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Food smuggling and trafficking: the key factors of influence

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Abstract

Background

Food smuggling and food trafficking are terms not currently defined in the food literature. This work sought to determine how such definitions could be developed in order to inform future research and surveillance activity.

Scope and Approach

The concept of food smuggling and food trafficking is considered, and regulatory food surveillance data for illegal and unauthorised imports and food trade incidents (n=347) into the European Union (EU) between 1987 and 2017 is explored and critiqued.

Key findings

Illegal imports, especially animal and fish products, can pose a threat to human and animal health, spread animal disease and invasive plant species, and lead to loss of wildlife and biodiversity. Economies are weakened through the tax avoidance and evasion elements of food smuggling and coercive food trafficking. Reported illegal trade in the EU's Risk Assessment for Food and Feed (RASFF) database was highest for meat products followed by fruit and vegetables. Purposive sampling means the data does not reflect the true incidence, extent and type of illegal imports especially by individuals for personal use. There are limited global strategies in place to address food smuggling and trafficking. This work has translated the lessons learnt from the processes developed to reduce tobacco smuggling to illicit activity associated with food. Elements of a comprehensive strategy to address illicit food trade include the developing of effective legal and institutional frameworks in association with effective, transparent communication and cooperation systems. This paper fills a current gap in the academic literature on this topic.

Keywords: illicit, food, smuggling, supply, trafficking

Highlights

- Food smuggling and trafficking is an under-researched phenomenon.
- Illicit food trade can introduce animal and plant disease and reduce tax revenue.
- There are limited global strategies in place to address food smuggling
- Activities to address tobacco smuggling could be used to reduce illicit food trade.

1. Illegal trade

Smuggling is the illegal trading of goods across borders (Joossens & Raw, 2012); the import of contraband goods (Ferrier, 2009), or the movement of goods into or out of a country or trading region often to circumvent tariffs or legal duty. Smuggling is an ancient practice and forms one element of a set of wider informal, illegal or illicit economic activities not successfully regulated by government (Hartnett & Dawdy, 2013). Illicit trade is "any practice or conduct prohibited by law and which relates to production, shipment, receipt, possession, distribution, sale or purchase including any practice or conduct intended to facilitate such activity" (WHO, 2003). Illicit trade is differentiated by the nature of the goods (Bevan, Collier, & Gunning, 1988), for example, 'black goods' are illegal while 'black parallel markets' define legal goods being traded illegally at the supply chain level rather than single actors operating in an otherwise legitimate supply chain. Terms in use to describe illicit goods include black, grey, second, parallel, hidden, shadow, subterranean, unobserved, unreported, unrecorded, informal, clandestine or illegal (Feige, 1990). Therefore illicitness is neither an innate property of goods, nor of particular economic actors, but instead is a transient quality attribute often linked to the mechanisms of distribution or circulation of a food item (Gregson & Crang, 2016).

The Global Food Safety Initiative Position Paper on Food Fraud (GFSI, 2014) states "food fraud including the subcategory of economically motivated adulteration, is of growing concern. It is deception of consumers using food products, ingredients and packaging for economic gain and includes substitution, unapproved enhancements, misbranding, counterfeiting, stolen goods or others." This definition does not explicitly encompass food smuggling and food trafficking. However Spink et al. (2016) consider smuggling as a subset of food fraud.

77 Illegal cross-border trade has been associated with milk products (Beutlich et
78 al. 2015), coffee (Dercon & Ayalew, 1995), meat and meat products (Europol, 2016;
79 Beutlich et al,. 2015; Falk et al., 2013; FSA 2010) fish and fisheries (Pramod et al.,
80 2014; Poh & Fanning, 2012); bush meat and wildlife (Auliya et al., 2016; Europol,
81 2016; Wyler & Sheikh, 2013; Falk et al., 2013; Regueira & Bernard, 2012; Chaber et
82 al., 2010; Rice & Moore, 2008); and more widely timber (Cavanagh, Vedeld, & Trædal.
83 2015; Schaafsma et al., 2014), drugs (Cochrane & O'Regan, 2016; Rettberg & Ortiz-
84 Rimalo, 2016) and human organs and people (Adhikari, 2016; Salt, 2000).
85 Translating definitions with regard to human smuggling and trafficking, food
86 smuggling can be described as when all parties involved, excluding regulatory and
87 enforcement agencies, are fully consenting to illicit behaviour whereas food trafficking
88 involves coercion towards one or more parties, however, the fine line between
89 smuggling and trafficking is sometimes unclear (Butterly, 2014). Díaz (2015)
90 differentiates between small, petty smuggling (for personal use) and professional
91 smuggling or trafficking for profit where a significant volume of goods is transported
92 through international shipping channels (Ferrier, 2009). In order to protect national
93 farmers, some food products are subject to additional import tariffs. These products
94 may be more at risk of smuggling as a means to avoid taxation or import tariffs (Lotta
95 & Bogue, 2015). This highlights the *economic driver* for individuals and organisations
96 to engage in such practice. Joossens and Raw (2012) differentiate between *tax*
97 *avoidance*, legal and legitimate activities, and alternatively *tax evasion*, illegal
98 activities, undertaken to pay less or no tax.
99 Illicit trade can lead to *food safety concerns* especially the entry of foodborne
100 pathogens into the European Union (EU) that can impact on human health (Ciolacu et
101 al. 2016; Wagner, Skandamis & Rodríguez-Lázaro, 2015). This trade also has the

potential to *spread of animal disease* across borders with the resultant trade restrictions, economic and social costs (Beutlich et al., 2015; Falk et al., 2013). Animal diseases of interest here include foot and mouth disease (Hartnett et al., 2007), classical swine fever (Woolridge, Hartnett, Cox, & Seaman, 2006), African swine fever (Costard et al., 2013; Woolridge et al., 2006) and zoonoses such as brucellosis (Nenova, Tomova, Saparevska, & Kantardjiev, 2015). Finally, food smuggling can negatively impact both *wildlife and biodiversity* especially for endangered species. Bush meat, the smuggling of flesh of exotic game and other wild animals, and more widely the trade in endangered species of animal is illicit and should be strictly controlled by the Convention of International Trade in Endangered Species (CITES) of Wild Fauna and Flora (http://www.cites.org) (FSA, 2009). The complexity of the diverse economic, environmental and social impact of illicit trade can be demonstrated by illegal, unreported and unregulated (IUU) fishing activities that affect ecosystems, food security, and livelihoods and communities, create supply chain opacity, distort competition and promote tax evasion around the world (Pramod, Nakamura, Pitcher & Delagran, 2014). The aim of this paper is to define and frame the impact of smuggling and trafficking on the legitimate food supply chain and identify the factors that influence organisational vulnerability to such activity. The case study trading block of focus in this research is the EU.

2. Economic drivers for smuggling

Smuggling to gain economic advantage is ubiquitous. Smuggling of food and other commodities across borders is problematic and impacts directly on the economic growth of affected countries (Chen-Charpentier, Arenas, & Diaz-Rodriguez, 2015). The economic incentive for smuggling is the magnitude of differential between the price of a food in its original country and the price in the destination country

(Ferrier, 2009) citing the examples of sugar, wheat and rice (Golub & Mbaye, 2007). Factors that can lead to "black" economic activity include high taxes or complex tax systems, low tax morale, low Gross Domestic Product, weak institutions and corruption (Snowden, 2012). Differences in reported smuggling prevalence rates between countries is attributed to the types of goods affected by any trade prohibitions, the degree of opacity of smuggled goods and the ease of bringing incorrectly identified materials on manifest documents, and the targeting of any enforcement resources including purposive sampling (Ferrier, 2009).

Fresh garlic imports to the EU are subjected to *ad valorem* duty. As production costs in China are lower, the illegal import of Chinese fresh garlic is attractive to smugglers. OLAF (2010) highlight a smuggling operating route via Norway where garlic is exempted from customs duties and only value added tax (VAT) needs to be paid, so after customs clearance the Chinese garlic could be transferred to the EU instead of placing it on the market in Norway and thus bypassing such duty being paid. Also due to the intra-community trade within the EU this product could then be transferred to any country often without further inspection. One in ten bottles or cans of beer sold in the United Kingdom (UK) had not had duty paid on them with counterfeit alcohol sold by both licit and illicit retailers (Snowden, 2012). It is estimated that 35% of overall agricultural produce of the West Bank marketed in Israel was smuggled (Ihle & Rubin, 2013) and the 2013 United States (US) honey smuggling incident resulted in the non-payment of US$40 million in taxes (Spink et al., 2016). Estimates consider the reach of the illicit IUU fishing economy encompasses between 13% and 31% of reported catches, and over half in some regions with an associated value of between $10 and $23.5 billion per year (Pramod et al., 2014; Agnew et al., 2009).

Market and regulatory standards and the wider regulatory environment play a fundamental role in the transnational supply chain (Knoll et al., 2017). Indeed, the rationale for whether a specific country is given an export licence for a second country, or trading group, is largely based on consideration of existing national standards, and the degree of adoption within the given internal supply chain of standards that address legality, food safety, quality and the control of animal disease. Brazil, as an example, has had a weak phytosanitary record over two decades with Foot and Mouth Disease in 2005, and Bovine Spongiform Encephalopathy (BSE) in 2011-2012 (Knoll et al., 2017). This has led to periods when Brazilian beef products were banned from the EU. When food products are produced in areas of the world with reduced public-private regulatory oversight this creates conflict with the regulatory checks and balances in place in the EU (Garnweidner, Terragni, Pettersen & Mosdøl, 2012; Baylis, Martens & Nogueira, 2009; Lawton et al., 2008). Where regulatory control increases in the EU, this in itself is a driver for an illicit, underground economy as demand still remains the same in specific countries for certain types of foods, but that demand cannot be met through legal supply routes. Further, as it is outside the traditional multiple retailer dominated supply chains that have higher embedded private standards that supplier organisations are mandated to comply with for market access, any resultant illicit trade has reduced oversight. Naim (2005) concludes that illicit trade is driven not from a moral standpoint, instead it is motivated by the opportunity to make high profits.

3. Food sanitary and biodiversity concerns associated with food smuggling

This section critiques the food sanitary and biodiversity concerns with food smuggling. In 2003, in California, an outbreak of Exotic Newcastle Disease, said to have been caused by smuggled game birds from Mexico, led to approximately $168

178 million of eradication costs for farmers (Ferrier, 2009). Oniciuc et al., (2015) in their
179 work found illicit food items (16/200 samples), purchased from an informal (black)
180 market in Romania, contaminated with methicillin-resistant *Staphylococcus aureus*
181 (MRSA) while *Listeria monocytogenes* was isolated from 7.5% of samples in another
182 study (Ciolacu, Nicolau, Wagner & Rychli, 2015). Illicit food is thus a potential route
183 for disseminating MRSA into the EU and it is difficult to estimate the amount of food
184 from non-EU countries entering the EU black market where food products can come
185 from the Republic of Moldova, Ukraine, Bulgaria and Russia, but this is definitely a
186 cause for concern (Oniciuc et al., 2015). It is also a challenge as the EU has many
187 seaports, airports, and routes of entry. In addition to the standard entry and transit ports
188 in Europe (e.g. via the Port of Rotterdam), food can also be smuggled into the EU via
189 personal luggage of consumers and sold in black markets (Ciolacu et al., 2016). Schoder
190 et al., (2015) sampled 600 products of animal origin (POAO) from more than 60,000
191 passengers from non-EU countries. More than 50% of the POAO were milk products
192 followed by meat products and bush meat. Most of the confiscated food products came
193 from Asia. Foodborne pathogens were detected in 5% of the samples with the highest
194 prevalence attributed to *Listeria monocytogenes* (2.5%), followed by verocytotoxin
195 *Escherichia coli* (1.3%) and *Salmonella* spp (1.2%). Similarly, Rodríguez-Lázaro et al.,
196 (2015) tested 200 food samples of animal origin and found 20 samples were positive
197 for *L. monocytogenes* (10%) and *Salmonella* spp. (5.5%).

198 Illegal importation of livestock, fish or bushmeat was identified during checks
199 at EU airports such as Paris Roissy-Charles de Gaulle airport (Chaber et al., 2010), and
200 Zurich and Geneva airports, Switzerland (Falk et al., 2013). Examples of seized
201 bushmeat include primate, ungulate, pangolin, rodents and crocodile (Chaber et al.,
202 2010), and antelope, pangolin, porcupine, rodents and game animal (Falk et al., 2013).

Chaber and Cunningham (2016) sampled illegally imported bushmeat and fish and in the bushmeat *Listeria* spp. (including *Listeria monocytogenes* was cultured from ten samples and *Streptococcus* spp. (including *S. aureus*) and *Staphylococcus* spp. were also detected. Temmam et al., (2016) screened for viral pathogens in African bushmeat smuggled via France airport and found the presence of virus-like particles in the samples confirming the presence of sequences related to the *Siphoviridae, Myoviridae* and *Podoviridae* bacteriophage families; some of them infecting bacterial hosts that could be potentially pathogenic for humans. Confirmed examples of disease introduction via the wildlife trade in the US have included amphibian chytridiomycosis, exotic Newcastle's disease, and with bushmeat specifically pathogen screening identified retroviruses such as simian foamy virus) (SFV) and/or herpesviruses cytomegalovirus and lymphocryptovirus) in non-human primate material (Smith et al. 2012).

Further data on the public health risks associated with illegal imports can be derived from PROMISE, an EU funded research project between 2012 and 2014. PROMISE had the overall goal of improving and strengthening the integration, collaboration and knowledge transfer between the new and old member states of the EU and its candidate countries (see http://www.promise-net.eu/). The objective was to tackle common food safety threats and hence to protect the European consumers. Literature derived from the project includes the aforementioned work by Ciolacu et al. (2014); Oniciuc et al. (2014); and Schoder et al. (2015). Rodríguez-Lázaro et al. (2017) evaluated confiscated food items (n = 868) whereby 15.7% were positive for *S. aureus* and 3% for MRSA. In a further study the virulence and antimicrobial resistance determinants of verotoxigenic *Escherichia coli* (VTEC) and of multidrug-resistant *E. coli* from hard cheese illegally imported to the EU by flight passengers (n = 1526 samples) was investigated and 1%

of samples contained VTEC isolates (Nagy et al. 2015). This demonstrates the public health risk associated with such illicit foods.

One of the main reasons posited as to why illegal trade is high for bush meat is that exotic species form part of the traditional diet of newly emerging food sub-cultures in the EU and the wish to consume such exotic POAO is driven by religious observance or out of social reminiscence (Beutlich et al., 2015; Grabowski, Klein & López, 2013). Hunting and eating bushmeat is a longstanding cultural practice in these communities and it is difficult for individuals to recognise the potential health and sanitary concerns in areas such as the EU (Bair-Brake et al. 2013). The role of the EU Rapid Alert for Food and Feed (RASFF) system is now considered in the context of food smuggling and trafficking.

4. Holistic review of illegal or unauthorised imports into the EU

Illegal or unauthorised import is one of the six food fraud categories in the RASFF database, a centralised platform developed to ensure the safety of food and animal feed in the EU (RASFF, 2017). Members including the European Commission, EU members, the European Food Safety Authority (EFSA), the European Free Trade Association (EFTA) Surveillance Authority, (i.e. Iceland, Liechtenstein and Norway) and Switzerland are obliged to notify and to exchange information on food and feed safety issues and measures (RASFF, 2017). Between 1987 and 2017, 347 illegal import and food trade incidents were logged within the RASFF database. In this timeframe notifications for illegal trade were highest for meat products (n=62) followed by fruits and vegetables (n=58), other food products (n=39), fish and fish products (n=35) and poultry and poultry products (n=29) see Figure 1 and Table 1. Misrepresentative manifest documents are sometimes difficult to identify when food is packed into large

containers and labelled in a foreign language and it may be impractical to check every element of the consignment (Ferrier, 2009). The enforcement authorities at ports will notify RASFF of any rejection related to a direct or indirect risk to human health. Destruction was by and large the most common action undertaken for illicit fruits, vegetables, fishery, poultry and other food categories possibly as the consignments were deemed to be a risk to human or animal health or because persons responsible for the consignment failed to comply with the direction to re-export (Pocknell, Tanner & Ambrose, 2017). The nature of food products involved in the problem of illegal imports is diverse including: seafood products such as abalone in cans, shark fin, dried scallop, frozen pomfret, various POAO such as beef jerky, duck meat, pork, poultry and products thereof, frozen insects, soy-based products, bird's nests and also ethnic food products.

Take in Figure 1 and Table 1

Within the RASFF data on illegal imports, China ranks consistently as one of the top 3 country of concern and in the dataset considered in this research, China was recorded in 63 food incidents associated with illegal trade. This echoes the wider work of Nepusz, Petroczi and Naughton (2009) who identify China as one of the country with the largest number of overall RASFF alerts for food and feed safety and fraud. In fact, Beestermoller, Disdier and Fontagne (2016) report an overall 11.4% rejection rate of Chinese shipments (out of 14,860) during the period 1979 to 2011 suggesting a challenge in meeting EU sanitary standards.

The discourse surrounding underground and illegal food economies and the associated vulnerabilities that businesses may face is opaque and complex. It is particularly difficult to quantify illegal or unregulated movements of food, feed and

beverage products and very few studies of this type have been conducted (Fèvre, Bronsvoort, Hamilton & Cleaveland, 2006) although more recently the body of literature is growing as demonstrated in this paper. A number of factors specifically influence the vulnerability of organisations to illicit materials as a result of smuggling. These factors include, but are not limited to, market competition, supply chain pressure and power dynamics, resource scarcity, inadequate governance, lack of sanctions and low probability of discovery, rapid development of systems, logistics and technology, data swamping and intentional opacity (Manning, Soon, Aguiar, Eastham & Higashi 2017; Manning, Smith & Soon, 2016; Charlebois, Schwab, Henn & Huck, 2016; Marvin et al., 2016). Further, compartmentalisation of operational management, lack of transparency about practices and processes and information opacity increases the longevity of smuggling activities and protects against the impact of disruption, whistleblowing or infiltration by regulatory or law enforcement agencies. Illicit economies cannot be seen as simply a binary function of either legal or illegal products, ingredients or indeed actors (Manning et al., 2017). Instead these economies often represent transience of status of ingredients and/or products or an acceptance and tolerance of customary illegality by predominantly legal economic actors (Gregson & Crang, 2016).

Informal food networks, behave in the same way as criminal networks and are characterised by their heterogenicity i.e. their diversity in composition, density of connections, size, structure, shape, underlying bonding mechanisms, degree of sophistication, and scope of activities (Williams, 2011). Further, the capacity for food trafficking networks to cross national borders creates an advantage for perpetrators because it enables them to supply markets where the profit margins are largest, whilst operating from and in countries where risks are the least (Manning et al., 2016).

303 Illegality as an attribute of a food is therefore transient i.e. once an illegally imported
304 material has been re-packaged, or incorporated into a food product the inherent illicit
305 nature of the first state has subsequently been masked. Further illicitness is not an
306 intrinsic, embedded property of the goods that can be tested or analysed and thus
307 identified and mitigated against at some point in the supply chain. Instead illicitness
308 represents a transient extrinsic quality attribute often linked to the logistical aspects and
309 mechanisms of distribution or circulation of a given food item (Gregson & Crang,
310 2016). Effective action against food smuggling at the food supply chain level is
311 underpinned by reducing opacity, and minimising acceptance of opportunistic
312 behaviours within a given business environment (Manning et al., 2017; Soon &
313 Manning, 2017).

314 Whether at a multi-member trading block level, setting national priorities to
315 combat smuggling or at a discrete supply chain or business level, the undertaking of
316 food fraud vulnerability risk assessments to determine the potential for such activity in
317 the food supply chain is an evolving art. At present the process is largely qualitative or
318 semi-quantitative (Manning et al., 2016) and built on a number of assumptions that, due
319 to the cost involved, are not fully tested or explored. This means that new predictive
320 methods need to be developed to address food smuggling and trafficking in order to
321 protect the food economy and most specifically prevent harm to the consumer, both in
322 terms of the financial, environmental, social and health impacts. Whilst there is a gap
323 in the literature with regard to food smuggling, one associated consumer item where
324 anti-trafficking and smuggling protocols are in place is tobacco. These controls are now
325 considered in order to translate such protocols to the scenario of controlling illicit food
326 smuggling and trafficking.

327 **5. Lessons from tobacco smuggling: context and controls**

Tobacco is one of the most commonly smuggled commodities in the world (Interpol, 2014). Illicit trade in tobacco products is a serious threat to public health, increases accessibility and affordability of tobacco products and undermines tobacco control policies such as pricing and tax measures (WHO, 2013). China is the largest tobacco market with one third of total consumption, at approximately two trillion cigarettes per annum, and producing around 190 billion counterfeit cigarettes annually of which 15-20% are exported (Allen, 2012). Global illicit trade in tobacco affects one in nine cigarettes (around 657 billion cigarettes); leads to over US$40-50 billion in lost tax revenue, and involves multiple stages of illegal behaviour including illegal manufacturing, counterfeiting of existing brands and then smuggling activities to avoid and evade tax (Interpol, 2014; Allen, 2012; Joossens & Raw, 2012). In 2012, the loss of tax revenue in the EU for cigarette smuggling was 12.5 billion Euros (Interpol, 2014). The impact of this illicit tobacco trade can be translated to considering food smuggling and trafficking too. The resultant impact weakens legitimate industry (employment, innovation, trade and distribution); and the social fabric of society, especially as the crime is often targeted at the poor and vulnerable. The crime undermines national and international health policy objectives; leads to lost revenue threatening the tax base of economies and the rule of law; and finally such crime supports corrupt practices, and funds organised crime and possibly even terrorism and wider criminal activity (Allen, 2012). The causes and facilitating factors of illicit tobacco trade are synthesized from the literature here into the following categories: financial benefit, weak consumer knowledge, logistics and data management infrastructure that aid distribution of illegal tobacco including data opacity, strength of policy frameworks and measures and tolerance of illicit behaviour (Table 2).

Take in Table 2

Weak policy measures that influence the incidence of commodity smuggling and trafficking include: inadequate legislation and sanctions, the weak enforcement of regulatory controls; the lack of robust official controls in free trade zones and on goods in transit; the lack of coordination of government agencies and weak goal alignment; having protectionist policy measures such as tariffs that create incentives to deceive; the disparities in tax driven prices between jurisdictions; unbalanced fiscal policy with high tax burden including value added tax (VAT) on the products that are at risk of being smuggled; weak information exchange systems at national and international level; and no, or if present, poorly functioning public awareness campaigns.

Joossens and Raw (2012) argue illicit trade can be split into: (1) legal products that are illegally distributed within national boundaries; (2) illegal products distributed within national boundaries; (3) legal products illegally distributed across borders; and (4) illegal product distributed across borders. For example, the manufacture, movement and smuggling of counterfeit cigarettes from China are controlled by highly organised criminal syndicates causing a loss of income for registered trademarks owned by many of the transnational tobacco corporations (Allen, 2012). Elements of a comprehensive strategy to address illicit tobacco trade and by inference illicit food trade are the developing of effective legal and institutional frameworks in association with effective, transparent communication and cooperation systems (see Table 3). The policy elements determined here to address tobacco would also form an effective strategy towards illicit food trade.

Take in Table 3

The World Health Organisation Framework Convention on Tobacco Control (WHO FCTC, 2003) is a treaty that was adopted in May 2003. The Protocol to Eliminate Illicit

Trade in Tobacco Products is the first protocol for the WHO FCTC and the protocol was adopted in 2012 (WHO, nd). The Protocol builds upon and complements Article 15 of the WHO FCTC that focused on countering illicit tobacco trade as part of an overall tobacco control policy (WHO, 2013). In this context illicit trade is described as "any practice or conduct prohibited by law and which relates to production, shipment, receipt, possession, distribution, sale or purchase, including any practice or conduct intended to facilitate such activity" (WHO, 2013 p.6).

Article 7 of the Protocol focuses on the role of due diligence checks before and during any business relationships such as establishing that suppliers are natural or legal entities with business registration numbers, article of incorporation etc. that criminal checks are undertaken and bank accounts intended to be used in transactions are verified. The Protocol also requires parties to develop a "global" tracking and tracing system using unique, secure and non-removable identification markings and that individual batches can be traced to manufacture and other supply chain records, facilities and production lines, intermediaries and shipment routes and destinations. Some systems of tracking and tracing involve the use of digital coding technology and authentication tools on packaging, however interoperability of systems is key to the success of anti-smuggling procedures i.e. via "open" coding standards across manufacturers, common reporting standards so customs officials can use the same methodology to read codes and a standard regulatory report source (Allen, 2012). These could include 1D, 2D or 3D barcoding and radio-frequency identification (RFID) systems.

Supply chain strategies to address illicit tobacco trade operate at three levels influencing and reducing the supply of raw materials to illegal operations, reducing illicit manufacturing capacity and putting pressure on illegal distribution networks from

403 growing through to sales of finished product (Interpol, 2014). This example
404 demonstrates what can be achieved with global concensus on addressing illicit trade in
405 a commodity, in this case tobacco, and much of the control systems proposed can be
406 readily translated to address food smuggling and trafficking. What has been the success
407 to date with these strategies? The European Commission European Anti-fraud Office
408 (OLAF) highlight that focused enforcement strategies in the EU have led to illicit
409 tobacco seizures rising from 3.1 billion cigarettes in 2013 to 3.8 billion in 2015 (OLAF,
410 2017).
411
412 **6. Conclusion**
413 The capacity for illicit food networks to cross national borders often avoiding tariffs
414 or regulatory control creates an economic advantage for those actors involved. Illicit
415 food trade, described in this paper as smuggling, enables perpetrators to supply value-
416 added markets where the profit margins are largest, whilst operating from and often in
417 countries where risks of discovery of their activity are the least. The scope of this dark
418 food trade is largely unquantified by current research activity. The challenge for
419 addressing food smuggling is that illegality can be transient i.e. once an illegally
420 imported material has been re-packaged, or incorporated into a composite food product
421 its illicit nature can be masked.
422 The literature and data explored in this conceptual paper outlines firstly that the
423 prevalence of illegal food trade makes this a subject worthy of note and in need of
424 further empirical research. It is important not to consider illegal food trade as being
425 totally distinct from legal trade. It should be recognised that illegal activity, including
426 smuggling or trafficking rather than being a parallel food chain is actually embedded
427 within existing food markets and supply chain activities. The use of the tobacco case

study demonstrates what can be achieved through international collaboration to address illicit trade in a specific commodity. However factors, such as cooperation, global standards development, transparency and regulatory oversight are key influencers in mitigating food smuggling and trafficking and need to be addressed through a collective multi-stakeholder approach.

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752 **Table 1 Top 5 EU food categories of illegal import and food trade (1987-2017)**

Food categories (total number of notifications)	Sub-categories of illegal import and food trade	Description of fraud (examples)	Number of notifications
Meat (62)	Attempt to illegally import	Attempt to illegally import frozen boneless beef from Uruguay	12
	Illegal import	Illegal import (bovine casings declared as sheep casings) of bovine casings (*Bubalus bubalis*) from Pakistan	15
	Illegal trade	Illegal trade of frozen pork tender loins with falsified Italian health mark, dispatched from Malaysia	13
	Suspicion of attempt to illegally import	Suspicion of attempt to illegally import frozen beef tongue from Brazil	2
	Suspicion of illegal trade	Suspicion of illegal trade of frozen beef meat from Ireland via the Netherlands	4
	Unauthorised import	Unauthorised import of frozen bovine offals (tongues) (*Bos taurus*) from Brazil	2
	Unauthorised transit	Unauthorised transit of corned beef from Brazil	14
Fruits and vegetables (58)	Attempt to illegally import	Attempt to illegally import dried beans from Nigeria	52
	Illegal import	Illegal import (contains poultry DNA) of salted spicy soy from China	4
	Unauthorised import	Unauthorised import of sprouted sugar beet seeds from France, dispatched from Egypt	1
	Illegal trade	Illegal trade of canned asparagus from Spain	1
Other food products (39)	Illegal import	Illegal import of pork legs, abalone in cans, dried scallops, shark fin	10
	Attempt to illegally import	Illegal import of and absence of health certificate(s) for various food products from Vietnam	25
	Unauthorised transit	Bad hygienic state and unauthorised transit of various	1

Food categories (total number of notifications)	Sub-categories of illegal import and food trade	Description of fraud (examples)	Number of notifications
		products of animal origin from China	
	Unauthorised import	Unauthorised import of swallow's nests extract from China	3
Fish (35)	Attempt to illegally import	Attempt to illegally import and absence of health certificate(s) for chilled swordfish (*Xiphias gladius*) from Morocco	18
	Illegal import	Illegal import (false certificate) of hake (*Merluccius* spp.) from Ecuador	9
	Suspicion of attempt to illegally import	Absence of health certificate(s) for and suspicion of attempt to illegally import frozen cuttlefish and squid (*Sepia officinalis*) from Morocco	3
	Suspicion of illegal trade	Suspicion of illegal trade of frozen eel (*Anguilla anguilla*) from France	1
	Unauthorised import	Unauthorised import of frozen yellowtail tuna fillets from Japan	2
	Illegal trade	Illegal trade and unauthorised placing on the market of fresh fishery products from Poland	2
Poultry meat (29)	Attempt to illegally import	Attempt to illegally import of frozen chicken breasts in consignment of frozen taro from China	21
	Illegal trade	Illegal trade of various poultry meat from unknown origin	1
	Illegal import	Illegal import of frozen poultry meat from China, via Hong Kong	3
	Suspicion of illegal trade	Suspicion of illegal trade of chicken breast from unknown origin	3
	Unauthorised import	Unauthorised import of roasted boneless whole duck from China	1
		Grand total	**223**

753 Source: RASFF System

754 **Table 2. Factors cited as being of influence in the illicit tobacco trade (Adapted**
755 **from Allen, 2012; Interpol 2014)**

Factors of influence
Financial
• Customers seeking to save money. • Smokers wanting cheaper products. • Affordability for those on low incomes or in an economic downturn. • Criminals seeking to make money including taking advantage of tax differentials. • Opportunity to launder money. • Legitimate businesses turning a blind eye to increase profit.
Logistics and data management infrastructure
• Tobacco manufacturers seeking to penetrate new markets. • Growth in illegal distribution and criminal networks. • New transit routes and infrastructure being developed in countries with weak regulatory control. • Oversupply of tobacco products in source country. • Poor quality data in terms of records and import/export declarations, inadequate data handing capacity and unreliable information technology infrastructure. • Ease and cost of smuggling as tobacco is light and portable.
Policy framework
• Inadequate legislation and sanctions especially with regard to intellectual property. • Weak enforcement of controls, lack of enforcement capacity, poorly trained police forces and inspection officials and lack of political will to fight illicit trade in source countries leading to low prosecution rates and weak penalties for offenders. • Weak official border controls. • Lack of robust official controls in free trade zones and on goods in transit. • Lack of cooperation and coordination of government agencies and weak goal alignment • Protectionist policy measures such as tariffs. • Disparities in tax driven prices between jurisdictions. • An unbalanced fiscal policy with a high tax burden on tobacco products. • Weak information exchange systems at national and international level. • Poorly functioning or lacking public awareness campaigns.
Tolerance of illicit behaviour
• Level of corruption (e.g. as measured by the Transparency Index). • Corruption and bribery of public officials. • Public tolerance of the illicit trade in tobacco products.
Knowledge
• Consumer inability to recognise illegal product.

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Table 3. Elements of a comprehensive strategy to address illicit tobacco trade (Adapted from Allen, 2012)

Elements
• Achieve top level political ownership to ensure sufficient prioritisation and the necessary resources are made available to address illicit trade. • Understand and monitor the size and nature of the problem e.g. through an unexplained drop in legal market sales as identified by the industry or associated tax revenue, increased incidence of illegal product seizures (frequency of incidents or volume of product); emergence of new brands as is also seen with illicit trade in alcohol. • Adopt a balanced tax policy and operate effective tax collection and means to recover tax revenue losses and destruction costs e.g. asset confiscation. • Analyze existing legislation and regulations to ensure they work and are enforced effectively and that offences are clearly identified, the penalties for contravention are adequate and act as a deterrent; systematic destruction of illicit products and illicit supply chain infrastructure and effective tracking and tracing mechanisms. • Conduct full impact assessments of any proposed tobacco related legislation. • Ensure the judiciary is aware of the seriousness of the crime and the need to destroy illicit product and equipment in a timely manner. • Evaluate the main facilitators, including manufacturing and export controls, Free Zones and transit operations, etc. • Develop an enforcement strategy that includes all relevant national agencies and ensure they possess adequate powers to act effectively. • Provide sufficient financial resources for adequate law enforcement capacity. • Tackle demand by educating and informing the public about the implications of the illicit trade. • Build and strengthen partnerships between national and international agencies. • Cooperate with legitimate industry players to make the best use of combined intelligence and resources. • Implement anti-money laundering provisions and transparent payment procedures. • Implement a track and trace programme for products.

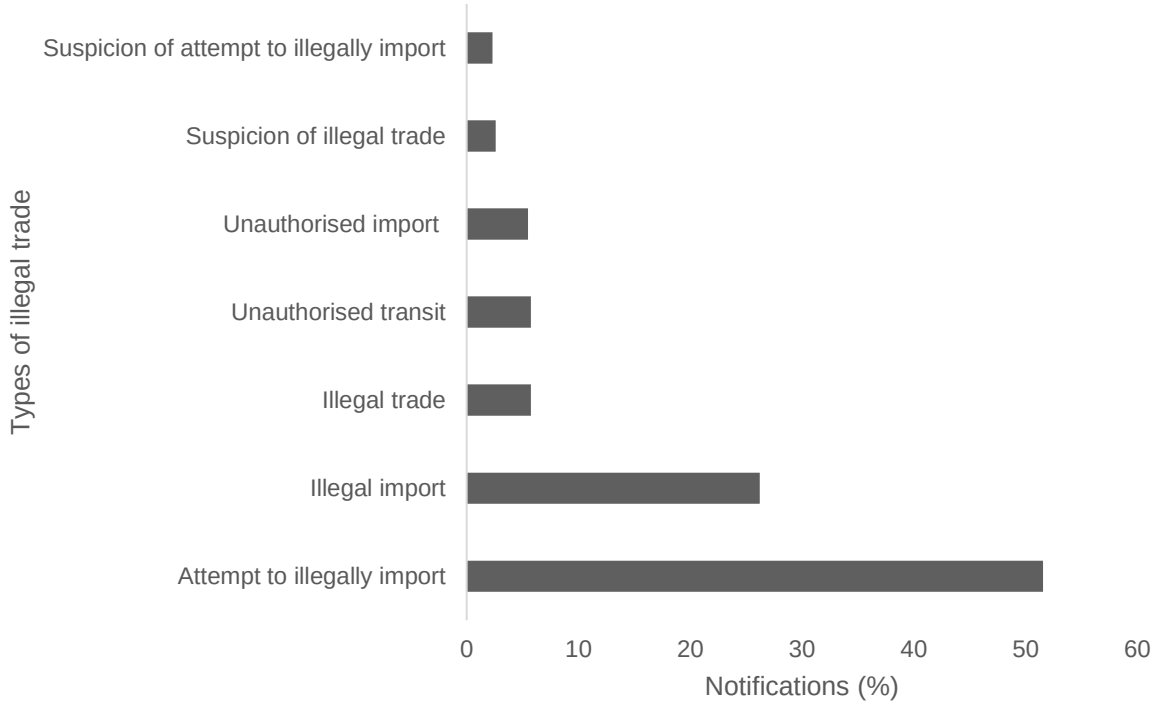

Figure 1 Reported illegal import and food trade from 1987 – 2017 (n=347) (RASFF 2017)