



# ● Delivering Supply Chain Resilience: The five questions we need to answer in 2022

BSI Supply Chain Risk Insights Report

November 2021



By Royal Charter





# Contents

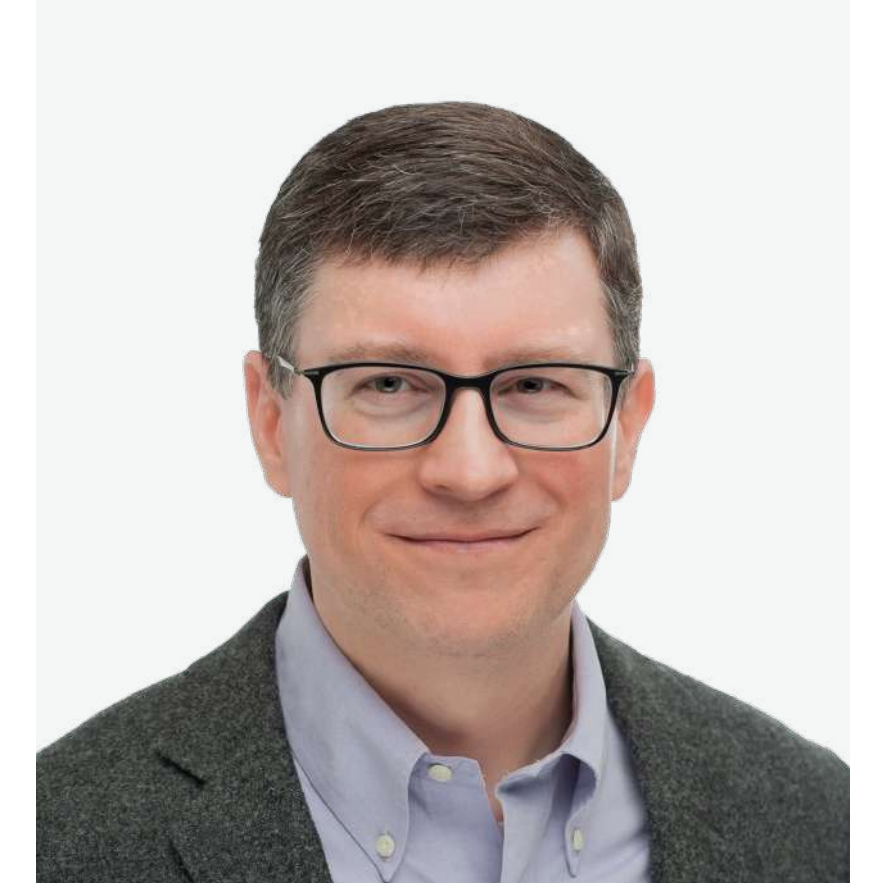
Foreword	3		
Executive Summary	4		
Advisor profiles	5		
		<b>Chapter 1: Understanding our suppliers</b>	<b>Chapter 4: Adapting to multiple challenges</b>
		Against a backdrop of irreversible climate change and economic uncertainty, what do we really need to know about our suppliers? <b>7</b>	How do we adapt to the current convergence of multiple business challenges? <b>42</b>
		<b>Chapter 2: Ensuring sustainability</b>	<b>Chapter 5: Unlocking potential opportunities</b>
		As regulatory regimes evolve, how do we ensure we make the supply chain decisions that can shape business success and a cleaner, greener planet? <b>22</b>	What are the key emerging trends for 2022 and beyond and how do we unlock the potential they offer? <b>47</b>
		<b>Chapter 3: Addressing the changing world</b>	Conclusion <b>54</b>
		How do we best address the key geographic and sector pain points in a changed and changing world? <b>32</b>	BSI Connect SCREEN: Resilience through insight <b>55</b>
			Appendix <b>56</b>

# Foreword

Oscar Wilde famously said: “There is only one thing in life worse than being talked about, and that is not being talked about”. Based on the last 12 months, the global supply chain has nothing to worry about on that score. 2021 was the year that supply chain finally tipped over into the public consciousness and became headline news all over the world.

From semiconductor shortages to missing milkshakes, supply chain was everywhere. And I really don’t see that changing in 2022 as we continue to grapple with an ongoing global COVID-19 pandemic and the convergence of multiple business challenges across all sectors and all geographies. With so much attention focused on supply chain, it’s arguably never been more important to make the right decisions and our role at BSI is to help organizations do that by sharing knowledge, innovation and best practice.

With this in mind, we’ve framed our latest report around five questions we believe are fundamental to securing a successful and sustainable supply chain in 2022. We hope our insights and opinions can help set you up for a flying start to the year.



**Jim Yarbrough**  
Director, Global Intelligence  
Programme, BSI

# Executive summary

As we approach another year which looks set to be defined by uncertainty and opportunity in equal measure, there are many questions we could ask.

But what are the questions we **must** ask? To help organizations prepare for 2022 we have created a detailed analysis of these questions from our risk management experts and advisors from all over the world.

Here are the questions we feel will be essential to answer to ensure a successful supply chain strategy for the upcoming year:

## 01

Against a backdrop of irreversible climate change and economic uncertainty, what do we really need to know about our suppliers?

## 02

As regulatory regimes evolve, how do we ensure we make the supply chain decisions that can shape business success and a cleaner, greener planet?

## 03

How do we best address the key geographic and sector pain points in a changed and changing world?

## 04

How do we adapt to the current convergence of multiple business challenges?

## 05

What are the key emerging trends for 2022 and beyond and how do we unlock the potential they offer?



# Advisor profiles



**David Fairnie**

Principal Consultant, Supply Chain Security,  
BSI

David is a senior international risk management executive and team leader with 25 years of corporate and operational experience and an exceptional track record of delivering enterprise solutions on major critical infrastructure and supply chain projects globally. He has a proven and demonstrable track record of developing and successfully implementing high-level supply chain security strategies and solutions for global corporations, aimed at mitigating political, strategic and operational risks to position his client organizations as recognized international leaders in supply chain security initiatives.



**Ryan Lynch**

Practice Director, Sustainability,  
BSI

Ryan has worked with organizations across multiple regions and industries to design creative solutions to drive organizational improvement, improve upon social/environmental impacts, and mitigate and remedy risks. He leads BSI's strategy to align their standards, services, technology and global resources to the UN Sustainable Development Goals. He and his team work with their clients to develop and deliver innovative approaches related to clean energy and climate action, circular economy and waste, recent work in global supply chains, among other challenging areas.



**Tony Pelli**

Practice Director for Security and Resilience,  
BSI

Tony is an experienced supply chain risk consultant with a broad range of specialized skill sets, including conducting end-to-end, enterprise-level supply chain risk assessments for clients and their supply chain partners. As a member of BSI's Advisory team, he designs and implements supply chain security programmes and management systems. Tony has also designed loss prevention and security assessments, mapped security and business continuity risk in supply chains for Fortune 500 companies, and assisted in the successful implementation of supply chain security procedures, including for CTPAT certification.



# Advisor profiles



**Paul Raw**

Senior Consultant,  
BSI

Paul is a Master's level business continuity specialist with extensive leadership experience in strategic prevention, preparedness, response and recovery planning. As a member of the BSI advisory team, he helps clients develop and implement international best practice frameworks (ISO22301, ISO31000, ISO28002 and ICS) as well as developing their strategic resilience plans. He is an expert in assessing threats, risks and conducting impact and gap analysis through all levels of organizations and developing processes and policies to mitigate risks and maximize recovery, without detracting from core objectives.



**Christopher Tomas**

Lead Intelligence Analyst,  
BSI

Chris is a seasoned global intelligence expert who has lead SCREEN's team of Intelligence Analysts for four years. After obtaining a Bachelor of Science in Global Security and Intelligence Studies Suma Cum Laude, Chris has worked for BSI as part of the Intelligence Analyst team for a total of eight years. With this team he analyses risks that crime, terrorism, human rights and environmental violations, and business continuity issues pose to supply chain operating globally. After each quarter he leads the team as it presents the Quarterly Risk Intelligence Outlook to organizations who take advantage of BSI Connect Screen.



**Jim Yarbrough**

Global Intelligence Programme Manager,  
BSI

Jim Yarbrough leads BSI's team of supply chain risk analysts and assesses the potential threat of security, corporate social responsibility, and business continuity risks to countries and businesses worldwide. These assessments are integral to the Supply Chain Risk Exposure Evaluation Network (SCREEN) tool. He also provides information and analysis about the threat to international cargo to governments around the world and to a number of Fortune 500 companies.

## Additional Contributors:

**Erica Bressner**  
Intelligence Analyst over the Middle East and Africa

**Marianna McMillan**  
Intelligence Analyst over the Americas

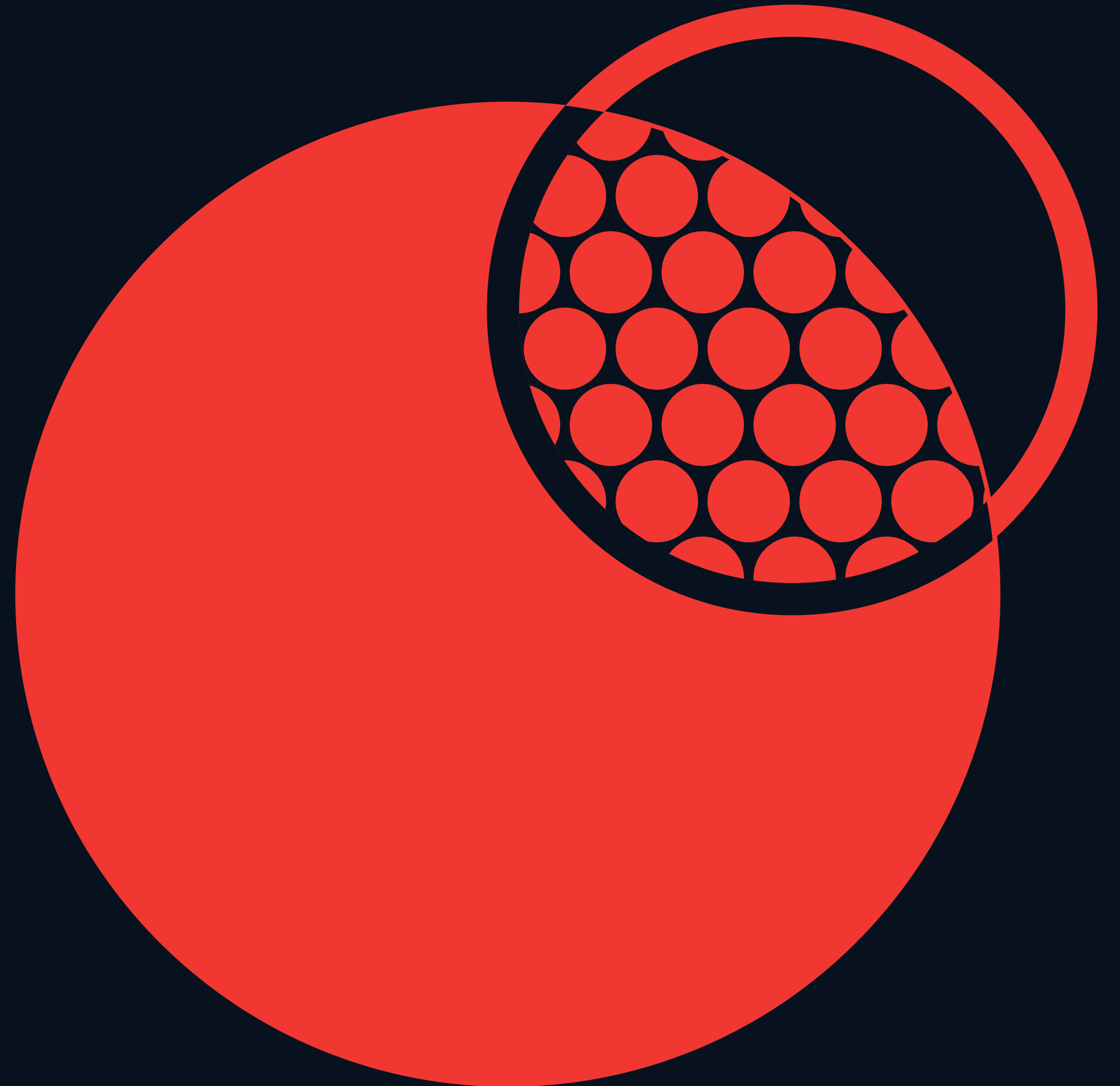
**Anna Lee Robbins**  
Intelligence Analyst over Europe

**Jason Willoughby**  
Intelligence Analyst over Asia



# ● Chapter 1 Understanding our suppliers

Against a backdrop of irreversible climate change and economic uncertainty, what do we really need to know about our suppliers?





## Chapter 1: Against a backdrop of irreversible climate change and economic uncertainty, what do we really need to know about our suppliers?

For any relationship to succeed, it needs time, effort, commitment and care from both sides. And for any relationship to grow, it needs to be nurtured. This growth is rooted in better understanding as Jim Yarbrough, Director of BSI's Global Intelligence Programme, explains: "There are two things I need to know. First, will my supplier be a good business partner that is open to working together to identify, address and mitigate threats along the supply chain? And second: do they want to grow with you as a good corporate citizen and help you address the bigger issues we're all facing in 2022 and beyond? If the answers to the above are 'yes,' we're off and running."

If you want to find the right partner, you need to know who they are. This might sound obvious, but it's not always a given as Paul Raw, BSI Senior Consultant, Supply Chain Security, points out: "We talk to a lot of organizations that don't have a depth of insight into who their business partners are. There's a common saying that 'you inherit the risks of your business partners'. If you don't understand your business partners, and you don't understand their risk, you don't understand your own exposure to it."

So, you've got to start by knowing who your business partners are and identifying their areas of strength and weakness. If you think about high profile shortages in the last twelve months – semiconductors, masks and PPE, for example – it's a fact that there's a real reliance on a fairly small number of critical suppliers."

According to a recent research survey, 19 percent of UK business supply chain managers reported not knowing how sustainable their products are and one in five stated they were uninvolved in their company's sustainability strategy<sup>1</sup>. If the supply chain manager's goal is to ensure a green supply chain, then aligning your supplier's sustainability strategy with yours is essential, particularly in light of Goal 12 of the United Nation's Sustainable Development Goals which focuses entirely on responsible consumption and production and on "decoupling economic growth from environmental degradation," among others<sup>2</sup>.



"There are two things I need to know. First, will my supplier be a good business partner that is open to working together to identify, address and mitigate threats along the supply chain? And second: do they want to grow with you as a good corporate citizen and help you address the bigger issues we're all facing in 2022 and beyond? If the answers to the above are 'yes,' we're off and running."

<sup>1</sup> [https://www.edie.net/news/7/UK-supply-chain-survey-reveals-major-lack-of-transparency-on-sustainability/?utm\\_source=CC+Newsletters&utm\\_campaign=d4a0bee6a5-RSS\\_EMAIL\\_CAMPAIGN&utm\\_medium=email&utm\\_term=0\\_d7710f105d-d4a0bee6a5-71294437&ct=t\(RSS\\_EMAIL\\_CAMPAIGN\)&mc\\_cid=d4a0bee6a5&mc\\_eid=4580c02c5c](https://www.edie.net/news/7/UK-supply-chain-survey-reveals-major-lack-of-transparency-on-sustainability/?utm_source=CC+Newsletters&utm_campaign=d4a0bee6a5-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_d7710f105d-d4a0bee6a5-71294437&ct=t(RSS_EMAIL_CAMPAIGN)&mc_cid=d4a0bee6a5&mc_eid=4580c02c5c)

<sup>2</sup> <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>



“As companies look to transition to the utilization of sustainable and renewable energies in their supply chains, it’s important to understand where the materials used for these green energies come from.”



Chris Tomas, BSI Lead Intelligence Analyst, Supply Chain Services and Solutions, likened not knowing your supplier and supply chain to “being in a darkened room without a key”.

And of course, the backdrop to 2022 is that we’re facing the biggest climate crisis in history. Anyone left in any doubt over this need only read the sobering headlines from this summer’s report by the Intergovernmental Panel on Climate Change (IPCC) – human influence has warmed the atmosphere, ocean and land, and we are ever closer to irreversible tipping points with the earth’s surface warming projected to reach 1.5°C or 1.6°C in the next two decades. Organizations of all sizes and sectors are increasingly aware of their impact and the shift towards full decarbonization is gathering pace – this is a trend that will only increase as organizations seek to “green-proof” their supply chain.

As companies look to transition to the utilization of sustainable and renewable energies in their supply chains, it’s important to understand where the materials used for these green energies come from. For example, China’s Xinjiang Uyghur Autonomous Region (XUAR), which has received international criticism concerning allegations of forced labour<sup>3</sup> in numerous industries, reportedly accounts for roughly 45 percent of the world’s supply of polysilicon, one of the materials required for manufacturing solar modules.

In addition, the informal nature of many of Latin America’s mining industries contributes to environmental and human rights risks when sourcing minerals from the region, including silver, copper, gold, lithium and lead. Chile, Brazil, Peru and Mexico account for 85 percent of metal and mineral exports in Latin America, according to the United Nations Economic Commission for Latin America and the Caribbean. According to BSI’s risk assessments, each of these countries face significant risks to environment protections, while all apart from Chile also have similarly serious threats to human rights protections. In Peru, as an example, country legislation tends to only apply to workers in the formal sector, leaving workers vulnerable to exploitation as labour inspectors do not enforce regulations for these types of operations. Additionally, companies sourcing minerals from Peru should also understand the tendency for some mining operations in the country to contribute to environmental concerns, such as water pollution. With all of these factors, it’s crucial that we view them through an ESG lens.

<sup>3</sup> <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/in-broad-daylight>



## The Value of an End to End Risk Assessment

To fully understand who your supplier really is, it's always advisable to conduct a full risk assessment and risk appreciation for your entire supply chain, end to end, including contractors, sub-contractors, suppliers and origins of raw materials. By identifying your risks, threats, pinch points, opportunities and weaknesses, you can start to build an effective strategy that can unlock opportunities and mitigate risks.

If you consider the current global supply chain landscape, the geographical diversity brings in many different risks and threats, from politics to economics, the environment, social structure and social accessibility.





Organizations must have a clear 360 degree view of all of this and if you're a global organization with a global supply chain, you need a year-round perspective – think of seasonal risks and threats such as wildfires or the different weather challenges posed by a harsh winter. This requirement is emphasized by the exposure of business operations to natural disasters, with about 40 percent of the world's exports originating in countries that BSI rates as having a Severe or High risk of natural disaster exposure. These risk ratings mean that companies operating within these countries are susceptible to a wide range of natural disasters that occur frequently and may cause large amounts of economic damage or impact large numbers of people and important industries.

Different organizations face different challenges, so it's a matter of identifying and prioritizing organizational values early in the process. For some, it might be about determining how climate change could impact operations from a business continuity perspective; for others, it may be an attempt to convert as much of the supply chain as possible to more sustainable practices, such as the utilization of renewable energy, or adopting a circular economy approach in order to reduce its waste footprint.

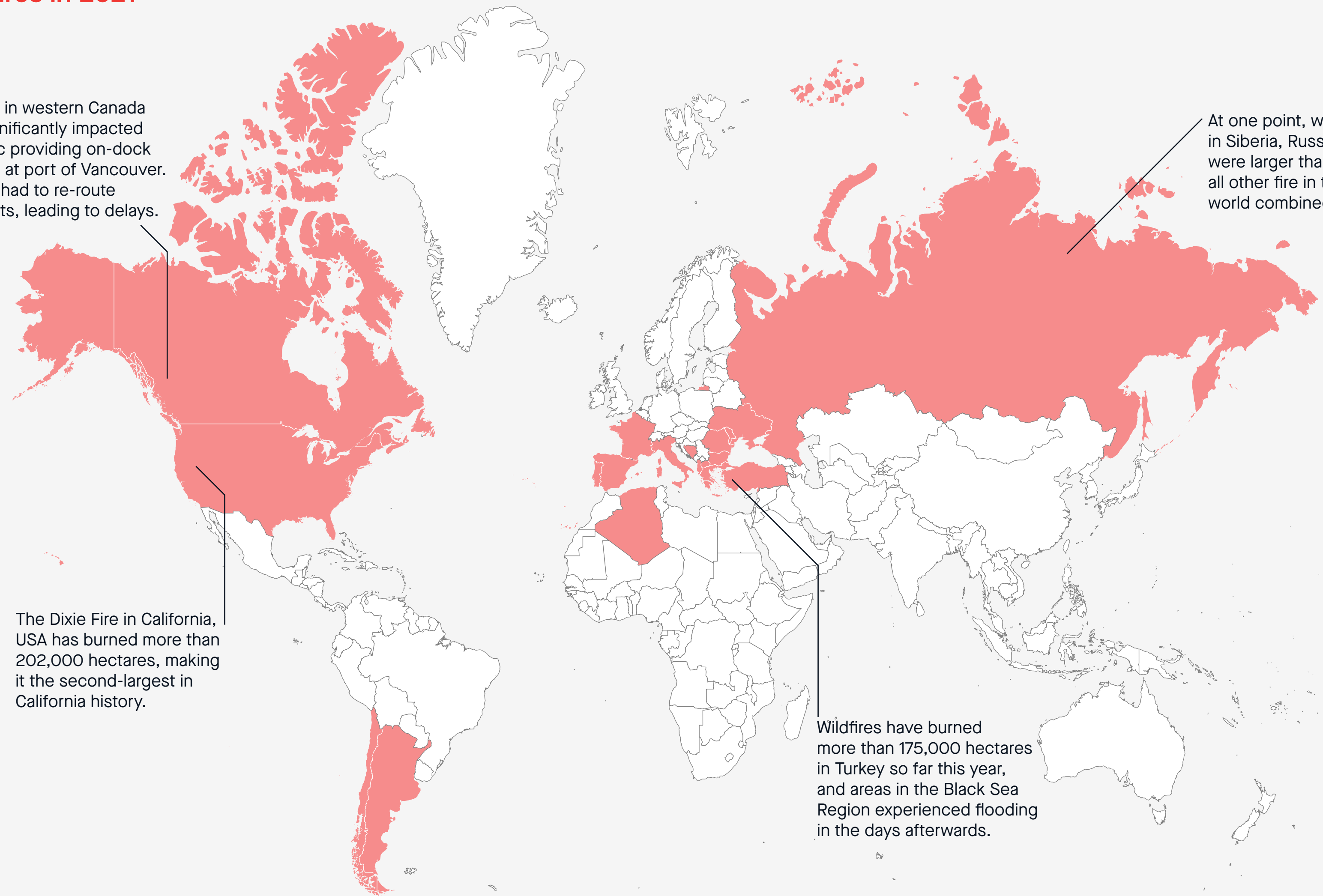
## Countries Experiencing Wildfires in 2021

Wildfires in western Canada have significantly impacted rail traffic providing on-dock services at port of Vancouver. Officials had to re-route shipments, leading to delays.

At one point, wildfires in Siberia, Russia were larger than all other fire in the world combined.

The Dixie Fire in California, USA has burned more than 202,000 hectares, making it the second-largest in California history.

Wildfires have burned more than 175,000 hectares in Turkey so far this year, and areas in the Black Sea Region experienced flooding in the days afterwards.





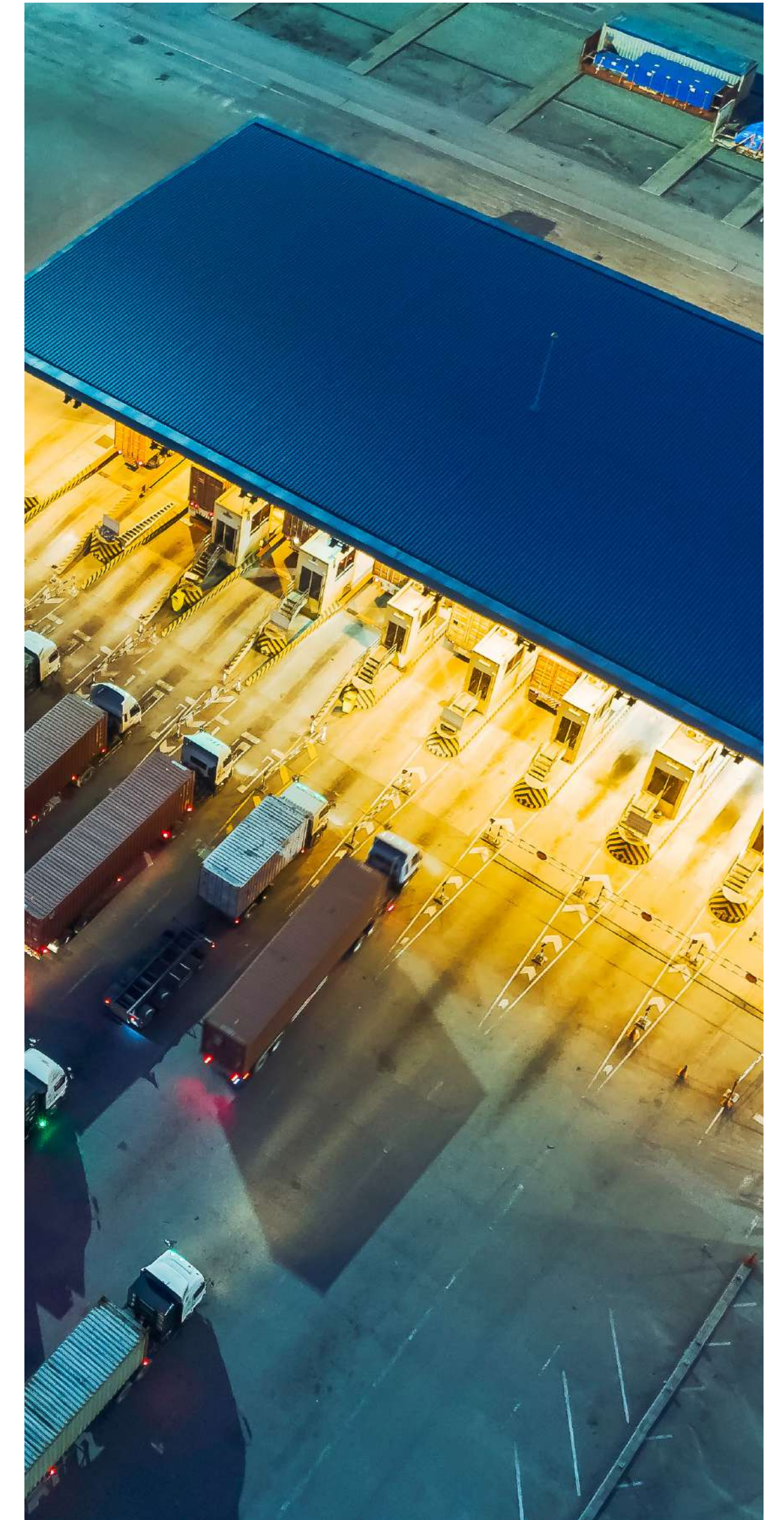
It's clear that a bespoke approach is required, but, as Tomas explains, the message is not always getting through: "There's a real tendency for some organizations to just default to a 'one size fits all' approach to security, business continuity or sustainability. In many cases, it's not their fault, they often don't have access to the right information, but this kind of blanket policy simply won't work in the long term."

Tomas cites geographical factors and different regulations as reasons why companies need to be more flexible: "When you think about it, being able to tailor your approach is what an effective supply chain risk management programme delivers by combining that geographic risk with those gaps in supplier protocol."

**"It's important to remember that the risk assessment process is a living, breathing thing – a supplier relationship is ever evolving and if you just take one look, you're only ever going to get one snapshot in time."**

It's important to remember that the risk assessment process is a living, breathing thing – a supplier relationship is ever-evolving and if you just take one look, you're only ever going to get one snapshot in time. Against the current backdrop of irreversible climate change and economic uncertainty, this becomes even more important.

It's a repeated cycle: What are the latest trends? How do they affect my supply chain? And what am I going to do about it? And then it starts again. This process can be drawn out because it takes time to work with suppliers to improve security measures, adopt the policies and then implement them.





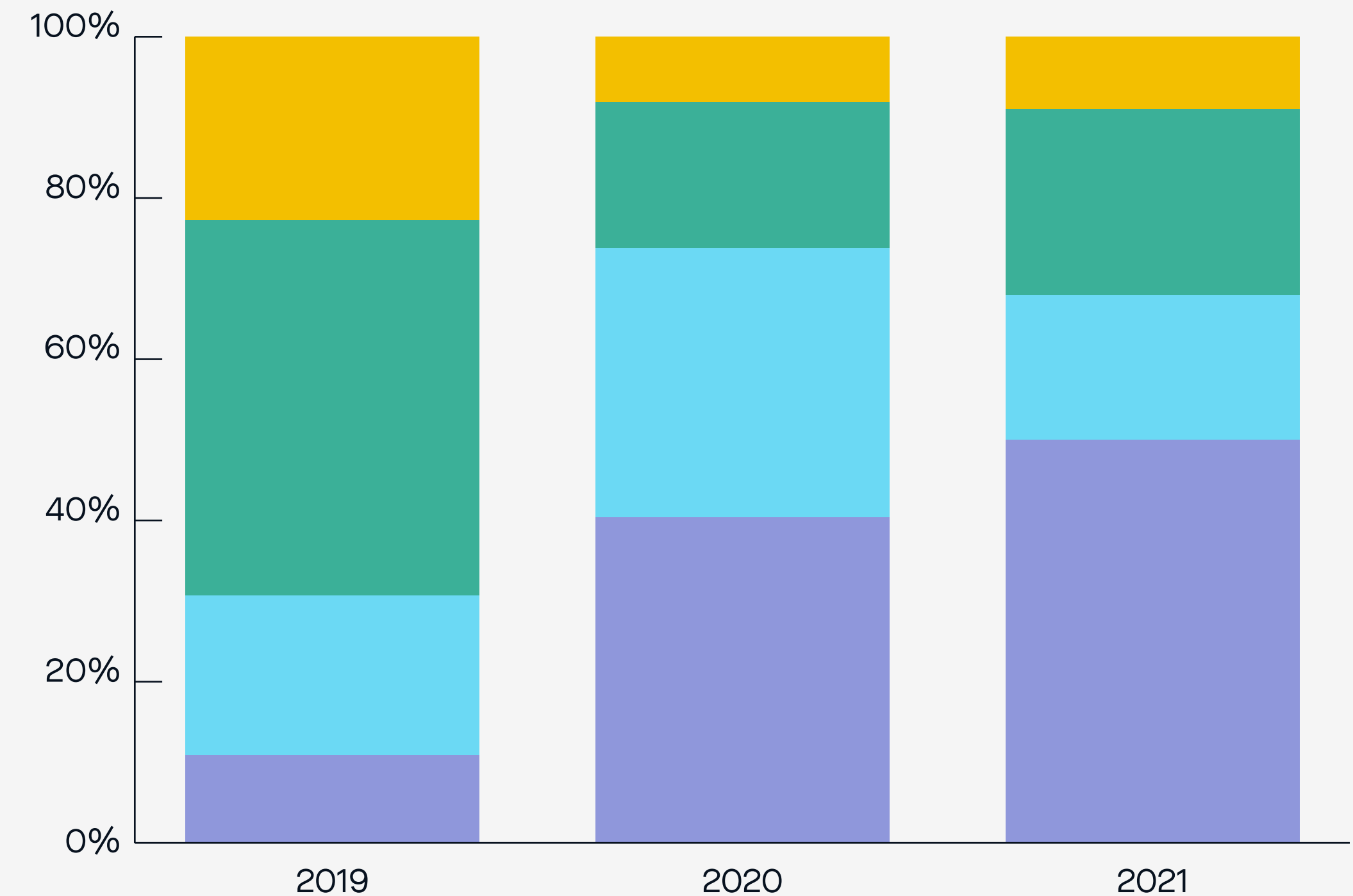
## The Adaptability of Criminal Organizations Shows the Need to Verify, Then Trust

One thing the COVID-19 pandemic has highlighted is just how quickly organizations of all types can adapt to changing conditions. Tomas expands on this: “Drug cartels around the world did not miss a beat. Their supply chain was disrupted – in their case, the chemicals required to manufacture illegal drugs – and changing border restrictions between the US and Mexico eliminated one of their key means of trafficking. But they very quickly adapted and began to increasingly target the supply chain because it was exempt from these restrictions. We saw this dynamic play out in the types of illegal drugs seized in the US, with a higher rate of amphetamine-type stimulants confiscated from cargo compared to cocaine, which resulted in part from the inability to source the drug from South American producing countries. Meanwhile, cartels turned to alternative sources of inputs needed to continue to produce and smuggle amphetamines, resulting in a higher proportion of incidents involving those types of drugs.

“Drug cartels around the world did not miss a beat. Their supply chain was disrupted – in their case, the chemicals required to manufacture illegal drugs – and changing border restrictions between the US and Mexico eliminated one of their key means of trafficking.”

### United States Seizures of Illegal Drugs - Proportion of Types of Drugs Seized from Cargo

- Amphetamine-Type Stimulants
- Cannabis
- Coca and Cocaine
- Other



The ingenuity and adaptability of cartels, however, is paired with the lack of eradication of coca crops in Latin American countries last year that has set up a situation in which there will likely be a larger amount of cocaine produced; therefore, an increased potential for smugglers to attempt to traffic illegal drugs to destination markets via the supply chain in the coming year.

The numbers and quantities of cocaine seizures in Europe increased steadily in 2020 and 2021 and are expected to continue to rise in 2022. Criminal organizations in Ecuador, Brazil, and Colombia ship large quantities, most often by sea freight, into ports in Europe. Although the ports of Antwerp in Belgium and Rotterdam in the Netherlands generally record the most and largest seizures of cocaine from Latin America, there have been notable shipments stopped in Ireland, France, Montenegro and Greece, further showcasing their ability to diversify routes. According to the United Nations Office on Drugs and Crime

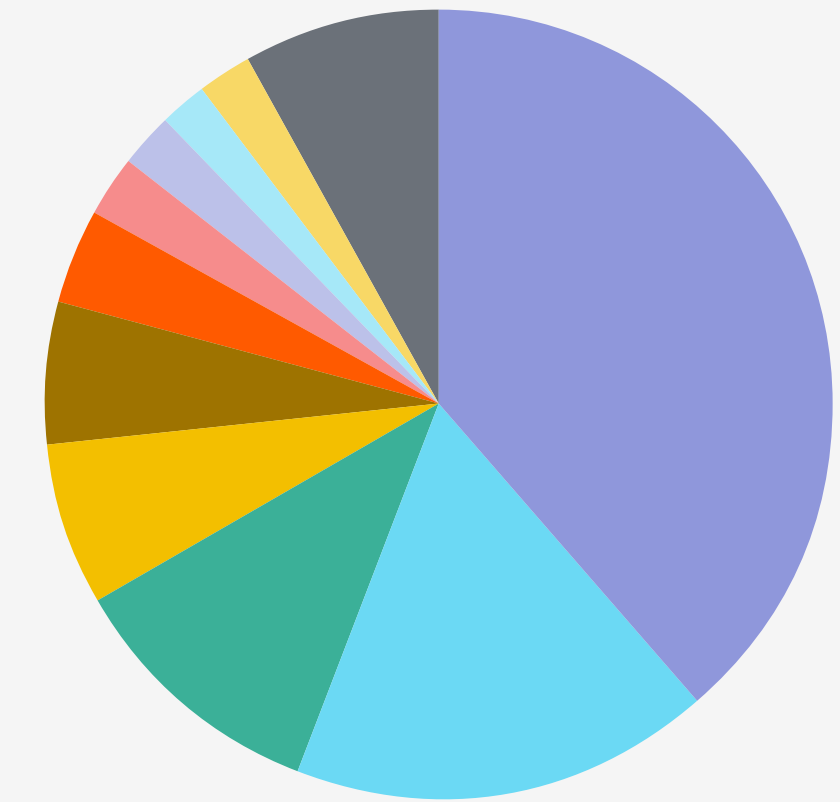
(UNODC) and Europol’s “Cocaine Insight Report,”<sup>4</sup> this increase can be attributed to the formation of alliances and collaboration of drug trafficking groups, the introduction of new actors in destination markets (Europe), the increase in supply and the switch from passenger to freight traffic. Both this report and the UNODC “World Drug Report”<sup>5</sup> link this phenomenon to the increased ability of drug traffickers to utilize parcel and mail, as well as the internet, to distribute and sell illegal drugs. However, the drug trafficking market is not solely between Latin America and Europe; BSI recorded significant numbers of drug seizures coming from and within Asia, the Middle East, Africa and North America as well.

<sup>4</sup> [https://www.unodc.org/documents/data-and-analysis/cocaine/Cocaine\\_Insights\\_2021.pdf](https://www.unodc.org/documents/data-and-analysis/cocaine/Cocaine_Insights_2021.pdf)

<sup>5</sup> <https://www.unodc.org/unodc/en/data-and-analysis/wdr2021.html>

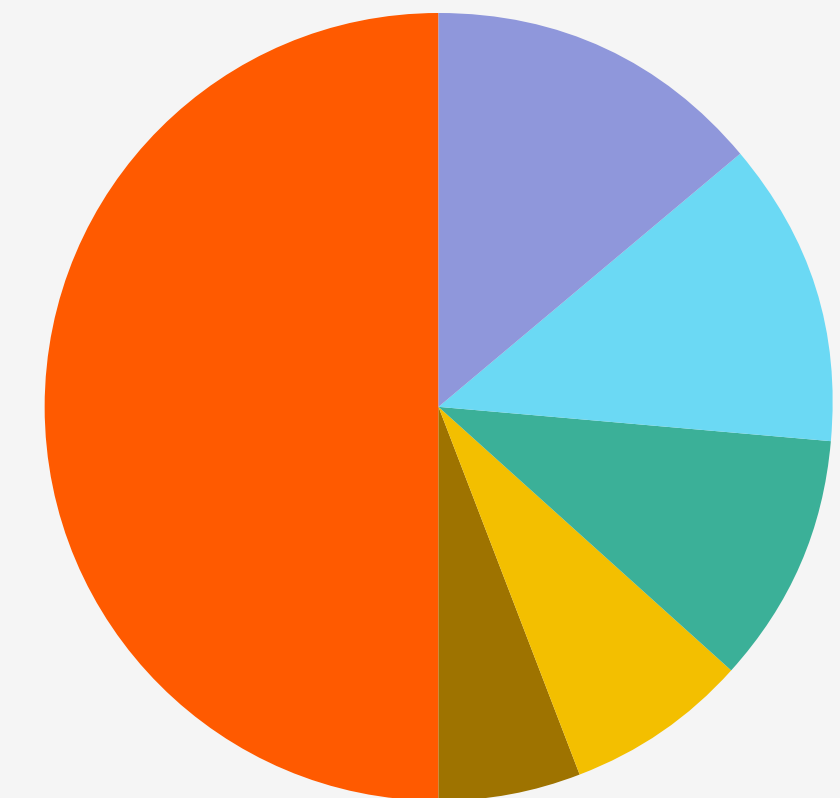
**Top products involved in drug smuggling incidents into Europe 2021 YTD**

● Agriculture	73
● Food and Beverage	33
● Consumer Products	20
● Construction Materials	13
● Pharmaceuticals	11
● Manufacturing Materials	7
● Heavy Machinery	5
● Appliances	4
● Automotive	4
● Chemicals	4
● Other	15



**Top Origins of Drugs Seized From Cargo in Europe 2021 YTD**

● Ecuador	34
● Spain	31
● Brazil	25
● Iran	18
● Colombia	14
● Other	122





# Global Unmanifested Cargo Trends 2021



Truck



Sea



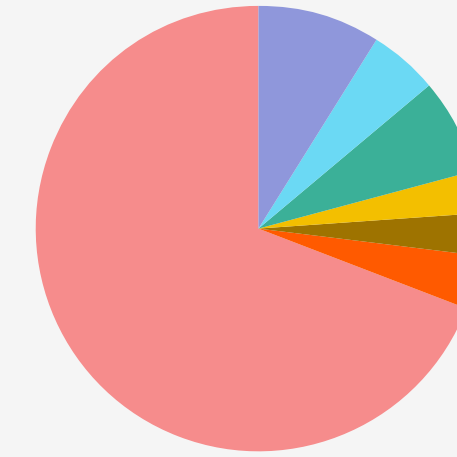
Air



# Global Unmanifested Cargo Trends 2021

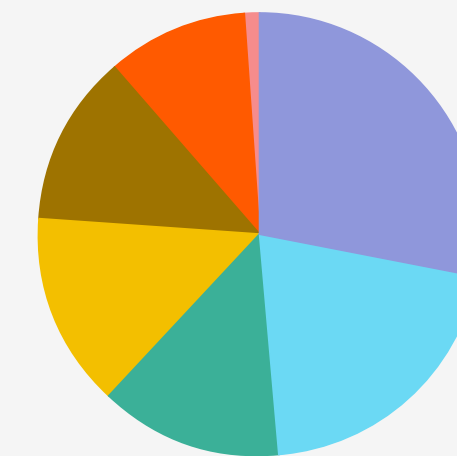
## Top countries for seizures from cargo

Brazil	9%
USA	5%
India	7%
Colombia	3%
Mexico	3%
Netherlands	4%
Other	69%



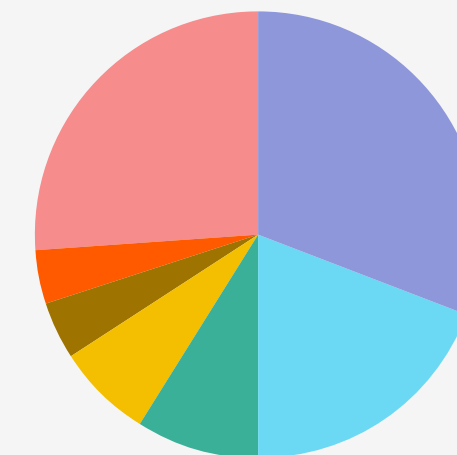
## Top regions for smuggling incidents involving cargo

Europe	28.2%
South America	20.5%
North America	13.5%
Asia	14.1%
Africa	12.5%
Middle East	10.1%
Caribbean	1.1%



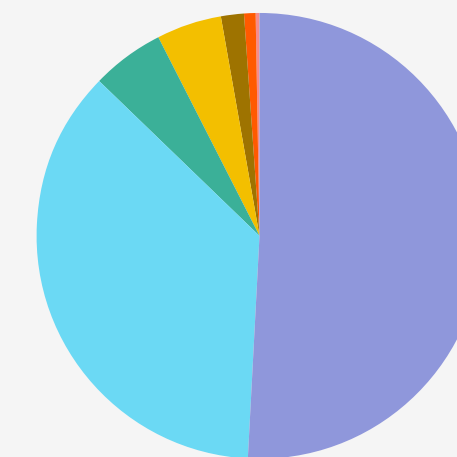
## Product types involved in smuggling incidents via cargo

Agriculture	31%
Food and Beverage	19%
Other Home	9%
Construction Materials	7%
Automotive	4%
Manufacturing Materials	4%
Other	26%

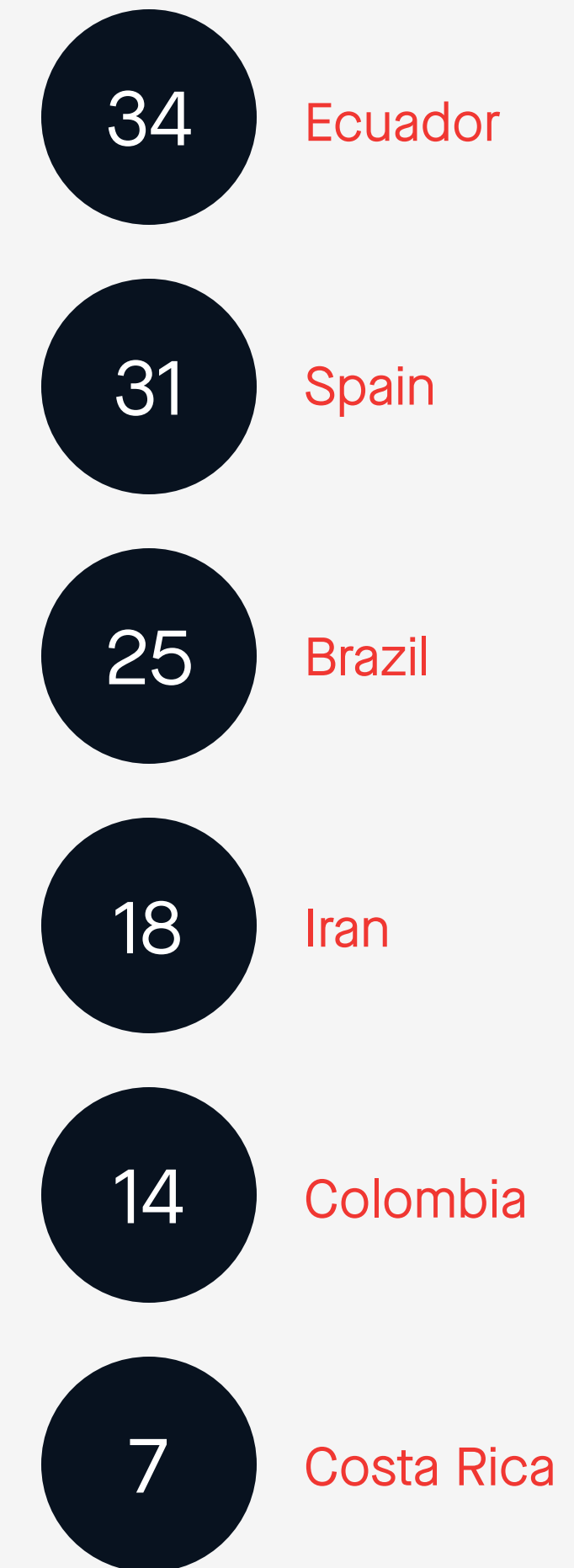


## Cargo transportation mode involved in smuggling incidents

Truck	51%
Sea	36%
Air	5%
Facility	5%
Parcel	2%
Van	1%
Rail	0%



## Top origins of drugs seized from cargo in Europe 2021





# Global Unmanifested Cargo Trends 2020 vs 2021

## Top countries for seizures from cargo

Countries	2020	2021
Brazil	18%	9%
USA	9%	5%
India	5%	7%
Colombia	9%	3%
Mexico	8%	3%
Netherlands	4%	4%
Other	53%	69%

## Top regions for smuggling incidents involving cargo

Regions	2020	2021
Europe	26%	28.2%
South America	36%	20.5%
North America	21%	13.5%
Asia	10%	14.1%
Africa	5%	12.5%
Middle East	1%	10.1%
Caribbean	1%	1.1%

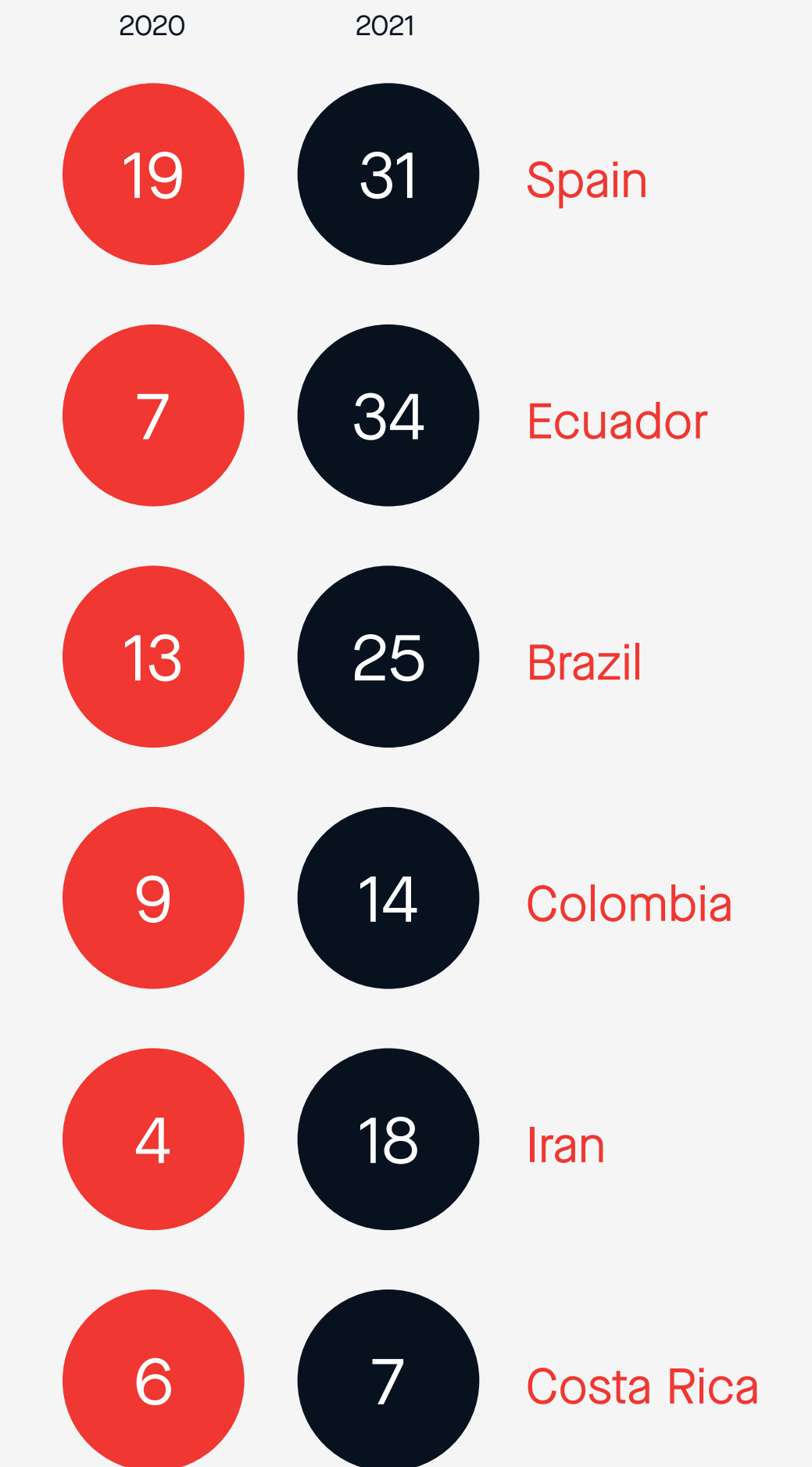
## Product types involved in smuggling incidents via cargo

Product type	2020	2021
Agriculture	34%	31%
Food and Beverage	21%	19%
Other Home	4%	9%
Construction Materials	11%	7%
Automotive	5%	4%
Manufacturing Materials	5%	4%
Other	20%	26%

## Cargo transportation mode involved in smuggling incidents

Transportation mode	2020	2021
Truck	67%	51%
Sea	23%	36%
Air	3%	5%
Facility	2%	5%
Parcel	4%	2%
Van	0%	1%
Rail	1%	0%

## Top origins of drugs seized from cargo in Europe



David Fairnie, Principal Consultant, Supply Chain Security, BSI, summarizes the situation: “I’m seeing a significant number of false suppliers acting as genuine potential suppliers in supply chain logistics provision – warehousing distribution, distribution centres, transportation companies – and actually, they are criminal groups trying to infiltrate the logistics supply chain. So, arguably today more than ever, you do need to know your suppliers. So far in 2021, BSI has noted this issue of fake carriers in an increasing number of countries in both the Americas and Europe. In some of these incidents, truck drivers posing as legitimate transporters may pick up goods from a facility and divert them to another location. In other instances, criminals may wait outside or near delivery destinations and then, posing as legitimate employees, divert the cargo to a different truck or warehouse facility.

Knowing your supplier goes back to verify, then trust. First and foremost, when you’re bringing on new suppliers, you need to conduct proper due diligence. That could take the form of engaging with the customs agencies within countries who will recognize those reputable logistics or supply chain companies who are, for example, paying import/export taxation.

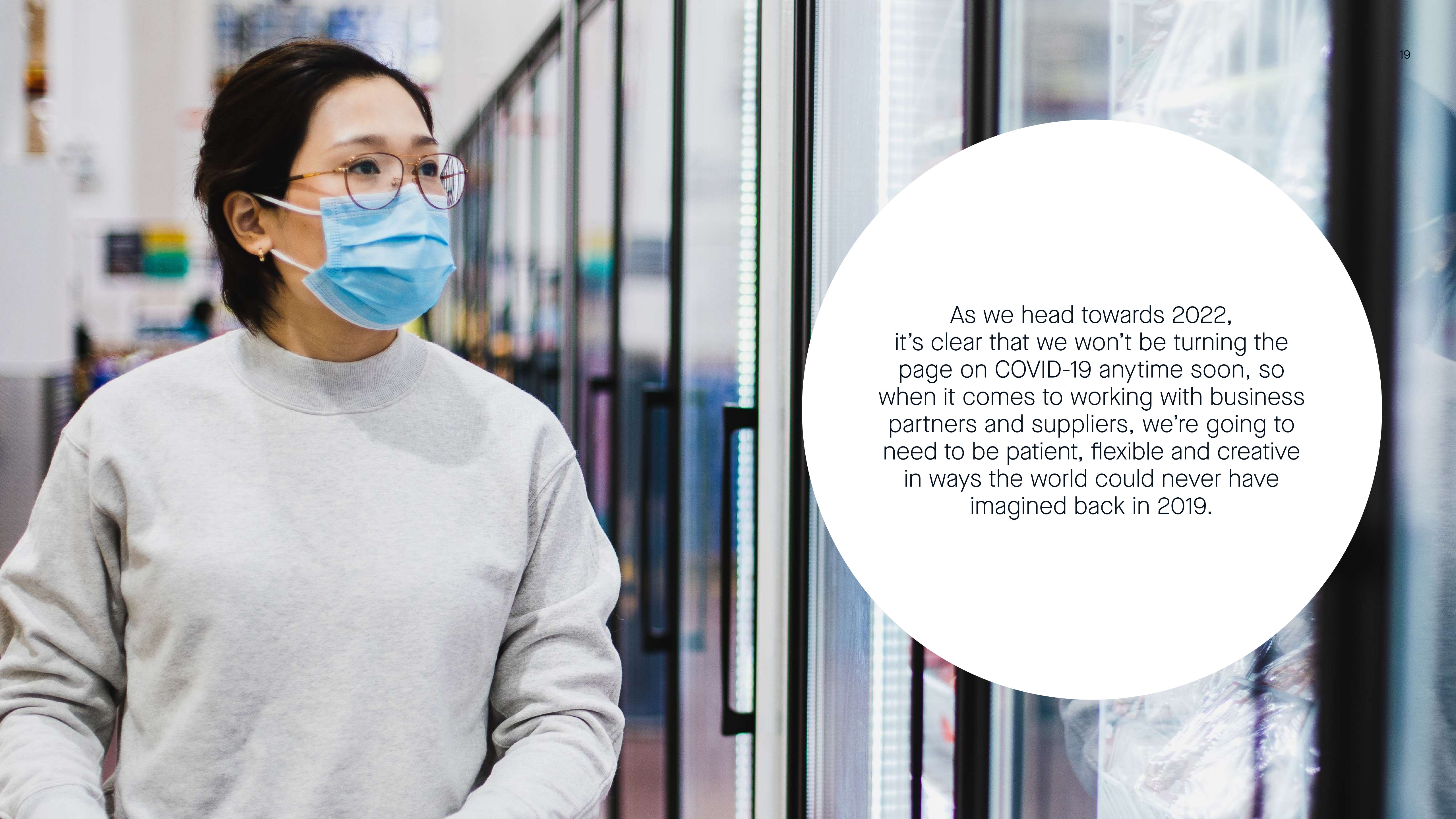
---

“I’m seeing a significant number of false suppliers acting as genuine potential suppliers in supply chain logistics provision – warehousing distribution, distribution centres, transportation companies – and actually, they are criminal groups trying to infiltrate the logistics supply chain.”

And, as Fairnie is keen to emphasize, onboarding is just the start of the journey: “New suppliers will go through a process of onboarding where they confirm what services they’re providing – what capability and capacity they have. That’s generally done remotely, but we strongly advocate that you then work with your quality group to audit the supplier, particularly their resilience capabilities. It’s all about being flexible as an organization continuously monitoring your supply chain.

“Over the last 18 months, I’ve seen organizations having to dust off their resilience plans and many are still in crisis management mode because of the impact of both COVID-19 and Brexit. As well as the audit process, you should conduct regular performance reviews and it’s also important to physically go and visit their facilities, so you understand the services they are providing. This is protecting everyone in the long run.”





As we head towards 2022, it's clear that we won't be turning the page on COVID-19 anytime soon, so when it comes to working with business partners and suppliers, we're going to need to be patient, flexible and creative in ways the world could never have imagined back in 2019.



## Being Patient, Flexible and Creative, and Asking the Right Questions

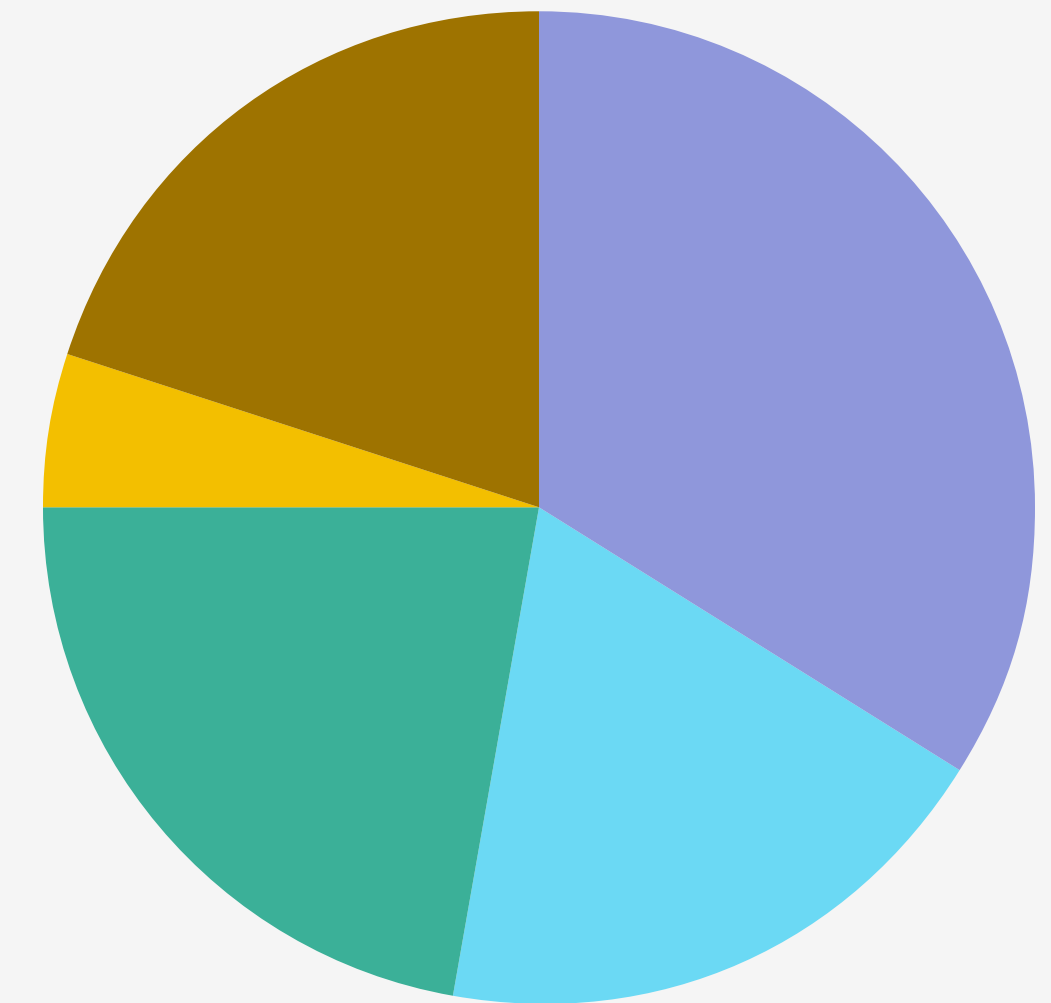
As we head towards 2022, it's clear that we won't be turning the page on COVID-19 anytime soon, so when it comes to working with business partners and suppliers, we're going to need to be patient, flexible and creative in ways the world could never have imagined back in 2019 – there are several questions to answer: How do we approach our business? How do we maintain product delivery and production? What about forced labour and worker safety? Whether your business is thriving or struggling, the reality is that we are going to be dealing with supply chain issues that simply weren't on the table two years ago.

Against this backdrop, it's timely to consider how the questions asked of suppliers have evolved significantly over recent years. The basic “Can you produce the goods?”, “Can you do it for a competitive price?”, “Can you do it on time?” questions still apply, but they have now been joined by “Am I exposed by your environmental risks?”, “What about your social labour, human rights related risks?”. These are fundamental considerations for an importer or multinational brand seeking to engage new suppliers.

BSI uses a set of standardized criteria to assess countries on their performance against 25 risk variables, providing users with an at-a-glance look at risk within any given country. These risk variables, which lie on a scale from Low to Severe, are constantly reviewed and updated while also backed up by in-depth country risk reports containing analysis of trends identified during the country risk assessment process.

### Exports From Countries by BSI Threat Rating Forced Labour 2020

Low	34%
Guarded	19%
Elevated	22%
High	5%
Severe	20%





We've all seen the global headlines around semiconductor shortages but what may not be so apparent is how this has upended multiple sectors outside of the electronics industry, including automotive, appliances and even pharmaceutical devices. This is a trend that will only continue and, as a result, more and more organizations are developing a greater awareness of the materials and components that might go into a finished product.

Yarbrough is feeling optimistic: "Despite the challenges of the last 18 months, it's been very encouraging to see such tremendous progress in risk management across multiple sectors and geographies. The same companies that are leading the way when it comes to addressing climate change and economic inequality are setting higher standards for all of us by making suppliers and business partners aware of these challenges and actually helping them to address them."

---

"Despite the challenges of the last eighteen months, it's been very encouraging to see such tremendous progress in risk management across multiple sectors and geographies."



# ● Chapter 2

## Ensuring sustainability

As regulatory regimes evolve, how do we ensure we make the supply chain decisions that can shape business success and a cleaner, greener planet?





## Chapter 2: As regulatory regimes evolve, how do we ensure we make the supply chain decisions that can shape business success and a cleaner, greener planet?

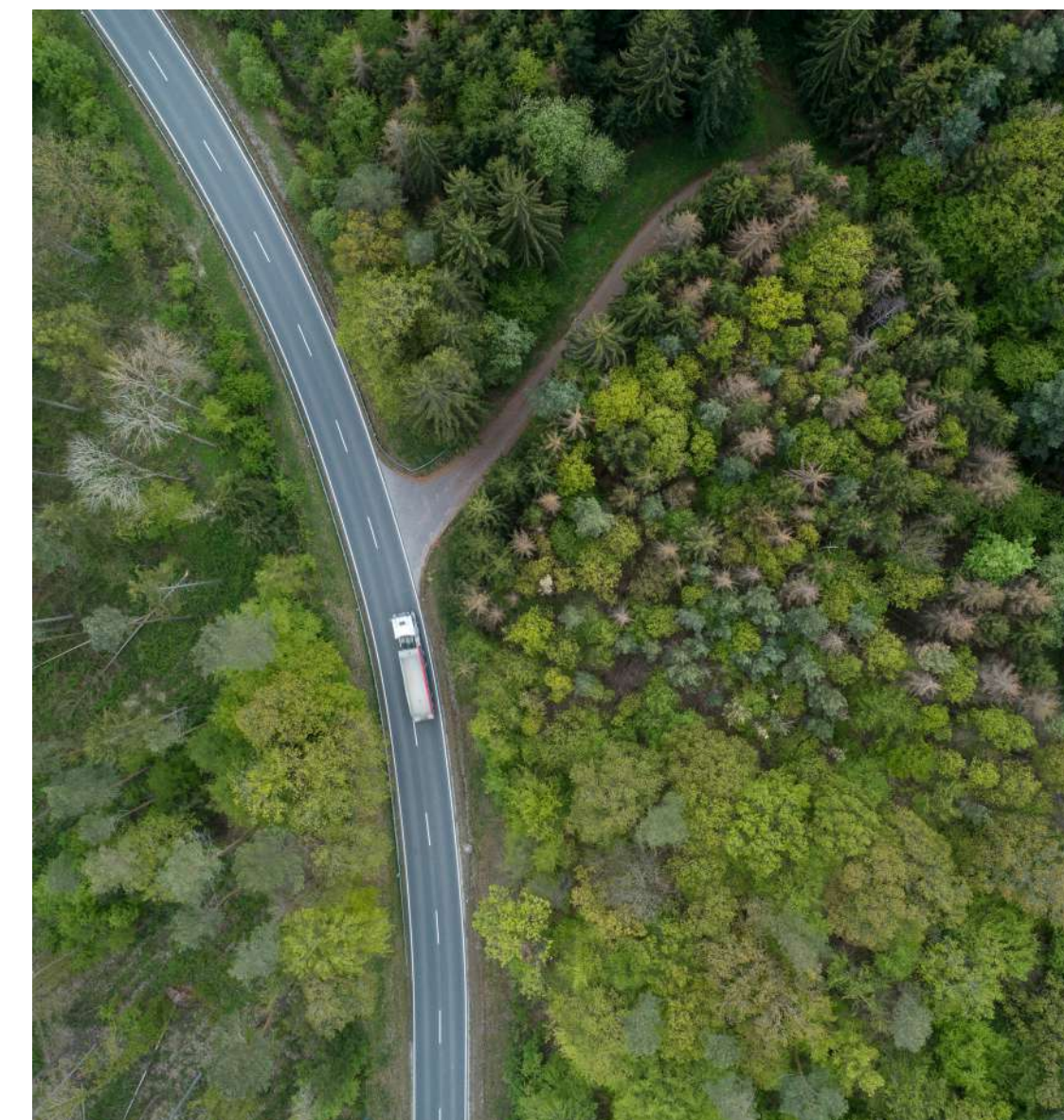
Amidst all the uncertainty organizations and suppliers are facing on a daily basis, one thing is certain – regulations will keep changing. Keeping on top of this is the bare minimum – ideally, you want to be one step ahead of the regulations, so anticipation is the key word here. If you can anticipate the regulations coming down the track, you can put the appropriate measures in place before it becomes mandated.

We’re seeing constant evolution in this area – everything from modern slavery laws to different environmental regulations – and getting your supply chain used to these types of changes before they are formally introduced means they have more time to plan for any issues or make necessary changes as quickly as possible. The alternative is a mad dash or scramble, and nobody wants that.

Raw puts it well: “If you can be proactive and somewhat visionary in your approach to business, and identify the coming changes before they’re imposed, then you’ll be in a position where you can create competitive advantage and avoid unnecessary disruption. You’re going to be ahead of the storm and in a much stronger position. Ultimately, if you can demonstrate that you’re ahead of your competitors when it comes to achieving the goals of your potential customer, then it’s more likely that they will end up doing business with you.”

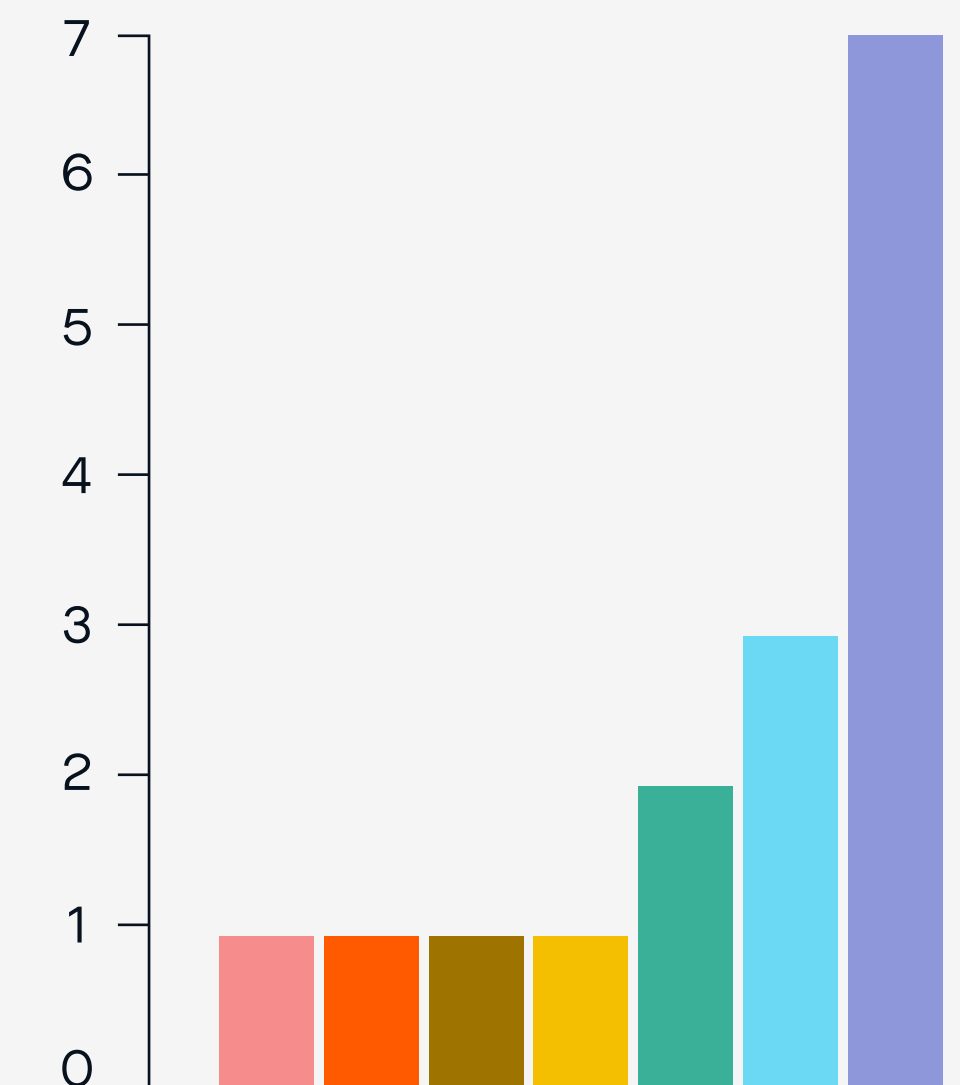
This kind of forward planning is something Tony Pelli, BSI Practice Director, Security and Resilience, is passionate about: “What has proved a successful approach is running pilots with a few key suppliers, so we can understand what works for them. If we can pinpoint that for your most critical and traditionally successful suppliers, then you can roll it to other suppliers as well. And that’s true of any supplier improvement programme – pick what works with the most critical ones and see if you can implement it with the ones that are currently less critical.”

“If you can be proactive and somewhat visionary in your approach to business, and identify the coming changes before they’re imposed, then you’ll be in a position where you can create competitive advantage and avoid unnecessary disruption.”

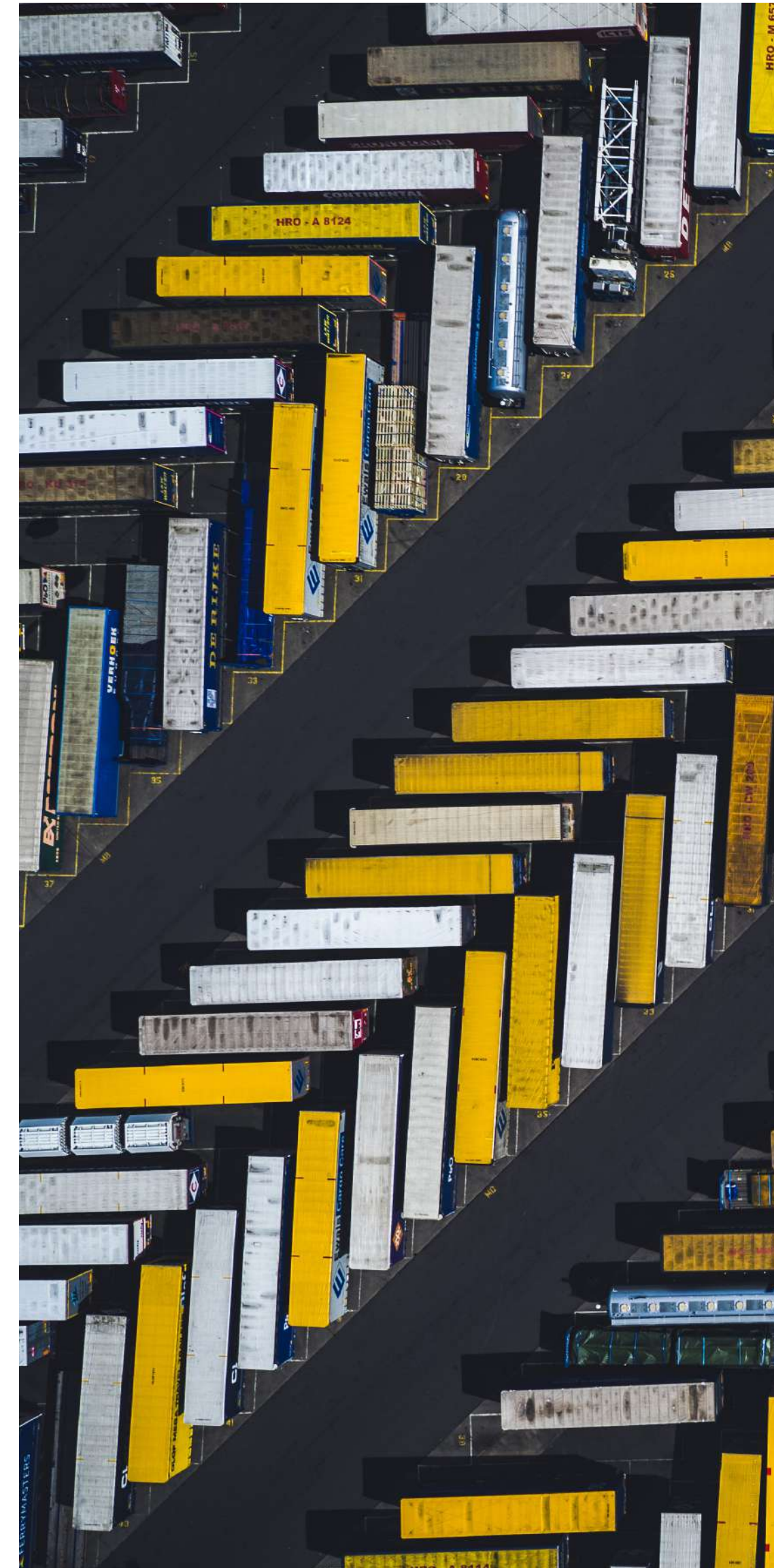


### Number of BSI-Identified, Introduced or Enacted Regulations Affecting Supply Chains 2021 YTD

United States	7
European Union	3
Canada	2
Mexico	1
Global	1
Germany	1
United Kingdom	1







### Alignment and Management Buy-In Are Critical

Yarbrough is keen to stress the importance of alignment: “How do we ensure that we’re being true to company goals amidst the maelstrom of everyday business life? It’s one thing for a CEO to be quoted in a press release about his organization’s climate change goals. However, it’s an entirely different thing to truly understand how you realize these goals when you’re still air freighting goods across the world every day and moving production facilities from A to B. There needs to be a really practical approach to these ambitious goals – what are they and how do they trickle down throughout the company. That needs proper planning and a crystal clear understanding of the supply chain within an organization so that they can align all of these moving pieces.”

Understanding how all of these moving pieces work together is something that requires a holistic approach. The different components of an organization must support each other and management buy-in is critical to this. Traditionally, it’s not uncommon to see organizational divides where groups are working in contained units with little interaction with other units in the company. This has been exacerbated by the explosion

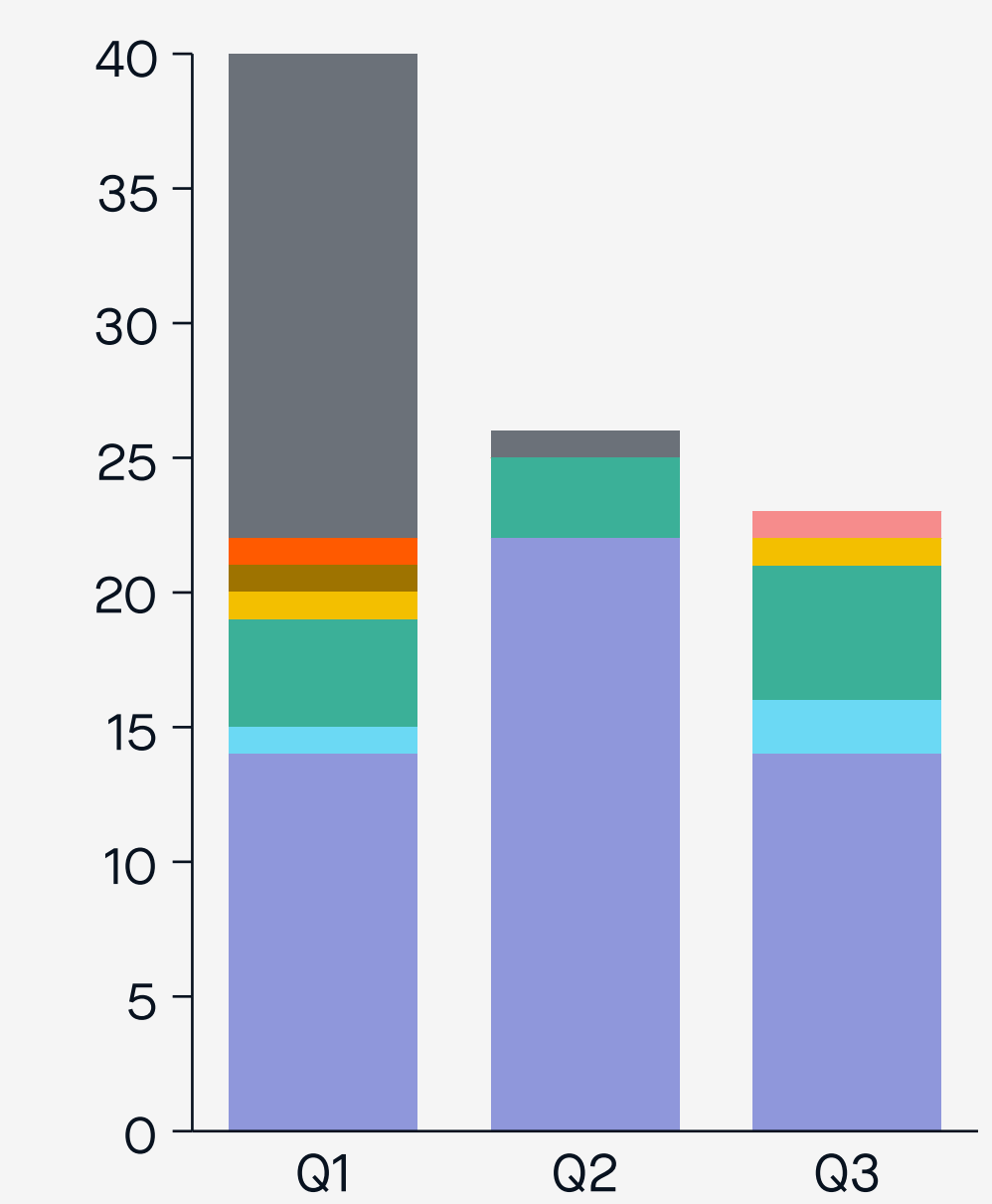
of remote working due to the COVID-19 pandemic. It’s clearly not a good state of affairs where a company’s supply chain security team is not in regular contact with logistics or procurement – that can only lead to issues and, most likely, sooner rather than later.

An example of why this coordinated approach to risk is important can be exemplified by the crossover nature of issues affecting the supply chain. For example, in South Africa earlier this year, BSI Intelligence reported increasing unemployment correlating with an uptick in organized crime and cargo truck hijackings in South Africa. As unemployment rates increased to 32.6 percent in the first half of 2021, hijacking crimes also increased by approximately 24.6 percent<sup>6</sup>, highlighting a correlation between high unemployment rates and high crime rates in the country. Without communication between groups within an organization, the proper mitigation efforts may not be implemented as risk trends in a given location inevitably shift.

<sup>6</sup> <http://www.statssa.gov.za/?p=14415>

### Cargo Truck Hijackings and Facility Thefts in South Africa 2021

- Hijacking
- Theft from Container/ Trailer
- Theft from Facility
- Theft from Vehicle
- Theft of Employee Belongings
- Theft of Vehicle
- Theft by Employee
- Unspecified





As Tomas explains: “If we want to manage risk more effectively and mitigate gaps in the supply chain, we have to break down these barriers. New regulations affecting the supply chain, in general, are evolving and increasing in frequency and it’s important to understand that there could be components of these regulations that impact crucial business decisions, such as how you evaluate your suppliers. A business continuity issue is not just a business continuity issue anymore; it could have ramifications on the security of the supply chain and vice versa. In addition, we have also observed a strong correlation between countries with issues of supply chain corruption and significant risks of food fraud, again highlighting the crossover nature of many issues that can have a significant impact on the supply chain. So, having the ability to communicate and coordinate with the other units within the organization is critical.”

### Products at Risk of Food Fraud in Countries with Issues of Supply Chain Corruption



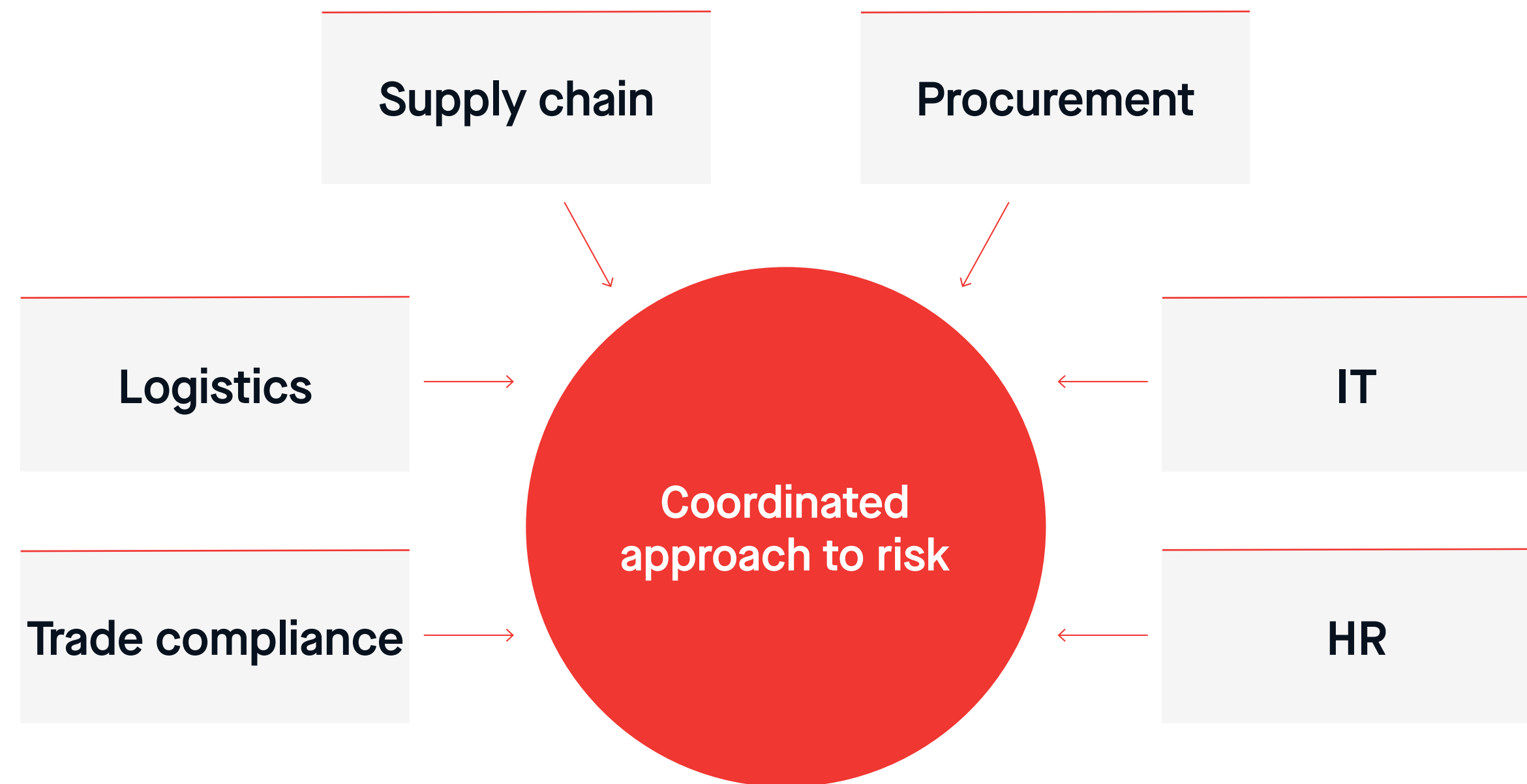


A more coordinated strategy is something that is also being strongly encouraged by governments and regulators. For example, when it comes to granting certification, we increasingly see governments introducing criteria for companies to bring different business units together, and effectively form a taskforce or working group that can share information efficiently and provide a more agile response to relevant issues. Tomas expects to see more of this in 2022: “Companies are going to have to up their game here. It’s clear that governments have identified this as a knowledge gap and organizations need to respond.”

“Regulators like the SEC are starting to ask whether greenhouse gas emissions should be included as a mandatory part of financial disclosures.”

It’s the same story with regulators, according to Ryan Lynch, BSI Practice Director, Sustainability: “Regulators like the SEC (US Securities and Exchange Commission) are starting to ask whether greenhouse gas emissions should be included as a mandatory part of financial disclosures. This opens up more granular questions around scope – from direct Scope 1 and Scope 2 emissions, such as burning fuel and purchasing electricity, to less direct Scope 3 emissions which might include upstream in the supply chain, raw materials, transportation, supplier production activity, but also downstream elements such as the use of phase emissions of products. So, there’s a greater focus on these factors beyond the direct control of the organization, and I’m seeing a big uptick in the desire of companies to establish practices to account for those Scope 3 emissions.”

To embed this within the business, you need management buy-in to create a consistent framework that can address these issues at scale. This simply can’t be treated separately from commercial or operational strategy – it needs to be baked into the company’s DNA.





As Lynch says, it's not just about ticking a box: "If you're smart, you're thinking about what the world's going to look like in ten or 15 years, and what fundamental changes you need to put in place now. I talk to clients about this all the time – for example, more resilient companies in the oil and gas sector are talking about the diversification of energy as part of a decarbonization strategy. If they're creative, they're considering how they can repurpose their infrastructure and engineering expertise to solve significant global challenges such as carbon capture and sequestration and turn a negative into a positive.

"At the same time, we recognize that there is sometimes a cost for more sustainable products, and organizational strategies and financing decisions should be designed around closing the gap for technologies that are starting to scale up or funding early Stage One projects that need more R&D budget. This extends to building out infrastructure, and we're seeing the sustainability function connecting all the different business units together, everything from finance and leadership to product development and marketing. To us, sustainability goes way beyond risk management; it's got to be about developing these transformational new business opportunities."

---

"If you're smart, you're thinking about what the world's going to look like in ten or 15 years, and what fundamental changes you need to put in place now."





As we saw in Chapter One, unlocking these opportunities requires a more granular understanding of the supply chain than was required a decade ago. It's no longer about your immediate supply chain – you need to look further, as Fairnie explains: “My job is to look at regulatory regimes from a compliance point of view in the context of supply chain security and resilience. One of the key components of maintaining compliance is looking to your extended supply chain, so, downstream into your supply chain, through your supplier groups, to ensure that they are complying with the regulatory requirements. This is done through a quality or business performance audit, ideally on a regular cadence. That audit is to ensure that they are managing risk within their supply chain to maintain compliance and ensure that their own set of supplier groups can assess the risk and put measures in place to manage it. Quite often, you find that organizations’ supplier groups haven’t looked at their supply chain from a risk point of view and that’s something that has to change.”

The broader context here is informed by major factors such as continuing global deforestation and new EU regulations on climate change. Consider the Amazon Rainforest, for example. Despite a slight drop in deforestation of 1.2 percent between January and August 2021, about 6,026 square kilometres of forest were still removed. In addition to the issue of contributing to environmental degradation, we noted this year so far at least 18 companies, spanning industries ranging from food and beverage to automotive, which had been identified as sourcing products from companies contributing to deforestation in the Amazon. This type of negative association brings nothing but damage to the brand and could ultimately result in a drop in revenue.





The European Green Deal<sup>7</sup> in its entirety is not yet law, as the proposals still need to be approved by the 27 member states and EU Parliament, but more of its action items are likely to be passed into law in 2021. Once it passes, the European Climate Law<sup>8</sup> aims to ensure all sectors of the economy and society contribute towards the 2050 climate-neutrality objective. Some of the proposals that will undoubtedly affect companies operating in the EU include emission targets for vehicles produced after 2030, taxes on aviation fuel, reforming regulations on land and forestry use and the implementation of a border tax on goods dependent on the amount of greenhouse gasses emitted to make them, such as steel, cement, and fertilizer.

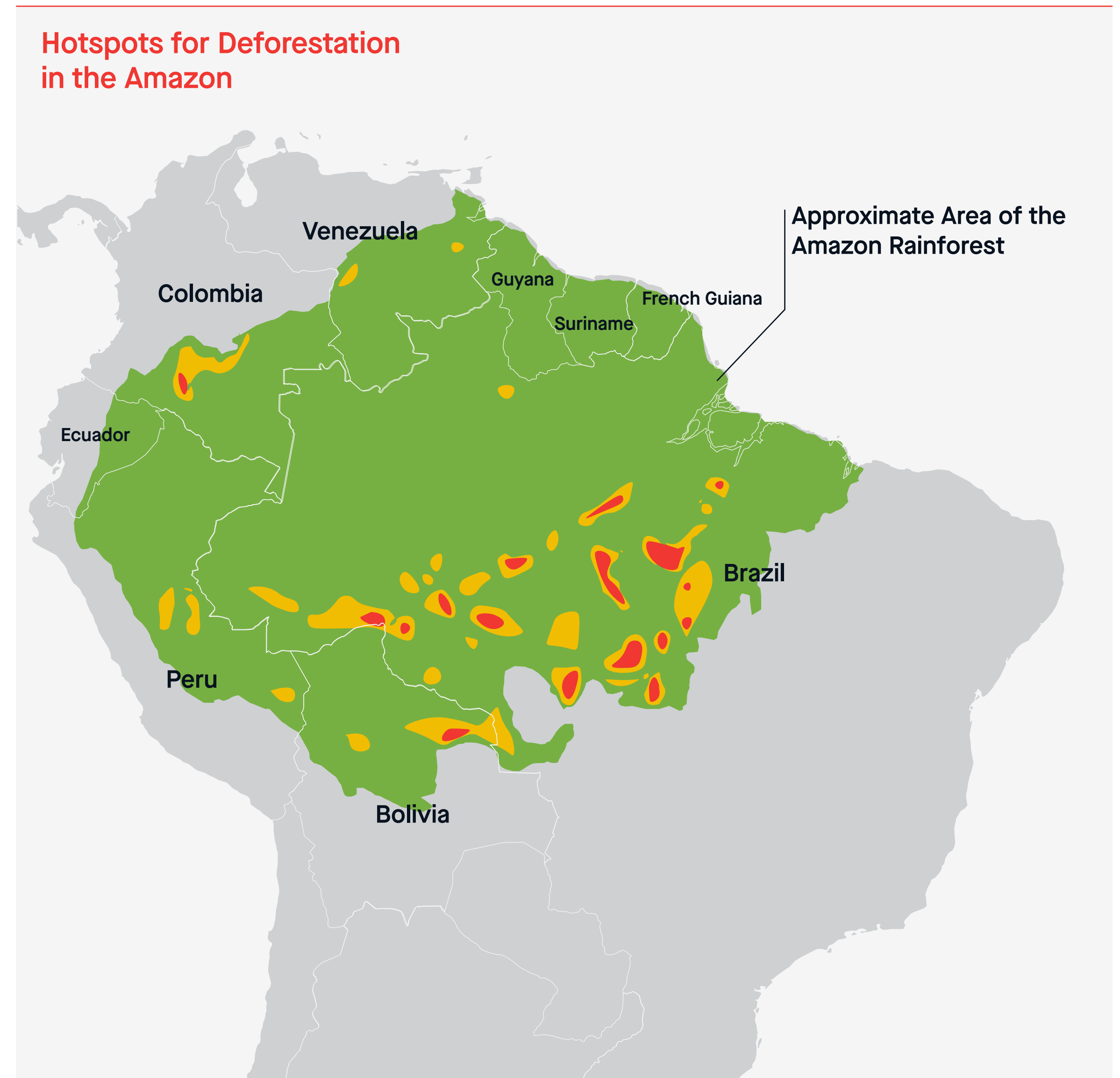
As Lynch explains, the answers to these questions often depend on several variables: “You have to consider the operating environment you’re working in – a certain country, province or city may have a greater likelihood of certain types of risks because of the legal regime or enforcement. You need to know what controls the company has in place and how aware it is of the risks to its workforce, its local community, and, therefore, what its buyers are exposed to.

“We’re seeing an evolution where our clients have a better and more granular understanding of environmental risks and people-related risks. In the past, there was an assumption that they couldn’t get this kind of information – for example, energy usage, greenhouse gas emissions, water usage, or waste usage.

You might be operating in a water stressed area and not be managing water appropriately, or you may not be up to speed on local policies regarding migrant workers. Sadly, in the case of the latter, we’re seeing an increase in labour-related violations, with recent figures from BSI’s supply chain incident database revealing that migrant cases accounted for 24 percent of these violations in Europe and 15 percent in Asia so far in 2021. With a number of new regulations affecting supply chains from an environmental perspective, it’s never been more important to understand these high risk scenarios and appreciate that the onus is now on you to ensure that your suppliers are managing their business relationships in an appropriate way.”

<sup>7</sup> <https://www.consilium.europa.eu/en/policies/climate-change/>

<sup>8</sup> [https://ec.europa.eu/clima/policies/eu-climate-action/law\\_en](https://ec.europa.eu/clima/policies/eu-climate-action/law_en)





In June 2021, the EU released guidance<sup>9</sup> for EU businesses to address the risk of forced labour in their supply chains. This guidance is expected to bridge the gap between now and when the EU is able to issue legislation on sustainable corporate social responsibility. Meanwhile, the EU Conflict Minerals Resolution<sup>10</sup> requires that EU-based importers comply with the ‘Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and High-Risk Areas’ provided by the Organization for Economic Co-Operation and Development (OECD), thereby reducing the risk that minerals used in supply chains are used to finance abusive practices, armed groups, or forced labour.

To emphasize how important this issue and these new regulations are, multiple countries in the EU passed their own due diligence laws, thereby implementing some of these rules and requirements into their national bodies beforehand. In coordination with the US and the UK, among others, Canadian ministers announced new measures<sup>11</sup> aimed at improving the rights of Uyghurs in the Xinjiang Uyghur Autonomous Region of China that include the prohibition of imports of goods produced wholly or in part by forced labour, export controls, and a business advisory on Xinjiang-related entities.

<sup>9</sup> [https://trade.ec.europa.eu/doclib/docs/2021/july/tradoc\\_159709.pdf](https://trade.ec.europa.eu/doclib/docs/2021/july/tradoc_159709.pdf)

<sup>10</sup> <https://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/regulation-explained/>

<sup>11</sup> <https://www.canada.ca/en/global-affairs/news/2021/01/canada-announces-new-measures-to-address-human-rights-abuses-in-xinjiang-china.html>





Pelli assesses the bigger picture: “With the landscape changing so quickly, it’s so important to understand what plans suppliers have in place for different types of disruptions or unforeseen events. How are they vetting their suppliers for those types of disruptions and how are they prepared to deal with things like raw materials shortages and shipping delays?”

Average shipping delays skyrocketed over the past year and a half, with ships at the Port of Los Angeles, for example, staying at berth for as long as 12 days<sup>12</sup> back in January of this year compared to the 2018 average of 0.7<sup>13</sup> days that the United Nations recorded. While this trend rebounded partially in March, sporadic disruptions to the global supply chain like the Suez Canal blockage in late March, COVID-19 outbreaks in May in Shenzhen, China, Hurricane Ida in August in the US, and Typhoon Chanthu in September in Guangdong, China, have cumulatively caused the various delays of shipment volume seen arriving at infrequent

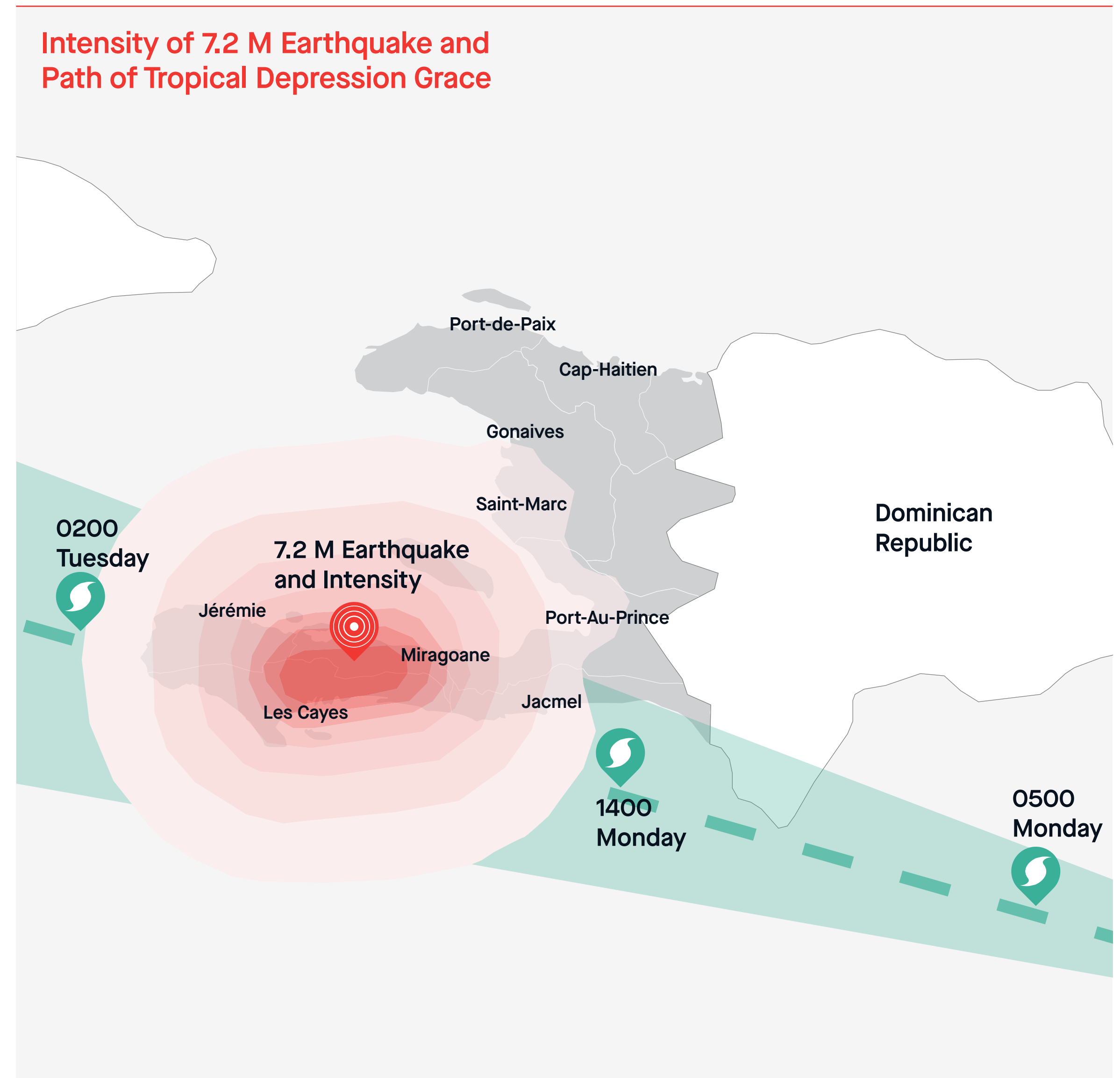
times at facilities in California<sup>14</sup>. This is putting renewed stress on the ports of Los Angeles and Long Beach, which account for about one-third of US imports. In addition, there are flashpoints where multiple disruptions converge to create challenges from all angles – think of Haiti, where the COVID-19 pandemic was quickly followed by the assassination of its president Jovenel Moïse and then a major earthquake and subsequent tropical storm.

It is against this volatile backdrop that organizations need to reassess and look beyond traditional supply chain partners, methods and technologies.

<sup>12</sup> <https://kentico.portoflosangeles.org/getmedia/3bc2c710-5783-4f92-a39f-ae9b167d5f1f/container-vessels-in-port>

<sup>13</sup> [https://unctad.org/system/files/official-document/rmt2019ch3\\_en.pdf](https://unctad.org/system/files/official-document/rmt2019ch3_en.pdf)

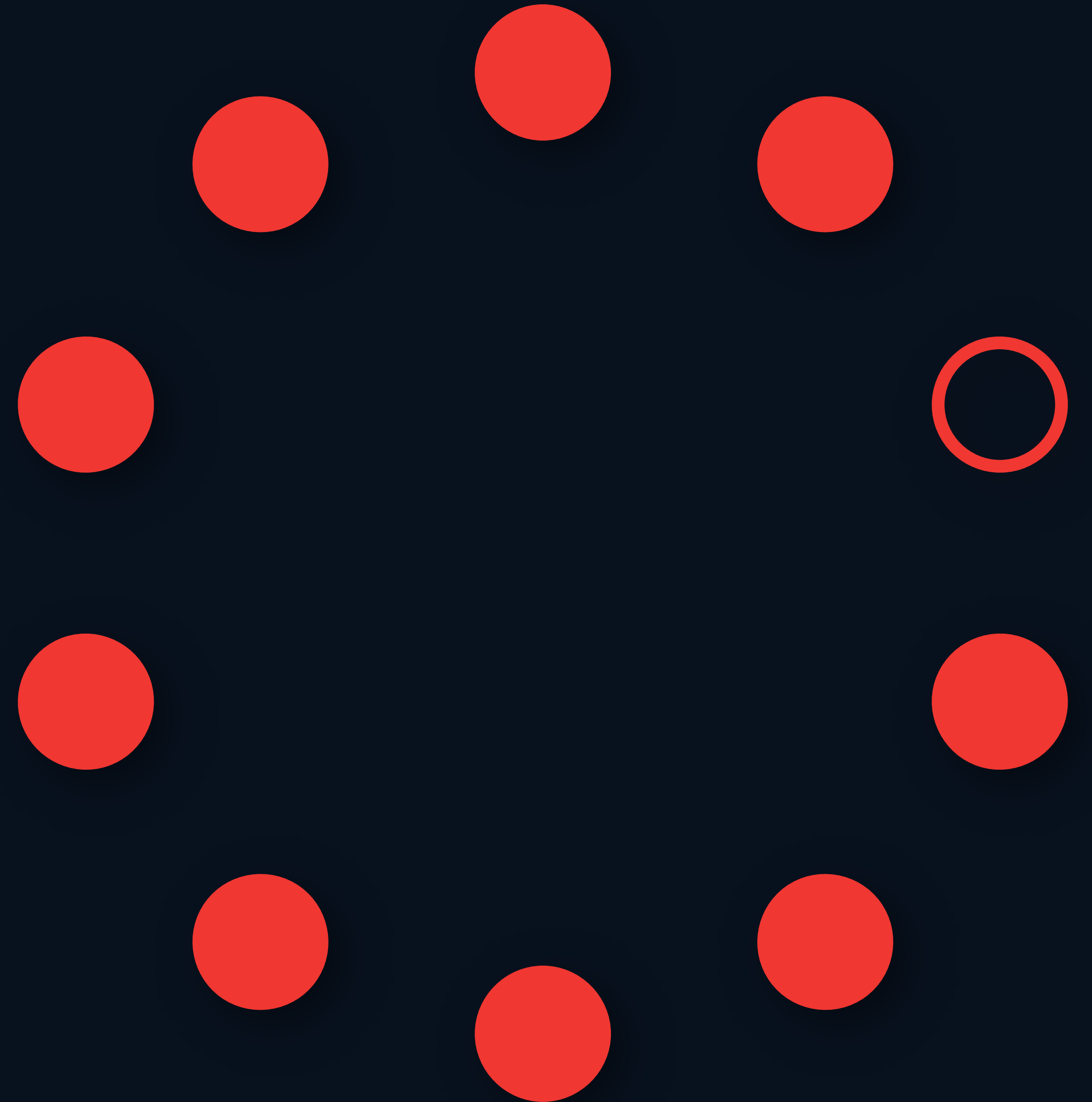
<sup>14</sup> <https://kentico.portoflosangeles.org/getmedia/3bc2c710-5783-4f92-a39f-ae9b167d5f1f/Container-Vessels-In-Port>





# ● Chapter 3 Addressing the changing world

How do we best address the key  
geographic and sector pain points  
in a changed and changing world?





## Chapter 3: How do we best address the key geographic and sector pain points in a changed and changing world?

It's a fact that goods are lost in the supply chain and it's a fact that customers often don't know why. And that's because they don't understand where the pain points are within their supply chain. With factories, distribution centres, shipping, port handlers, agents and sub-contractors, there are so many variables.

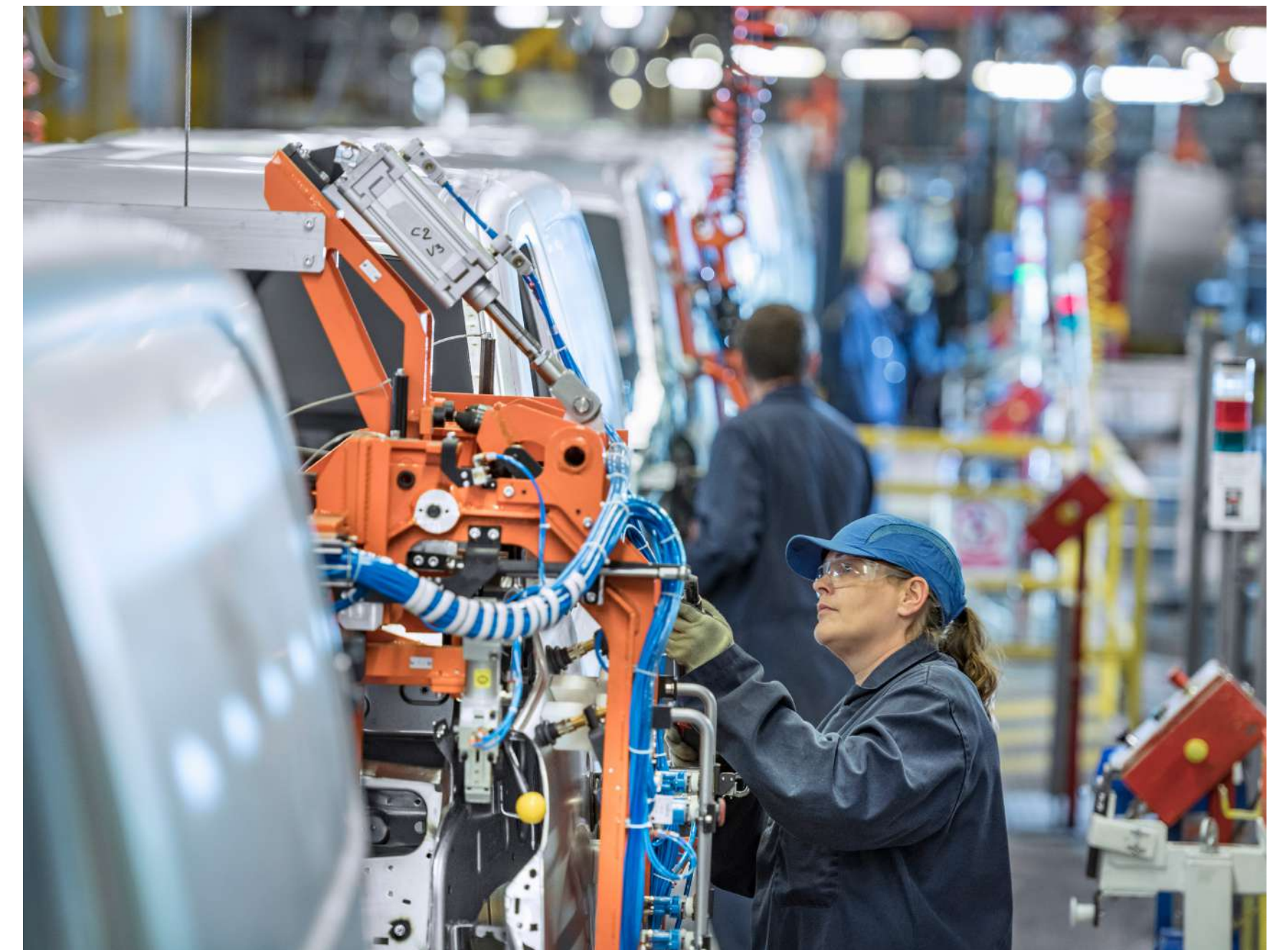
### 1. Identifying Pain Points

As a crucial first step you need to understand the dynamics of the supply chain if you want to identify where the pain points are and put robust control measures in place.

One major pain point none of us need reminding of is the ongoing COVID-19 pandemic. Fairnie assesses the current situation like this: "Global supply chains are going to continue to be massively disrupted way into 2022 and it may well get worse before it gets better. It continues to be a challenging environment and whether it's a global or local supply chain, you need to understand the risks of disruption, the cause and effect, and prepare and mitigate as much as possible."

For an indication of the scale of disruption the COVID-19 pandemic has caused, consider this: the majority of global trade is East to West – manufacturing in the East, consumption in the West. For a nation like Vietnam, which exports as much as 40 percent of its finished products to the US, it changes everything. Add to that the inter-regional transshipment from Vietnam to the big ports in China, and then origin destination from China to the US or Europe, and you can see the scale of the impact.

"Global supply chains are going to continue to be massively disrupted way into 2022 and it may well get worse before it gets better."





Fairnie continues: “One incident can have monumental consequences – for example, the world’s third largest port, Ningbo-Zhoushan in China was partially closed in August due to COVID-19. The recovery period can be immense as it may take months to get back up to operational speed. These issues ripple through the global supply chain – I think all the key stakeholders will tell you that global supply chains are in a perilous position at the moment. And where there’s a lack of supply, there will always be ‘bad actors’ willing to step in to satisfy that demand. This could mean cargo theft, counterfeiting, diversion and many other opportunities for organized criminal groups.”

Another COVID-19-related pain point is highly inflated shipping costs from East to West, in some cases as much as 400 percent, even 650 percent higher than pre-COVID-19 pandemic rates. However, these rocketing shipping costs are spread indiscriminately across shipping routes. In the US and China, for example, since pre-COVID-19 levels, the price to ship one container from China to the US West Coast has increased by thirteen-fold while the price to ship one container from the US West Coast to China has only increased by two-fold. This imbalance in shipping prices has led to shifts in the flow of trade, and with it shifts in risks to goods circulating on cheaper alternative routes. With the increase in

shipping prices coupled with congestion and delays surrounding ground transportation, some companies shifted to air routes to ship consumer products. However, these shifts in supply chain transportation modes should be similarly evaluated for new or different risks and re-evaluated for security measures that may be tailored for one method of transportation but are irrelevant or unnecessary for another. One example of this varying risk occurred in the US, as parallel to this shift toward air freight was an increase in smugglers introducing illegal drugs into air cargo shipments; up from 20 percent in February to 33.3 percent in June.

In supply chain terms, an over-reliance on China has also emerged as one of the defining trends of the COVID-19 pandemic. Anecdotally referred to as the “factory of the world”, China is pivotal to the transportation of goods, both to end products and components. The pharmaceutical sector has been particularly exposed to urgent global demand for medicines and medical supplies over the past eighteen months. As a result, several high-profile companies have all started to shift manufacturing away from China, with Vietnam proving a popular alternative. This shift is likely to continue as organizations work to future proof their operations.





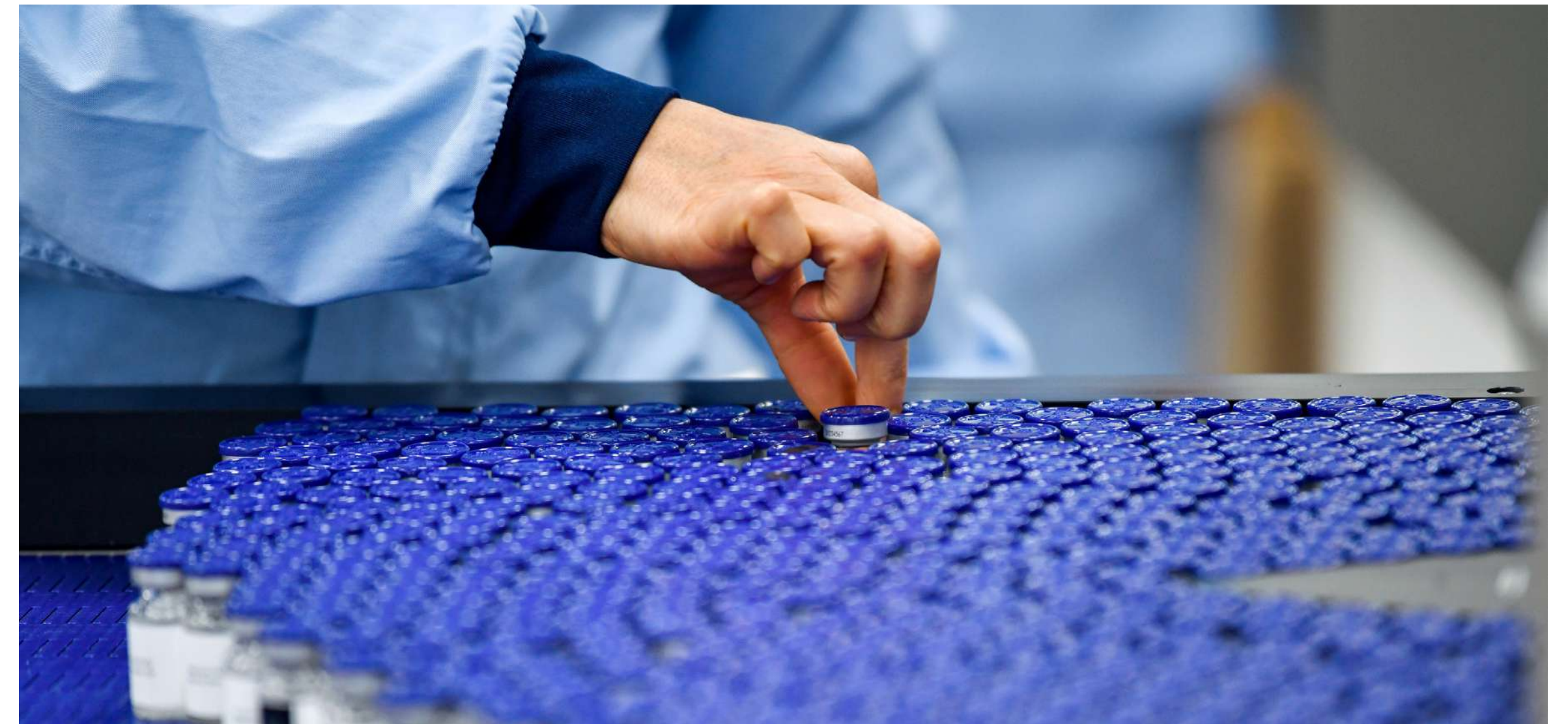
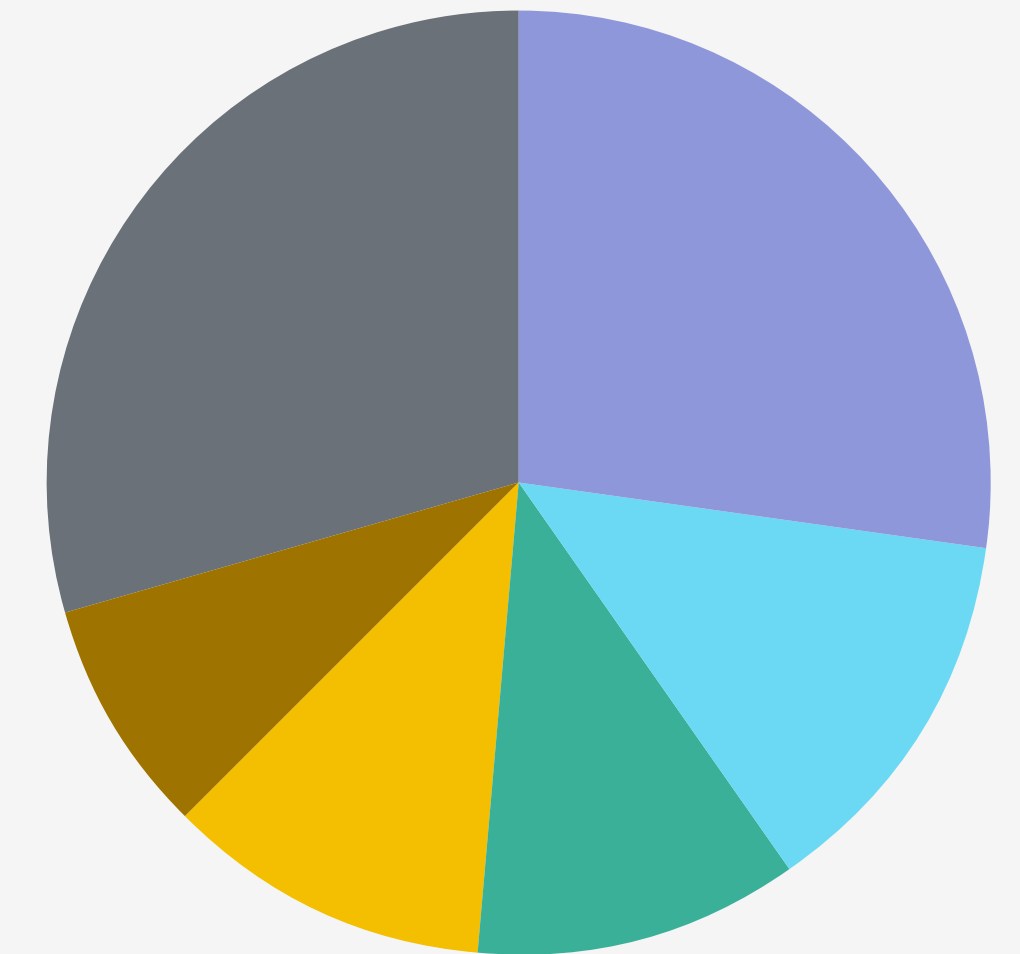
## 2. Transparency and Effective Communication Throughout the Supply Chain

Having identified the various pain points in the supply chain, the second step is to establish effective communication between all parties. You need to gather effective and timely information throughout the supply chain: “Where’s the product?” “How is it being transported?” “What are the temperature control elements?”

Raw believes best-in-class technology is an important factor here: “I’m thinking of one current example where we’re using a Blockchain solution to ensure the customer has transparency throughout their supply chain so they can manage the risk of diversion, counterfeiting and their products entering the black market – this data is incredibly valuable when it comes to mitigating the risks and empowering business leaders to make timely and effective decisions.”

### Top Counterfeit Goods Seized in India 2021 YTD

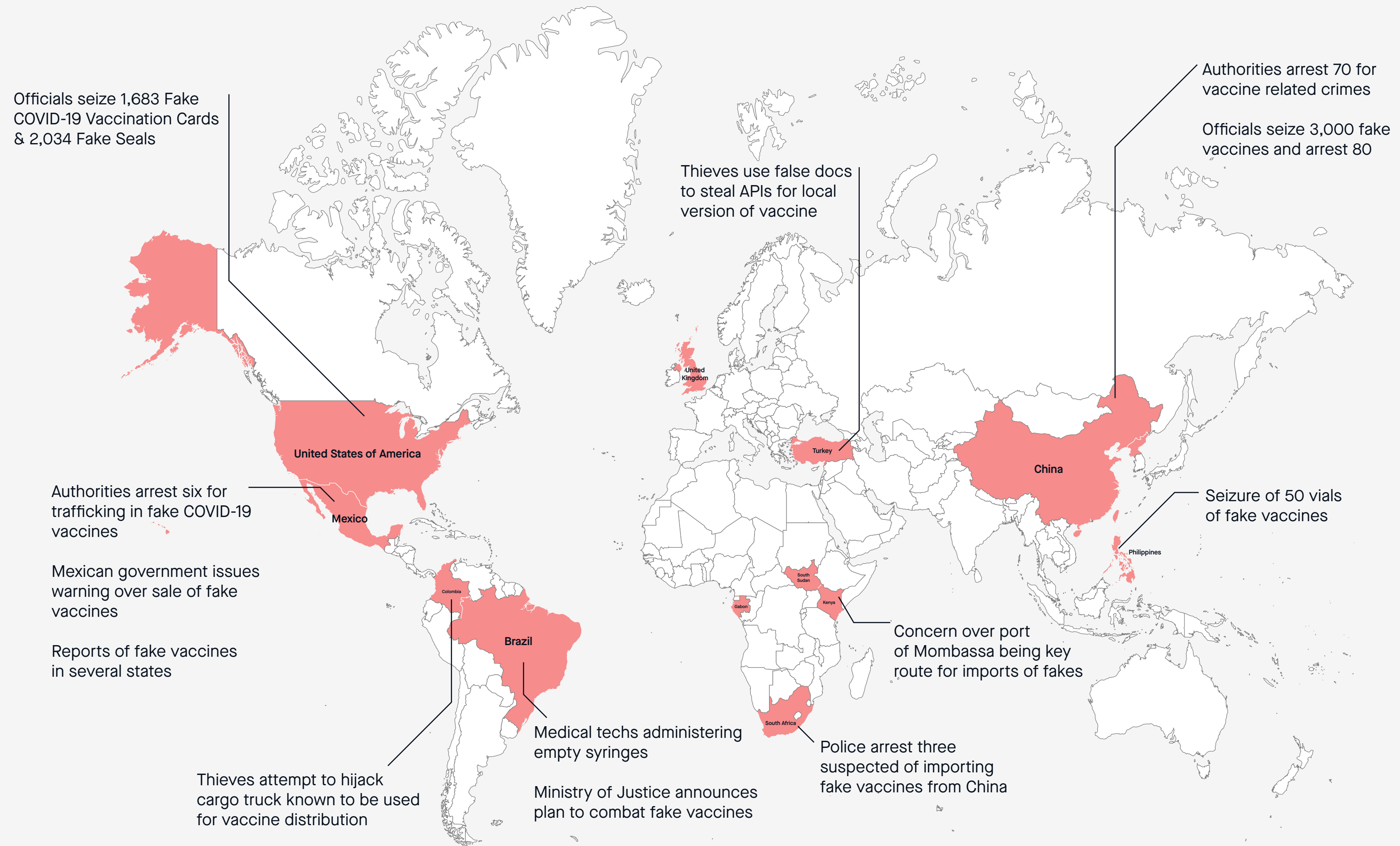
Pharmaceuticals	27%
Industrial Chemicals	13%
Construction Materials	11%
Fuel	11%
Alcohol	8%
Other	29%





This risk mitigation effort is critically important as criminals continue to adapt and utilize every available means of producing fake products. One tactic that criminals continue to leverage is the use of discarded materials – packaging, containers, labels, and other items – that are legitimate and can be used in the creation of otherwise fake goods. This came to light with the distribution of the COVID-19 vaccines, with sales of empty vials appearing online. Leveraging solutions like Blockchain applications and auditing suppliers for proper waste disposal protocols can help mitigate these types of risks stemming from discarded materials.

### Select Counterfeit and Cargo Theft Incidents Involving COVID-19 Vaccines







### 3. A Unified Approach

Thirdly, it's essential to establish common goals, objectives and strategies across the company so that the entire business is fully integrated in a unified approach. This means a common understanding of what the organization is trying to achieve, the standards it's trying to uphold and the key reporting requirements of its stakeholders.

If you look at it from a business continuity perspective, common goals and objectives allow companies to move forward even when challenges arise – this could be a breakdown in communications or the unavailability of critical staff. In almost any event, the show can go on. But if you don't have the right lines of communication, you don't have those common understandings. From a disaster management point of view, we're always looking at training people to have the skills, knowledge, and insight to make effective decisions rather than waiting for a chain of command. Along similar lines, decentralisation can be a powerful tool, but only if the leadership and management systems are established to enable it.

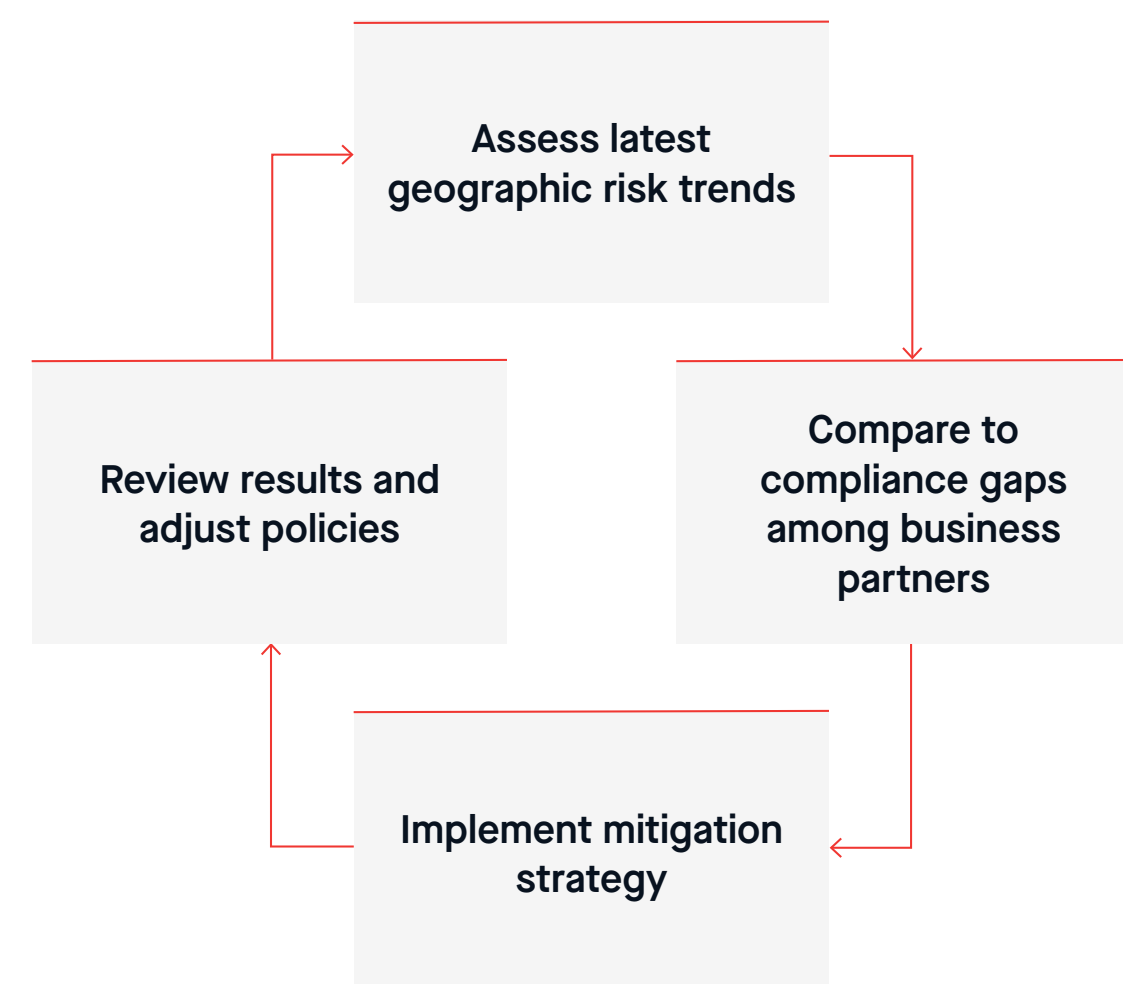


Tomas stresses the importance of being ahead of the game: “It’s crucial to have access to information that is objective and predictive – if you’ve got a clear understanding of the actual dynamics of risk in a given market or sector, you can prepare for any risks that could harm your supply chain, which means you can get those wheels spinning earlier.

“Continuing to follow the risk assessment process is a key factor in how well organizations remain resilient to these ever-changing risks in both supply chains and the world in general. It is up to the supply chain professionals, whether from a security, business continuity or sustainability perspective, to ensure that not only are they staying up to date on the current trends in risks, but also to apply this knowledge to the supply chain by ensuring that those pain points are identified in advance. This can be accomplished through the supplier assessment process, which measures how any given supplier is adhering to organizational standards.”

**“Continuing to follow the risk assessment process is a key factor in how well organizations remain resilient to these ever-changing risks in both supply chains and the world in general.”**

With this in mind, companies must follow the latest standards and procedures in order to effectively mitigate the ever changing threat landscape. To further illustrate this shift in criminal activities, we’re seeing a growing use of phone apps and online marketplaces for shipping services by thieves around the world, who use this means of communication to fraudulently pose as legitimate parties to steal cargo trucks and shipments. While fraud, in general, has been a key tactic used by thieves, the use of these online communication platforms and exchanges is a more recent phenomenon. So firstly, organizations should understand that this is a growing issue, and secondly, they should modify the standards and procedures used to assess suppliers.





As discussed in Chapter One, different organizations face different challenges, and pain points vary by sector. If you consider retail, their main challenge is around getting products that are customized or bespoke for individual customers – think of fashion, for example. The question is: How do you maintain the kind of micro supply chains that may be required for those types of business-to-consumer interactions? And then: How do you maintain the distribution lines when you no longer have a million shoes going to a million consumers?

As Pelli says: “This creates more complexity in the supply chain, so it’s crucial to build resilience when you’re looking for suppliers for those smaller supply chains. How do you build that in from the beginning and make it part of the supplier selection process, rather than it being an afterthought? This is particularly important when it’s a group of specialized suppliers, as opposed to just one large factory that’s making your product.

“If you think of other industries like pharmaceuticals, they have pretty intense regulatory pressures, and their biggest challenge will be reaching the next generation of customers – patients in middle or developing countries such as China or Brazil. They are facing a whole new range of supply chain risks, everything from counterfeiting and diversion of their products to outright theft. In that case, it’s important that organizations understand that they’re not dealing with the same sort of supplier, distribution and risk environment as they are in Western Europe.”

---

“It’s crucial to build resilience when you’re looking for suppliers for those smaller supply chains.”







### Collaboration Will Drive Large-Scale Change

“Whether it’s with suppliers, or with industry peers, collaboration will help drive large-scale change,” explains Lynch. “It’s crucial to have the right data and intelligence in the early stages of decision-making to make informed decisions about how to allocate resources. You clearly can’t be on the ground with a thousand suppliers every day, 24 hours a day, so you have to decide who to engage and how deeply to engage with them. ‘One size fits all’ is not the answer, so you have to assess who you spend more time with based on the risk, impact, or opportunity.

“Our role here is to enable suppliers to identify the problem and the root of the problem. We need to help them own the diagnosis of it, and own the development of the solution, ideally collaboratively across functions and up and down levels within their organization.”

Yarbrough concludes: “We may be competitors in the market, but when it comes to tackling the supply chain issues we’ve highlighted in this report, the best path forward is through association and collaboration with the experts that can help address the challenges and deliver better, faster results.”



“We may be competitors in the market but when it comes to tackling these issues, the best path forward is through association and collaboration with the experts that can help address the challenges in front of us and deliver better, faster results for sectors and industries as a whole.”

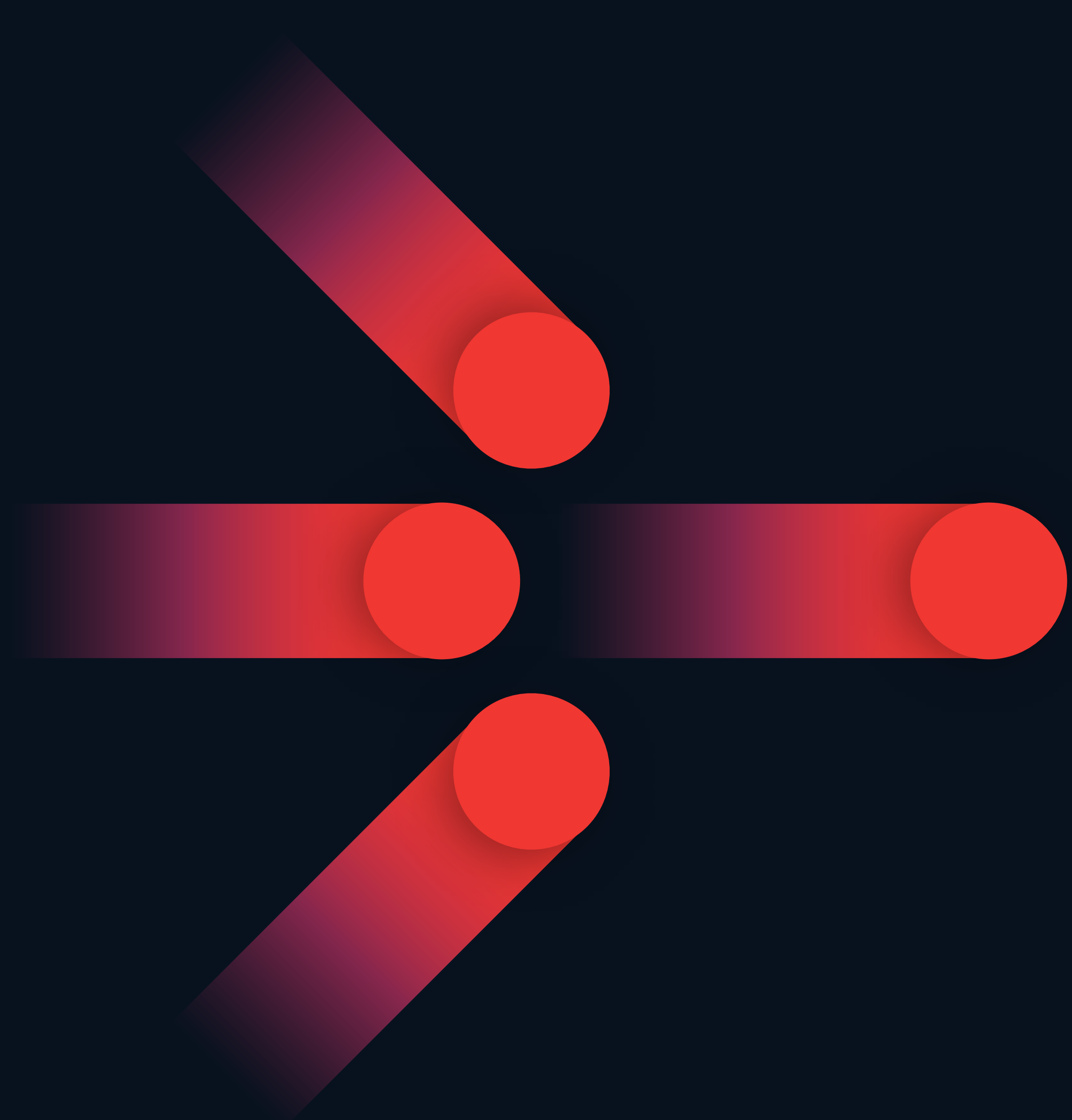
**Jim Yarbrough**  
Director, Global Intelligence  
Programme, BSI



# ● Chapter 4

## Adapting to multiple challenges

How do we adapt to the current convergence of multiple business challenges?





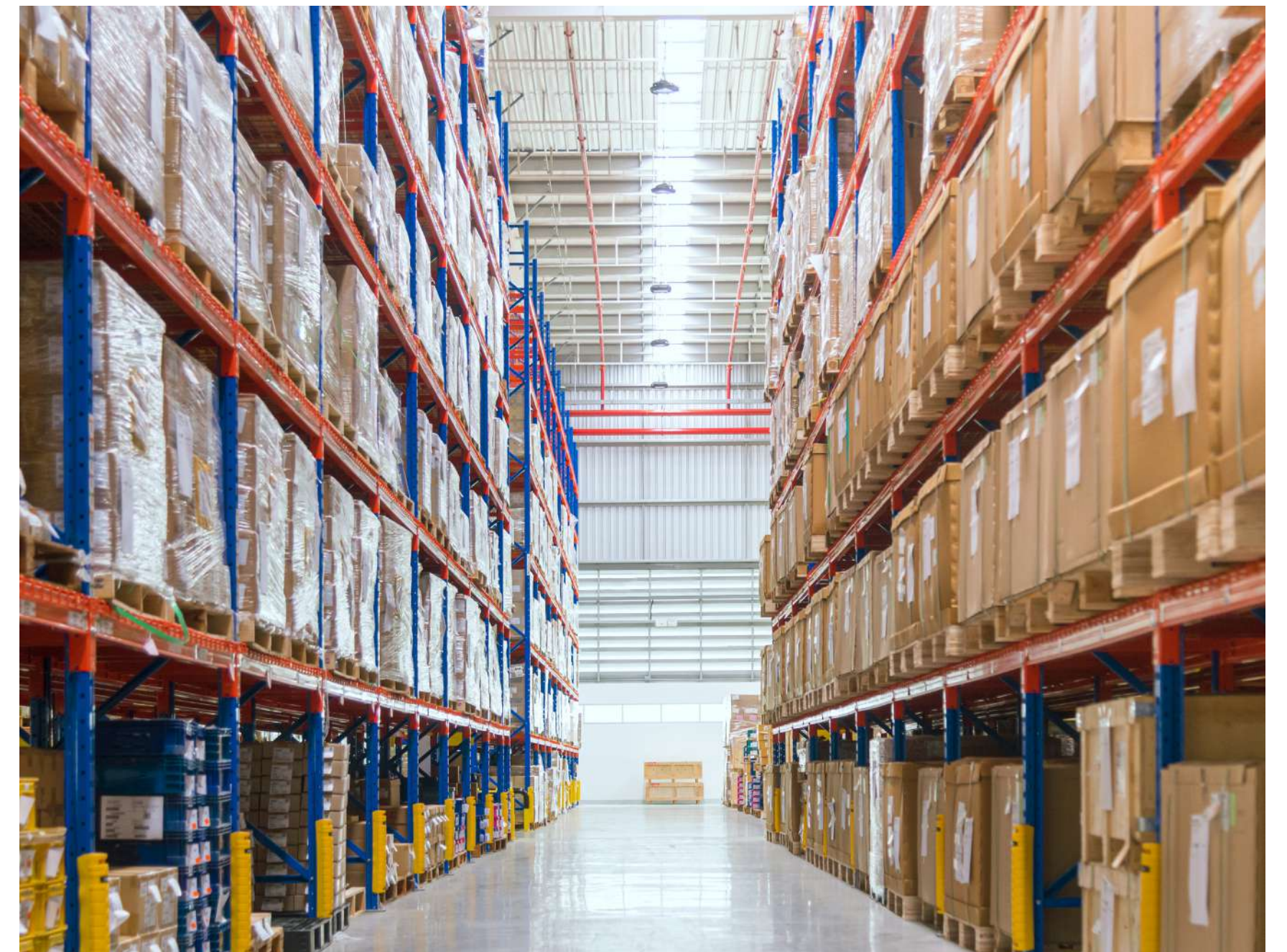
## Chapter 4: How do we adapt to the current convergence of multiple business challenges?

The start of the answer to this question is to be fully aware of the fact that these different challenges are converging. There needs to be an appreciation within an organization that your business continuity, sustainability, CSR and security teams need to be working together on the same challenges as there is a convergence of these challenges. Those organizations that adapt and start working that way sooner will be the leaders in terms of getting through these challenges. They'll be the ones who find the best solutions.

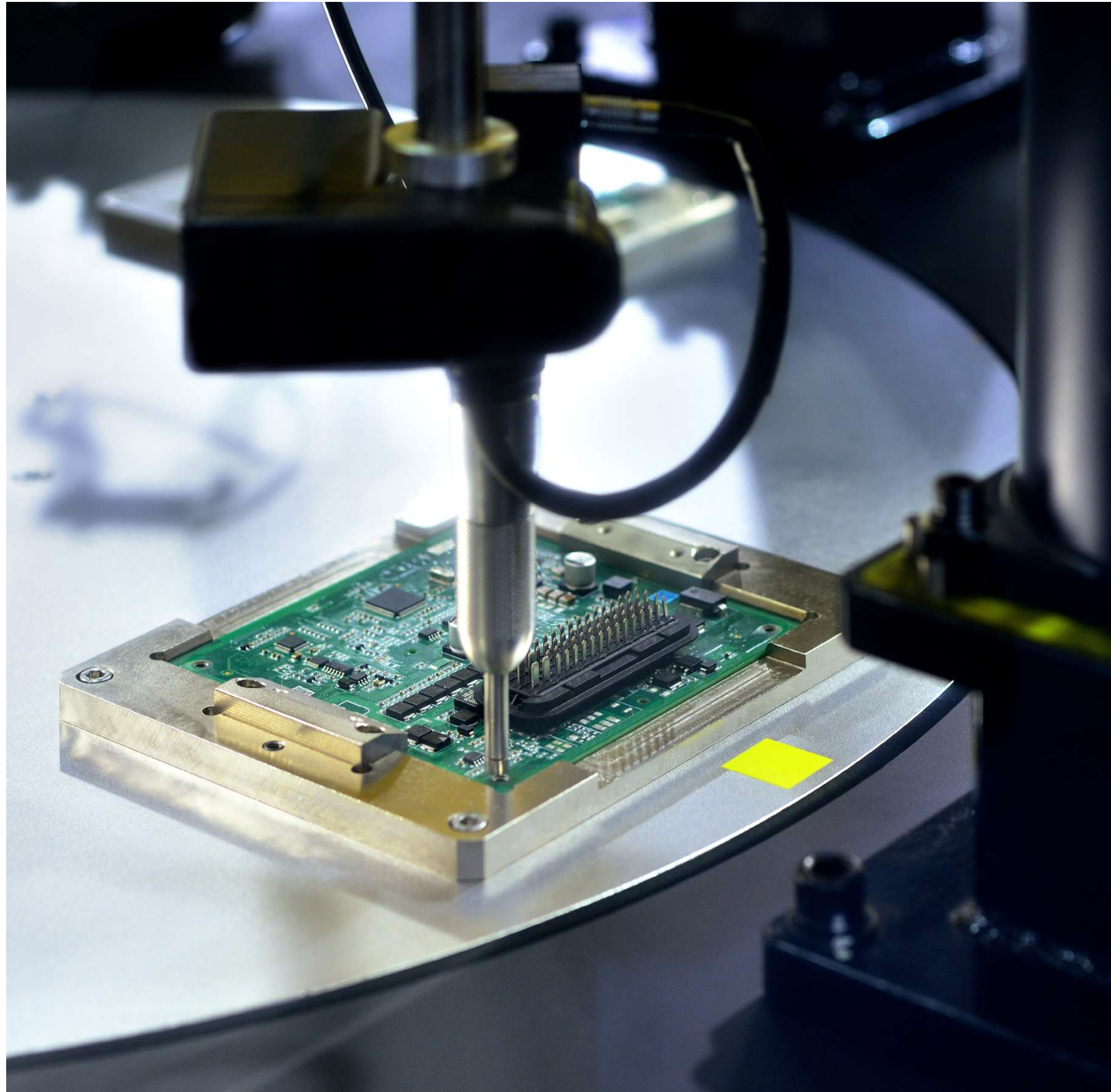
Data and analysis have consistently shown that whatever the sector or geography, business continuity disruptions can lead to security issues. For example, if strikes or staff shortages lead to goods piling up in overflow warehouses, it won't be long before 'bad actors' identify these weak points and you have a potential security issue. We saw this a lot in the early days of the COVID-19 pandemic – organizations were using overflow warehousing facilities because they couldn't ship the products they were producing. Suddenly, valuable goods are being stored in facilities that haven't met the same security criteria that existing established facilities have in place. Those disruptions start to overlap.

As an example, a worker at an airport in Ciampino, Italy, was able to steal smartphones from an airplane while attention was focused on the unloading of the COVID-19 vaccine. To combat this risk when certain products overlap, companies should be aware of the other commodities their logistics partners handle. For example, if logistics partners handle a lot of sensitive or temperature-controlled pharmaceuticals that need to be moved quickly, other products could be left waiting while those are handled. Keeping tabs on the 'dock to stock' KPIs and times with suppliers can help deal with this problem. Another option is for companies to put into contracts that their products should not be co-loaded for LTL (less-than-truckload) shipments with frequently targeted commodities, such as food or electronics.

“There needs to be an appreciation within an organization that your business continuity, sustainability, CSR and security teams need to be working together on the same challenges.”







The global shortage of semiconductors also exemplifies this convergence of business challenges from both a business continuity and security perspective. According to reports, Taiwan holds roughly 90 percent of the world's manufacturing capacity to produce semiconductor chips. This dependence on Taiwan's manufacturing has contributed to the global shortage of this increasingly ubiquitous component. Factors such as droughts and COVID-19 outbreaks in Taiwan between April and July impacted operational capacity, further compounding the global shortage of semiconductors. This chip shortage has also created security concerns as well. For example, in June, a group of criminals attacked a truck driver's assistant as he was transporting a high-value cargo of semiconductor chips on an elevator in Hong Kong, stealing \$650,000 worth of goods. There have also been reports indicating a growing prevalence of counterfeit semiconductors. One Japanese company investigated the distribution of its semiconductors and found that over 30 percent were counterfeits.

It's the same with sustainability – you can draw a direct line from human rights violations leading to protests and business continuity disruptions that very quickly turn into security challenges.

Take social unrest in Nigeria, for example. In October and November 2020, thousands of demonstrators took to the streets of Lagos and Abuja to protest the notorious Special Anti-Robbery Squad (SARS) over human rights violations towards suspects. What initially emerged as a series of protests over police violence quickly developed into a nationwide series of violent anti-SARS, then anti-government protests. Parallel to this escalation in size, impact and violence was an increase in cargo theft incidents and, with it, a diversification in types of cargo theft. For example, during the demonstrations in Q4 of 2020, criminals increasingly targeted the facility modality, often exploiting the weaker security environment. As a result, in 2020, thefts from facilities accounted for the majority of thefts at approximately 33 percent of all recorded incidents. Whereas in 2021, cargo theft trends returned to pre-demonstrations levels and the trucking modality accounted for the majority of cargo theft incidents, at 66.7 percent. This link between human rights violations and social unrest, and in turn, business continuity and security issues, signals that no security trend happens in a vacuum.



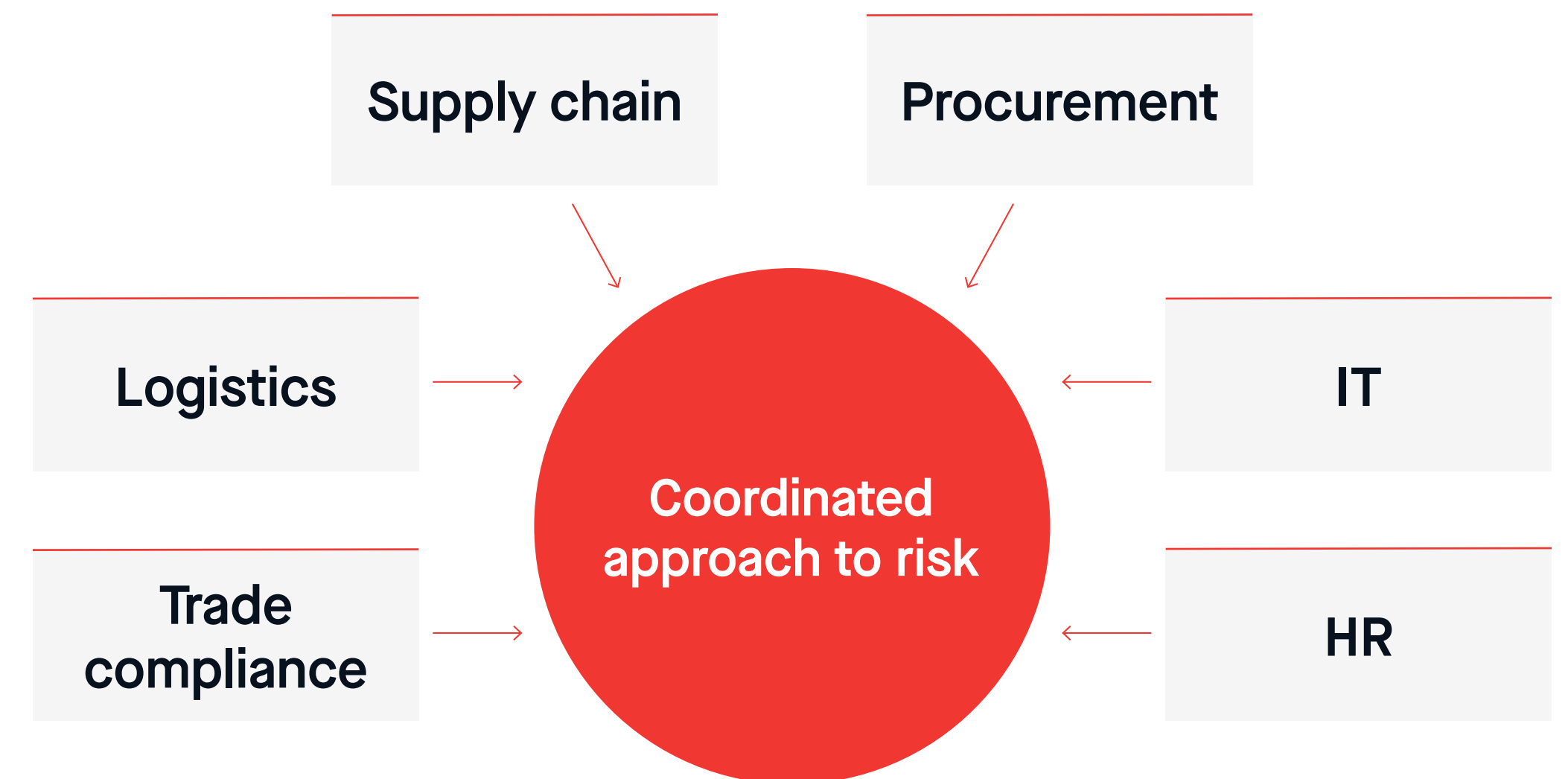
## Understanding the Overarching Supply Chain Challenges

Yarbrough would like to see more collaboration across businesses: “There needs to be working groups within organizations that understand these overarching supply chain challenges and bring all the different experts together to resolve them. The organizations that embrace this approach will be those that find the best solutions. Of course, this is much easier said than done, and no organization purposely creates silos, but leadership teams need to show the way by identifying and tackling these challenges.”

One high profile convergence – cyber security and physical security in this case – made international headlines in April this year. In the US, hackers gained entry into the Colonial Pipeline through a virtual private network account, which was intended for employees to remotely access the company’s computer network. The hack took down one of the largest fuel pipelines in the country and led to gas shortages across the East Coast. All because of a single compromised password.

And as Pelli points out, it can work both ways: “A lot of physical security vulnerabilities are also cyber security vulnerabilities if your data centres are not secure. There are a lot of different ways that you can get access to

different networks or systems through physical security vulnerabilities. My message for companies that typically would not have taken cyber security very seriously, or for people who are looking at supply chain risk, is that the cyber security element is increasingly important.







Increasingly, we're seeing organizations turn to automation and this is likely to be a trend that continues into 2022 and beyond. With technological developments, soaring levels of e-commerce and acute labour shortages, companies are looking for solutions to better streamline workflow, manage operations and serve customers, all with greater levels of transparency throughout the supply chain.

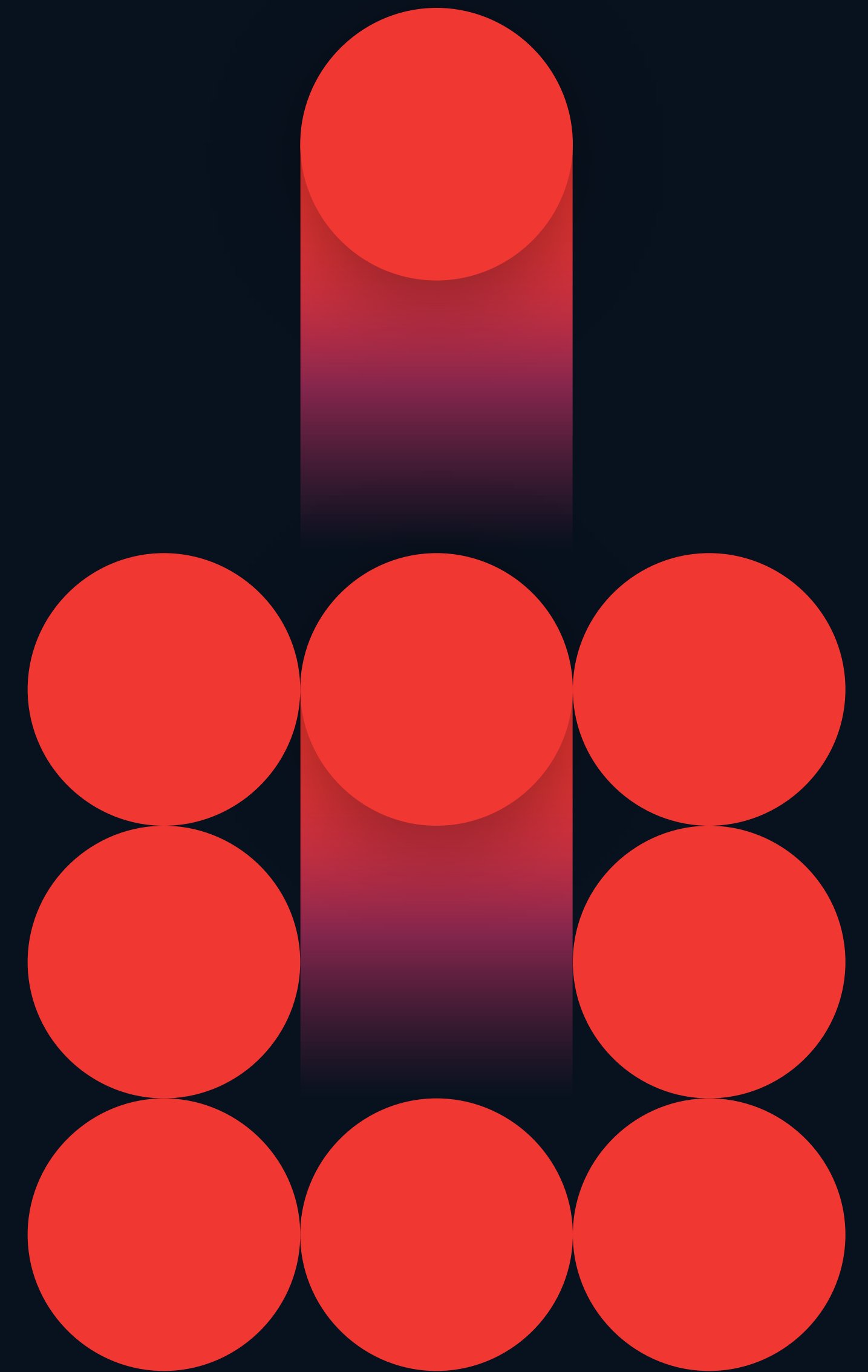
Better integration, as Raw points out, offers huge positives: "You have to maintain a clear focus on the desired end state and corporate objectives – if you do this, it can be so powerful to include people in the momentum you're building. There's a famous quote from when John F. Kennedy visited NASA in 1962 and asked a janitor what he was doing – he replied, 'I'm helping put a man on the moon'. It's all about making sure that people feel part of something and aligned to it."

We're living through a time of immense change and if we want to bring people with us, we have to ensure they understand the interrelated nature of things, not just within their organization but across their value chain. It's tempting to have a binary view, but things change and what we need is people within organizations who are comfortable with change, ambiguity and uncertainty supported by flexible and scalable frameworks.



# ● Chapter 5 Unlocking potential opportunities

**What are the key emerging trends for 2022 and beyond and how do we unlock the potential they offer?**





## Chapter 5: What are the key emerging trends for 2022 and beyond and how do we unlock the potential they offer?

As we move towards 2022, it's important to take a step back and assess the global supply chain landscape. Of course, there are other factors at play, but the changing US political landscape and Brexit in the UK have, for example, triggered a massive change in trade agreements between nations. This continues to reveal an ever-evolving global economic picture and, from a supply chain perspective, those changing dynamics are going to continue into the future.

It's essential that organizations have a clear insight into these dynamics – for example, tariffs on imports from non-US companies had an impact on many organizations. Suddenly, the whole landscape shifts – what was a good quality product at a good price starts to look very different, and, on top of that, the tariff is being passed onto the US consumer.

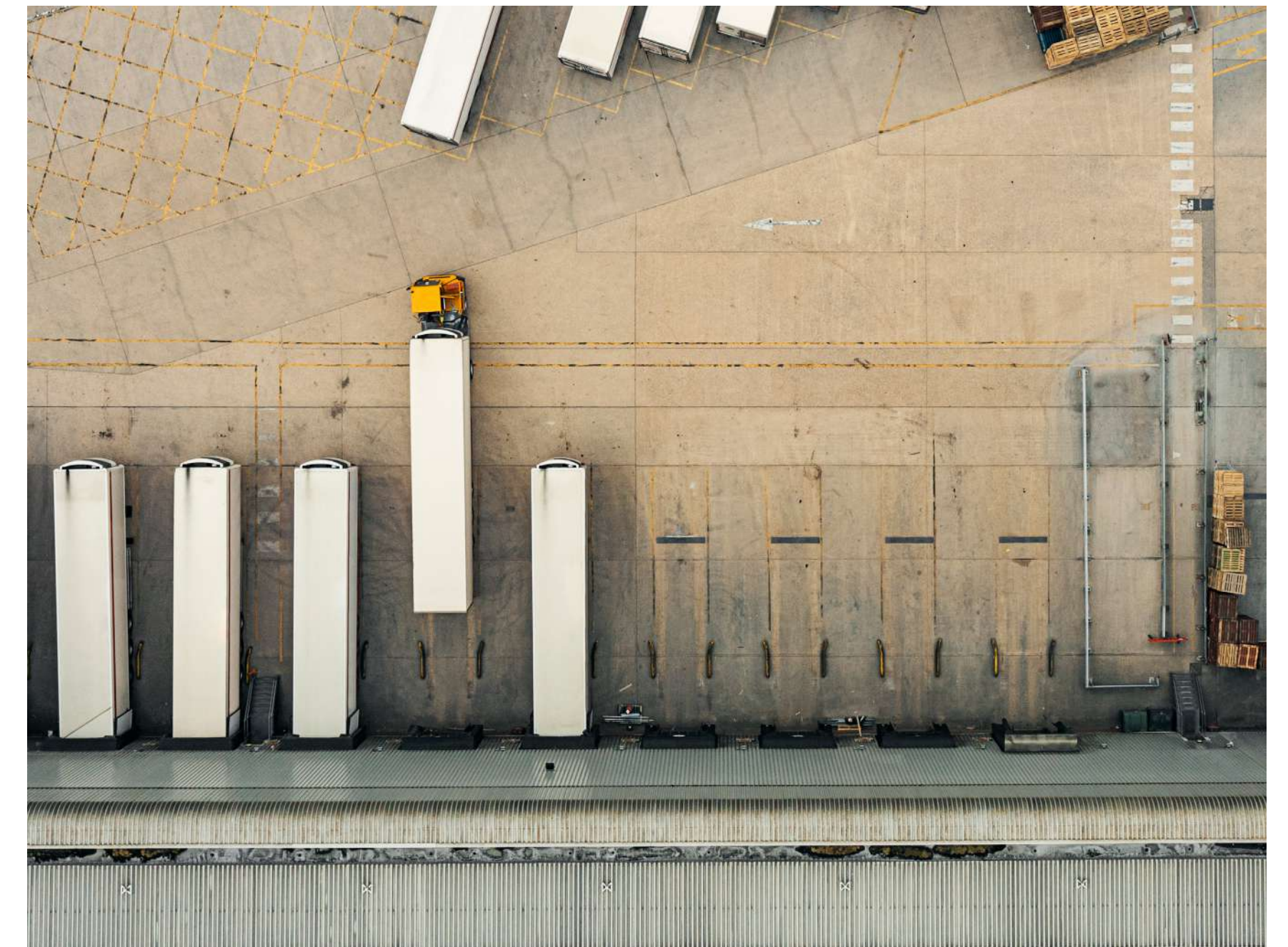
These shifts in trade policy are additionally contributing to the current shipping capacity crunch. Imposing duties as high as 221 percent on imports from subject countries and companies further exacerbates the US shipping market by discouraging new capacity for freighters and importers and raising the

shipping costs<sup>15</sup>. For example, with the case of imports of truck chassis from China, the product is already stretched thin, with major companies reporting shortages across some of the country's biggest transit hubs, including Seattle-Tacoma, Los Angeles/Long Beach, Chicago and St. Louis. With the high duty on truck chassis, the country is experiencing acute shortages of an essential product that is difficult to acquire which also happens to be a victim of shipping bottlenecks, rising freight prices, and high demand because there are not enough non-Chinese chassis companies to help alleviate some of these issues. This will likely be passed onto consumers as freighters, importers, and manufacturers cope with the high prices and pass those costs on to customers.

For various reasons linked to both Brexit and COVID-19, the UK is experiencing a shortage of up to 100,000 truck drivers. As a result, garages, supermarkets, restaurants and other businesses are experiencing shortages of goods, an issue that is not expected to be resolved anytime soon. When looking at Europe overall, there is an estimated shortage of 400,000 truck drivers.

<sup>15</sup> Cato Institute, 2021

The UK is experiencing a shortage of up to 100,000 truck drivers. As a result, garages, supermarkets, restaurants and other businesses are experiencing shortages of goods, an issue that is not expected to be resolved anytime soon.





## Adaptations to Help Tackle Climate Change

As discussed in Chapter Two, we're witnessing a proliferation of new regulatory requirements and many of these will be rooted in sustainability issues such as decarbonization and deforestation. As Yarbrough says: "This is putting accountability front and centre of the supply chain at the customer level but also at the organization head level. As a result, organizations need to adapt to these regulations quickly and understand their supply chain in ways they haven't done previously."

Lynch sees a drive towards decarbonization among organizations: "This year I've seen organizations willing to invest time and effort on making changes with regards to energy production, food production, transportation and the built environment. They understand that they need to have a clear understanding of their own impact and their current baseline, and to plan better to drive change. The IPCC report in August carried a lot of weight – especially when you consider that 195 countries have to agree on the text – and we're seeing a market like the US being more assertive and tackling climate change."

"This year I've seen organizations willing to invest time and effort on making changes with regards to energy production, food production, transportation and the built environment. They understand that they need to have a clear understanding of their own impact and their current baseline, and to plan better to drive change."





This shift towards internalizing climate change is gaining traction. This summer, first in June and later in August, lawmakers in the European Union and in the US introduced legislation to enact a carbon border tax. While the proposals face independent roadblocks, whether it be adopted in the US or implementation in the EU, these initiatives signify a major shift driven by regulations to incentivize climate policy.<sup>16</sup>

In July, we even saw China enact a national emissions trading system to help curb carbon emissions before 2030, further illustrating the growing prioritization of climate policies by some of the world's largest carbon emitters.

Climate risk is another emerging trend – for example, if you're a bank or an insurer involved in a building project that you anticipate will be in use for the next 50 years, how do you know it's not going to be underwater in five years?

Climate risk is another emerging trend – for example, if you're a bank or an insurer involved in a building project that you anticipate will be in use for the next 50 years, how do you know it's not going to be underwater in five years? Or how can you guarantee that you'll be growing coffee in Guatemala in ten years?


Against this backdrop of sustainability challenges and opportunities, there's an interesting dynamic between an organization's fiscal responsibility versus their consumer responsibility: Which one is going to come out on top? We all know there are times when there's a divergence between what companies say and do, and different stakeholders want different things. For an investor it may be maximum profit, and for a consumer it may be better working conditions; those two things are not always compatible.

It will be fascinating to see which drivers emerge as the dominant ones; this will vary by sector. For fashion retail, it's likely that organizations will be primarily consumer focused, whereas other sectors will be firmly fixed on profit.



<sup>16</sup> <https://www.coons.senate.gov/imo/media/doc/GAI21718.pdf>



A woman in a white lab coat and cap is working in a factory. She is wearing a blue surgical mask and is focused on a small component in her hands. The background shows other workers in similar attire, indicating a clean, controlled manufacturing environment.

Customers and end users are more aware than ever of the supply chain dynamic, and this will be a driving force for an increased focus on sustainability and ethical business.





## The Influence of Consumer Behaviour and Automation

Another major trend to be aware of is the changing nature of the consumer – their wants, needs and behaviours. Customers and end users are more aware than ever of the supply chain dynamic, and this will be a driving force for an increased focus on sustainability and ethical business. But, as discussed, commercial considerations are never far away.

And then you have technology – Blockchain and the Internet of Things are driving business and making things more efficient which can drive financial return for your organization and potentially offset some of the other challenges we've discussed in this report.

We're also going to be seeing more automation in the supply chain – for self-driving vehicles and for trucking. There are potential positives and negatives here. One of the positives is that it opens up continuous travel – this is real progress because when trucks are stopped, they're more at risk for hijackings and theft. But it also creates a potential issue in that truck drivers do much more than just drive the truck; there's paperwork and documentation that help with safeguarding shipments at different points in the supply chain. This is the kind of challenge we'll need to address in 2022 and beyond: What does this mean in terms of supply chain security? How do we work out how to avoid disruptions in the supply chain with self-driving vehicles?



## Remembering the COVID-19-Related Lessons

And of course, there is the ongoing legacy of the COVID-19 pandemic. COVID-19 certainly exposed some serious gaps in many supply chains – an over-reliance on China and problems getting hold of PPE equipment, for example. As we head into 2022, we'll still be dealing with the issues of 2021 in terms of commodity prices and shortages of containers, so being able to plan your supply chain for some degree of flexibility is going to be crucial. Imagine your chosen mode of transport is too expensive or not available: How do you account for that? How do you manage customer expectations? How do you find an alternate way of shipping or making your product?

COVID-19 has also opened up additional opportunities for criminal behaviour – for example, bottlenecks within the supply chain have led to massive stock increases within warehouses, making them more susceptible to crime. And connected to this, fraud and counterfeiting which are both on the rise.

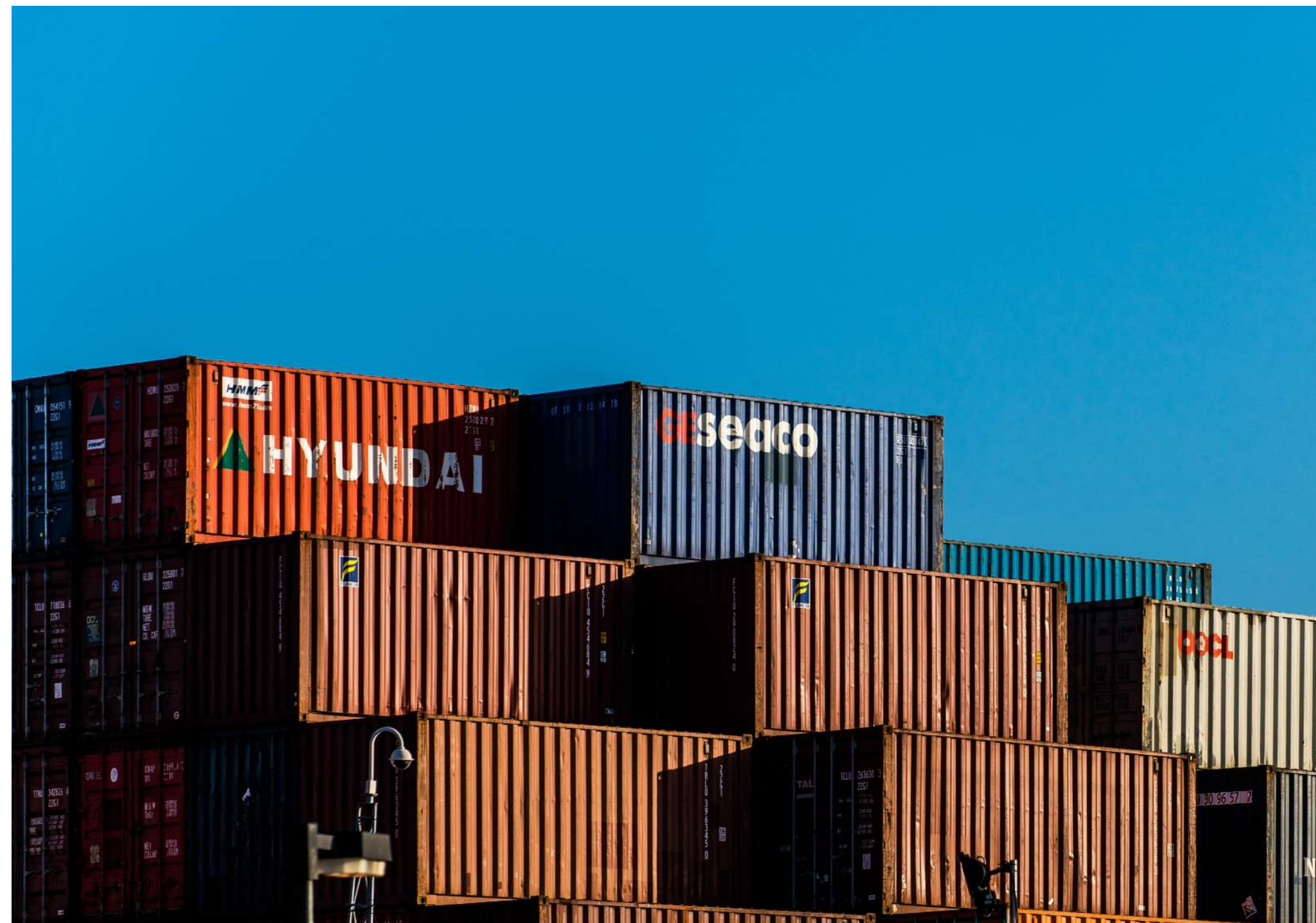
As we approach 2022, there is no doubt that supply chain is right at the heart of public consciousness. We've learned many lessons over the last eighteen months, but the important thing now is that we take them forward with us.





# Conclusion

As we've seen in the report, the ongoing COVID-19 pandemic, irreversible climate change, evolving regulatory regimes and the convergence of multiple business challenges mean there are difficult decisions ahead. With supply chain firmly in the public spotlight, these decisions have never been more critical, or scrutinized.



For every question we asked, we have heard from some of BSI's main experts who work daily to provide guidance for organizations as they make such decisions.

We hope their shared experiences and recommendations are a good starting point as businesses look ahead to next year and beyond and answer these key questions for their own company. This journey starts with fully understanding your suppliers – verify, then trust – and putting genuine partnership right at the heart of your supply chain strategy.

Organizations need to be proactive and visionary and embrace change before it becomes imposed upon them – this is how they can drive competitive advantage. Supplier performance audits are key, and organizations must understand that the onus is now on them to ensure that suppliers are managing their business relationships correctly. It's time to adopt a holistic approach and look beyond traditional supply chain partners, methods and technologies.

When it comes to addressing key pain points, organizations need to first identify them, next establish effective communication between all parties, and then embrace a unified approach. With this in place, collaboration with experts can help address business challenges and deliver better, faster results.

To address the convergence of challenges surrounding us, it's crucial to fully understand the interrelated nature of things, not just within organizations but across value chains. And to establish flexible and scalable frameworks and foster a culture that celebrates change rather than fears it.

Against a backdrop of unprecedented climate change, organizations need to adapt to evolving regulations quickly and understand their supply chain in ways they haven't done previously. Changing consumer behaviour and automation are other key trends to follow closely as businesses seek to apply the lessons learned from the COVID-19 pandemic to become more resilient. 2022 promises to be another momentous year. Let's tackle it together.



## Empowering organizations to be ready for the future

As the financial, environmental, and social climates of our planet continuously shift, BSI's founding purpose to benefit society is more relevant now than ever before. By shaping, sharing, embedding, assessing, and supporting industry best practice, for 120 years BSI has equipped organizations with the tools and techniques they need to turn today's challenges into tomorrow's opportunities.

Working globally across a range of sectors - with specialist expertise in the built environment, food and retail, automotive and aerospace, and healthcare - BSI offers a range of services and solutions to make organizations more trusted and resilient.

We adopt innovative technology and processes to offer our services in an efficient and effective manner. Adopting a balance of hindsight and foresight, BSI partners with our clients to embed sustainable behaviours for the long-term benefit of their people, their customers, and our planet.

## BSI Connect Screen: Resilience through insight

Employing a risk-based approach to supplier auditing and supply chain risk management, BSI Connect Screen is the world's largest proprietary global supply chain risk intelligence database.

Utilizing over 25 risk-ratings in more than 200 countries, organizations turn to BSI Connect Screen to accelerate their understanding of supply chain risk and gain insight to empower decision-making for a more resilient supply chain.

By infusing geographic data based on risk, vulnerability, probability, and impact, combined with features to proactively identify, analyse, and track compliance and risk through self-assessments and internal and external audits, BSI Connect Screen is the only end-to-end suite of services to assess, monitor and efficiently manage supply chain risks.



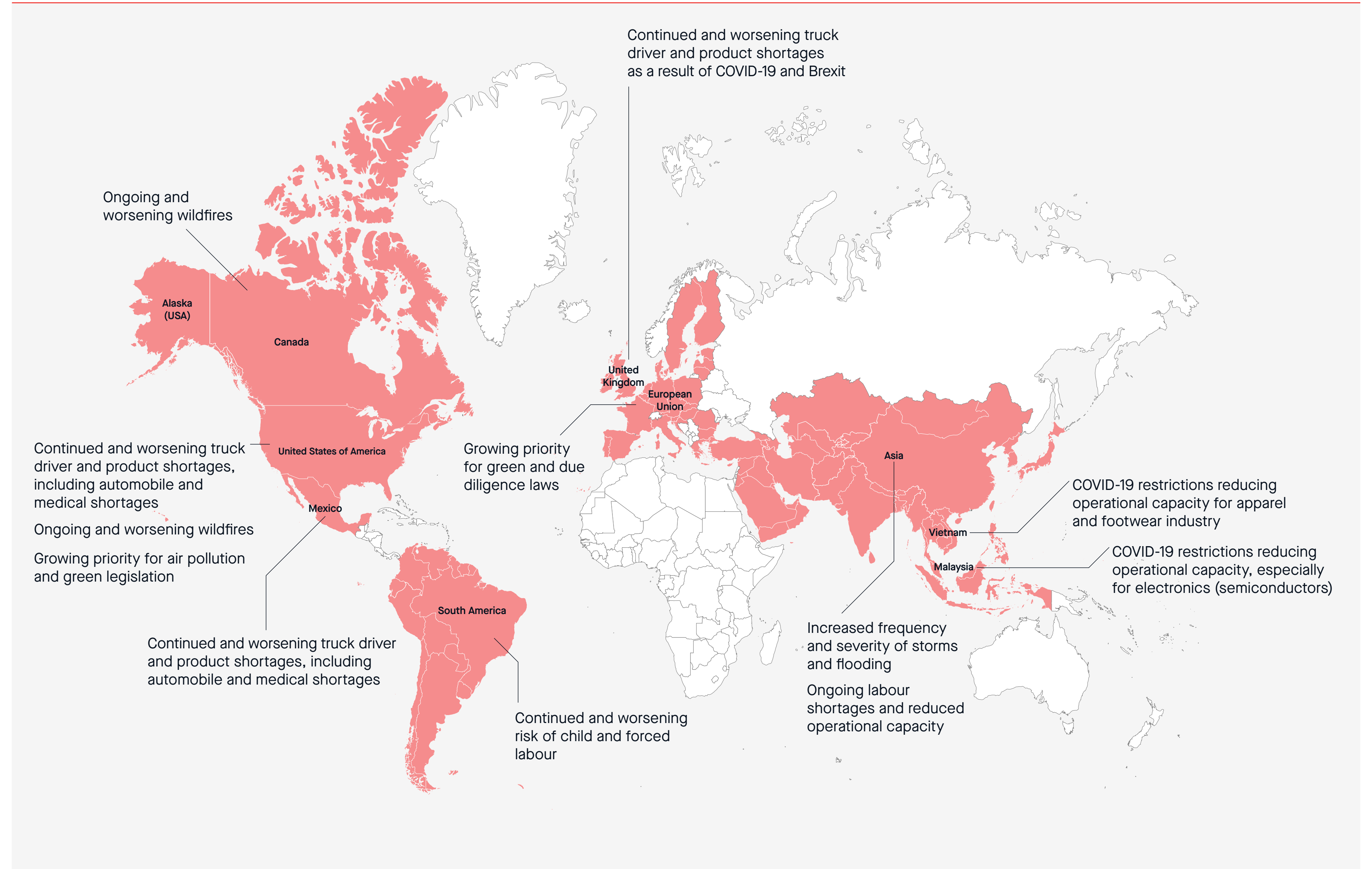
Find out more at:  
[bsigroup.com](https://bsigroup.com)



# ● Appendix



# SCREEN Global Intelligence Report 2021





# SCREEN Global Intelligence Report 2021

## Threat Rating Changes

↑ **United States**

Man-made disruption

↓ **Jordan**

Terrorism

↑ **Myanmar**

Political stability

↑ **India**

Natural disaster exposure

↑ **Bulgaria**

Counterfeiting

↑ **Israel**

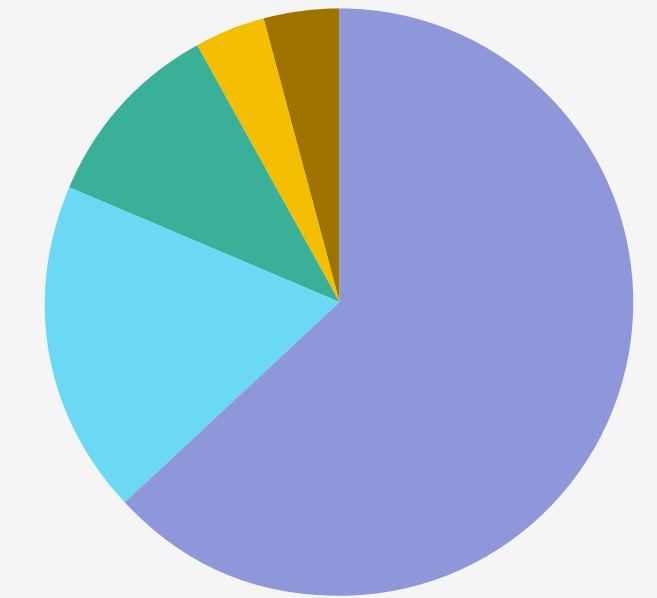
Political stability

↑ **Israel**

Man-made disruption

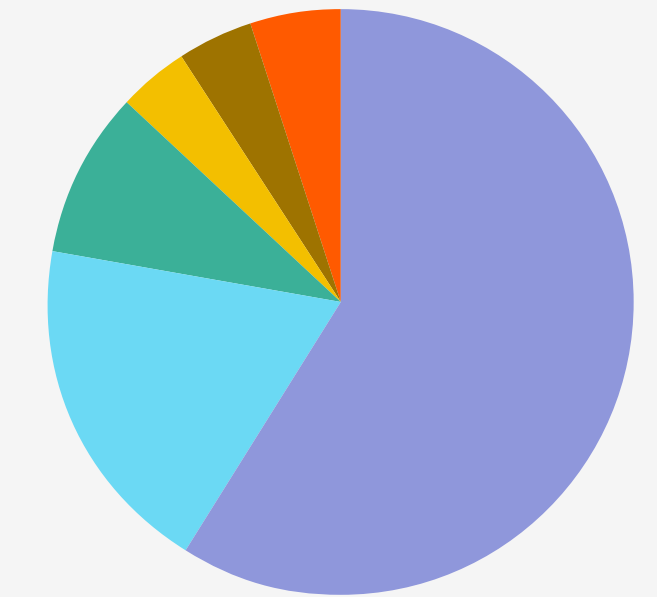
## Disruption from Labour Strikes

Facility Operations	63.2%
Ground Transportation	18.4%
Sea Transportation	10.4%
Air Transportation	4.1%
Rail Transportation	3.9%

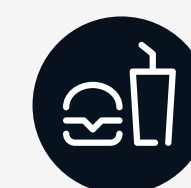


## Top Labour Violations

Workplace accident	59%
Working conditions	19%
Forced labour	9%
Child labour	4%
Wage violations	4%
Other	5%



## Top Commodities Stolen



13%

Food and beverage



12%

Agriculture



10%

Construction Materials



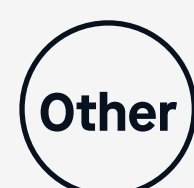
9%

Electronics



7%

Fuel



49%

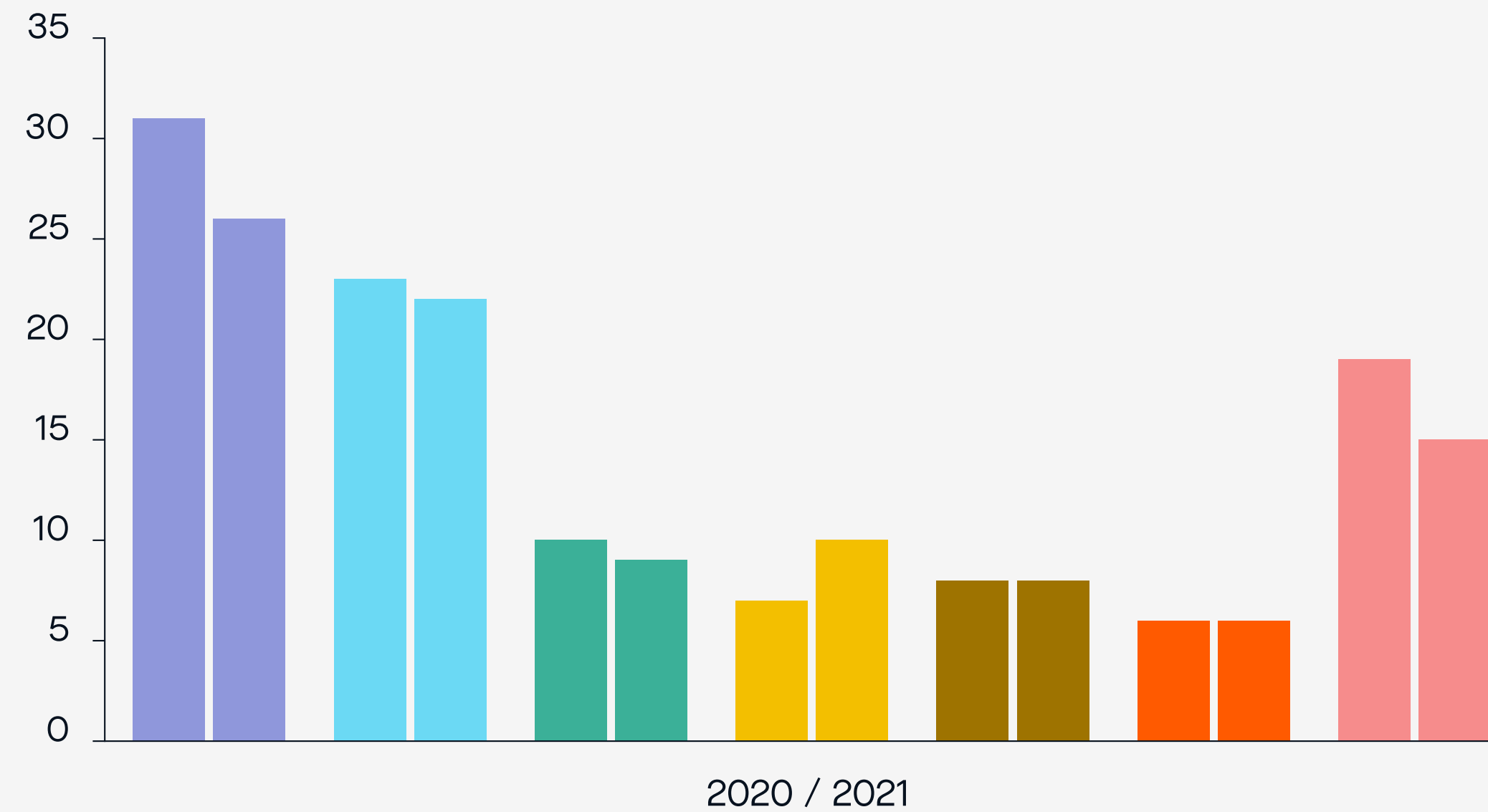
Other



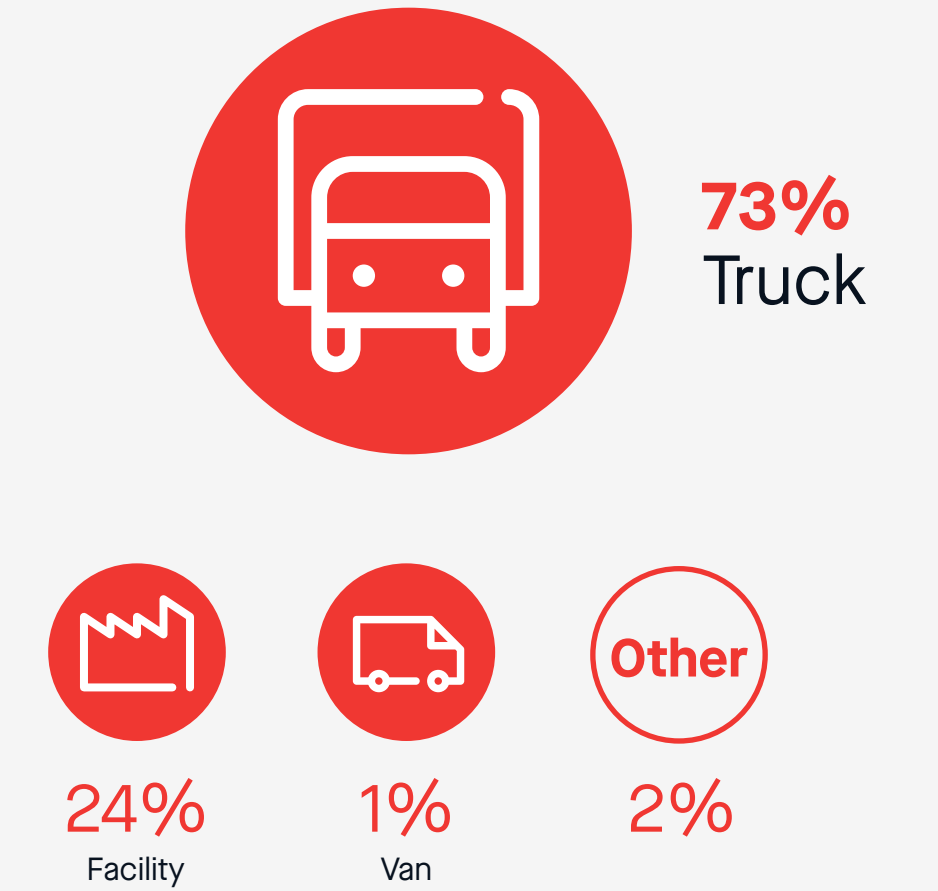
## Cargo theft trends Global 2020 v. 2021

### Cargo theft types

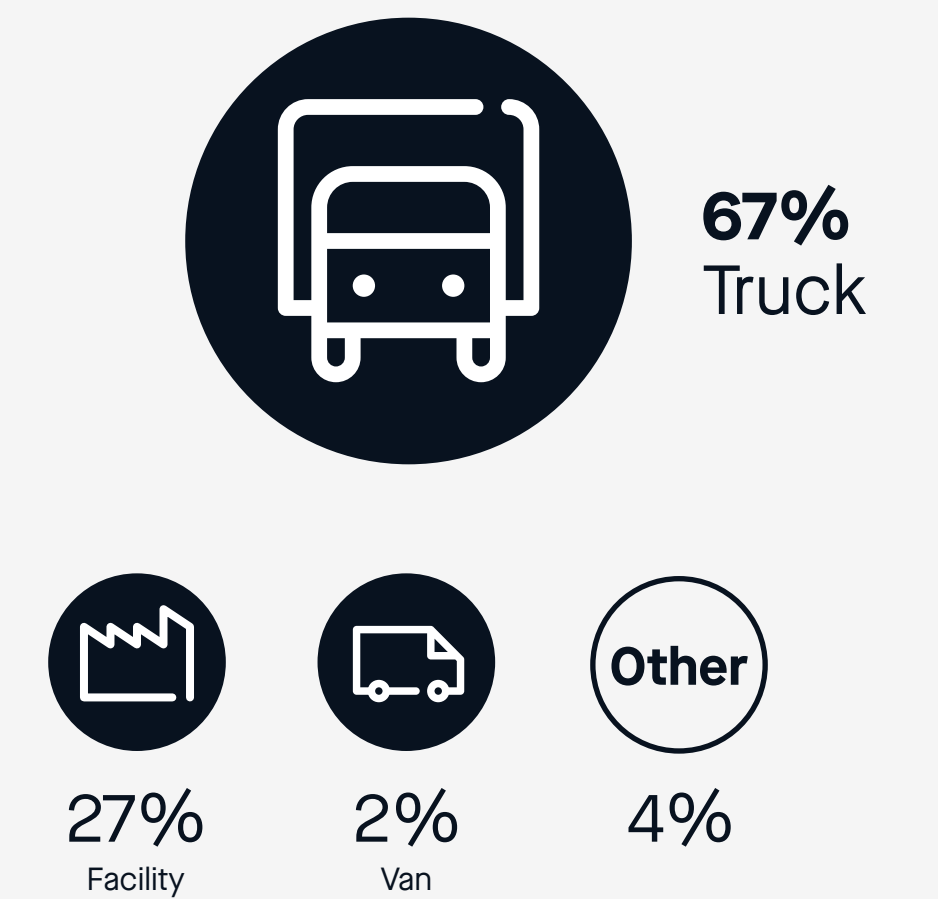
	2020	2021
Hijacking	31%	26%
Theft from facility	23%	22%
Theft of vehicle	10%	9%
Theft from container/trailer	7%	10%
Theft from vehicle	8%	8%
Theft of employee belongings	6%	6%
Other	15%	19%



### Modalities of theft 2020



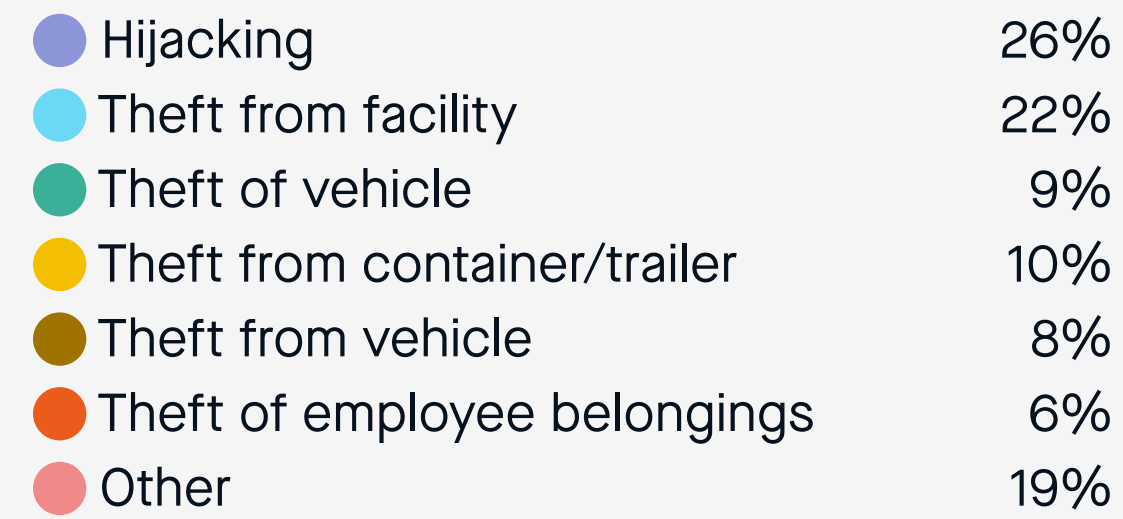
### 2021



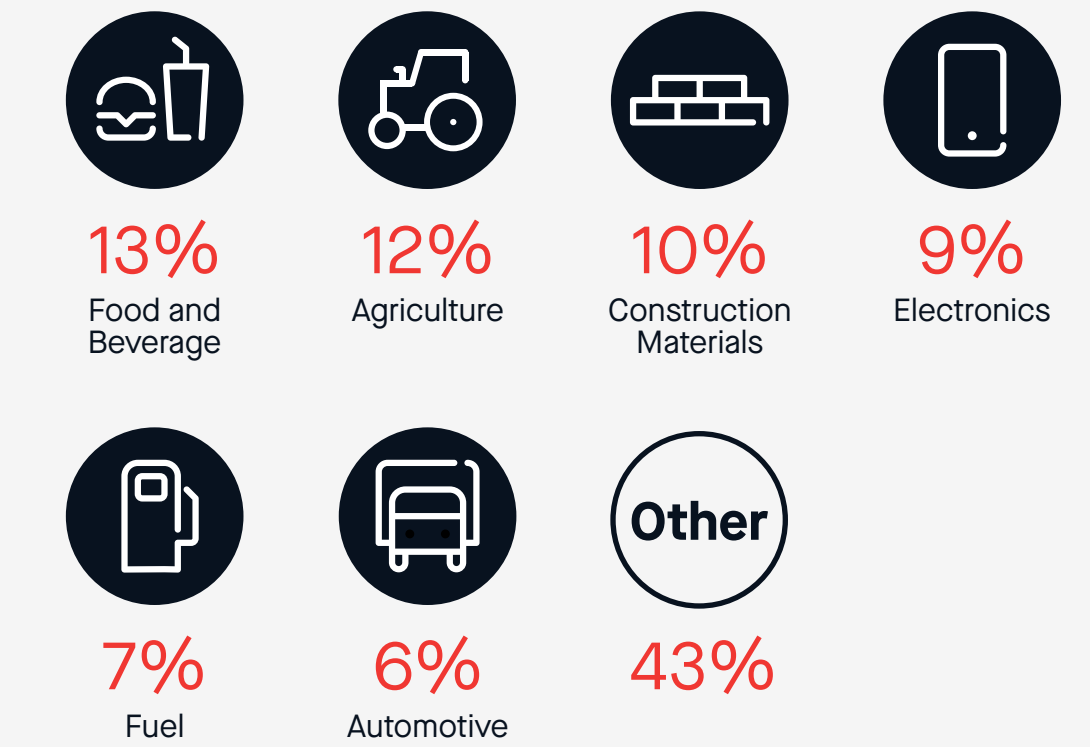


# Cargo theft trends Global 2021

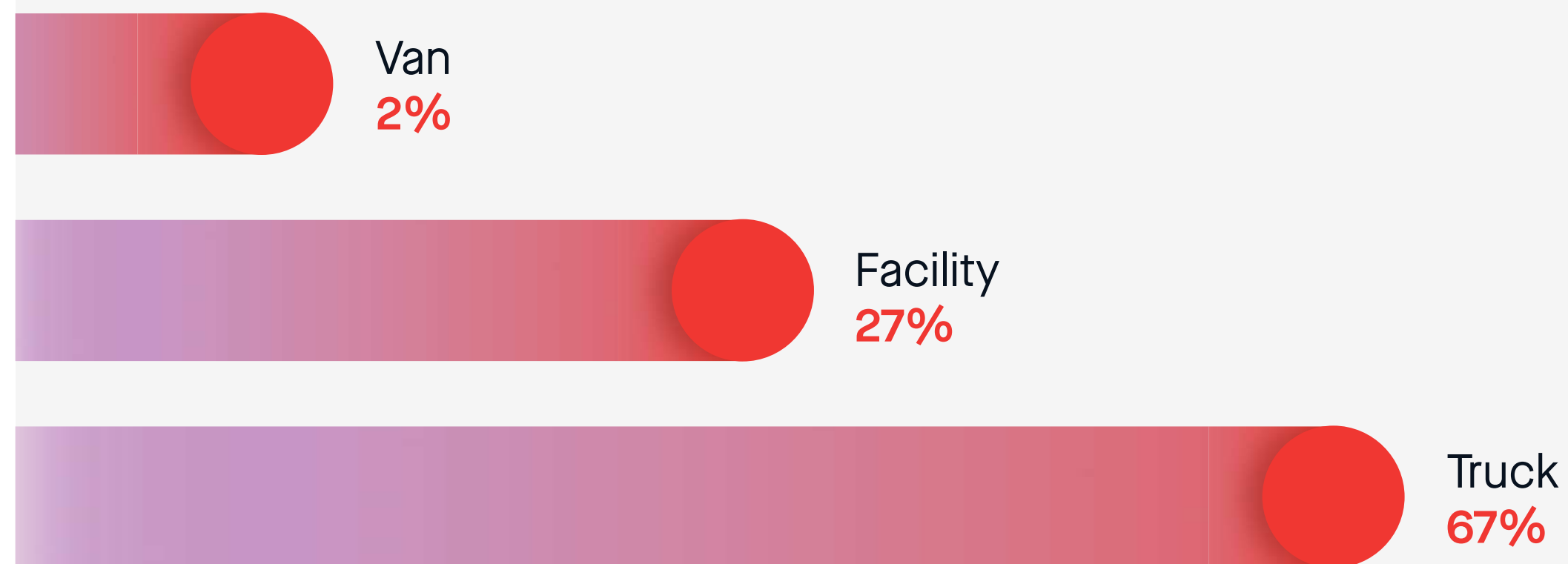
## Cargo theft types



## Top commodities stolen 2021



## Modalities of theft 2021



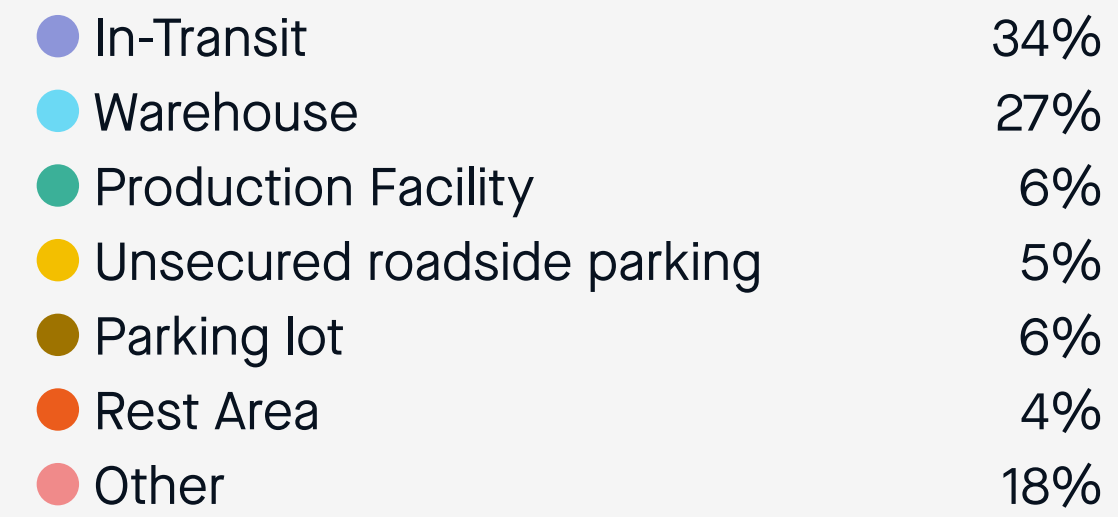
## Top countries with hijackings 2021

Mexico	209
Brazil	187
South Africa	47
India	33
Chile	36
Argentina	27



## Cargo theft trends Global 2021

### Location of Theft 2021



### Thefts by Employee 2021

Russia	50
India	26
Brazil	20
Indonesia	17
Italy	12
China	5

### Countries with Facility Thefts 2021

India	121
Germany	55
Russia	63
Indonesia	33
Italy	19
France	19



bsi.



Read more about our  
services and products  
on our website  
[bsigroup.com](https://bsigroup.com)