliberate and intentional substitution, addition, tampering or misrepresentation of food, food ingredients or food packaging, labelling, product information or false or misleading statements made about a product for economic gain that could impact consumer health” (emphasis added). Thus, GFSI's food fraud definition limits the requirements to systematic controls to identified food fraud hazards risking “consumer health”.

GFSI recommends two fundamental steps to be taken to mitigate food fraud. Step one is to carry out food fraud vulnerability assessments where information is collected at points along the supply chain. Step two is to implement appropriate control measures to reduce the risks from these vulnerabilities, including monitoring and testing strategies, origin verification, specification management, supplier audits and anti-counterfeit technologies (GFSI, 2014).

Concerns whether food fraud controls will dilute established food safety systems were abated when GFSI included its Food Fraud Benchmarking Requirements in its Version 8 standards (now referred to as Version 2020). To this end, an agreement was reached that audits of GFSI-recognized certification programmes not only inspect Hazard Analysis and Critical Control Point (HACCP)-based systems, but also evaluate management systems and practices contributing to food safety. Accordingly, the burden on private food safety scheme auditors has increased to include acting as guardians against food fraud. However, the private scheme auditor is not expected to detect fraud or affirm that an anti-fraud programme is capable of “preventing fraud.”

Sources: Kirezueva and Luning, 2017; GFSI, 2014, 2018, 2020, 2021.

In addition to GFSI accreditation, two other initiatives are illustrative on how co-regulation can be used to combat food fraud: Foundation Food Safety System Certification (FSSC) 22000 Version 5, and International Featured Standards (IFS) Product Fraud.

The FSSC 22000 provides a complete certification scheme for the auditing and certification of Food Safety Management or Quality Management Systems. In implementing food fraud requirements, FBOs certified to this scheme should perform the following steps:

- establish a Food Fraud Mitigation Team;
- conduct a Food Fraud Vulnerability Assessment (FFVA) identifying potential vulnerabilities;
- define significant vulnerabilities;
- identify and select proportionate control measures for the significant vulnerabilities;
- document the vulnerability assessment, control measures, verification and incident management procedures in a Food Fraud Prevention Plan supported by the Food Safety Management System; and
- develop an effective training and communication strategy and implement the Food Fraud Prevention Plan (Foundation FSSC, 2021).

The IFS is another GFSI-recognized standard for certifying the safety and quality of food products and production processes. In 2018, it released the *Standards Product Fraud: Guidelines for Implementation*, which specifically deals with food fraud, while calling it “product fraud” throughout the food supply chain (IFS, 2018). Numerous IFS standards have incorporated the need for product fraud mitigation measures, and the 2018 Guidelines are intended to assist the users of IFS standards to understand these requirements.

These public-private initiatives are limited in coverage of food fraud but understanding their operations builds appreciation for their potential in scope and purpose. One important caveat to keep in mind when building initiatives is that unlike with food safety, where all industry stakeholders have a vested interest in keeping food safe, food fraud is not something that all industry stakeholders are committed to resolving. Cooperative efforts can be undermined by incalcitrant stakeholders who benefit from fraud of a particular food product. Notwithstanding this concern, there seems to be broad support and agreement across stakeholders to embed in food safety management systems the requirements for food companies to conduct food fraud vulnerability assessments.

4.6.3. Cooperation

In order to provide a comprehensive response to food fraud, different actors (governments, consumers, the private sector) have developed different coordinated initiatives that go from public-private partnerships to collaboration with recognized intergovernmental organizations. While these are contextually very similar to the co-regulatory schemes discussed above, cooperative responses tend to be more ad hoc rather than aim at creating permanent regulatory structures.

In this context, the Elliott Review (2014) recognized:

The [United Kingdom of Great Britain and Northern Ireland] Government should encourage the food industry to ask searching questions about whether certain deals are too good to be true; work with industry to ensure that opportunities for food fraud, food crime and active mitigation are included in company risk registers; support the development of whistle blowing and reporting of food crime; urge industry to adopt incentive mechanisms that reward responsible procurement practice; encourage industry to conduct sampling, testing and supervisions of food supplies at all stages of the food supply chain; provide guidance on public sector procurement contracts regarding validation and assurance of food supply chains and encourage the provision of education and advice for regulators and industry on the prevention and identification of food crime.¹⁶

The fruits of general cooperation were borne out in a recent jointly coordinated operation by Europol and INTERPOL, under the name *Operation OPSON IX*, already mentioned in 4.4.1, which targeted trafficking of counterfeit and substandard food and beverages. The ninth operation of its kind, it ran from December 2019 to June 2020 and involved law enforcement authorities from 83 countries. The operation was also supported by the European Anti-Fraud Office, the European Commission, the European Union Intellectual Property Office, national food regulatory authorities and private sector partners (EUIPO, 2020).

It may be that refined international legal instruments could include provisions on food fraud that encourage this level of cooperation between the government and industry. This exercise of developing and implementing effective coordinating strategies for controlling food fraud should also involve cooperation with various stakeholders. There are numerous additional steps that could be implemented. Informal and formal education campaigns targeting food companies and consumers can be organized.

Governments should be cognizant that food companies that are economically damaged by food fraud committed by competitors are generally amenable to reporting fraud to the appropriate authorities. Governments could encourage food companies to work with authorities in establishing and implementing best practices to address and report fraud in specific product categories. These best practices, which could eventually be incorporated into government policies, may include use of emerging technologies to help with traceability and documentation to ensure the authenticity of food products.

Governments could coordinate with academics and researchers in developing databases documenting suspected or confirmed cases of food fraud in emerging markets and developing countries, following the examples in Chapter 2.1. Governments could also coordinate with industry on developing specific food fraud audit modules and inspection programmes based on a risk-based, proportionate approach to fraud. Governments can also manage confidential hotlines encouraging employees to report to food authorities any suspected frauds in food manufacturing and supply chains.

4.6.4. Transnational contracts and global food value chains

Pertinent to regulating food fraud through public-private approaches is the potential for regulating fraud through global value chains by way of transnational contracts. This should

¹⁶ In response to the Elliott Review, food industry leaders created the Food Industry Intelligence Network (fin) in 2015 for industry to create a safe haven to collect, analyse, and disseminate information with the aim to protect food integrity, see at <https://www.fin.co.uk>

be considered when evaluating the role of legal instruments and strategies in addressing food fraud. An impressive amount of literature and research exists on the role of private regulation in the food supply chain, covering food safety, food quality and environmental impacts involved in food production.¹⁷ The literature shows how this private regulation has responded to consumer demand and how it has to a significant degree challenged, complemented, and even in some cases superseded public food governance. Although food fraud has not received the same level of attention in private regulation as has food safety, pressures in the market and consumer demand may cause this to change.

a) Rationale for use

It has been suggested that the drivers for growth of transnational private regulation are: 1) increasing production levels; 2) the multiple crises connected with product safety in food and non-food sectors and the resulting consumers' demand for stronger, more effective and coordinated monitoring and control; and 3) the inability of states to deal with cross-boundary risk assessment and management (Cafaggi and Iamiceli, 2015). Each of these drivers applies to food fraud. The high concentration of actors at the retail level and disintegration at the production level applies equally to food fraud as it does for food safety, food quality and environmental issues. Finally, given the complexities of food fraud, it may be easier to monitor and control the international sale of goods through contracts, than leave it all for individual states to assess risk and manage cross-border trade.

Transnational contracts also present the following additional advantages in dealing with food fraud:

- coordinate world supply chains and generate a coordinated exchange with the general goal to eradicate food fraud;
- manage the fragmentation of information on fraud in the global food supply more adeptly than command and control approaches (Cafaggi and Iamiceli, 2015);
- enable retailers, who are the gatekeepers to consumer interests, to view authenticity of food product as a benefit in order to create value and trust with consumers;
- import or export domestic regulations across national boundaries complementing and/or replacing modes of implementation defined by international public regimes;
- operate through use of complementary tools (codes of conduct enacted by trade associations at national and global levels, supply chain of agreements, and framework contracts);
- contribute to the enforceability of regulation including international soft law and Codex principles and guidelines by binding food companies to soft law provisions, examples of which are included in food safety, HACCP, or in environmental standards, pesticide codes of conduct or other forms of environmental standards (Cafaggi, 2013; Cafaggi and Iamiceli, 2015);
- more easily monitor innovations on methods and techniques of cheating;

¹⁷ For example, Cafaggi and Iamiceli, 2015.

- for certain commodities, facilitate the incorporation of third-party certification schemes that shift the focus from product to process standards, resulting in more intense food chain regulation to potentially control food fraud;
- facilitate the realization of social responsibility norms for food authenticity or food integrity espoused by international food companies;
- introduce consumers, employees of the supplier, and local communities as third-party beneficiaries from the higher standards introduced in the contract in relation to food safety, labour, and the environment; and
- provide more flexibility in their design and sanctions than public hard law, which tends to be more rigid (Cafaggi, 2013).

These advantages separately and accumulatively make a strong case for the role of transnational contracts to be used in regulating food fraud.

b) Challenges

Notwithstanding the appealing aspects of these features, transnational contracts, including those that might apply to food fraud, face a number of challenges, and should therefore be used to supplement the toolbox that national governments have in responding to food fraud, rather than substituting government action. First, the monitoring of compliance within supply chains deploying different forms of contractual governance on food fraud would likely be complicated (Cafaggi, 2012). Second, transnational contracts arguably lack legal accountability to consumers – the potential beneficiaries of the contracts – and other stakeholders (Delisle and Trujillo, 2010). Third, there is arguably a lack of legitimacy because of the detachment of transnational contracts from traditional government mechanisms. Fourth, there are free-riders benefitting from the existence of the international private regulation without adopting or implementing it (Scheltema, 2014). Fifth, increased reliance on transnational contracts as governance tools may disincentivize the strengthening of national governance capacities, which would contribute in further fuelling the other challenges mentioned above. All of this together, highlights the role that still remains for the domestic governments in setting enabling frameworks also for transnational contracting.

c) Types generally

The types of private contracts used in the world food supply chain are numerous, giving a wide range of options for use in addressing food fraud. In addition to the essential elements of contract law, it is frequent that international food contracts incorporate technical specifications, such as food safety or consumer protection provisions that would have a role to play in containing food fraud. These are found in a number of contracts such as supply agreements, merger and acquisition agreements, and credit and insurance agreements. Specific quality and private standards can also be incorporated into these contracts. These standards may concern products and processes and often cover quality, food safety and environmental concerns (Cafaggi, 2012). Supply agreements vary in their approach: in some cases, there exists a general framework contract, designed by the retailer and applied to all suppliers. Another model is bilateral contracts along the food chain. It has been suggested that an alternative model is the multi-party contract – a consortium or a multiparty joint venture, involving more than two parties (Cafaggi, 2012).

5. Conclusion

Although food fraud is a very old problem that has long challenged the regulatory and enforcement skills of national governments, it is also very much rapidly evolving into a new and complicated problem, largely due to technological and global dimensions of a modern food supply maze. Food fraud is not easily defined, let alone regulated. However, there appears to be an emerging consensus that food fraud consists of specific elements: intention, deception, and motivation for undue advantage. This definition helps delineate food fraud from offences related to food safety and food quality when examining legal frameworks to regulate this problem.

The complicated challenge in regulating food fraud, especially in global food value chains, raises a fundamental question of how the international regulatory framework might provide strategies and guidance for an effective regulatory approach. In particular, the Codex standards and texts and other international legal instruments considered in this paper are germane to aspects intrinsically related to food fraud and therefore offer a general and fluid framework in which to view and regulate the problem. It may be that more direct guidance on food fraud itself – separate and independent of food safety and quality – could help national governments approach the problem in practical and holistic ways and instil a greater measure of cooperation. It may very well be, with encouragement from international bodies, that these channels can make a substantial dent in food fraud. A specific Codex definition of food fraud, or clear Codex guidance on how to identify and address food fraud, would be particularly helpful.

National governments, of course, may try to counter food fraud through their national strategies and regulatory frameworks. Effective strategies start with food systems thinking and end with a coherent, fluid multi-faceted approach that prioritizes and focuses on balancing prevention and controls, enabling and protecting consumers. The legal strategies and tools used in these approaches range from coordination with public agencies and food companies, emerging detection and testing technologies and traceability capabilities, labelling and conveying information to consumers, encouraging the development of best practices and CSR codes, and enforcement regimes shaped by civil and criminal elements. Indeed, the private sector can also play an important role, and transnational contracts and public-private cooperation provide important pathways to dealing with food fraud in the global food value chains.

Underlying all of these international and national strategies and tools is the overarching need for cooperation, from information sharing to joint enforcement activities. The ability of national governments to abrogate food fraud will depend on their ability under their legal systems and international legal frameworks to cooperate with each other, with international bodies and with private stakeholders.

Amid the complexities of regulating food fraud, there is one simple surety in this paper: doing nothing is not an option in order to maintain consumer and stakeholder confidence in food systems, food products and the ability of national authorities as a whole. All it takes is one food-fraud crisis to undermine this confidence.

References

Literature

- Agnoli, L., Capitello, R., De Salvo, M., Longo, A. & Boeri, M.** 2016. Food fraud and consumers' choices in the wake of the horsemeat scandal. *British Food Journal*, 118(8), 1898-1913. <https://doi.org/10.1108/BFJ-04-2016-0176>
- ASEAN (Association of Southeast Asian Nations).** 2021. ARASFF - ASEAN Rapid Alert System for Food and Feed. In: *ARASAFF Network* [online]. [Cited 5 August 2021]. www.arasff.net/
- Barnard, C. & O'Connor, N.** 2017. Runners and Riders: The Horsemeat Scandal, EU Law and Multi-Level Enforcement. *The Cambridge Law Journal*. 76. 116-144. www.doi.org/10.1017/S000819731700006X
- Bawden, T.** 2015. New food scandal over peanuts is 'more serious' than the horsemeat crisis. In: *The Independent* [online]. [Cited 15 September 2021].
- Benöhr, I.** 2020. The United Nations Guidelines for Consumer Protection: Legal Implications and New Frontiers. *Journal of Consumer Policy* 43, 105–124. <https://doi.org/10.1007/s10603-019-09443-y>
- Bhardwaj S. & Kaushik M.** 2018. Blockchain—Technology to Drive the Future. In: Satapathy S., Bhateja V., Das S. (eds) *Smart Computing and Informatics. Smart Innovation, Systems and Technologies*, vol 78. Springer, Singapore. https://doi.org/10.1007/978-981-10-5547-8_28
- Brackett, R.E.** 2018. The Role of Public-Private Collaborations in Global Food Safety. *Food Safety Magazine* [online]. [Cited 12 August 2021]. www.food-safety.com/articles/5615-the-role-of-public-private-collaborations-in-global-food-safety?v=preview
- Cafaggi, F.** 2012. Transnational governance by contract. Private regulation and contractual networks in food safety. In J. Swinnen, J. Wouters, M. Maertens & A. Marx (eds), *Global Governance and Private Standards. Interdisciplinary Perspectives*, Cheltenham, UK: Cheltenham: Edward Elgar.
- Cafaggi, F.** 2013. The Regulatory Functions of Transnational Commercial Contracts New Architectures. *Fordham International Law Journal*, 36(6): 1557–1618.
- Cafaggi, F. & Iamiceli, P.** 2015. Private Regulation and Industrial Organization: Contractual Governance and the Network Approach. In S.M. Grundmann, F. Möslin, K. Riesenhuber (eds), *Contract Governance: Dimensions in Law and Interdisciplinary Research*. Oxford (UK): Oxford university Press, p. 341-374.
- CFS (Centre for Food Safety).** 2021. Rapid Alert to Trade. In: *Centre for Food Safety, The Government of the Hong Kong Special Administrative Region* [online]. [Cited 5 August 2021]. https://www.cfs.gov.hk/english/rapid_alert/rapid_alert.html
- Chen, K., Wang, X. & Song, H.** 2015. Food safety regulatory systems in Europe and China: A study of how co-regulation can improve regulatory effectiveness. *Journal of Integrative Agriculture*, 14(11): 2203–2217. [https://doi.org/10.1016/S2095-3119\(15\)61113-3](https://doi.org/10.1016/S2095-3119(15)61113-3)
- Cohen, L.E. & Felson, M.** 1979. Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*, 44(4): 588–608. <https://doi.org/10.2307/2094589>
- Comans, C.** 2016. *eCommerce of Food – International Conference on Trends and Official Control, Online Food Fraud*. Conference presentation, 25th June 2019. Berlin, Cibus Rechtsanwälte. www.bvl.bund.de/SharedDocs/Downloads/10_Veranstaltungen/eCommerce2019/PPT/Comans_PPT.pdf?__blob=publicationFile&v=1
- Council of Europe.** 2001. *Explanatory Report to the Convention on Cybercrime*. European Treaty Series No. 185. Budapest.
- Croall, H.** 2001. Conceptualizing White Collar Crime In *Understanding White Collar Crime*. Buckingham, UK: Open University Press. pp. 39-40.

- Delisle, J. & Trujillo, E.** 2010. Consumer Protection in Transnational Contexts. *The American Journal of Comparative Law*, Volume 58, Issue suppl. 1. pp. 135–164. <https://doi.org/10.5131/ajcl.2009.0044>
- Elliott, C.** 2014. *Elliott Review into the Integrity and Assurance of Food Supply Networks – Final Report. A National Food Crime Prevention Framework*. Independent Review Report, Department for Environment, Food & Rural Affairs (DEFRA) and Food Standards Agency. London, HM Government.
- Ericson, B., Gabelaia, L., Keith, J., Kashibadze, T., Beraia, N., Sturua, L. & Kazzi, Z.** 2020. Elevated Levels of Lead (Pb) Identified in Georgian Spices. *Annals of Global Health*, 86(1), p.124. DOI: <http://doi.org/10.5334/aogh.3044>
- Ericson, B., Hu, H., Nash, E., Ferraro, G., Sinitsky, J. & Taylor, M.P.** 2021. Blood lead levels in low-income and middle-income countries: a systematic review. *The Lancet Planetary Health*, 5(3), e145-e153. [https://doi.org/10.1016/S2542-5196\(20\)30278-3](https://doi.org/10.1016/S2542-5196(20)30278-3).
- EUIPO (European Union Intellectual Property Office).** 2020. 320 tonnes of potentially dangerous dairy products taken off the market in Operation OPSON IX. In: *EUIPO, News* [online]. [Cited 10 August 2021]. <https://euiipo.europa.eu/ohimportal/en/news/-/action/view/5896264>
- European Union.** 2018. *Official Controls on Internet Sales of Food in EU Member States – Overview Report*. DG Health and Food Safety, DG(SANTE) 2018-6537. 33 pp.
- European Union.** 2020. Food Fraud Cases. *Monthly Summary of Articles on Food Fraud and Adulteration*. May edition. Joint Research Centre. 4 pp.
- European Union.** 2021. Food Fraud and Quality. In: *Knowledge Centre for Food Fraud and Quality, European Commission* [online]. [Cited 5 August 2021]. https://knowledge4policy.ec.europa.eu/food-fraud-quality_en
- FAO.** 2017. *Food Traceability Guidance*. Santiago. 140 pp. www.fao.org/3/i7665e/i7665e.pdf
- FAO & ITU.** 2019. *E-agriculture in action: blockchain for agriculture – Opportunities and challenges*. Bangkok. 72 pp. www.fao.org/3/CA2906EN/ca2906en.pdf
- FAO (Food and Agriculture Organization of the United Nations) & WHO (World Health Organization).** 2003. *Assuring Food Safety and Quality – Guidelines for Strengthening National Food Control Systems*. FAO Food and Nutrition Paper 76. Rome, FAO. 80 pp. www.fao.org/3/y8705e/y8705e.pdf
- FAO/WHO CAC (Codex Alimentarius Commission).** 2017. *Discussion Paper on Food Integrity and Food Authenticity*. CX/FICS 17/23/5. Prepared by Iran with assistance from Canada and the Netherlands, Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) (23rd Session), Mexico City, Mexico, 1-5 May 2017.
- FAO/WHO CAC.** 2018a. *Discussion Paper on Food Integrity and Food Authenticity*. CX/FICS 18/24/7. Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) (24th Session), Brisbane, Australia, 22-26 October 2018.
- FAO/WHO CAC.** 2018b. *Codex Alimentarius: Understanding Codex*. Fifth edition. Rome, FAO. www.fao.org/3/CA1176EN/ca1176en.pdf
- FAO/WHO CAC.** 2019a. *Discussion Paper on Internet Sales E-Commerce*. CX/FL 19/45/7. Codex Committee on Food Labelling (CCFL) (45th Session), Ottawa, Canada, 13-17 May 2019.
- FAO/WHO CAC.** 2019b. *Codex Alimentarius Commission – Procedural Manual*. 27 ed. Codex Alimentarius - Joint FAO/WHO Food Standards Programme 27. Rome, FAO. 255 pp. www.fao.org/3/ca2329en/CA2329EN.pdf
- FAO/WHO CAC.** 2020. *Discussion Paper on Role of CCFICS with Respect to Tackling Food Fraud in the Context of Food Safety and Fair Trade Practices in Food*. CX/FICS 20/25/8. Report prepared by the Electronic Working Group, Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) (25th Session) Hobart, Tasmania Australia, 27 April – 1 May 2020.
- FAO/WHO/WTO (World Trade Organization)/AU (Africa Union).** 2019. *Digitalization, food safety and trade*. Thematic briefing presented at the International Forum on Food Safety and Trade, The future of food safety International Food Safety Conference, 23-24 April 2019, Geneva, Switzerland. https://cdn.who.int/media/docs/default-source/resources/digitalization-food-safety-and-trade-en.pdf?sfvrsn=a11a03b8_2

- FDA (United States Food and Drug Administration).** 2016a. Gel Spice, Inc. Issues Alert on Elevated Lead Levels in One Lot of Fresh Finds Ground Turmeric Powder. In: *Recalls, Market Withdrawals, & Safety Alerts, U.S. Food and Drug Administration* [online]. [Cited 7 August 2021]. USA. <https://www.usrecallnews.com/gel-spice-inc-issues-alert-on-elevated-lead-levels-in-one-lot-of-fresh-finds-ground-turmeric-powder/>
- FDA.** 2016b. Oriental Packing Co. Inc. Issues Alert on Lead in Curry Powder. In: *Recalls, Market Withdrawals, & Safety Alerts, U.S. Food and Drug Administration* [online]. [Cited 7 August 2021]. USA. www.usrecallnews.com/oriental-packing-co-inc-issues-alert-on-lead-in-curry-powder-2/
- FDA.** 2018. Healthy Innovation, Safer Families: FDA's 2018 Strategic Policy Roadmap. p. 18.
- Felson, M. & Santos, R.B.** 2010. Chemistry for Crime, In *Crime and Everyday Life*. Fourth edition, USA, Sage Publications Inc. <http://site.ebrary.com/id/10833243>
- Food Safety News.** 2018. Public-private partnerships in the spotlight at GFSI conference. In: *Food Safety News* [online]. [Cited 12 August 2021]. www.foodsafetynews.com/2018/03/public-private-partnerships-in-the-spotlight-at-2018-global-food-safety-conference-kick-off/
- Forsyth, J.E., Nurunnahar, S., Islam, S.S., Baker, M., Yeasmin, D., Islam, M.S., Rahman, M., Fendorf, S., Ardoin, N.M., Winch, P.J. & Luby, S.P.** 2019a. Turmeric means “yellow” in Bengali: Lead chromate pigments added to turmeric threaten public health across Bangladesh. *Environmental research*, 179, [108722]. <https://doi.org/10.1016/j.envres.2019.108722>
- Forsyth, J.E., Weaver, K.L., Maher, K., Islam, M.S., Raqib, R., Rahman, M., Fendorf, S. & Luby, S.P.** 2019b. Sources of Blood Lead Exposure in Rural Bangladesh. *Environmental science & technology*, 53(19), 11429–11436. <https://doi.org/10.1021/acs.est.9b00744>
- Foundation FSSC.** 2021. FSSC 22000 Scheme. In: *FSSC 22000* [online]. [Cited 13 August 2021]. www.fssc22000.com/scheme/
- FPDI (Food Protection and Defense Institute).** 2021. Food Protection and Defense Institute. In: *University of Minnesota* [online]. [Cited 5 August 2021]. <https://foodprotection.umn.edu/>
- Food Standards Agency.** 2021. What is food crime and how does it differ from food fraud? In: *Food Standards Agency* [online]. [Cited 16 September 2021]. https://webarchive.nationalarchives.gov.uk/ukgwa/20180411152901oe_/https://www.food.gov.uk/enforcement/the-national-food-crime-unit/what-is-food-crime-and-food-fraud
- GFSI (Global Food Safety Initiative).** 2014. *GFSI Position Paper on Mitigating the Public Health Risk of Food Fraud*. <https://mygfsi.com/wp-content/uploads/2019/09/Food-Fraud-GFSI-Position-Paper.pdf>
- GFSI.** 2015. Leveraging the Global Food Safety Initiative to Meet China Food Safety Challenges. In: *MyGFSI* [online]. [Cited 12 August 2021]. https://mygfsi.com/press_releases/leveraging-the-global-food-safety-initiative-to-meet-china-food-safety-challenges/
- GFSI.** 2018. *Tackling Food Fraud Through Food Safety Management Systems*. <https://mygfsi.com/wp-content/uploads/2019/09/Food-Fraud-GFSI-Technical-Document.pdf>
- GFSI.** 2020. *GFSI Benchmarking Requirements – Version 2020*. Compendium of IV Parts. <https://mygfsi.com/wp-content/uploads/2020/02/GFSI-Benchmarking-Requirements-v2020.1-3.zip>
- GFSI.** 2021. Recognition. In: *MyGFSI* [online]. [Cited 13 August 2021]. <https://mygfsi.com/how-to-implement/recognition/>
- GMA (Grocery Manufacturers Association) & A.T. Kearney.** 2010. *Consumer Product Fraud: Deterrence and Detection – Strengthening Collaboration to Advance Brand*. 28 pp.
- Gray, A. & Hinch, R.** 2015. Agribusiness, Governments and Food Crime: A Critical Perspective. In R.A. Sollund, ed. *Green Harms and Crimes: Critical Criminology in a Changing World*, pp. 97–116. London, Palgrave Macmillan UK. https://doi.org/10.1057/9781137456267_6
- Hunter, J. & Riefa, C.** 2017. The challenge of protecting EU consumers in global online markets. The European Consumer Organisation (BEUC) & the Federation of German Consumer Organisations (vzbv). p. 64. Germany.

- IFS (International Featured Standards).** 2018. *IFS Standards Product Fraud: Guidelines for Implementation*. Germany. 50 pp. www.kin.de/wp-content/uploads/2018/05/FoodFraud-Guide_1805.pdf
- International Organization for Standardization.** 2010. *Guidance on social responsibility* (ISO Standard No. 45001:2018).
- ItalianFOOD.net.** 2021. Italy and Alibaba renew the agreement for the protection of Italian Geographical Indications. In: *ItalianFOOD.net* [online]. [Cited 9 August 2021]. <https://news.italianfood.net/2021/04/01/italy-and-alibaba-renew-the-agreement-for-the-protection-of-italian-gis/>
- Jack, L.** 2014a. Food fraud is still hard to detect – so follow the money. In: *The Conversation* [online]. [Cited 9 August 2021]. <http://theconversation.com/food-fraud-is-still-hard-to-detect-so-follow-the-money-31322>
- Jack, L.** 2014b. The term ‘food crime’ needs to be used with care. In: *The Grocer* [online]. [Cited 11 August 2021]. www.thegrocer.co.uk/letters/the-term-food-crime-needs-to-be-used-with-care/371437.article
- Kapadia, S.** 2018. Walmart 3-D image patent enables online shoppers to pick their produce. In: *Supply Chain Dive* [online]. [Cited 18 September 2021]. www.supplychaindive.com/news/walmart-3-d-image-patent-enables-online-shoppers-to-pick-their-produce/514875/
- Kendall, H., Kuznesof, S., Dean, M., Chan, M. Y., Clark, B., Home, R., Stolz, H., Zhong, Q., Liu, C., Brereton, P. & Frewer, L.** 2019. Chinese consumer’s attitudes, perceptions and behavioural responses towards food fraud. *Food Control*, 95, 339-351. <https://doi.org/10.1016/j.foodcont.2018.08.006>
- Kennedy, S.** 2012. Emerging Global Food System Risks and Potential Solutions. In W. Ellefson, L. Zach, & D. Sullivan, eds. *Improving Import Food Safety*, pp. 1–20. John Wiley and Sons, Inc. <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118464298.ch1>
- Kirezieva, K. & Luning, P.** 2017. The influence of context on food safety governance: Bridging the gap between policy and quality management. In: P. Verbruggen & T. Havinga, eds. *Hybridization of Food Governance*, 166. Edwards Elgar Publishing Ltd.
- Lord, N., Flores Elizondo, C.J. & Spencer, J.** 2017. The dynamics of food fraud: The interactions between criminal opportunity and market (dys)functionality in legitimate business. *Criminology & Criminal Justice*, 17(5), 605–623. <https://doi.org/10.1177/1748895816684539>
- Lotta, F. & Bogue, J.** 2015. Defining Food Fraud in the Modern Supply Chain. *European Food and Feed Law Review*, 114, 115.
- Manning, L.** 2016. Food fraud: policy and food chain. *Current Opinion in Food Science*, 10. <https://doi.org/10.1016/j.cofs.2016.07.001>
- Manning, L. & Smith, R. & Soon, J.M.** 2016. Developing an organizational typology of criminals in the meat supply chain. *Food Policy*, 59, 44-54. <https://doi.org/10.1016/j.foodpol.2015.12.003>
- Moyer, D.C., DeVries, J.W. & Spink, J.** 2017. The economics of a food fraud incident – Case studies and examples including Melamine in Wheat Gluten. *Food control*, v. 71: 358–364. doi: 10.1016/j.foodcont.2016.07.015
- NSF (National Sanitation Foundation) Safety and Quality UK Ltd.** 2014. Risk Modelling of Food Fraud Motivation – “NSF Fraud Protection Model” Intelligent Risk Model Scoping Project, Final Report, FS 246004. 72 pp.
- Oceana.** 2018. Seafood fraud impacts. In: *Oceana Canada* [online]. [Cited 12 August 2021]. <https://oceana.ca/en/seafood-fraud-impacts>
- OECD (Organisation for Economic Co-operation and Development).** 2011. *OECD Guidelines for Multinational Enterprises*. 2011th edition. 92 pp. doi.org/10.1787/9789264115415-en
- OECD.** 2015. *Industry Self Regulation: Role and Use in Supporting Consumer Interests*. OECD Digital Economy Papers, 247. Paris. 63 pp.
- OECD.** 2016. *Consumer Protection in E-commerce: OECD Recommendation*. Paris. 24 pp. <https://doi.org/10.1787/9789264255258-en>
- Randell, A.W. & Whitehead, A.J.** 1997. Codex Alimentarius: food quality and safety standards for international trade. *Revue scientifique et technique (International Office of Epizootics)*, 16(2), 313–321. <https://doi.org/10.20506/rst.16.2.1019>

- Reilly, A.** 2014. Tackling Food Crime – a History Lesson. *FSAINNEWS*, 16(3) May/June. p. 2.
- Reilly, A.** 2015. *Food Crisis Management Implications for Regulators: Lessons learnt from the EU-wide horsemeat scandal*. Speech delivered at the Ministry of Primary Industries, Food Protection Forum, Auckland, 12 October 2015.
- Reilly, A.** 2018. Overview of Food Fraud in the Fisheries Sector. *FAO Fisheries and Aquaculture Circular*, No. 1165. Rome, FAO.
- Roberts, M.** 2016. *Food law in the United States*. New York, NY, Cambridge University Press. 471 pp.
- Roberts, M.** 2019. A 'Food Systems Thinking' Roadmap for Policymakers and Retailers to Save the Ecosystem by Saving the Endangered Honey Producer from the Devastating Consequences of Honey Fraud. UCLA School of Law, Public Law Research Paper No. 20-02. Rochester, NY, Social Science Research Network. <https://doi.org/10.2139/ssrn.3466477>
- Roberts, M. and Turk, W.** 2017. *The Pursuit of Food Authenticity: Recommended Legal and Policy Strategies to Eradicate Economically Motivated Adulteration (Food Fraud)*. White Paper from the Resnick Program for Food Law and Policy, UCLA School of Law. Los Angeles, California, USA.
- Rowe, S., Alexander, N., Kretser, A., Steele, R., Kretsch, M., Applebaum, R., Clydesdale, F. et al.** 2013. Principles for building public-private partnerships to benefit food safety, nutrition, and health research. *Nutrition reviews*, 71: 682–691. <https://doi.org/10.1111/nure.12072>
- Scheltema, M.W.** 2014. Assessing Effectiveness of International Private Regulation in the CSR Arena. *Richmond Journal of Global Law and Business*, Vol. 13, Issue 2. pp. 263-375.
- Schroeter, U.** 2013. Defining the Borders of Uniform International Contract Law: The CISG and Remedies for Innocent, Negligent or Fraudulent Misrepresentation. *Villanova law review*, 58. 553. [10.2139/ssrn.2231841](https://doi.org/10.2139/ssrn.2231841).
- Spink, J.** 2014. *EMA Submission to FDA*. FDA Correspondence, Michigan State University, Food Fraud Initiative.
- Spink, J. & Moyer, D.C.** 2011. Defining the Public Health Threat of Food Fraud. *Journal of food science*, 76(9): R157-63. <https://doi.org/10.1111/j.1750-3841.2011.02417.x>
- Spink, J. & Moyer, D.C.** 2014. Food Fraud Prevention - beyond Adulterants and to Decision-Making. 17(5) *New Food* 18.
- Taylor, M.R.** 2014. Keeping Foods Safe Through Global Partnerships. *Food Technology* [online]. [Cited 12 August 2021]. www.ift.org/news-and-publications/food-technology-magazine/issues/2014/december/columns/perspective
- Tibola, C., Alves da Silva, S., Dossa, A. & Patrício, D.** 2018. Economically Motivated Food Fraud and Adulteration in Brazil: Incidents and Alternatives to Minimize Occurrence. *Journal of Food Science*, 83. <https://doi.org/10.1111/1750-3841.14279>
- UNCTAD (United Nations Conference on Trade and Development).** 2015. Summary of Adoption of E-Commerce Legislation Worldwide. In: *UNCTAD* [online]. [Cited 11 August 2021]. <https://unctad.org/topic/ecommerce-and-digital-economy/ecommerce-law-reform/summary-adoption-e-commerce-legislation-worldwide>
- UNCTAD.** 2017. *Guidelines on Consumer Protection: Business Engagement*. MENA (Middle East and North Africa) Programme. 46 pp.
- UNCTAD.** 2018. *Manual on Consumer Protection*. UNCTAD/DITC/CPLP/2017/1/Corr.1. 153 pp.
- UNIDROIT/FAO/IFAD.** 2015. *Legal guide on contract farming*. Rome, UNIDROIT. 258 pp. www.fao.org/3/i4756e/i4756e.pdf
- USP (United States Pharmacopeial Convention).** 2015. Honey Expert Panel 2015. In: *Honey Expert Panel 2015, USP Call For Candidates* [online]. [Cited 9 August 2021]. <https://callforcandidates.usp.org/node/5341>
- USP.** 2021a. USP Convention. In: *USP* [online]. [Cited 5 August 2021]. www.usp.org/about/usp-convention
- USP.** 2021b. Food Chemicals Codex (FCC). In: *Food Chemicals Codex (FCC)* [online]. [Cited 9 August 2021]. www.foodchemicalscodex.org/

- van Ruth, S.M., Luning, P.A., Silvis, I.C.J., Yang, Y., & Huisman, W.** 2018. Differences in fraud vulnerability in various food supply chains and their tiers. *Food Control*, 84, 375-381. <https://doi.org/10.1016/j.foodcont.2017.08.020>
- Vapnek, J. & Spreij, M.** 2005. *Perspectives and guidelines on food legislation, with a new model food law*. FAO Legislative Study 87. Rome, FAO. 284 pp. www.fao.org/3/a-a0274e.pdf
- Wheatley, V.M. & Spink, J.** 2013. Defining the Public Health Threat of Dietary Supplement Fraud. *Comprehensive reviews in food science and food safety*, 12(6), 599–613. <https://doi.org/10.1111/1541-4337.12033>
- Whitworth, J.** 2020. Food fraud rise “inevitable” because of COVID-19, *Food Safety News*, 22 May 2020.
- WHO & FAO.** 2009. *Toxicological and health aspects of melamine and cyanuric acid: report of a WHO expert meeting in collaboration with FAO*. Supported by Health Canada, Ottawa, Canada, 1-4 December 2008. World Health Organization. <https://apps.who.int/iris/handle/10665/44106>

Legal instruments

Legally binding instruments

Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). Adopted by the World Trade Organization (WTO), 1994.

Convention on Cybercrime, (Budapest Convention on Cybercrime) Adopted by the Committee of Ministers of the Council of Europe at its 109th Session on 8 November 2001 and entered into force on 1 July 2004.

United Nations Convention on Contracts for the International Sale of Goods (CISG). Prepared by the United Nations Commission on International Trade Law (UNCITRAL) and adopted by a diplomatic conference on 11 April 1980.

Non-legally binding instruments

Codex Alimentarius – Text, Principles and Guidelines

- *The Eleventh FAO Conference in 1961 establishes the Codex Alimentarius Commission and endorsement of a joint FAO/WHO Food Standards Programme*. Resolution No. 12/61.
- *Code of Ethics for International Trade in Food including Concessional and Food Aid Transactions, ‘Code of Ethics’ (CXC 20-1979)*. Adopted in 1979, revised in 1985 and 2010.
- *Compilation of Codex texts relevant to the labelling of foods derived from modern biotechnology (CXG 76-2011)*. Adopted in 2011.
- *General Guidelines for Use of the Term “Halal” (CXG 24-1997)*. Adopted in 1997.
- *General Guidelines on Claims (CXG 1-1979)*. Adopted 1979, latest amendment 2009.
- *General Principles of Food Hygiene (CXC 1-1969)*, latest amendment 2020.
- *General Standard for the Labelling of and Claims for Prepackaged Foods for Special Dietary Uses (CXS 146-1985)*. Adopted in 1985, latest amendment 2009.
- *General Standard for the Labelling of Food Additives when sold as such (CXS 107-1981)*. Adopted in 1981, latest amendment 2016.
- *General Standard for the Labelling of Prepackaged Foods (CXS 1-1985)*. Adopted 1985, latest amendment 2018.
- *Guidelines for Food Import Control Systems (CXG 47-2003)*. Adopted in 2003, latest amendment 2006.

- *Guidelines for the Design, Operation, Assessment and Accreditation of Food Import and Export Inspection and Certification Systems (CXG 26-1997)*. Adopted in 1997, latest amendment 2010.
- *Guidelines for Design, Production, Issuance and Use of Generic Official Certificates (CXG 38-2001)*. Formerly *Guidelines for Generic Official Certificate Formats and the Production and Issuance of Certificates*. Adopted 2001, latest amendment 2009.
- *Guidelines for the Development of Equivalence Agreements Regarding Food Import and Export Inspection and Certification Systems (CXG 34-1999)*. Adopted in 1999.
- *Guidelines for the Exchange of Information between Countries on Rejections of Imported Food (CXG 25-1997)*. Adopted 1997, latest amendment 2016.
- *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods (CXG 32-1999)*. Adopted in 1999, latest amendment 2013.
- *Guidelines for Use of Nutrition and Health Claims (CXG 23-1997)*. Adopted in 1997, latest amendment 2013.
- *Guidelines on Nutrition Labelling (CXG 2-1985)*. Adopted 1985, latest amendment 2017.
- *Guidelines on the Judgement of Equivalence of Sanitary Measures associated with Food Inspection and Certification Systems (CXG 53-2003)*. Adopted in 2003, latest amendment 2008.
- *Principles and Guidelines for Monitoring the Performance of National Food Control Systems (CXG 91-2017)*. Adopted in 2017.
- *Principles and Guidelines for National Food Control Systems (CXG 82-2013)*.
- *Principles and Guidelines for the Exchange of Information between Importing and Exporting Countries to support trade in food (CXG 89-2016)*. Adopted in 2016.
- *Principles and Guidelines for the Exchange of Information in Food Safety Emergency Situations (CXG 19-1995)*. Adopted in 1995, latest amendment 2016.
- *Principles for Food Import and Export Inspection and Certifications (CXG 20-1995)*. Adopted 1995.
- *Principles for Traceability/Product Tracing as a Tool within a Food Inspection and Certification System (CXG 60-2006)*. Adopted in 2006.
- *Standard for Honey (CXS 12-1981)*. Adopted in 1981, latest amendment 2019.
- *Standard for Olive Oils and Olive Pomace Oils (CXS 33-1981)*. Adopted in 1981, latest amendment 2017.

Food Chemicals Codex (FCC), was first published in 1966 by the Institute of Medicine, USA and is developed under the United States Pharmacopeial Convention. Twelfth edition published in 2020.

UNIDROIT Principles of International Commercial Contracts 2016. Fourth edition. Published by International Institute for the Unification of Private Law (UNIDROIT), Rome.

United Nations Guidelines for Consumer Protection. Adopted by the General Assembly under Resolution 39/248 of 16 April 1985. Expanded under Resolution E/1999/INF/2/Add.2. in 1999 and revised under Resolution 70/186 in 2015.

Work programme on electronic commerce. Adopted by the General Council of the World Trade Organization (WTO) on 25 September 1998.

Cases

Asociación Profesional Elite Taxi v Uber Systems Spain SL, Case C-434/15, No. 137, 2017.

In re: 100% Grated Parmesan Cheese Mktg. & Sales Practices Litigation, 348 F. Supp. 3d 797 (N.D. Ill. 2018).

Williams v. Gerber Products, 552 F.3d 934 (9th Cir. 2008).

National and Supranational legislation

Australia. *The Food Regulation Agreement (FRA)* was signed by all Australian governments in November 2000 committing to a national system of food regulation. The FRA has two attachments (Annex A and B) which contain the model food provisions that each state and territory used as the basis to amend their respective Food Acts.

China. *Food Safety Law*. Adopted in 2009 with new regulatory amendments in 2015.

China. *Notice of the State Council on Issuing the Plan for Promoting the Simplifying Administrative Procedures, Delegating Powers and Combination of the Simplification and Delegation and Transforming Government Function*, 2015 (containing measures for online food controls).

China. *Measures for Investigation and Punishment of Unlawful Acts Concerning Online Food Safety* (Order 27), 2016.

China. *Measures for Supervision and Administration of Food Safety in Online Catering Service* (Order 36), 2017.

China, Hong Kong SAR. *The Rapid Alert System* operated by the Hong Kong Centre for Food Safety (CFS), at www.cfs.gov.hk/english/rapid_alert/rapid_alert.html

European Union. *Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce')*.

European Union. *European Parliament Resolution on the Food Crisis, Fraud in the Food Chain and the Control Thereof*, T7-0011/2014 (2013/2091 (INI)). Environment, Public Health and Food Safety Committee, 14 January 2014.

European Union. *Regulation (EC) No. 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I)*. Adopted 2008.

European Union. *Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers*. Adopted in 2011, last consolidated version 2018.

European Union. *Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products*. Adopted 15 March 2017.

Germany. *Food and Feed Code*. Came into force in 2005, largely replacing the provisions of the *Food and Consumer Goods Act*, and redesigned in accordance with the EU basic regulation, which has become the umbrella law of German food law.

Germany. *German Criminal Code*. Adopted 1971, latest amendment 2019.

India. *Consumer Protection Act, 1986* (No. 68). Adopted in 1986. Replaced by the *Consumer Protection Act, 2019*.

India. *Indian Penal Code, 1860* (Act No. 45 of 1860).

Uganda. *Penal Code Act (Cap. 120)*. Adopted on 15 June 1950.

United States of America. *Class Action Fairness Act of 2005*. Public Law 109–2, 109th Congress.

United States of America. *Food Safety Modernization Act (FSMA)*. Adopted on January 4, 2011.

United States of America. *United States Code*, approved by Congress and first published in 1926.

Food fraud has beset governments for centuries, and the legal responses to it have been uniquely suited to the sensibilities of the time. This publication follows the concept of food fraud described to occur when a fraudster intentionally deceives a customer about the quality and/or contents of the foods they wish to purchase, and such act is done to obtain an undue advantage, most often economic, for the fraudster.

The vastness and complexity of food fraud, and the versatility in regulatory approaches can challenge national governments in their attempts to develop a coherent, focused approach to food fraud. To respond to this challenge, this paper introduces the available international regulatory guidance and the potential legal strategies at the national and regional level. It identifies and analyses some of the regulatory approaches to food fraud that countries have chosen and pays attention to the role of the private sector in food fraud regulation.

