



Feeding tomorrow

5 questions for the next 5 years
in fruit and vegetable logistics



MAERSK

ALL THE WAY

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Introduction

"Strategy is the only answer."

— ROBERT GREENE

'Tumultuous,' 'unprecedented' and 'unpredictable' are adjectives typically used to describe the uncertainty of the fruit and vegetable market in the last few years.

To combat the uncertainty, many fruit and vegetable businesses resorted to what bestselling strategy writer, Robert Greene, calls 'tactical hell.'¹ This is the focus on the 'here and now' rather than the 'what's next' — to the detriment of business strategy, sustainability and growth.

But times change, and with the market normalising somewhat, businesses have some breathing space in the present to start planning for the future. It's the perfect opportunity to return to more strategic, long-term thinking.

In this guide, we look ahead and explore some of the biggest questions for fruit and vegetable logistics over the next five years, and how businesses can start preparing now.



Question 1:

How can we adapt to increasing climate volatility?

According to the UN, climate change is the “largest, most pervasive threat to the natural environment and societies the world has ever experienced”.²

Every business has a role to play in solving this, but fresh food producers and logistics companies have a greater responsibility than most: according to the Carbon Trust, the global food cold chain is responsible for 1% of all greenhouse gas emissions.³

THE CURRENT STATE OF PLAY

In 2015, the Paris Agreement was signed by 196 countries to limit the temperature increase to 1.5C above pre-industrial levels. However, according to recent analyses, the world has already warmed by about 1.2C.⁴ That doesn't leave much room to spare.

Furthermore, it's now confirmed that the past eight years have been the warmest on record,⁵ while the heatwaves of July 2023 have seen temperature records fall all over the world, bringing home the reality of the threat. Something needs to change, and fast. **But how?**

Challenges and opportunities



FOOD WASTE REDUCTION

The fruit and vegetable industry has a waste problem. Research suggests that as much as 25% of apples, 20% of onions and 13% of potatoes grown in the UK are destroyed because they 'don't look right'.⁶ Producers, logistics partners and retailers can reduce food waste through greater collaboration. For example, they could create a joint campaign highlighting the importance of 'ugly' produce in a bid to relax the industry's cosmetic standards.



MORE EFFICIENT PRODUCTION

If agricultural land becomes more susceptible to adverse weather shocks, producers will have to find ways of increasing efficiency. Digitisation and data analytics can help by providing producers with insights into things like field characteristics, soil types and agrochemical usage. These insights can then form the basis of more informed decision making, helping producers to be more precise, predictive and responsive.



FOOD SECURITY

Food production is bearing the brunt of climate change. For instance, in 2023, long-lasting droughts in Spain affected the production of tomatoes and peppers, resulting in a tight supply globally, and in some cases, supermarkets rationing produce.⁷ This is just one example of many, of course, but it illustrates how climate volatility threatens what we can grow, harvest and eat.



"The warning signs are flashing red. The climate emergency is reaching critical status, and what we do over the next five years will be crucial to securing the future of our planet. From a fruit and vegetable standpoint, it's critical that we address waste, production and security challenges, and temperature control, cold storage and sustainable logistics solutions have a big part to play in achieving that."

**Stein van Est, Head of Fulfiled By Maersk Europe,
A.P. Moller – Maersk**

Maersk in action



GREEN FUELS ARE GO

Maersk continues to pioneer the transition to alternative fuels: we launched the world's [first container vessel to sail on green methanol](#) in September 2023. Access sustainable transport options with [Maersk ECO Delivery](#).



CARBON-EMISSIONS CLARITY

The [Maersk Emissions Dashboard](#) makes it simple for businesses to understand their emissions data, which helps identify which actions can have the most impact.



CASE STUDY: PROVIDING OPTIMAL CONTROL OF THE CITRUS COLD CHAIN

"We are selling a perishable good. The less we know about how it's doing, the greater the chances of it going to waste." – Oussama Ghissassi, Founder and CEO Clementina, Agadir, Morocco.

See how Maersk helps Clementina to increase control and reduce waste with a fully connected and transparent, unbroken cold chain.

[Read the full case study](#)



Question 2:

What impact will AI have on our operations?

Since the launch of ChatGPT, AI has been headline news every day. Talk of its potential is reaching fever pitch. But how can it help fruit and vegetable producers, transporters and retailers?

THE CURRENT STATE OF PLAY

Using technology isn't a new thing for the fruit and vegetable industry. Product temperatures within refrigerated containers have long been monitored and controlled remotely using digital solutions.

AI presents a more advanced way. Its sophisticated monitoring capabilities can identify issues from afar and automate a response to mitigate their impact, giving fruit and vegetables the best chance of arriving at their destination in optimal condition.

Plus, AI has a host of other production applications too – for precision agriculture, crop monitoring, disease detection, and harvesting and sorting. **But how?**

Challenges and opportunities



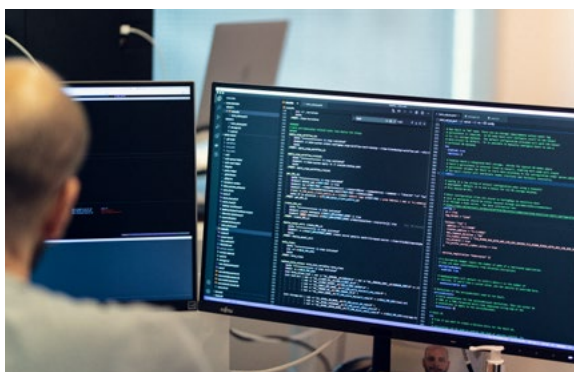
DATA SECURITY

AI will be critical to driving agricultural efficiency in the future. However, at present, its use is controversial. According to a recent Food and Scientific Reports article, one of the main challenges of AI in the industry is data privacy: “As AI systems collect and analyse large amounts of data, there is a risk of sensitive information, such as personal data and trade secrets, being compromised.”⁸



INFRASTRUCTURE REQUIREMENTS

While many fruit and vegetable companies would like to explore the potential of AI, not many are in a position to do so. A recent survey shows that 85% of global businesses are pursuing the benefits of AI, but 42% believe their existing infrastructure isn't fully prepared for the technology.⁹ To reap the rewards of AI, more IT investment is needed.



DATA ACCURACY AND QUALITY

With any form of technology, the principle of ‘garbage in, garbage out’ applies. Data must be high quality, consistent and error-free, to properly train AI and make it effective. Raconteur reports that “data is key to ensuring that AI produces useful results”, however, CIO claims there's still a “blind spot” when it comes to data in the AI context.¹⁰ It's clear that data governance is foundational to scaling AI, and companies must prioritise it to take advantage.



“The industry needs to walk before it can run. We're still digitising manual processes in a lot of cases, and many businesses are continuing to use paper-based systems. Bringing AI into the mix is exciting, but it needs to be tempered with a sense of realism.”

Steven Morris – Regional head of Contract Logistics and Cold Stores – Europe, A.P. Moller – Maersk



AI IN THE (WARE)HOUSE

Maersk has recently deployed an [AI-enabled robotics](#) solution in one of its UK warehouses. It sorts orders three times faster than manual systems, improves upstream batch inventory picking by up to 33% and handles 100% of SKU assortments, order profiles and packages. This type of system could be a solution that Maersk considers implementing in the future across the cold chain.





Question 3:

How do we stay ahead of consumer trends?

Consumer trends create the supply and demand for fresh fruit and vegetables. Here we look at how some of these trends might play out over the next five years.

THE CURRENT STATE OF PLAY

There are seemingly counterintuitive consumer trends at play, making it difficult to forecast accurately. The first is that consumers' appetite for convenience is driving demand for processed foods. Research from Euromonitor International suggests that the post-pandemic return to normality has meant more consumers are 'on the go' and looking for affordable, timesaving, ready-to-eat food options. In support of this, Kantar data shows that 11.5% of meals have little to no preparation time at all.¹¹ This is taking demand away from fresh fruit and vegetables.

Conflicting with this trend is the growth of conscious consumerism. More and more consumers are reducing their meat intake for ethical reasons. In fact, the World Economic Forum (WEF) reports that veganism and vegetarianism are on the rise in Europe.¹² Take Germany, for instance. The rise in veganism has doubled in the past five years, and it's now thought to have the largest number of vegetarians (around 10% of the population) and vegans (2%) in Europe.¹³ If this trend continues, fresh fruit and vegetables are one of the key beneficiaries. **But how?**

Challenges and opportunities



TRANSPARENCY AND FOOD TRACEABILITY

Not only are consumers increasingly interested in knowing how food's produced and its impact on the environment and communities, but at the same time, local regulations are also getting stronger. For example, recent EU rules on fresh fish traceability state that it'll determine the minimum level of fine based on the value of the fishery products, and "if there is repeated infringement, the penalty will be at least twice the average value of the products".¹⁴ That means there'll be a growing emphasis on food traceability. Technology will help provide this level of transparency.



WASTE REDUCTION AND UPCYCLED FOODS

Nearly 59 million tonnes of food waste (131kg/inhabitant) are generated in the EU each year.¹⁵ So, what can the industry do to prevent surplus stock going to waste? Upcycled foods, which repurpose food by-products or ingredients that would otherwise be thrown away, will likely gain more attention.



ADAPTABILITY AND SCALABILITY OF SUPPLY CHAINS

If there are sudden jumps in demand, retailers need a supply chain that can adapt and scale quickly, otherwise they'll miss out on commercial opportunities. Adjusting the supply chain at speed requires working with a logistics provider that has flexible transport and cold chain storage options.



"In logistics, there's always a delicate balance between supply and demand that needs striking. Rapidly changing consumer trends often blur these lines. To make things clearer, we advise fruit and vegetable businesses to adapt their supply chain setup for more visibility and flexibility."

**Graham Schrieder, Global Head of Fruit and Vegetables,
A.P. Moller – Maersk**



CASE STUDY: A FRUITFUL PARTNERSHIP

Changing global demand presented Nava, an Italian grape producer, with an opportunity to expand into a new market – the US. However, the journey from the south of Italy to the US is long and requires many pitstops along the way.

So, Nava turned to Maersk. By taking a partnership approach, we helped Nava to build an unbroken cold chain comprising ocean and inland transport, along with customs services and digital solutions. The transport provided greater flexibility, and the technology solutions, such as centralised customs and our remote container monitoring assistant, [Captain Peter™](#), provided more visibility and control.

[Read the full case study](#)



A photograph of a man and a woman in a warehouse setting. The man, on the left, is older with grey hair and glasses, wearing a blue and white checkered shirt under a grey quilted vest. He is holding a brown clipboard. The woman, on the right, is younger with dark hair, wearing a grey hoodie and a bright yellow safety vest. They are both looking down at the clipboard. The background is a blurred warehouse with blue and red structural elements.

Question 4:

What do legislative changes mean for us?

Regulation, regulation, regulation. If there's one thing we can be sure of over the next five years, it's that more legislative changes are coming. So, how can you prepare for them?

THE CURRENT STATE OF PLAY

For many, it feels like the agriculture industry is swimming against a constant tide of legislative changes. Perhaps the most significant is the EU's proposal of a new Soil Monitoring Law, part of its Soil Strategy 2030, to protect and restore soils in member states.¹⁶

On top of that, Foundation Earth has been tasked with developing a Europe-wide eco-label for food and drink products,¹⁷ which will provide information on environmental footprints. The EU is looking to deploy a nutrition scoring system for products to provide consumers with clarity. Both will create new standards that fruit and vegetable producers need to meet to get their products on supermarket shelves. **But how?**

Challenges and opportunities



KEEPING UP WITH CHANGES

Complying with all these changes is a huge challenge for fruit and vegetable businesses. In addition to everything else that producers have to deal with to operate profitably, this extra red tape — while necessary — will only use more time and resources.



GETTING AHEAD OF POTENTIAL CHANGES

The coming compliance challenge is huge, so the faster fruit and vegetable companies act now, the easier and more valuable their compliance efforts will become. Proactivity is key. This doesn't all have to be completed in-house though; external expertise can help make things simpler.



SILOED DATA

When regulatory data isn't visible, organisationwide, it puts you at risk of fines for non-compliance. Using connected technology and a centralised management tool, you can keep compliant, keep ahead of changes and use that actionable data to make better business decisions.



"At Maersk, we've invested in developing our expertise and capabilities in this area to help our fruit and vegetable customers to cope with these new and evolving challenges. We firmly believe in the power of partnerships and want to collaborate to help our partners exceed legislative expectations."

**Sandy van Herck – Regional Head of Customs Europe,
A.P. Moller – Maersk**



COMPLIANCE AS A COMPETITIVE EDGE

Maersk Customs Services provides [a one-stop customs](#) shop that keeps businesses compliant with all regulatory changes, automates processes, ensures complete control and visibility, and turns customs data into valuable insight.



CASE STUDY: BLOOMING CUSTOMS CLEARANCE

Flowers, like fruit and vegetables, are temperature-sensitive cargo. This means delays at the border can be devastating for the bottom line. But when the new Import of Products, Animals, Food and Feed System (IPAFFS) rules came into play, extra pressure was put on the cold chain journey, attracting lengthier delays.

Find out how Maersk Customs Services eased the pressure for a leading floriculturist with smooth and speedy clearances.

[Read the full case study](#)

A hand holding a dark green avocado over a large pile of similar avocados. The background is slightly blurred, showing more produce like yellow and red bell peppers. The overall image has a dark blue overlay.

Question 5:

How do we achieve an end-to-end unbroken cold chain?

With fruit and vegetable logistics, product integrity is the priority. But this integrity is threatened by breaks in the cold chain, signalling the need for end-to-end connectivity. What's getting in the way?

THE CURRENT STATE OF PLAY

The philosopher Thomas Reid observed, “a chain is only as strong as its weakest link”. But in the context of today's cold chains, when often there are multiple breaks in the operation, all the links are weak.

As fruit and vegetable businesses have scaled, they've typically done so by using a wide range of different logistics providers to transport their goods. But that makes things more complex, not more connected. **But how?**

Challenges and opportunities



FRAGMENTED COLD CHAINS

A single global shipment of refrigerated cargo can involve as many as 30 businesses and 200 unique interactions.¹⁸ That leaves a lot of room for error. A fully integrated, unbroken cold chain, delivered via a single partner, can reduce handovers and connect the dots.



DIGITAL ENABLEMENT

From producer to logistics provider to retailer, data needs to be made open and accessible to all parties across the supply chain, improving transparency and collaboration and reducing the burden of paperwork. Take a customs declaration as an example. For bulk shipments, a declaration can include more than 40,000 rows that could take even the most efficient worker a number of days to type up. But with digitalisation, the form can be populated in seconds.



CULTURE CHANGE

In many cases, establishing an end-to-end cold chain is a transformation. Not only does this require investment in technology, but it also requires a change of mindset. Employees will need to embrace new ways of working, and a coordinated effort is required to educate the workforce on why changes are necessary.



“From our experience, collaboration is the key to creating a fully connected, end-to-end supply chain. As such, it’s important for fruit and vegetable companies to work with a logistics orchestrator with the right expertise who can help them bring together the necessary components.”

Bruce Marshall – Global head of Refrigerated Cargo, A.P. Moller

Maersk in action



SEAMLESS SUPPLY CHAINS

[Remote Container Management](#) from Maersk provides real-time data on the condition, location and status of fruit and vegetable cargo. And with [cold storage across Europe](#) and multi-modal transport options, we offer complete transparency, control and partner continuity right across your [fruit and vegetable](#) supply chain.



CASE STUDY: CONSOLIDATING THE COLD CHAIN FOR GREATER EFFICIENCY

Daltex prides itself on delivering the “finest quality” produce, such as citrus fruits and pomegranates, to more than 70 countries around the world.

Discover how Maersk’s expertise and deep understanding of market dynamics helps Daltex to maintain seamless supply from the south of Egypt to multiple destinations in Europe, including over 1,000 kilometres of inland transport, customs services and ocean freight.

[Watch the case study](#)





Conclusion

As fruit and vegetable companies focused all resources on solving the 'here and now' tactical challenges of the last few years, strategic inertia has crept in and is standing in the way of progress.

It's time to look at the big picture. The next five years will bring new challenges and opportunities, and it's up to fruit and vegetable companies to get ahead now and set themselves up for sustainable success. Having looked at five of the questions the industry will need to answer, one message stands out: Fruit and vegetable companies need end-to-end visibility, control and reliability. And a partnership with an expert logistics provider can help them rise to the challenge.

Maersk is that partner. With over 250 years of reefer expertise, we understand the nuances of transporting fruit and vegetables, and our global experts have designed truly integrated cold chain solutions. That means near real-time data providing end-to-end visibility into the location, temperature and quality of produce at every point in the journey. Combined with our integrated approach to logistics, we're able to develop a true partnership approach, taking the time to understand unique challenges and build a tailored solution for different fruit and vegetables. As a result, a partnership with Maersk can help feed tomorrow's world.

For more information on our cold chain logistics expertise,
[visit this page.](#)

To talk to us about your specific cold chain requirements,
[contact us here.](#)

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