



**The supply chain is
the key to winning
the fight against
climate change**

Founded in 2000, the United Nations Global Compact (UNGC) is playing a vital role in mobilizing companies to align their strategies and operations with universal principles on human rights, labor, the environment and anti-corruption (Figure 1), and to take actions that advance societal goals. To date, nearly 15,000 companies across more than 160 countries have signed on.

FIGURE 1: The 10 principles of the UNGC



Human rights

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. Make sure that they are not complicit in human rights abuses.



Labor

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. The elimination of all forms of forced and compulsory labor;
5. The effective abolition of child labor; and
6. The elimination of discrimination in respect of employment and occupation.



Environment

7. Businesses should support a precautionary approach to environmental challenges;
8. Undertake initiatives to promote greater environmental responsibility; and
9. Encourage the development and diffusion of environmentally friendly technologies.



Anti-corruption

10. Businesses should work against corruption in all its forms, including extortion and bribery.

A key part of UNGC's work is research, which includes the UNGC/CEO report, the world's largest program of CEO research on sustainability. The most recent edition of this report is based on the input from 1,232 CEOs across 113 countries and 21 industries, who provide their authentic, unfiltered perspectives on the private sector's contribution to climate action.

The results of the research are illuminating, particularly as they apply to the supply chain. It's clear that the supply chain is a major CEO topic when it comes to the challenges companies face in dealing with the impact of climate change. For example, in just one week, "supply chain disruptions" was mentioned more than 3,000 times during S&P 500 earnings calls.

The fact is, more than ever, the supply chain is the key to winning the battle against climate change. Why? It's not only the biggest contributor to the problem—supply chains generate 60% of global emissions—but also, consequently, can be a big part of the solution.

But that's only possible if companies, together, build resilient and responsible supply chains—from engineering, planning, and sourcing and procurement to manufacturing, logistics and service management—that effectively address the vital elements of emissions, circularity, and trust.

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The supply chain is challenged as never before

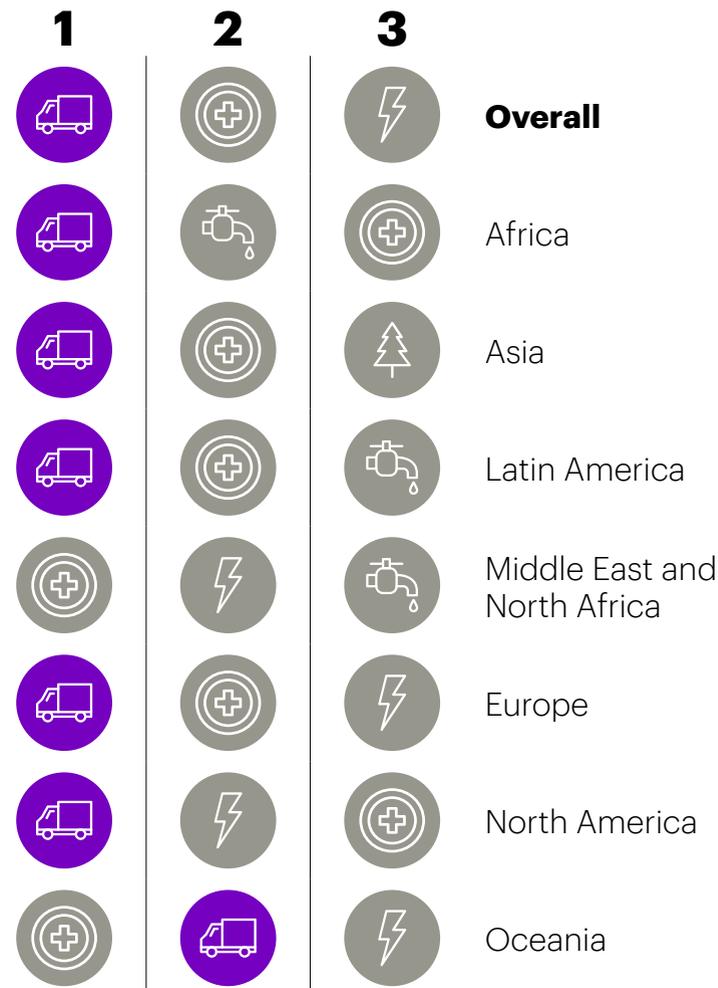
It's certainly been a difficult year for supply chains around the world, with COVID-19 upending demand and supply in virtually every industry. But disruptions caused by the pandemic aren't the only ones supply chains face.

For example, nearly half of CEOs globally (49%) report they are grappling with supply chain interruptions due to extreme weather events—and, in fact, such interruptions pose the greatest physical risk due to climate change (Figure 2). Furthermore, 26% of CEOs globally say that supply chain disruptions (e.g., loss of critical suppliers or output capacity) pose a top-three major risk to their business or industry shifting to a low-carbon economy. Notably, half of CEOs in the food and beverage industry (50%) are concerned about their ability to access natural resources for business operations due to extreme weather, highlighting the threat of a changing climate on global food supply.

FIGURE 2: Supply chain interruptions due to extreme weather events pose the greatest physical risk due to climate change

Which of the following do you see as major risks to your business or industry due to the physical impacts of climate change?

Top 3 risks by region



Key

-  **Supply chain interruptions due to extreme weather events**
-  Negative health impacts across the workforce
-  Operating challenges due to physical impacts on assets (e.g., heat waves, storm surges)
-  Loss of biodiversity and related ecosystem services
-  Availability and affordability of insurance in risk-prone areas
-  Mass workforce migration or reallocation from existing areas of operations
-  Inability to access natural resources for business operations
-  Dramatic changes to water supply
-  Widening social inequalities across the workforce

It's not just climate change supply chains have to worry about. There are other big challenges to the supply chain more broadly across environmental, social, and governance (ESG) factors. For example, nearly three in four CEOs globally (72%) agree that sustainability remains an immediate priority as they deal with the fallout of the COVID-19 pandemic. And, in fact, over half (57%) of CEOs are prioritizing climate action in their recovery from the pandemic.

Another big challenge is growing international instability, which has direct and significant impacts on supply chains. Nearly half of CEOs globally (46%) are confronting uncertainty in their industry stemming from national trade wars; 37% are facing uncertainty from an increasing number of populist movements; and 40% say they are facing uncertainty from threats to globalization and the movement of goods and services.

On top of the direct operational challenges, ESG expectations from investors have changed rapidly in the past few years and will continue to increase exponentially. Today, nearly one in three CEOs (31%) cite investors as among the most influential stakeholders to manage future sustainability efforts. This is up from nearly one in five CEOs (18%) in 2016. Investors are flexing their influence by conditioning access to capital on sustainability performance and requiring more thorough disclosures. The rise in investor influence is most stark among prominently high-emitting industries: 46% of CEOs in the oil and gas industry and 42% in the basic resources industry cite investors as a key influence on sustainability management. High investor pressure to prioritize sustainability is critical in these industries, which constitute a majority of the 100 companies responsible for nearly 70% of greenhouse gas (GHG) emissions.¹

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of CEOs globally agree that sustainability remains an immediate priority as they deal with the fallout of the COVID-19 pandemic.

Companies' supply chains are struggling to respond

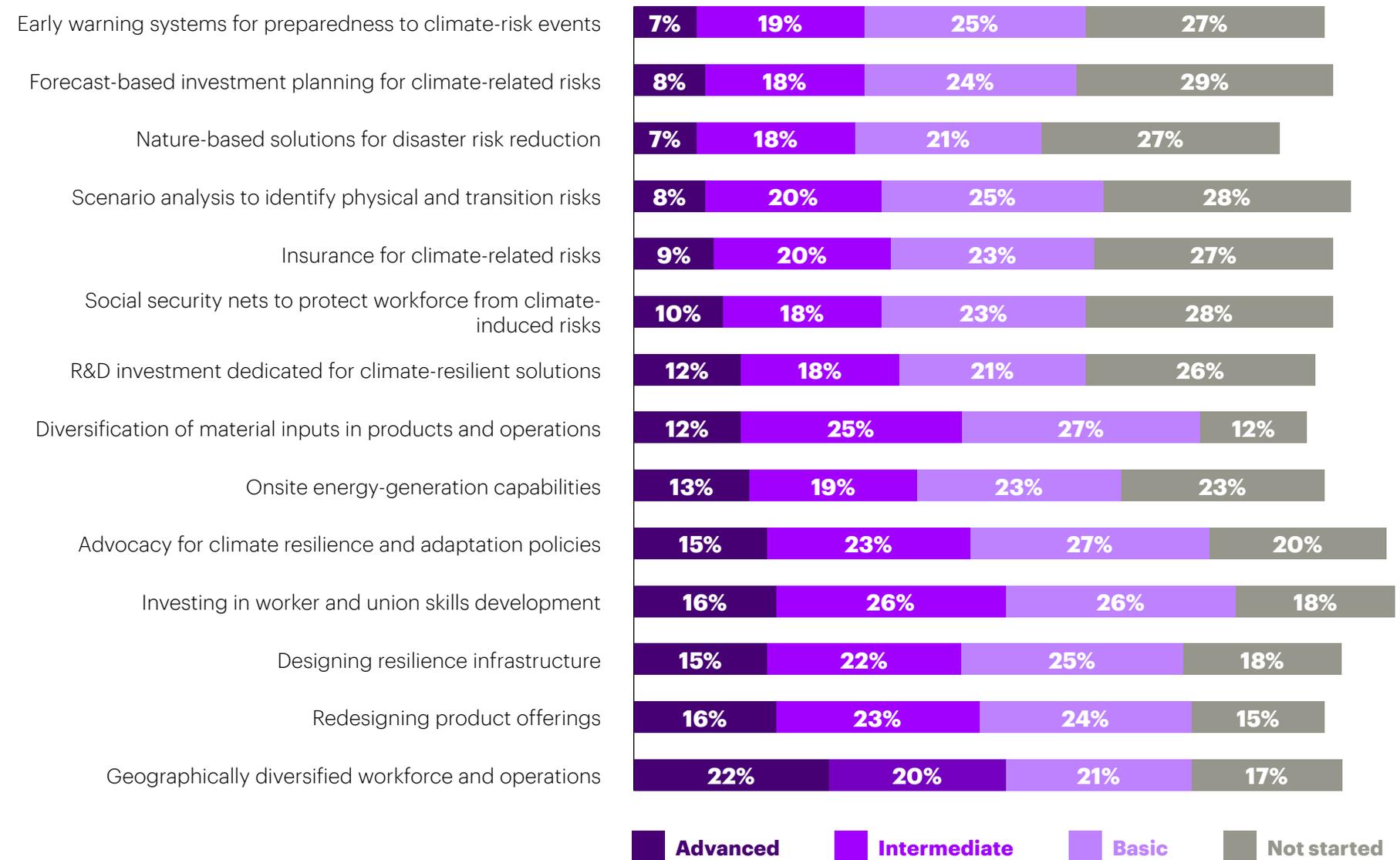
These are steep challenges and, according to CEOs in the UNGC research, their supply chains have a lot of work to do to address them (Figure 3).

For instance, globally, 54% of CEOs say their companies are only at a basic level or have not even started conducting scenario analyses to identify physical and transition risks to build climate resilience and adaptation; and 52% of CEOs globally say their companies are at a basic level or haven't begun implementing early warning systems for preparedness to climate-risk events.

Furthermore, just under half (48%) of CEOs of the largest companies (> USD \$1 billion in annual revenue) say extending sustainability strategy across the supply chain is the top barrier to implementing an integrated and strategic company-wide approach to sustainability. A big barrier is lack of data: Over half of CEOs globally (63%) say that difficulty in measuring ESG data across the value chain is an obstacle to sustainability in their industry.

FIGURE 3: Global maturity of adaptation and resilience actions

How mature do you believe your company is across the following climate resilience and adaptation actions?



Climate change and environmental degradation could jeopardize the jobs of nearly

40%

A horizontal bar chart with a white outline, representing 40% of the global labor force. The bar is filled with a light blue color and is positioned below the 40% text.

of the global labor force.²

Yet only

47%

A horizontal bar chart with a white outline, representing 47% of CEOs globally. The bar is filled with a light blue color and is positioned below the 47% text.

of CEOs globally are investing in green jobs to deliver on the 2030 Agenda and the Paris Agreement.

Additionally, companies globally are struggling to manage their scope 3 GHG emissions, a particular challenge for supply chains which, as mentioned, generate 60% of global emissions. While 55% of CEOs have begun measuring and reporting their scope 3 GHG emissions, only 16% of all CEOs do so at an advanced level. More than six in 10 CEOs (63%) say limited ESG data across the value chain is also a key barrier here.

Then there's the people aspect. The transition to a net zero economy risks alienating and displacing people dependent on high-emitting industries, many of whom are employed in supply chain roles. According to the International Labour Organization (ILO), climate change and environmental degradation could jeopardize nearly 1.2 billion jobs, constituting 40% of the global labor force.² Yet less than half of CEOs globally (47%) are investing in green jobs to deliver on the 2030 Agenda and the Paris Agreement.

Building the resilient and responsible supply chain

The upshot of the preceding? Companies need to build resilient and responsible supply chains that address emissions, circularity, and trust—and that’s not an insignificant challenge. It requires companies to build in ESG in every step of the way to make supply chains future ready and a powerful force for good. Here’s how businesses can take on the challenge.



More effectively leverage advanced technology and data across the enterprise

Technology is fundamentally transforming business models and it’s also introducing entirely new industries to efforts to accelerate global decarbonization (Figure 4). As Christian Klein, CEO and Member of the Executive Board of SAP SE, explains, “technology can help address some of the most profound environmental, economic, and social challenges of our time at scale. It enables us to convert our biggest challenges into our greatest opportunities and make sustainability profitable and profitability sustainable.”³

Advances in technologies from artificial intelligence (AI) to internet-of-things (IoT) to cloud management enable companies to reinvent their supply chains to achieve their climate ambitions. And, in fact, 75% of CEOs said their companies have begun digitizing their value chain with advanced technologies to usher in the next frontier of sustainability management.

FIGURE 4: Technology promises to significantly accelerate the future of sustainable value chains in the next five years

Which technology solutions will have a significant impact on sustainability in your industry within the next 5 years?	> USD 1 billion
Analytics on processes, equipment and products	87%
Customer sentiment analysis on sustainability preferences	84%
Artificial Intelligence (AI) demand forecasting	78%
Electric vehicles for transportation and distribution	77%
Autonomous and remote operations	76%
Predictive models to schedule maintenance and repairs	75%
Real-time track-and-trace of materials or goods	77%
Tracking systems to manage product use after sale	64%
Blockchain track-and-trace supply chain solution	64%
Take-back and returns management systems	53%
3D printing for product design and equipment repair	45%
Virtual representation of assets through digital twin	46%

One especially critical technology here is the digital twin. Companies can use digital twin technology to virtually represent assets and reimagine opportunities to embed sustainability across the supply chain. Globally, 44% of CEOs say that digital twin technology will make a significant impact on sustainability in their industry over the next five years. For example, with a digital twin, companies can create a supply network that optimizes cost and customer service levels, while simultaneously analyzing its carbon footprint. This ensures that companies can meet sustainability targets while delivering the best service for customers. One example: A company can design a network that reduces shipping times by minimizing the distances trucks must drive and, thus, reducing fuel consumption and emissions.

But technology without data is useless. That's why data is at the core of any effective climate response. As Deutsche Bank AG CEO, Christian Sewing, points out, "it is important that we get into impact measurement in the near future. Data is a game-changer in this context. To measure impact and manage risk, we need to have access to good data."⁴ CEOs say they *are* building ESG

data management capabilities. Globally, 81% of CEOs are leveraging technology to collect and manage organization-wide ESG data; yet only one-quarter of these CEOs (25%) are managing their data at an advanced level. To move that needle, companies need to accelerate their move to cloud. With the cloud, a company can knit together the complex web of systems and data across multiple levels of supply chain players—from suppliers and their suppliers, to inbound logistics providers, to a company's facilities, to outbound carriers, to distributors and, ultimately, customers. The cloud provides the technology and environment that takes information sharing and management to a level never before possible—affordably, securely, and timely.

There's also great potential to collect quality sustainability data using real-time track-and-trace and blockchain technologies. Globally, 71% of CEOs say that real-time track-and-trace of materials or goods will have a significant impact on sustainability in their industry over the next five years. Sixty percent of CEOs say the same about blockchain track-and-trace supply chain solutions. As Annica Bresky, President and CEO of

Stora Enso, explains, "digital track and trace technology will be critical to overcoming transparency challenges throughout the value chain. Increasing access to carbon footprint data will enable us to make fact-based choices on materials and products."⁵

Blockchain can also be used to score suppliers on responsible practices. Accenture created a state-of-the-art supplier management platform to manage over 100,000 of our suppliers. The platform doesn't just meet typical needs such as supplier onboarding, engagement and communication. It also collects sustainability data from suppliers to score them on three criteria: environment, human rights and inclusion and diversity. Based on scoring, the platform proposes predefined actions suppliers can take to improve.

These improvements create a ripple effect, driving the sustainability goals of a large multi-national company across the globe.

“Our employees are our most important asset. As we seek to grow sustainably, we must make sure that our employees have the skills and training they need to grow with us.”⁶

—**Ken Crichton**

President Director of PT ArchiIndonesia Tbk



Prepare and protect the workforce to build resilience

While technology and data provide the tools to create more sustainable supply chains, the people aspect is even more critical. CEOs recognize the need to preserve a just transition to greater sustainability. “Our employees are our most important asset. As we seek to grow sustainably, we must make sure that our employees have the skills and training they need to grow with us,”⁶ says Ken Crichton, President Director of PT ArchiIndonesia Tbk. Individuals must ‘learn to learn’ to remain competitive in the labor market, while employers must invest in employability and build the skills their workforce needs to succeed in a digitally-driven, sustainably-focused environment.

While they nurture the skills workers will need to succeed in the green economy, businesses should also diversify their workforce footprints to improve resilience and protect against climate-related events. For most companies, there is room to grow in this area. While 63% of CEOs globally say they have begun geographically diversifying their workforce and operations, only 22% have achieved this to an advanced level. Shifting to more local models of production and consumption

can help on multiple levels. As Kim Fausing, CEO of Danfoss, says, “Localized sourcing and manufacturing enable a more sustainable future by reducing transportation costs, creating jobs and preserving flexibility throughout the supply chain.”⁷

Protecting the workforce against extreme weather events should also be a critical area of focus. Extreme weather doesn’t just jeopardize the flow of supply chains in vulnerable regions. It poses a direct threat to employees’ physical and mental wellbeing. 42% of CEOs globally see negative health impacts across the workforce as a major climate-related risk. “The COVID-19 pandemic laid bare some of the most significant issues faced not only by our business, but by the entire world: health inequities, weaknesses in global health security, and the need for greater resilience in global supply chains,”⁸ explains Alex Gorsky, Chairman and CEO of Johnson & Johnson. Businesses can start protecting their workforce against these risks by providing health coverage to workers across the value chain and creating contingency plans for climate-related shocks.⁹



Treat carbon emissions as a business cost

Tax-efficient supply chain management lowers tax rates and overall costs, improves cash flow and creates efficient global transactions. But there's a downside. Low tax rates reduce the revenue local governments can invest in important causes needed to fight climate change, like the energy transition. As Surya Paloh, Chairman and Founder of Media Group, says, "In Indonesia, businesses want to set net zero carbon targets, but the Government has not released guidelines or rules to provoke action. The Government has an opportunity to influence action through fiscal and tax policies."¹⁰ Supply chain leaders should revisit tax-efficient arrangements for this reason, and to cut down on the emissions created by moving materials and products around the world during production.

Carbon pricing on both the micro and macro scale will be critical to addressing these issues and driving emissions down to meet climate goals. At the micro or company level, some businesses are working to shift the cost of carbon from healthcare costs and environmental

damage to direct payments for activities that cause carbon emissions—air travel, for example.¹¹ Placing an internal carbon price drives progress towards a low-carbon strategy. And the money collected can be kept for operational expenses, returned to shareholders or used for sustainability projects.

At the macro level, nearly half (47%) of CEOs from the largest companies called policymakers to ratify Article 6 of the Paris Agreement and establish the rules for implementing it at COP26. The so-called Glasgow Package was approved, paving the way for more seamless and effective cooperation across borders.¹² For CEOs, this means a more stable, predictable environment to incentivize innovation around emissions reduction. "A well-functioning, global CO₂ emission trading system is the best way to drive this transformation as fast as possible. It not only prices cost, but also sparks and accelerates innovation,"¹³ says Anna Borg, President and CEO of Vattenfall.

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Get to net zero emissions—and beyond—to create a world-wide ripple effect

The message from leading executives is clear. CEOs who are not shifting to net zero business models are putting their companies at risk.

Meeting global climate goals will require companies to address scopes 1, 2 and 3 emissions successfully. For supply chains, the greatest area of focus needs to be on scope 3.

On average, scope 3 emissions—indirect emissions from upstream and downstream of company operations—are 11.4 times greater than scope 1 and 2 combined.¹⁴ And supply chain emissions often account for a significant majority. For example, electronics companies can expect

scope 3 emissions to account for 77% of overall emissions and for fast-moving consumer goods (FMCG) companies this figure is 90%.¹⁵ If supply chains can address scope 3 emissions in a significant and lasting way, they'll create a ripple effect across the globe.

However, CEOs reported that limited ESG data across the value chain is a key barrier to progressing emissions management. Nearly two-thirds of CEOs globally (63%) say that difficulty in measuring ESG data across the value chain is a barrier to sustainability in their industry. As Derek Hydon, President of Ma Cher (USA) Inc., relates, "Transparency is the single biggest challenge in supply chain development."¹⁶

Businesses can gain this level of transparency with a data-driven scope 3 emissions reduction strategy.

Through value chain mapping, emissions assessments and benchmarking, they can determine the best areas to focus initiatives. Companies can then work with ecosystem partners and suppliers to create long-term sustainable impact. And they can use data and analytics to continuously monitor success and track compliance levels.

It's important to note that getting to net zero is important, but it's not the end game. Instead of simply stopping activities that create negative environmental or social consequences, businesses should pursue a "continuous positive" state. To be continuously positive is to seek out ever-increasing contributions at each step of the value chain. For example, a company might look at removing more carbon than it emits or retroactively remove the carbon it emitted in past decades.

Supply chains must lead the charge to a sustainable future

With the power of digital technology, companies can reimagine their supply chains to create good for both business and the planet.

That starts with positioning ESG at the heart of the value chain and thinking differently about operations, people and cost. CEOs' responses in the UNGC survey make it clear that this change is no longer optional. It has become a major focus for virtually all businesses.

Perhaps Roberto Simes, CEO of chemicals manufacturer Braskem, said it best: "Sustainability as a topic area has continued to grow in importance [and] more than ever, stakeholders from around the world demand that companies...make sustainability a top priority."¹⁷

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—**Roberto Simes**

CEO of Braskem

Author



Kris Timmermans

Senior Managing Director – Strategy & Consulting Supply Chain & Operations Global Lead

Kris Timmermans is head of Accenture's Supply Chain & Operations function and a member of the company's Global Management Committee, where he also represents the Chief Financial Officer/Enterprise Value and Customer and Channels functions.

Kris has set a clear mission for Supply Chain: help clients reimagine their supply networks to be more relevant, resilient, and socially and environmentally responsible. His strategic vision guides a multidisciplinary team of 40,000 people who use the transformative power of data and technology to drive customer-centric business models.

With 27 years of experience in the sector, Kris has led supply chain and enterprise-wide transformations for clients across multiple sectors, including consumer goods, automotive and life sciences. He has also published *The Big Zero*, a book focused on the benefits of a zero-based mindset (ZBx), and written several articles on the future of supply networks. Most recently, he co-authored *A Simpler Way to Modernize Your Supply Chain* for Harvard Business Review. He holds a Master's degree in Mechanical and Electronics Engineering from Katholieke Universiteit Leuven, Belgium, and completed aspects of his thesis at the Massachusetts Institute of Technology (MIT).

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The CEO Study program, developed by the UN Global Compact and Accenture, is an effort to enhance understanding and commitment between the United Nations and the private sector. The program is an extensive review of the advancing corporate sustainability movement, and the publications coalesce dominant views of CEOs, business leaders and UN executives to track developments in sustainability.

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