

Rethinking resilience in an age of unpredictability

Decoding the future risk landscape for the consumer industries



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Preface

This briefing document is part of joint efforts by Verisk Analytics and the World Economic Forum to demonstrate the imperative in investing in resilience across economic sectors. It builds on a much more extensive white paper on the value of rethinking and prioritising organisational resilience, published in July 2022. This report expands on that work by focusing on some of the key risks to the Consumer Industries Partner Community over the next 10 years, using a unique horizon scanning approach that combines Verisk Maplecroft's global risk data, analysis, and strategic forecasting.

Verisk is a leading data analytics provider serving customers in insurance, energy and specialised markets, and financial services. Using advanced technologies to collect and analyse billions of records, Verisk draws on its data assets and domain expertise to provide innovations that are integrated into customer workflows.

Verisk Maplecroft is a global risk intelligence company, providing unparalleled insight into sustainability, resilience and ESG issues, underpinned by best-in-class geospatial data and analytics.

As organisations strive to understand and adapt to a fast-moving world, we empower them to put the environment, human rights and political risk at the heart of their decision-making. Built upon objective insight and data, we stitch these issues together to offer a unique and interconnected view of the global risk landscape.

By thinking 'big picture' we capture what matters most to our partners; making positive outcomes possible in a time of change; helping people, business and societies become stronger; creating value with values.



Executive summary

The world is in a state of flux, with sustained and accelerated change permeating every facet of society, from governments to business to the individual lives of people in every corner of the globe. Driving this change are a set of interconnected risks that are combining to disrupt the resilience of traditional power structures, as well as the operations and supply chains of multinational companies.

Spiralling geostrategic competition, the rising impacts of global warming, prolonged economic instability, widening inequality, and increasing political polarisation are chief among these macro risks. They sit at the top of a pyramid of a range of mutually reinforcing environmental, social and political risks that are cascading outwards to upset the predictability of the operating environment. These cascading risks are the focal point of this paper.

This fluid landscape makes rethinking corporate strategies to withstand rising uncertainty a matter of urgency. Resilience should no longer be viewed as a defensive measure, 'bubbled-up' from various operational parts of the business; it must become interwoven with an organisation's growth strategy to bolster its ability to weather the critical challenges that lie ahead. For most industries the risk map is being redrawn and determining where, when and how risks will manifest is central to this effort.

The objective of this research is to identify some of the key risks consumer industries will have to prioritise over the next decade. To do this, we have employed a unique horizon scanning approach, featuring a nuanced and effective risk assessment framework that draws upon Verisk Maplecroft's Industry Risk Analytics dataset alongside analysis from our team of political, human rights and environmental experts (see Appendix).

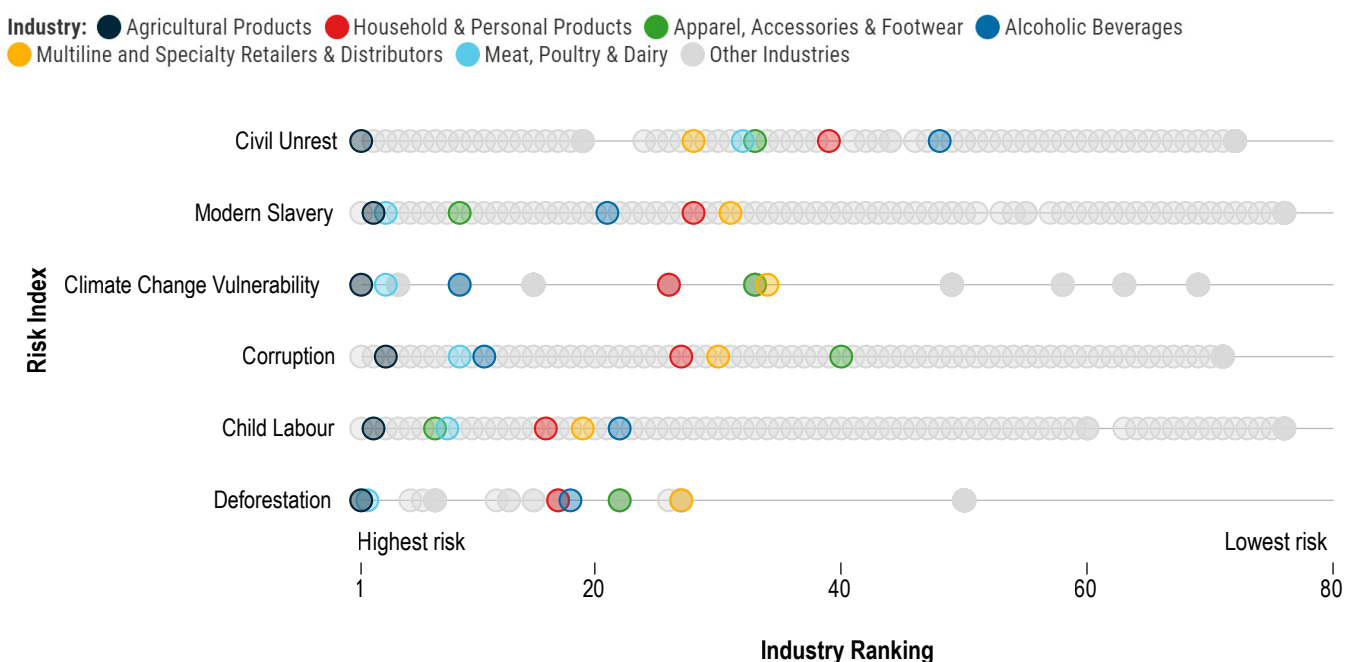
Analysing the global exposure of the 18 industries of relevance to the World Economic Forum's Consumer Industries Partner Community (WEF CIPC) to the 51 ESG and disruption risk issues measured by our Industry Risk Analytics, we have isolated civil unrest, the growing regulatory human rights obligations surrounding supply chains with a focus on modern slavery, and climate change vulnerability as priority challenges for the WEF's CIPC.

This briefing unpacks the key threats associated with these issues and the timelines in which they are likely to materialise. As we note throughout, these issues should not be viewed in isolation, but as part of an interlinked ecosystem of risk that includes structural geopolitical drivers.

Within this, we primarily focus on threats posed by these issues to the resilience of the agricultural sector because of its fundamental role in all aspects of human existence, and its centrality to the consumer goods and retail industries. Underpinning this is the finding from our data showing that agriculture is the most exposed of the 18 CIPC industries to the priority issues we identify over the short-, medium- and long-term time horizons.

(cont...)

Figure 1: The agricultural industry is the highest risk globally across key ESG and political risk metrics



Verisk Maplecroft's Industry Risk Analytics cover 80 industry sectors. Overlapping circles occur when more than one industry occupies the same rank position.

Figure 1 shows the relative risk ranking for all 80 industries in our dataset across the top six risk issues in the environmental, social, and political spheres. This paper hones in on civil unrest, modern slavery and climate change vulnerability because each one constitutes the primary threat in each respective risk dimension.

At the industry level, the analysis concentrates on agriculture as it stands out as the highest risk industry for civil unrest and climate change vulnerability, while it is second only to metals and mining for modern slavery risks.

While businesses that are dependent on agriculture must strengthen operations against these risks concurrently, the peak timeframe for the worst impacts from each issue varies, as Figure 2 shows.

We have prioritised these in short-, medium- and long-term outlooks, with civil unrest coming in as the main potential disruptor in the short term (over the next 2 years). In the medium term (over the next 5 years), compliance with fast-evolving human rights legislation, particularly in relation to modern slavery, is the next area of focus. Lastly, climate change vulnerability is the top threat in the long term (over the next 10 years), given its potential multiplier effect to increase risks across numerous other areas.

Our research showed that 101 countries saw an uptick in risk between 2022-Q2 and 2022-Q3 on our Civil Unrest Index, and we predict this trend will worsen. Outbreaks of unrest not only pose a threat to supply chain continuity, but also to future consumption patterns and overall economic performance in the affected countries. In the current context of heightened social discontent due to the cost-of-living crisis, consumer industries could be facing an added strain on economic performance in the 2024-2025 period.

The risk of modern slavery appearing in supply chains is also on the rise as a direct consequence of current global economic conditions. Minimising exposure to this issue is the leading human rights challenge facing all consumer industries at present. With an increasingly large raft of human rights legislation coming into force, the consumer industries will be legally liable for ensuring suppliers, partners, and contractors remain compliant. In the coming years, failure to tackle modern slavery will evolve from posing reputational risks to major financial and legal ones.

Lastly, climate change vulnerability will increase the frequency and severity of weather-related events across the world, creating severe disruption for business and supply chains. For societies that have weaker institutional, social and economic safeguards in place, they will not only have to cope with the physical impacts of climate change, but also cascading risks, such as food insecurity, migration, civil unrest and government instability (see Figure 3).

We saw this in Pakistan in 2022, where widespread flooding compounded political and economic crises, and deepened social unrest. It is important to note that these secondary risks are transboundary and no country will be fully insulated. Understanding the exposure of supply chains to climate-related risks is critical to their resilience.

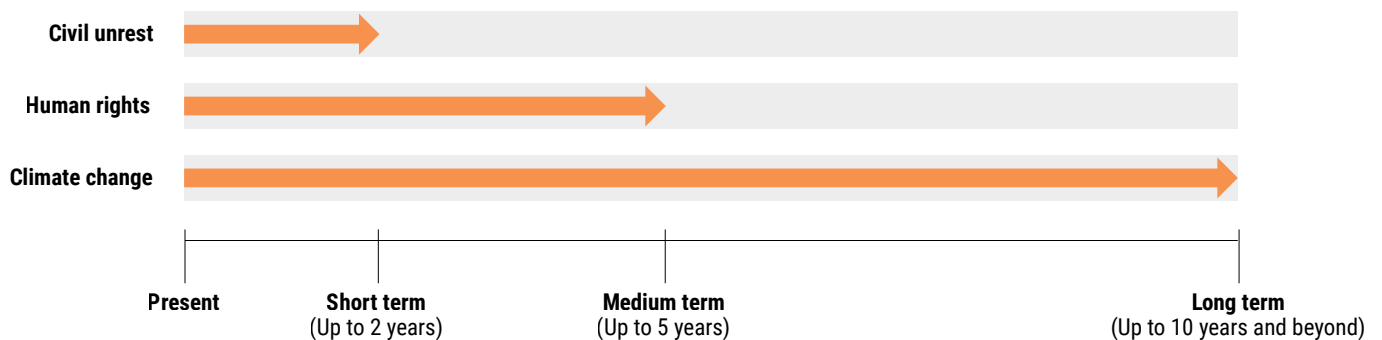
Resilience strategies addressing these issues going forward should not be built in isolation, but rather simultaneously, taking into account the potential impacts each has on one another. Failing to account for the interrelationships between risks will only exacerbate the potential impacts when any one of them materialises during the intervening period.

As the world continues on a trajectory of increased instability, there is no time to waste. Short of having a crystal ball, no business can predict exactly when or where each of these disruptors will materialise. The only certainty is that limiting exposure to the threats of tomorrow is the work of today.

A radical change in the global operating environment is well underway, weakening the effectiveness of established strategies to anticipate and manage risk. To succeed in this new and evolving landscape, business leaders must rethink current approaches, and soon. This will entail innovation and an embrace of new technologies and cutting-edge data.

But most importantly, viewing risks as individual issues is no longer viable. To identify how and where environmental, social and political threats will emerge, they must be considered in their entirety. Building an understanding of how risks are dynamically interacting and reinforcing each other will provide the foresight needed to anticipate how they will impact international operations and supply chains. Achieving this is vital to building resilience.

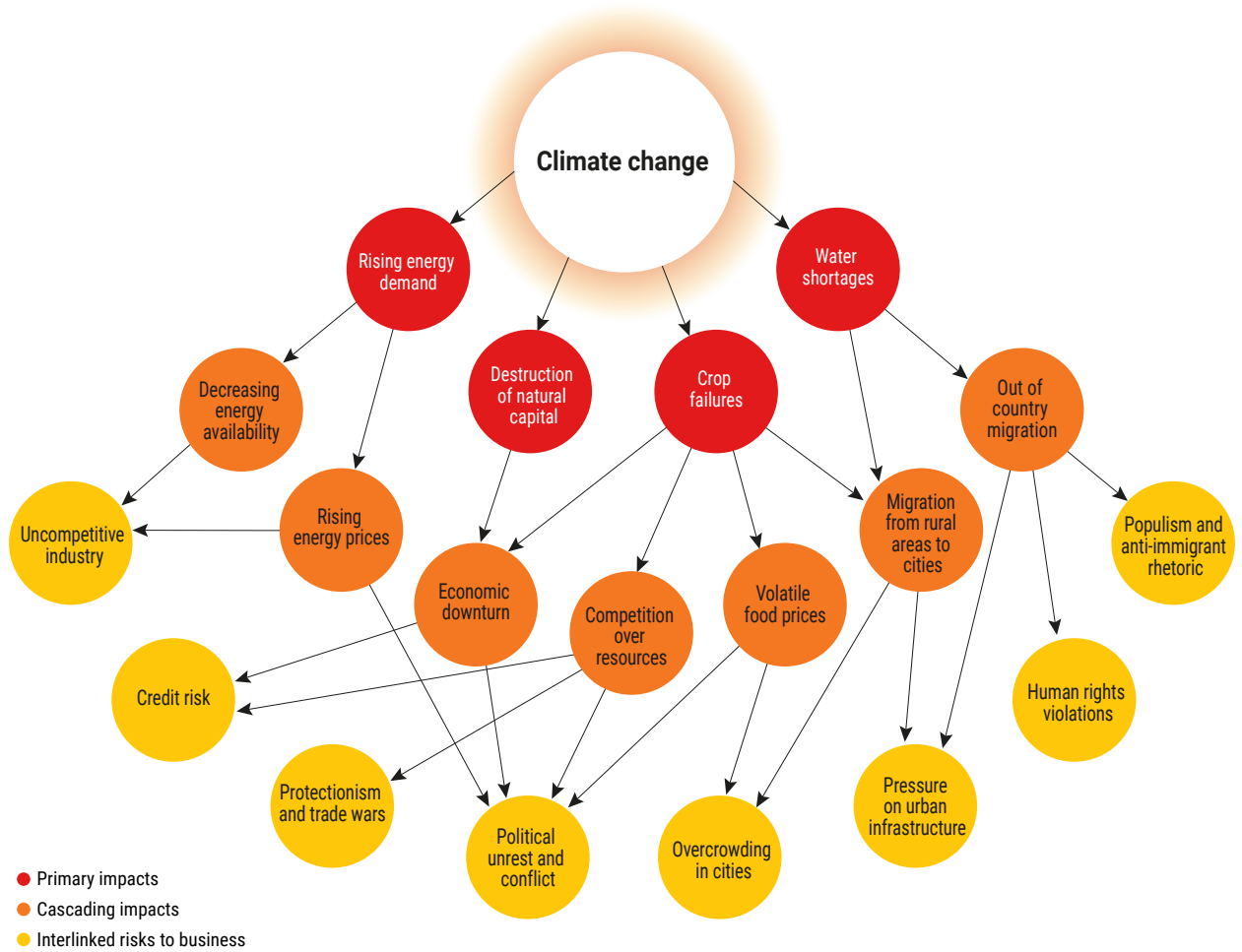
Figure 2: Peak of potential disruption stemming from priority risk issues



Source: Verisk Maplecroft

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Figure 3: The chain reaction of cascading climate risks



Source: Verisk Maplecroft

© Verisk Maplecroft 2022



Short term (up to 2 years): Civil unrest threatens spike in operational disruption for agricultural industry

Data from Verisk Maplecroft’s Civil Unrest Index reveals that civil unrest risks increased in 101 countries between 2022-Q2 and 2022-Q3, the biggest-ever quarter-on-quarter rise recorded in the index. This means that in 2022-Q4, half of the world records extreme- or high- risk exposure to civil unrest, and with inflation in over 80% of countries above annual rates of 6% (at the time of writing), the situation is certain to get worse before it improves.

Therefore, consumer industries face a rising risk of supply chain disruptions as civil unrest events in the agricultural sector become more frequent. Verisk Maplecroft’s Industry Risk Analytics dataset shows that all of the world’s leading agricultural-producing countries already face significant exposure to civil unrest. This risk is set to rise further over the next two years, driven by a combination of cross-cutting economic, political, social, and environmental issues. High inflation, disrupted fertiliser supply chains due to the war in Ukraine, and tightening environmental regulations all combine to create an operating environment that is highly conducive to civil unrest and much greater disruption.

From field to factory – full value chain at risk

No other sector is more exposed to civil unrest than agriculture. Not only is the sector less concentrated in particular geographies than other sectors, such as mining and oil and gas, it is also more difficult to shield during periods of civil unrest. This is the case along the entire value chain, from the burning or destruction of crops, to the targeting of distribution centres or networks by protestors.

Another major risk factor is that the largest producers of agricultural products globally are among the most exposed to civil unrest. As Figure 4 shows, nine of the world’s 10 biggest producers are classified as extreme risk in Verisk Maplecroft’s Industry Risk Analytics dataset.

The agricultural sector itself is also increasingly becoming a source of civil unrest. Europe has witnessed the sharpest increase in farmers’ protests globally, with a 30% uptick from 2021 to 2022. The Netherlands, Greece, France, and Italy all witnessed big surges in farmers’ protests during 2022. High fuel and fertiliser costs – alongside restrictions on nitrogen emissions – have been the main drivers.

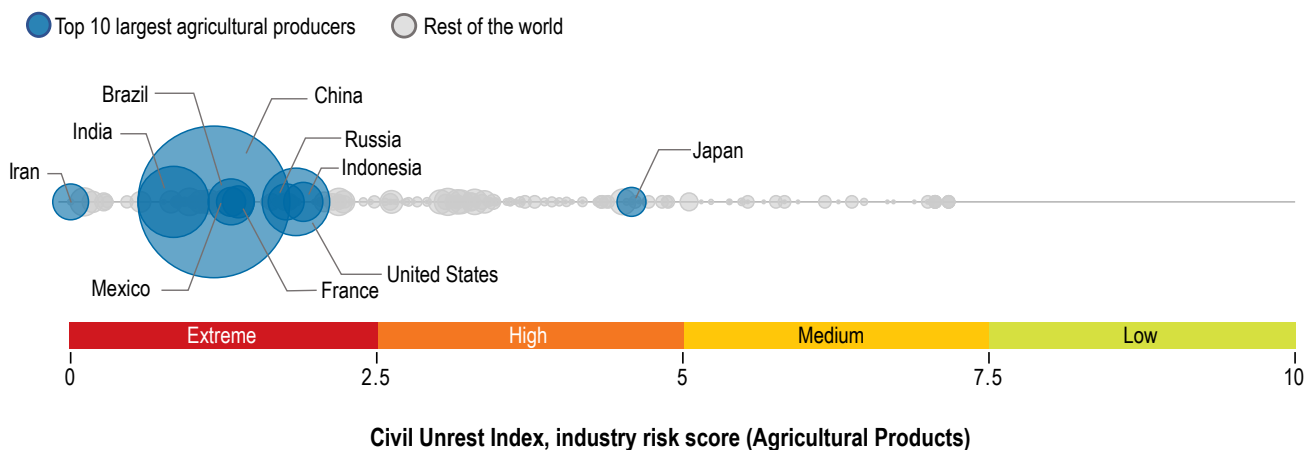
The biggest agricultural protests in Europe have been in the Netherlands, where farmers caused significant disruption during 2022 through the blocking of highways and food distribution centres. Globally, from a much longer list, South Africa, Sri Lanka, and India have witnessed even more disruptive protests.

During the first three quarters of 2022, India alone accounted for a quarter of all civil unrest events in the agriculture sector globally, despite a sharp fall in the number of protests from the previous year. Before that, protests during 2021 were the most widespread and disruptive in decades and cost domestic and global retailers based in India millions of dollars in revenue losses.

Tightening environmental regulation fuels farmer protests

Tightening government environmental regulation is emerging as a major driver of civil unrest in the agricultural sector, as governments seek to cut emissions from the sector and tackle concerns over biodiversity. For farmers, tightening environmental regulations come at a particularly bad time as economic and geopolitical headwinds have already put the sector under strain with soaring inflation, high energy costs and disrupted fertiliser supply chains.

Figure 4: Civil unrest risks run high among leading agricultural-producing countries in 2022-Q4



Bubble size denotes % of global gross agricultural production value in 2020. Risk scores are allocated on a scale ranging from 0 to 10, with 0 indicating highest risk.

Source: FAOSTAT, Verisk Maplecroft Industry Risk Analytics, 2022-Q4

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In the Netherlands, more than 3,000 farms are expected to close as part of a USD25 billion government plan to halve nitrogen emissions from the agricultural sector by 2030. The Dutch government estimates even more farmers will have to make significant cuts to their livestock, as it seeks to curb emissions from a sector that accounts for more than USD100 billion in exports.

Sri Lanka provides an even starker example of the potential for government environmental legislation to fuel protests in the agricultural sector. After the government’s ban on chemical fertilisers in April 2021, tens of thousands of farmers across the county mobilised, forcing a partial reversal of the ban in November. The chemical fertiliser ban led to stunted harvests, disrupted exports, and a USD450 million government food import bill to cover the shortfall.

Geopolitics weighs heavy on sector

Disruptions to supply chains following Russia’s invasion of Ukraine have compounded the impact of the Sri Lankan government’s chemical fertiliser ban, underscoring the potential for geopolitical, economic and environmental threats to combine and put farmers under greater strain over the next two years.

The growing weight behind global efforts to cut greenhouse gas emissions from farming suggests that protests against tightening environmental legislation will also spread globally in the near term. The UN estimates that 31% of global man-made GHG emissions come from the agricultural sector, making farming an unavoidable target for climate change policymakers.

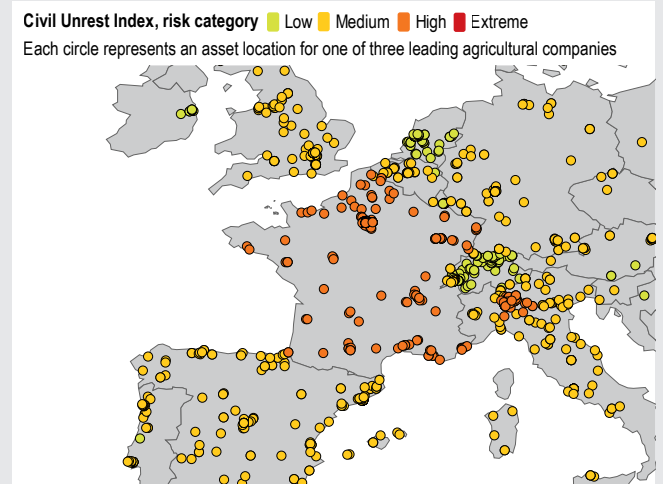
More than 100 countries have already pledged to achieve a 30% cut in methane emissions by 2030. Following the COP27 climate summit in November 2022, we expect the number of pledges to rise significantly. Measures such as taxing greenhouse gas emissions from the agricultural sector – as seen in New Zealand – will likely be emulated elsewhere and threaten to sharpen tensions between farmers and policymakers.

With global food security already under pressure from geopolitical turmoil, high inflation, and supply chain disruptions, more frequent and more intense protests in the agricultural sector come at a bad time for consumer industries.

Verisk Maplecroft’s top 3 recommendations to strengthen resilience:

- 1 **Map current civil unrest trends against key commodities/suppliers/assets within your supply chain, and rank the most disruptive based on materiality to company operations**
- 2 **Identify the main drivers of discontent in the most material risk areas to determine your level of direct exposure (i.e. whether your business is likely to be directly targeted) and degree of control/influence the company may exert in each particular situation**
- 3 **Develop feasible contingency plans to respond in the event of disruption, such as diversifying sourcing areas, or the development of alternative logistics routes**

Focus box: Civil unrest patterns changing in western Europe



Source: Verisk Maplecroft, 2022-Q4

Climate change, regulatory reform, and the global cost of living crisis have collided to create a perfect storm of civil unrest. Nowhere has this become clearer than in western Europe, where widespread social grievances set the stage for a winter of discontent in 2022/23. There’s also little doubt that tensions between farmers and governments over both climate change and climate change policies will become even sharper over the coming years. A context of heightened social tensions will expose the assets of key agricultural companies to a growing threat of disruption, both directly - in the form of farmer protests - and indirectly – as other societal grievances disrupt logistics chains and retail operations in urban centres.

Civil unrest: 5 highest risk industries for WEF CIPC

Risk category	Industry Rank	Industry
High risk	1/80	Agricultural products
High risk	4/80	Road Transportation
High risk	12/80	Rail Transportation
High risk	16/80	Marine Transportation
High risk	19/80	Air Freight & Logistics

Source: Verisk Maplecroft Industry Risk Analytics as of 2022-Q4
Verisk Maplecroft’s Industry Risk Analytics cover 80 industries. Rankings are oriented on a scale from 1 to 80, with 1 indicating highest risk.



Medium term (up to 5 years): The rising human rights imperative

Since the introduction of the UN Guiding Principles on Business and Human Rights (UNGPs) over a decade ago, business and investor approaches to human rights have seen a marked shift. No longer do human rights play second fiddle to environmental concerns – increasingly, recognition is emerging of the symbiotic, complex, relationship between the two. There are few sectors that sit more firmly at the crossroads of these two issues than agriculture.

As a result, consumer companies with global supply chains that are contingent on soft commodities will have to contend with the proliferation of human rights and environmental due diligence (HREDD) legislation globally. Over the next five years, companies will not only adapt to this fast-evolving human rights regulatory landscape, but also a legal beast of a different kind: the increasing use of extraterritorial litigation in holding companies that infringe on human rights accountable. As one of the highest risk industries across a wide range of human rights risks, including modern slavery, agriculture, and the supply chains that rely on it, will be firmly on the front line of this new, more stringent, legal era.

Box-ticking will not suffice

The days of toothless human rights laws are numbered. There is no question that emerging human rights due diligence (HRDD) laws, particularly those in the legislative pipeline in Europe, carry much-needed political heft to credibly impact corporate behaviour. While earlier iterations of human rights legislation saw relatively basic expectations of looking at a single issue (modern slavery, for example) or producing one-time statements, the most recent laws mandate more rigorous standards, oblige companies to engage in comprehensive reporting and due diligence practices.

It will no longer be sufficient for companies to state they have carried out supply chain risk assessments. They are now expected to develop action plans in response to known human rights risks. Crucially, there is a push for due diligence to be aligned with internationally recognised standards, such as the UNGPs and the OECD Guidelines, necessitating an approach beyond mere box-ticking. Financial and criminal penalties are becoming the norm.

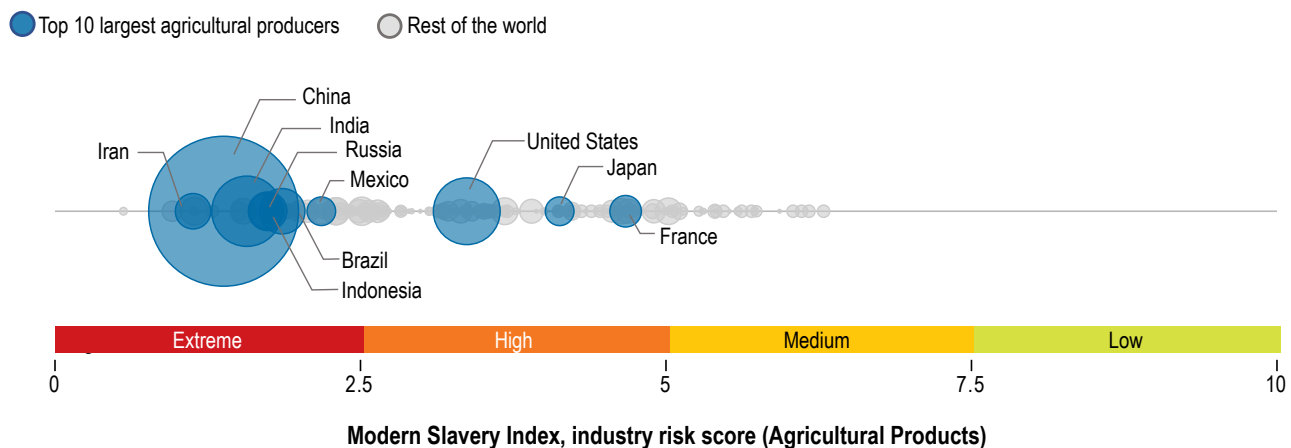
Failing to adopt an embedded approach to responsible business conduct can significantly impede a company's ability to meet increasingly rigorous legal obligations and may result in a loss of favour among the growing population of socially conscious consumers and investors.

Companies must respond to increasing modern slavery in the post-pandemic era

Despite this expanding legal regime, modern slavery risks have increased in the last five years – a trend further compounded by the COVID-19 pandemic and the cost-of-living crisis. Verisk Maplecroft's Modern Slavery Index has seen a quarter (47) of all countries record a significant increase in risk since the dataset launched in 2016.

The negative global trend in modern slavery risk is set to worsen in coming years due to interconnected risk factors, including climate change and a period of prolonged economic instability. The expansion of the regulatory landscape governing forced labour – not least the proposed EU Forced Labour Ban – presents a growing dilemma for retail and consumer goods companies which have traditionally relied on sourcing low-cost labour abroad.

Figure 5: World's leading agricultural producers at the forefront of modern slavery risks in 2022-Q4



Bubble size denotes % of global gross agricultural production value in 2020. Risk scores are allocated on a scale ranging from 0 to 10, with 0 indicating highest risk.

Source: FAOSTAT, Verisk Maplecroft Industry Risk Analytics, 2022-Q4

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As Figure 5 shows, agriculture is highly exposed to modern slavery risks. Verisk Maplecroft’s Industry Risk Analytics dataset shows that seven of the world’s top 10 agricultural producers register extreme risks for modern slavery. The omnipresent nature of soft commodities in supply chains means that few companies can afford to ignore this growing risk. Gaining clear visibility of upstream suppliers, which for many remain remote and scattered, will be imperative to tackle forced labour and build resilience to the reputational and legal risks that association with the practice can cause.

Companies facing increased legal jeopardy

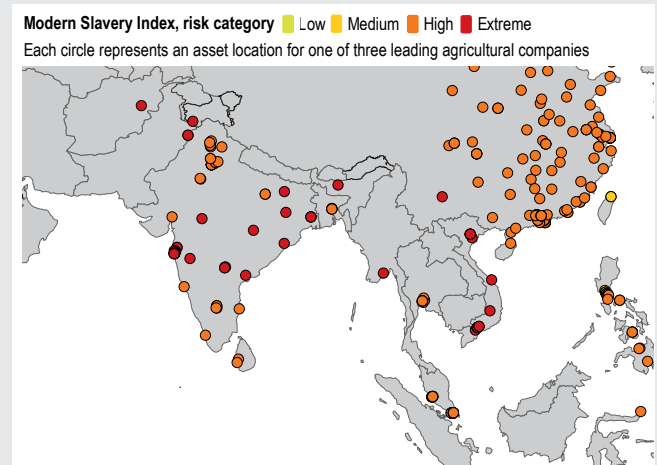
In the medium term, we expect to see an uptick in cases brought by activists and lawyers in well-regulated Global North jurisdictions. Civil society organisations will increasingly resort to climate and human rights litigation in seeking corporate accountability. Landmark lawsuits against extractive companies have established precedent of parent company litigation, creating serious legal risks for multinational enterprises with subsidiaries in less regulated jurisdictions.

As HREDD laws increasingly require companies to extend their due diligence further upstream, operating a regime of ‘plausible deniability’ for abuses in ‘foreign jurisdictions’ no longer applies. Extraterritorial litigation hubs, such as the UK, France, Germany, the Netherlands and Canada, will see a rise in such lawsuits, increasing the risk of reputational damage and potential investor boycotts.

Verisk Maplecroft’s top 3 recommendations to strengthen resilience

- 1 Utilise risk exposure data to assess the location-specific human rights risks of suppliers, rather than just using standardised questionnaires for all suppliers
- 2 Design an intelligent, automated scoring system to analyse responses efficiently and identify truly high-risk suppliers in order to focus auditing resources
- 3 Map and engage with civil society stakeholders on the ground to triangulate information reported by suppliers, receive any additional/unreported grievances, and address risks before they materialise into impacts

Focus box: South-East Asia - the Achilles heel of sourcing strategies



Source: Verisk Maplecroft, 2022-Q4

Poverty remains a key determining factor in the prevalence of modern slavery. Households lacking economic security are more likely to become dependent on employment agents within the informal economy, which can lead to exploitation. This is reflected in the data: 19 of the 24 extreme-risk countries on the latest edition of Verisk Maplecroft’s Modern Slavery Index are low- and lower-middle-income economies. This group includes Myanmar and Pakistan, two leading exporters of foodstuffs and goods including clothing, cotton fabric and rice.

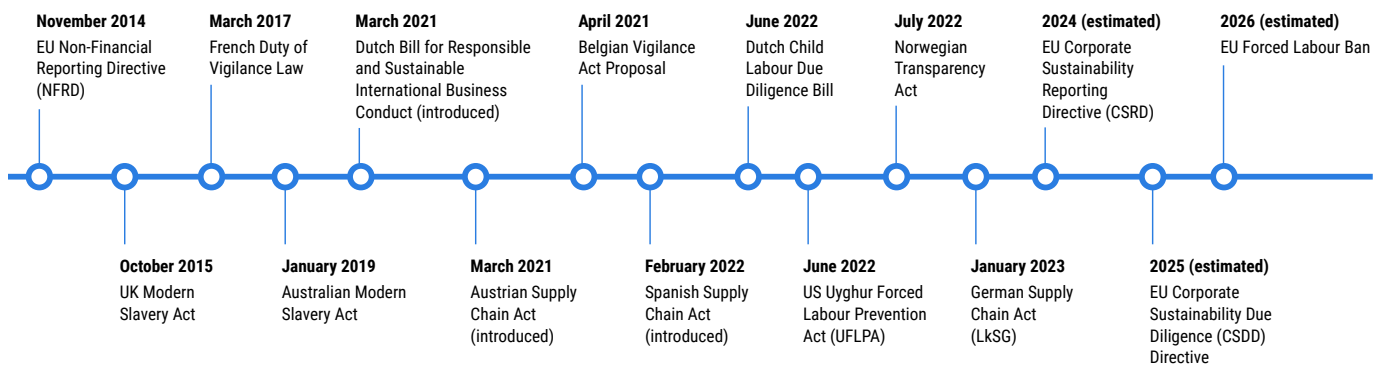
Modern slavery: 5 highest risk industries for WEF CIPC

Risk category	Industry Rank	Industry
High risk	2/80	Agricultural products
High risk	3/80	Meat, Poultry & Dairy
High risk	7/80	Processed Foods
High risk	9/80	Apparel, Accessories & Footwear
High risk	10/80	Toy & Sporting Goods

Source: Verisk Maplecroft Industry Risk Analytics as of 2022-Q4

Verisk Maplecroft’s Industry Risk Analytics cover 80 industries. Rankings are oriented on a scale from 1 to 80, with 1 indicating highest risk.

Figure 6: The human rights due diligence landscape is becoming increasingly complex



Source: Verisk Maplecroft



Long term (up to 10 years and beyond): Advancing strategies beyond physical climate risks to the cascading impacts

Agriculture demands predictability, whether that is rainfall, temperature, or seasonal conditions. But in the global economic system, even small changes to this predictability can upend the norm – not only with disruptions to industrial supply chains, but also with societies facing unpalatable, cascading issues like hunger, poverty, recession, and political instability.

The shockwaves can be felt right the way up global value chains, with disruption spilling into political systems, societal structures, and financial markets. We are already seeing glimpses of these issues emerge, such as in Pakistan, where devastating floods in 2022 brought the economy of the debt-distressed nation to its knees, and exacerbated severe instability in the country.

As we move through the next decade, growing climate change vulnerability means these risks will intensify and evolve in ways that are increasingly material to the retail and consumer goods sectors.

Climate impacts and the chain reactions of risk

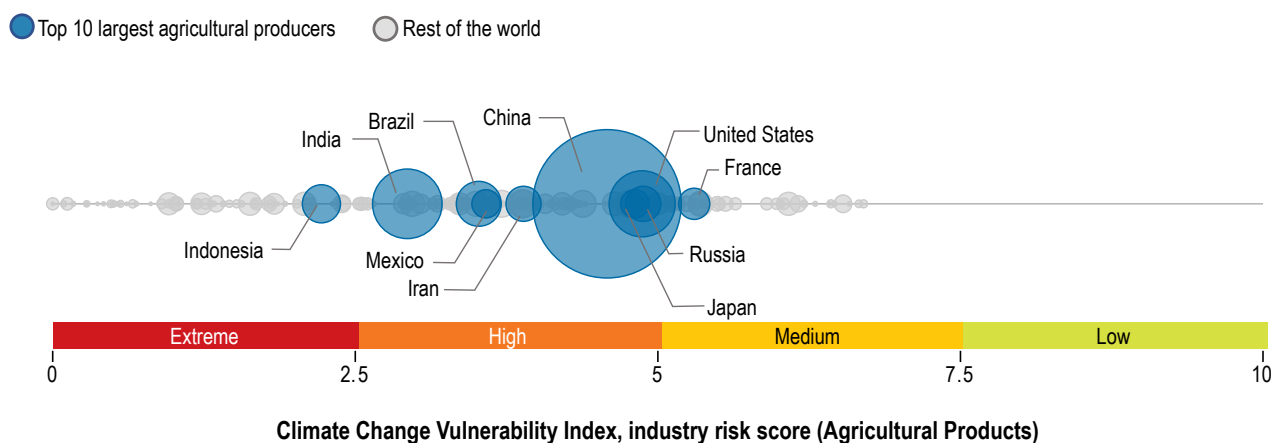
Predicting how climate-induced threats will pan out in a specific location is challenging, as the outcome depends heavily on a country's political, economic, and societal strength. The impacts and consequences of climate change are manifold, but looking at short-, medium-, and long-term horizons can provide organisations with the foresight needed to identify, assess, and manage the risks – and opportunities – that ensue.

Take Brazil, a country whose agricultural output (including coffee, sugar cane, pork, beef, and soy industries) is vital to the domestic and global economy. Crop and livestock production make up 8% of its GDP, but once processing and distribution are taken into account this figure climbs to 29%. Similarly, the agriculture and broader food and beverage value chain's output supplies 72% of the domestic market, and represented 17.6% of the country's exports in 2022.

Brazil is also highly sensitive to climate shocks and longer-term climate change. More frequent storms or changes to seasonal variations in countries like Brazil, or Indonesia, could make growing commodities much harder or more expensive – bringing into question the viability of these links in long-established supply chains.

Furthermore, climatic changes have the potential to trigger chain reactions in high-risk countries: crops fail, people move off the land, the agricultural workforce shrinks, yields are reduced further, national revenues are damaged, and food security is undermined. A tougher economic environment, shrinking food supplies, and further pressure on resources in urban areas, where former farm workers migrate to, have the potential to drive civil unrest and government instability – issues that could also impact the downstream operations of retail and consumer goods firms.

Figure 7: Climate change poses a high- or extreme-risk to major agricultural producers in 2022-Q4



Bubble size denotes % of global gross agricultural production value in 2020. Risk scores are allocated on a scale ranging from 0 to 10, with 0 indicating highest risk.

Source: FAOSTAT, Verisk Maplecroft Industry Risk Analytics, 2022-Q4

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Widespread unrest in places like Egypt due to rising food prices or cutbacks to subsidies are well documented. With the war in Ukraine – a vital cog in global production of grain and fertiliser – and the subsequent sanctions on Russia adding to rising energy and food costs, emerging and developed markets alike face an unprecedented period of turbulence. For example, the disruption to fertiliser imports from Russia made potassium chloride prices in Brazil rise by 150.7% in 2022-H1, compared to the 2021-H1. With no end to the war in sight, the addition of climate change to this volatile mix threatens to worsen an already bleak long-term outlook.

The human rights interconnection

Adding further fuel to the fire is a declining human rights situation, which goes hand in hand with climatic changes. Precedent shows that large influxes of people into urban areas exacerbates social problems. Desperation for housing or employment means migrants can be more easily coerced into disadvantageous – and potentially illegal – situations.

In more extreme cases, the risk of human trafficking and modern slavery can rise, especially if a migrant’s legal status is uncertain. This presents a huge issue to companies with agricultural supply chains in terms of their exposure to human rights violations, given how difficult it is to identify, let alone audit, a largely informal workforce. As these risks evolve, so does the due diligence legal framework that aims to combat it.

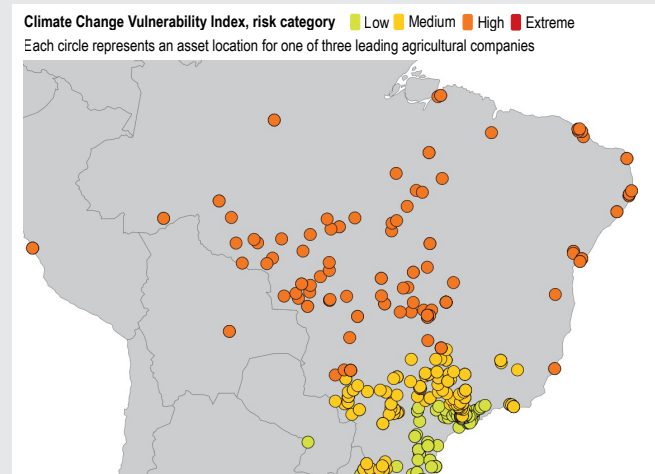
As climate change accelerates, these threats will intensify. For example, Mexico plays an integral role in US food and beverage supply chains. At the same time, it is already shouldering the load of Central American migration. Flows of people from across the region will only increase as climate change accelerates, heaping pressure on creaking infrastructure, but also exposing migrants to high levels of crime, rights abuses, and a political backlash – all issues that can easily find their way into value chains.

Long-term physical impacts threaten asset locations

Underpinning these issues are the mounting direct threats from extreme weather, as well as slower moving risks like global heating and sea level rise. Changing weather patterns will affect growing windows and hamper the production of some crops in certain regions of the world – with disastrous consequences for nations dependent on agricultural commodities. Looking at the 10 largest agricultural producing nations in Figure 7, all but one has a high- or extreme-risk score for Climate Change Vulnerability in Verisk Maplecroft’s Industry Risk Dataset.

As well as the obvious destruction of crops and disruption of supply chains, the shift to new production areas necessitated by climate change will unlock additional risks. First, companies will be less familiar with the risk profile of new markets, exposing key components of their supply chain. Second, these movements make the potential clash with biodiversity stand out: for example, coffee needs to be grown at altitude, but as the world warms, production will need to edge higher into inaccessible and often ecologically important areas. Balancing this against commitments to protect vital natural capital will be a key challenge for the sector.

Focus box: Brazil – returning to the fold of climate policy



Source: Verisk Maplecroft, 2022-Q4

Being the world’s fourth largest agricultural producer and a primary source of critical staple foods, Brazil’s economy is highly exposed to a worsening climate. Declining production of commodities like coffee, sugar cane, or soy could trigger a chain reaction both at home and abroad, further damaging already strained agricultural supply chains. The return of Luiz Inácio ‘Lula’ da Silva to power on 1 January 2023 marks a stark shift in Brazil’s recent environmental rollbacks, with the country set to become once more a protagonist in the global agenda. Besides the ongoing repeal of some 120 decrees passed by the previous administration, Lula will focus on strengthening the enforcement of environmental regulations. Most importantly, framed by these environmental concerns, his administration will need to craft a new relationship with the sector.

Verisk Maplecroft’s top 3 recommendations to strengthen resilience

- 1 **Assess supplier and asset exposure across a broad spectrum of interconnected factors, such as physical exposure to weather-related events, political stability, economic power, resource security, civil unrest, poverty, human rights setting, conflict, and strength of infrastructure – all crucial to a country’s resilience**
- 2 **Prioritise suppliers/assets based on their materiality to operations, and determine the company’s ability to mitigate exposure to worsening risk factors**
- 3 **Allocate sustainability resources – human and financial – to develop investment programmes in the jurisdictions of greatest material risk to operations, and where the highest ability to manage outcomes resides**

Climate change vulnerability: 5 highest risk industries for WEF CIPC

Risk category	Industry Rank	Industry
High risk	1/80	Agricultural Products
High risk	3/80	Meat, Poultry & Dairy
High risk	9/80	Alcoholic Beverages
High risk	12/80	Non-alcoholic Beverages
High risk	18/80	Food Retailers & Distributors

Source: Verisk Maplecroft Industry Risk Analytics as of 2022-Q4
Verisk Maplecroft’s Industry Risk Analytics cover 80 industries. Rankings are oriented on a scale from 1 to 80, with 1 indicating highest risk.



Conclusion

In an age of increasing uncertainty and unpredictability, it is critical that business leaders rethink their approach to assessing, measuring, and monitoring changes to maximize the resilience of their organisations.

The past three years have demonstrated that high-impact 'grey swan' events not only come to pass, they can do so in quick succession. The COVID-19 pandemic and Russia's invasion of Ukraine collided with pre-existing political, social, and environmental risks to threaten company operations and their ability to generate value, both in the present and in the longer term. Climate change, both through direct and indirect impacts, will exacerbate the 'grey swan' potential.

And while no industry will be immune to a more dynamic risk environment, consumer industries will experience a higher degree of sensitivity given the complexity of their supply chains, economic interdependency, global exposure, and susceptibility to both natural and manmade threats.

Going forward, the identification of, and response to, 'signals' or subtle changes that indicate shifting risk trajectories will be critical. In other words, a resilience strategy should not be just based on laying out a future state, but rather on figuring out ways to decode it.

Adopting horizon scanning as a key risk management tool is a critical step in that journey. By identifying 'signals', business leaders will gain a strategic understanding of the external factors beyond their control that could weaken their company's future resilience.

Failure to shift attention from the challenges of day-to-day commercial pressures to the 'big picture' will leave an enterprise excessively exposed to a range of longer-term risks. And when caught off-guard, multinational corporate giants will struggle to adjust and respond to sudden changes in the operating environment.

Measuring the intangible is both a challenge and an opportunity. When done right, it can open the door to strategic insights and, when acted upon, allow you to be one step ahead of your competitors, building resilience, protecting your future reputation and bottom line.



Appendix

About Verisk Maplecroft

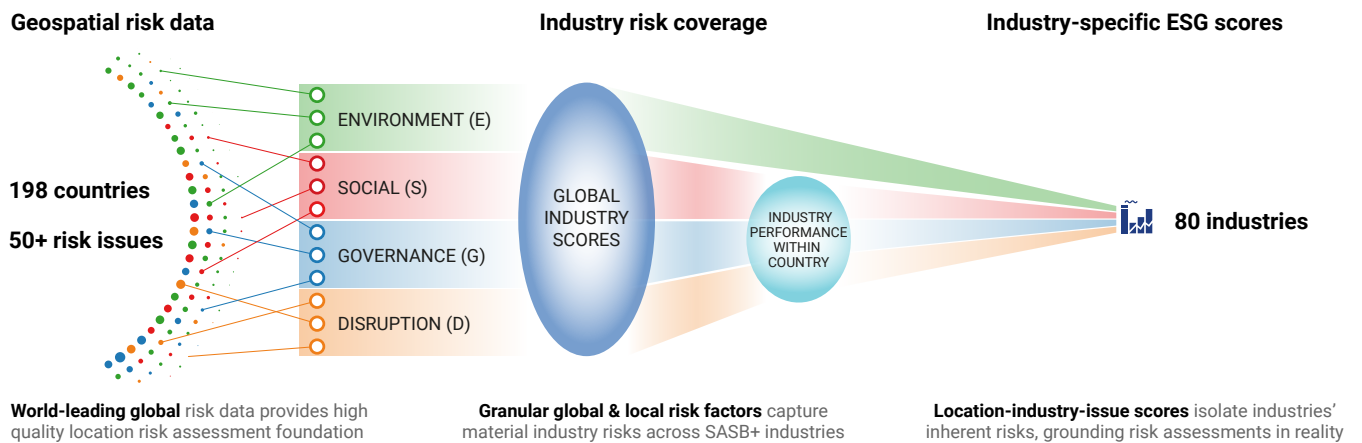
As organisations strive to understand and adapt to a fast-moving world, Verisk Maplecroft empowers them to put the environment, human rights, and political risk at the heart of their decision-making. We do this by providing unparalleled intelligence on sustainability, resilience and ESG – stitching together these disparate issues into an interconnected global view, built upon objective insight and data.

Methodological note

Verisk Maplecroft’s 170+ risk indices are developed using quantitative and qualitative data from a range of respected sources. For this briefing paper, we utilised our environment, social, governance and disruption datasets, which provide a foundation for high-grading of material issues, in combination with global industry traits to capture key industry risks.

These Industry Risk Analytics build on our geospatial risk data to provide precision risk scores for 51 ESG and disruption (D) issues, covering 80 industries across 198 countries.

Figure 8: Verisk Maplecroft’s Industry Risk Analytics at a glance



Source: Verisk Maplecroft, FAOSTAT

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For this briefing, we analysed the risk exposure, across all geographies and risk issues, of the 18 industries of greatest relevance to the World Economic Forum’s Consumer Industries Partner Community (WEF CIPC).

The industries of focus are:

- Air Freight and Logistics
- Marine Transportation
- Rail Transportation
- Road Transportation
- Alcoholic Beverages
- Agricultural Products
- Apparel Accessories & Footwear
- Appliance Manufacturing
- Building Products & Furnishings
- E-Commerce
- Food Retailers & Distributors
- Household & Personal Products
- Meat, Poultry & Dairy
- Multiline and Specialty Retailers & Distributors
- Non-alcoholic Beverages
- Processed Foods
- Restaurants
- Toys and Sporting Goods

The initial benchmarking exercise enabled us to identify the leading external ESG risks affecting the resilience and sustainability of the supply chains and operations of all key industries included in the WEF CIPC. Although the level of exposure differs by industry, climate change vulnerability was the top threat to all in the ‘E’, while modern slavery topped the threat list in the ‘S’ and civil unrest in the ‘G’.

Figure 9: Performance of 18 industries of focus against top 10 risk issues

Industry risk category	Political		Human rights and development			Climate				
	Civil Unrest	Corruption	Modern Slavery	Child Labour	Occupational Health and Safety	Biodiversity and Protected Areas (Terrestrial)	Deforestation	CO2 Emissions from Energy Use	Climate Change Vulnerability	Heat Stress (current climate)
Agricultural Products	High	High	High	High	High	High	High	High	High	High
Air Freight & Logistics	High	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Alcoholic Beverages	Medium	High	Medium	High	High	High	High	High	High	Medium
Apparel, Accessories & Footwear	Medium	Medium	High	High	High	High	High	High	High	High
Appliance Manufacturing	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Building Products & Furnishings	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
E-commerce	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Low
Food Retailers & Distributors	Medium	Medium	Medium	High	High	High	High	High	High	Low
Household & Personal Products	Medium	High	Medium	High	High	High	High	High	High	Low
Marine Transportation	High	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Meat, Poultry & Dairy	Medium	High	High	High	High	High	High	High	High	High
Multiline and Specialty Retailers & Distributors	High	High	Medium	High	Medium	Medium	Medium	Medium	Medium	Low
Non-alcoholic Beverages	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	High	Medium
Processed Foods	Medium	High	High	High	High	High	High	High	High	High
Rail Transportation	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Restaurants	High	Medium	Medium	Medium	High	High	High	High	High	High
Road Transportation	High	Medium	Medium	Medium	Medium	Medium	Medium	High	Medium	Medium
Toys & Sporting Goods	Low	High	High	High	High	High	High	High	High	High

Source: Verisk Maplecroft Industry Risk Analytics, 2022-Q4

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Our team of regional and thematic experts focused the analysis on the agricultural sector for the following reasons:

- Of the 18 industries under consideration, agriculture has the highest average risk exposure to all three issues (civil unrest, modern slavery, climate change vulnerability). The finding held when the analysis was extended to all 80 industries within the dataset, with the exception of modern slavery, to which mining has a greater exposure than agriculture.
- While overall other industries also have a high-risk exposure to the three issues in our dataset, nine of the 10 largest agricultural-producing countries (as per 2020) have an extreme-risk exposure to civil unrest. Seven also fall within the extreme risk category for modern slavery, with the other three classed as high risk. While one faces an extreme-risk of exposure to climate vulnerability, another eight are rated high-risk, and one sits within the medium-risk category (see Figure 10).
- Major disruption to agricultural production would have a devastating impact on all aspects of human life, not only for supply chains in the consumer industries.
- Yet, it would also have a ripple effect across the consumer industries by disrupting the source of raw materials for almost all businesses within the WEF CIPC.

Figure 10: Performance of top 10 agricultural producers against top 3 risk issues

Industry risk category	Industry Risk Category (Agricultural Products)			
	Agricultural Production Value (2020)	Civil Unrest	Modern Slavery	Climate Change Vulnerability
<ul style="list-style-type: none"> ■ Extreme ■ High ■ Medium ■ Low <p>Note: list organised by share of global gross agricultural production value in 2020</p>				
China	38.26	Extreme	Extreme	High
India	8.41	Extreme	Extreme	High
United States	7.59	Extreme	High	High
Brazil	3.51	Extreme	Extreme	High
Indonesia	2.53	Extreme	Extreme	Extreme
Russia	2.15	Extreme	Extreme	High
Iran	2.14	Extreme	Extreme	High
France	1.69	Extreme	High	Medium
Japan	1.40	High	High	High
Mexico	1.39	Extreme	Extreme	High

Source: FAOSTAT, Verisk Maplecroft Industry Risk Analytics, 2022-Q4

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Lastly, our team of experts made a qualitative assessment to determine three timelines, in which each of these issues could have the greatest impact on consumer industries. And while all three risks are present and evolving concurrently now, civil unrest has the greatest potential of causing disruption in the short term.

Rapidly evolving legal frameworks intended to combat modern slavery, and other human rights issues, in the supply chain are becoming increasingly common and more stringent. This issue has significant potential for disruption in the medium term, as organisations will have to come to grips with the challenges of identifying, managing, remediating, and reporting rising social risks across their entire value chain.

Last, but certainly not least, the team determined that climate change vulnerability poses the greatest threat in the long term.

As the impacts of climate change intensify, societies that are less capable to adapt will have a greater exposure to the chain reaction of cascading climate risks.

This means that climate change will not only pose environmental threats to business, but social and political ones as well.

Index methodology

Civil Unrest Index

The Civil Unrest Index assesses the risk of disruption to business in 198 countries caused by the mobilisation of societal groups in response to economic, political or social factors.

The index evaluates: the frequency, severity and impact of civil unrest; the issues driving popular protests, such as inflation, cuts to food and energy subsidies, and if there are marginalised groups; alongside the mechanisms to address discontent, such as independent courts and a free and fair media.

The index covers the spectrum of incidents of unrest, from peaceful protests, to violent mass demonstrations and rioting. Severe incidents of civil unrest may impact business operations in the following ways: disrupt logistics by obstructing major thoroughfares and access to airports and ports; pose security threats to employees; destruction of property either due to looting or as consequence of violence between parties. Long term, civil unrest can also create significant political, legal and regulatory uncertainty.

Even where incidents of social mobilisation do not result in violence, they can still have significant consequences for the business environment. In recent years, evidence of popular dissatisfaction illustrated by demonstrations over issues such as austerity, nuclear power and fracking have all influenced policy decisions.

Climate Change Vulnerability Index

The Climate Change Vulnerability Index evaluates the susceptibility of human populations to the impacts of climate extremes and changes in climate over the next three decades in 196 countries. It combines exposure to climate extremes and change with the current human sensitivity to those climate stressors and the capacity of the country to adapt to the impacts of climate change.

The index provides a quantitative assessment of the vulnerability of human populations to climate extremes, variability and change over the next three decades. It is comprised of the following three component indices:

- Climate Change Exposure Index, which assesses the degree to which countries are exposed to the physical impacts of climate extremes and future changes in climate over the next three decades.
- Climate Change Sensitivity Index, which assesses the human population's susceptibility to the impacts of extreme climate related events and projected climate change. Sensitivity is a function of a population's existing physical, social and livelihood circumstances, with the index examining aspects of sensitivity related to health, poverty, knowledge, infrastructure, conflict, agriculture, and population and resource pressure.
- Climate Change Adaptive Capacity Index, which assesses the present abilities of a country's institutions, economy and society to adjust to, or take advantage of, existing or anticipated stresses resulting from climate change.

Modern Slavery Index

The Modern Slavery Index evaluates the risk to business of the possible association with or exposure to practices of slavery, servitude, trafficking in persons and forced labour by state and non-state actors within its supply chain.

It combines quantitative and qualitative assessments covering the frequency and severity of modern slavery incidents, the strength of anti-slavery laws, and the efficacy of the enforcement of those laws.

Although the term 'modern slavery' is not defined under international law, it is heavily used in discourse. Rhetoric concerning slavery and enslavement is consistently intertwined with human trafficking and their concepts, along with many other exploitative practices, which are often collectively labelled as 'modern slavery' or some variation thereof.

Therefore, for the purposes of our index we define modern slavery as an umbrella term for slavery, servitude, trafficking in persons and forced or compulsory labour (hereinafter modern slavery). There are various definitions of slavery, servitude, forced or compulsory labour, and trafficking in persons, but for the purposes of our index we refer to the ones defined by institutions charged with addressing them, such as the UN and ILO.

For further information on our ESG and Resilience services visit our website maplecroft.com or to speak to one of our team about how we can support, please contact us info@maplecroft.com

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