

Meeting supply chain challenges in 2022 and beyond



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Contents

A challenging landscape for food industry stakeholders	3
Key steps to protect your business: Horizon scanning, mitigation & diversified sourcing. . .	4
Navigating the cost-of-living crisis	5
Health and safety in supply chain management	6
Europe's ongoing ethylene oxide crisis	6
Salmonella and E. coli outbreaks	7
Avian influenza & the poultry supply chain	7
The importance of clear escalation processes	8
Undeclared allergens	9
Creating a sound allergen management approach	10
Key takeaways	10



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Several years of disruption: A challenging landscape for food industry stakeholders

The food industry has always faced supply chain challenges with the sourcing of different ingredients from various countries around the world widespread. However, recent pressures such as the war in Ukraine and the Covid-19 pandemic have placed increased strain on an already tight margin sector, leading to shortages of some commodities.

In the UK and many other countries, supermarkets have put a limit on how much cooking oil people can buy due to supply chain issues linked to Russia's invasion of Ukraine, a major global exporter of sunflower oil.

This is also impacting manufacturers of processed foods that use sunflower oil as an ingredient. Recently, the Food Standards Agency (FSA) and other food safety authorities across Europe have warned the public that businesses may be having difficulties related to the supply of some foods such as sunflower oil and other raw materials and ingredients. This means the label may not match what is in the product. For example, some items may contain other refined or fully refined food grade vegetable oils, despite being labelled as having sunflower oil ¹.

Wheat is another major commodity experiencing shortages. Many North African countries are highly dependent on Russian and Ukrainian wheat exports and reduced supplies brings with it the possibility of food shortages for these countries ². Sufficient supplies of food in Europe seem not to be not compromised for the moment - in March, the European Commission said food security was not at stake in Europe with the region largely being self-sufficient – but it did flag the risk of increasing food prices as a concern.

What's more, the situation does not look set to improve in the short to medium-term. The Food and Agriculture Organization of the United Nations (FAO) has estimated that one third of the crops and agricultural land in Ukraine may not be harvested or cultivated in 2022 ³.

In July, Marcello Esteve, global director of the World Bank Group's Macroeconomics, Trade and Investment Global Practice (MTI), said as many as 25 African economies import at least one-third of their wheat from Ukraine and Russia; for 15 of them the proportion is greater than 50% ⁴.

All this comes just as the agri-food industry was starting to find its feet after the Covid-19 pandemic and related lockdowns drastically impacted – and indeed continue to impact – how and where people consume their food, and how food manufacturers can export their products.

At the time of publication of this report, for instance, there is an ongoing dispute between China and several other countries (including Australia and the US) regarding Chinese measures to prevent the spread of Covid-19 via food and agricultural products ⁵. These measures include widespread testing and disinfection of imported products and packaging and the suspension of foreign companies' ability to export. Although actual figures remain small - testing began in mid-2020 and, out of more than 30,000 samples, less than 10 have been positive ⁶ – concerns have been raised several times at World Trade Organization (WTO) meetings given the potentially disruptive nature of these measures on global trade.

Such measures are frustrating for food manufacturers, not least because they may not be necessary from a food safety perspective. In updated guidance published in August 2021, the FAO said current data indicates that neither food nor food packaging is a pathway for the spread of SARS-CoV-2, the strain of coronavirus that causes Covid-19, and the virus cannot multiply in food or on packaging ⁷.

A 2020 opinion from the International Commission for Microbiological Specifications of Foods (ICMSF) said that, as SARS-CoV-2 does not pose a food safety risk, systematic sampling and testing for the virus is of no added value ⁸.

Key steps to protect your business: Horizon scanning, mitigation & diversified sourcing

According to Rob Kooijmans, executive advisor for the Food Strategy Institute, companies should proactively engage in horizon scanning in such times.

"It is important to keep check of potential issues that are emerging in the wider supply chain. Just focusing on your current suppliers and relying on them to provide you with information on risks in the upstream supply chain is too weak an approach these days. Based on the potential risks identified, the company should start thinking of mitigation actions or scenarios," Kooijmans said.

"The horizon scanning platforms get information from food safety authorities so are you going to pick up everything? No. But if you combine this with one of the bigger systems that has global data you are more likely to find things."

Supply chain disruption may also be specific to certain raw materials, such as India's ban on wheat exports and Indonesia's export ban on palm oil in late April ⁹, that was lifted in May. Kooijmans said typical mitigation strategies include finding alternative suppliers from different regions or increasing the stock level of certain ingredients and materials.

"You can also think about setting up longer-term contracts against a fixed price – which might be a bit higher, but it takes out the volatility and uncertainty. [...] If prevention does not work, or has not been done in time, companies can only respond in reactive mode," Kooijmans added.



"Additional costs can come from rush-deliveries of ingredients, for example via air-freight, or to secure scarce products at a higher price. Another aspect is the amount of stress the work of changing materials and related specifications throughout an entire organization causes in a very short period of time. This can lead to very costly mistakes – a small error in ingredient declarations can already lead to a recall."

Kooijmans advised manufacturers to use at least two suppliers, preferably located in two different regions, or to opt for local sourcing although this can incur higher purchasing costs.

Navigating the cost-of-living crisis

The cumulation of these supply chain disruptions, as well as global inflation, has led to rising costs for almost all actors in the value chain. Most food and drink manufacturers and retailers have been forced to pass at least some of these rising costs onto consumers in the form of higher prices.

The risk, however, is that consumers will trade down, switching to cheaper brands, such as private label products, or seeking out cheaper supermarkets, such as hard discounters.

Navigating this is not easy and may result in some premium brands going out of business, according to Peter Wennstrom, founder of the Healthy Marketing Team. He said it was important for brands to offer consumers clear benefits and differentiation in order to stay relevant.

"Know your target audience and build the right messages to engage with them; tell them why they should choose you and justify your brand value. So, when the price increase comes, they know what they are paying for," Wennstrom said.

"Building a strong brand value is the only way to future-proof your brand from market fluctuations such as the ones we are currently experiencing. It can be a tough period for many startups but it can represent opportunities for others."



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Health and safety in supply chain management

Europe's ongoing ethylene oxide crisis

Ethylene oxide has many applications but its use to disinfect foodstuffs is not permitted in Europe. The substance is considered genotoxic and carcinogenic with continued exposure presenting a risk to public health.

Belgium first raised the alarm in September 2020 about ethylene oxide contamination in products with sesame seeds from India. It is believed that ethylene oxide was used to tackle Salmonella contamination in this case.

The Rapid Alert System for Food and Feed (RASFF) is a platform operated by the European Commission for EU member states to exchange information on hazards and covers food, food contact materials and animal feed.

In 2020, most RASFF ethylene oxide alerts related to sesame seed products, but in 2021 a variety of items were reported, including locust bean gum, guar gum and xanthan gum from Turkey, food supplements and spices. Stricter import rules have been adopted by the EU Commission but recalls continue to occur. The incident has led to the biggest ever food recall operation in EU history, according to the 2021 Alert and Cooperation Network report ¹⁰.

According to Kooijmans, the ethylene oxide crisis has shown that manufacturers need to have a deeper understanding of their supply chain and not focus only on direct suppliers.

"Initially ethylene oxide was only present in nuts, seeds and some herbs and spices and in products directly using these. At a later stage it started popping up in the feed industry, as some of the contaminated food was used for feed and, through feed, it ended up in dairy."

"This shows that as a food manufacturer, you should have a clear grasp of your supply chain down to the farm and evaluate all emerging issues."

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Salmonella and E. coli outbreaks

A number of major brands have also been rocked by serious food safety issues recently. A Salmonella outbreak traced to Ferrero chocolate made in Belgium sickened 400 people in 15 countries while Nestlé is dealing with an E. coli outbreak from frozen pizzas in France linked to the deaths of two children. Cocoa supplier Barry Callebaut reported it had found Salmonella in chocolate and Strauss Group in Israel recalled confectionery in markets around the world, including the UK and US, due to Salmonella.

All these and other incidents impact companies financially but also dent consumer trust, making the public question the robustness of food industry processes to identify in good time and prevent such issues.

According to Kooijmans, every food safety-related complaint or item of blocked stock should be treated as a huge red flag and with the utmost level of attention and speed.

"If a company is facing a consumer who has been infected with Salmonella or E. coli, this should trigger a comprehensive internal investigation. Although most players in the food industry have a sound product sampling and environmental monitoring plan, this does not guarantee that 100% of the microbiological contaminations get picked up."

"In testing, there are multiple things that can go wrong when taking a sample. That's where horizon scanning and measuring are so important: it gives you insights to take more samples or [...] introduce a kill-step," Kooijmans said.

"If a pathogen is discovered either internally or externally, the product at hand, which could be one or more batches, should be analysed with a far higher level of detail and number of samples. Although this is still not a 100% water-tight solution in many cases, it will help identify potential issues that might be there."

Avian influenza & the poultry supply chain

The prevalence of avian influenza, also known as bird flu, is also particularly bad at the moment in Europe and the US and is another factor driving up the price of poultry meat and eggs. The 2021–2022 highly pathogenic avian influenza (HPAI) epidemic season is the largest so far observed in Europe, according to the European Food Safety Authority (EFSA)¹¹.

In the UK, mandatory housing measures for poultry and captive birds were introduced in late November 2021 and ended in early May 2022. Marketing rules meant that free range egg packs were temporarily marked with the words 'Barn eggs' as the hens had been kept inside for more than 16 weeks.



The importance of clear escalation processes

In addition to horizon scanning and the thorough internal investigation of potential issues, companies must also have a clear escalation process in place.

"Each of the mentioned issues deserves the dedicated effort of a small team which is made available to treat it as a priority. Quality assurance managers should initially review the progress made on a daily basis and, if necessary, escalate emerging issues to a pre-crisis management team."

"This instils a proactive approach towards issues management and can help in effectively managing issues before they grow into a full-blown crisis where authorities step in, huge amounts of products have to be recalled from the market, and the company is facing significant costs and brand damage," said Kooijmans.

Quality assurance teams and financial departments must work together to gauge the impact of all types of incidents, ranging from internal to external and minor to major, so this can be presented to others in case it needs to be escalated and action taken.



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Undeclared allergens

Undeclared allergens are one of the top causes for food recalls, globally. In Australia, they have been the main reason for withdrawals every year since 2012 ¹².

Such recalls can be caused by packaging errors, accidental cross contamination and supplier issues when information is not shared within the supply chain. Corrective actions range from changing a product label and training staff to improving procedures and processes. In the worst case scenarios, public safety is seriously compromised and undeclared allergens can cause deaths.

Concern was raised recently about the presence of peanut protein in soybean lecithin from India. Thanks to a warning from the European Lecithin Manufacturers Association, guidance from UK authorities and several recalls in Europe ¹³, the incident appears to have been controlled.

Managing allergens in the supply chain is a hugely complex area, in part because of products traded between countries with different languages and the variations in the global regulatory landscape. The EU has 14 food ingredients that must be declared as allergens while the US has only eight, with sesame to become the ninth from 2023.

Another issue is novel foods. Earlier this year, the European Commission authorised the house cricket as a food. However, the European Food Safety Authority (EFSA) has said the consumption of insect proteins may lead to allergic reactions, especially for those with allergies to crustaceans, dust mites and molluscs ¹⁴.

In late 2021, the UK Anaphylaxis Registry was launched to provide more data on levels of anaphylactic reactions. It is hoped the national reporting platform will help food agencies better protect those with allergies. Finland already has such a system and there were 73 reports of serious allergic reactions to the national anaphylaxis register in 2021, of which 47 were caused by food.

In the UK, a campaign is ongoing to create Owen's Law. A young man with multiple food allergies, Owen died in 2017 after eating chicken marinated in buttermilk in a restaurant despite having been assured verbally of the absence of buttermilk in the dish ¹⁵. Owen's family are campaigning for a law that would require restaurants to state the allergens in their dishes on the main menu. Current rules rely on verbal communication between the customer and restaurant staff.

This law would expand Natasha's Law, which covers allergen information on pre-packaged food and came into force in October 2021. The change was brought about after Natasha Ednan-Laperouse, who had a sesame allergy, died in July 2016 after an allergic reaction to a sandwich bought at on-the-go food service outlet Pret A Manger.

Overall, firms must make sure they train staff to provide allergen information to customers and ensure they know and use trusted suppliers they can count on to pass on any information regarding changes to formulations involving allergens.



Creating a sound allergen management approach

A sound allergen management approach can include measures such as physical segregation of allergens in storage and production areas and validated cleaning procedures.

"Some of the essential, but often overlooked, building blocks to a comprehensive allergen management approach are data management. Every ingredient and allergen declaration starts with having proper information on all the individual ingredients. If someone misinterprets an ingredient – for example, not seeing that sodium caseinate is derived from milk and should therefore be classified as a milk allergen – this can result in an undeclared allergen," said Kooijmans.

"Physical label management both at the printer and in the factory is another big factor. If similar labels are stored next to each other – or even worse – are present at the same time at one production line, a mix-up can easily happen."

Key takeaways

- **Prepare as much as possible:** Invest in external horizon scanning and analytical tools or dedicate internal resources to practice handling crisis in quiet times.
- **Worse before better:** With the conflict in Ukraine, staff shortages, cost-of-living crisis and Covid-19 still present, things may get worse before they get better. Businesses need to have a long-term outlook and be prepared for the ride to be a bit bumpy in the near future.
- **Audit your suppliers:** Make sure you trust the companies in your supply chain and the firms they work with. If they make a mistake, it is your company that may suffer. Changing suppliers can be a lot of work so it is better to get it right the first time.
- **Incidents can last years:** The ethylene oxide crisis began at the end of 2020 and has continued into late 2022. Many recalls are in products such as ice cream which have long shelf-life dates. Such incidents also have a wider negative fallout, such as legal cases and public debate around food waste.
- **Allergen focus:** Allergens have been a common cause of recalls for years, but the topic is getting increased media and regulatory focus. Paying attention to detail and different national rules is essential to tackling the issue.

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