From Farm to Future:

ESG Strategies for the Food Sector

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Introduction

The food sector stands at a pivotal moment, facing increasing demands to adopt sustainable practices due to its significant contribution to global greenhouse gas (GHG) emissions. With over 95% of these emissions tied to Scope 3 activities—such as agricultural production, transportation, and packaging—the industry must address the complexities of measuring and managing its carbon footprint. On average, food companies emit 0.25 to 0.4 kg of CO_2e per dollar of revenue, with packaged goods and services being major contributors.

Leading food companies worldwide have set ambitious Environmental, Social, and Governance (ESG) targets and are making strides in reducing their environmental impact. However, while early gains have been made through renewable energy adoption and operational efficiencies, the next phase of GHG reduction will be more challenging. It will require precise data and deeper collaboration with suppliers across the value chain.

This ebook serves as a guide for food industry professionals navigating the complexities of ESG. It offers insights into the industry's carbon footprint, strategies employed by top companies, and the challenges ahead. Additionally, it explores how Lythouse's innovative solutions can support your sustainability journey.

Whether you are starting or refining your ESG efforts, this ebook provides the knowledge and tools needed to achieve your sustainability goals and drive long-term growth.

The global food industry is a vital pillar of the economy, feeding billions of people worldwide. However, this industry is also a major contributor to environmental degradation, particularly through its carbon emissions. Understanding the extent of these emissions and their sources is the first step toward mitigating the industry's impact on the planet.

Understanding Carbon Emissions in the Food Industry

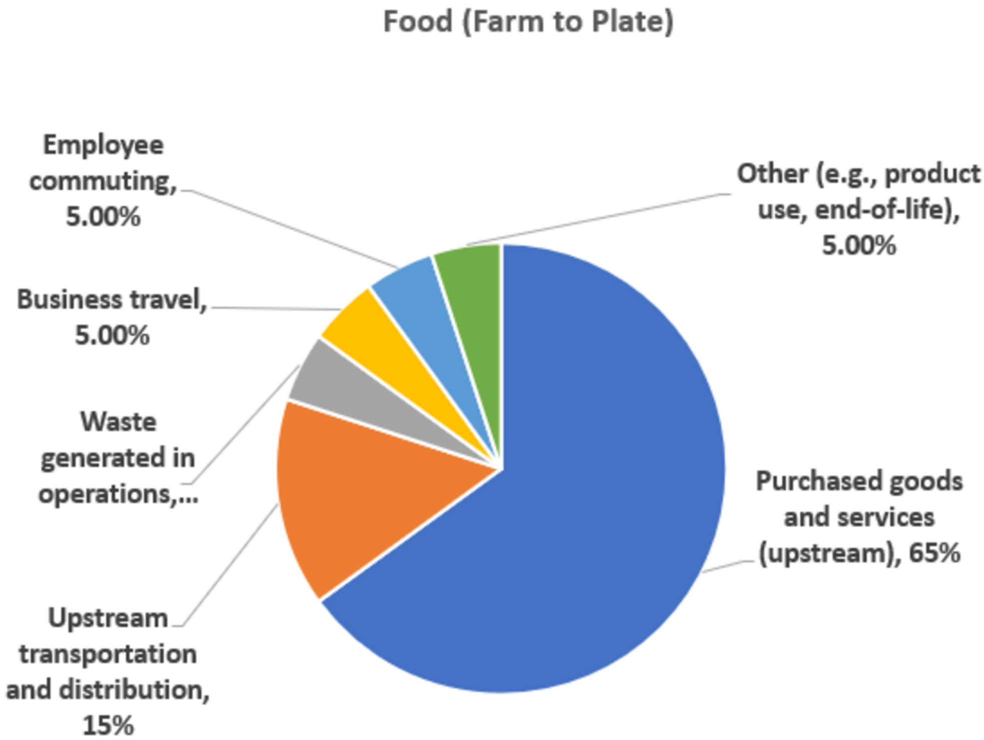
Food companies are responsible for a significant amount of carbon emissions, predominantly through Scope 3 activities, which account for over 95% of their total greenhouse gas (GHG) emissions. Scope 3 emissions encompass all indirect emissions that occur throughout a company's value chain, from the production of raw materials to the disposal of products. These emissions are often the most challenging to measure and reduce due to their complexity and the vast number of variables involved.
On average, food companies emit between 0.25 to 0.4 kg of CO2e for every dollar of revenue generated. Majority of these emissions stem from packaged goods and services, which make up approximately 65% of a typical food company's GHG emissions. This highlights the critical role that procurement decisions play in the overall environmental impact of food companies.

Breakdown of Scope 3 Emissions

Scope 3 emissions in the food sector can be broken down into several key components:

- **Procured Goods and Services:** This category is the largest contributor, accounting for about 65% of Scope 3 emissions. It includes emissions from the production and transportation of raw materials, ingredients, and packaging materials.
- **Upstream Transportation and Distribution:** Representing around 15% of Scope 3 emissions, this category includes the emissions generated from transporting goods from suppliers to manufacturers.
- **Other Components:** Additional contributions come from waste generated in operations, business travel, employee commuting, and the end-of-life disposal of products. Each of these categories accounts for roughly 5% of Scope 3 emissions.

Scope 3 is a major component of GHG emissions in any typical food company



Of this.. Procured goods & services could constitute about 65% of Scope 3

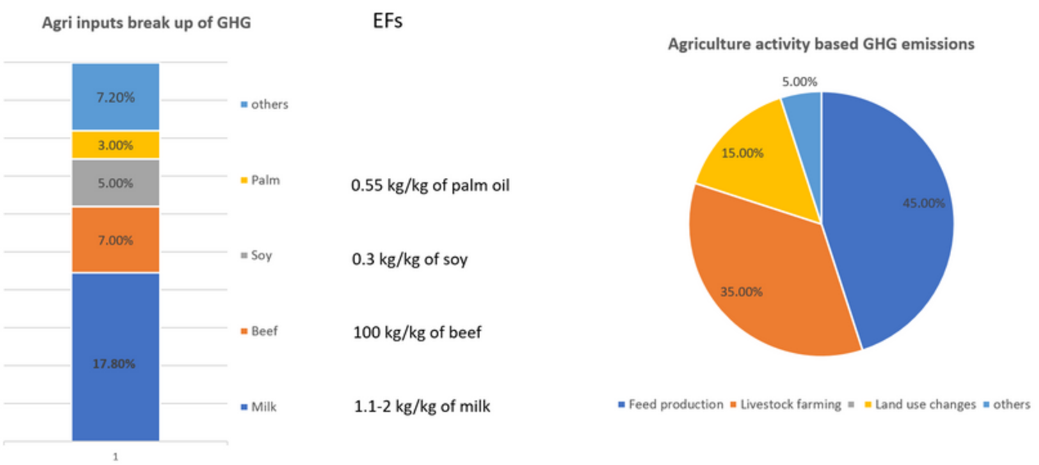
Agricultural Inputs: The Major GHG Contributors

Agricultural inputs, particularly raw materials like milk, beef, soy, and palm oil, are significant contributors to the food sector's carbon footprint. For example:

- **Milk:** Emissions factors (EFs) for milk vary significantly depending on the country and dairy practices, ranging from 1.1 to 2 kg of CO_2e per kilogram of milk produced.
- **Beef:** Beef production is a particularly high emitter, with EFs around 100 kg of CO_2e per kilogram of beef.
- **Soy and Palm Oil:** These commodities have lower emissions factors, approximately 0.3 kg and 0.55 kg of CO_2e per kilogram, respectively, but still contribute substantially due to the large volumes produced.

Understanding these emissions factors is crucial for food companies looking to reduce their overall carbon footprint. The variability of these factors highlights the importance of location-specific strategies in emissions reduction.

Accurate calculation and reduction of GHG is complex given the nature of business



The Role of Packaged Goods and Services

Packaged goods and services (PGS) are the largest contributors to Scope 3 emissions within food companies. This category includes the production and transportation of packaging materials like plastic, glass, and metal, as well as the services required to bring products to market. With packaging alone contributing up to 40% of a company's total emissions, efforts to reduce the environmental impact of packaging are critical.

Companies are increasingly turning to sustainable packaging alternatives, such as biodegradable materials and recycled content, to mitigate these emissions. Additionally, optimizing packaging design to reduce material usage and improve transport efficiency can further contribute to lowering emissions.

The food sector's carbon footprint is vast and multifaceted, with Scope 3 emissions representing the bulk of the industry's impact on the environment. By understanding the key contributors to these emissions—particularly agricultural inputs and packaged goods—food companies can begin to develop targeted strategies to reduce their carbon footprint. The next chapter will explore how top companies are setting and achieving their ESG targets to drive meaningful change in the industry.

As the food sector grapples with its significant environmental impact, the leading companies within the industry have recognized the necessity of adopting robust Environmental, Social, and Governance (ESG) strategies. These strategies are not only critical for meeting regulatory requirements and consumer expectations but also for ensuring long-term business sustainability. This chapter delves into the ESG targets set by the top global food companies, their progress towards these goals, and the challenges they face in achieving them.

Setting the Scene: Global Leaders in ESG

The top 10 food companies globally have taken decisive steps to integrate ESG into their core business strategies. These companies, which include giants like Nestlé, PepsiCo, JBS, and Unilever, have each set ambitious targets for reducing their greenhouse gas (GHG) emissions, with a strong focus on Scope 3 emissions. These targets typically align with the broader goals of the Paris Agreement, aiming to limit global temperature increases by significantly reducing carbon footprints by 2030 and beyond.

Examples of ESG Targets:

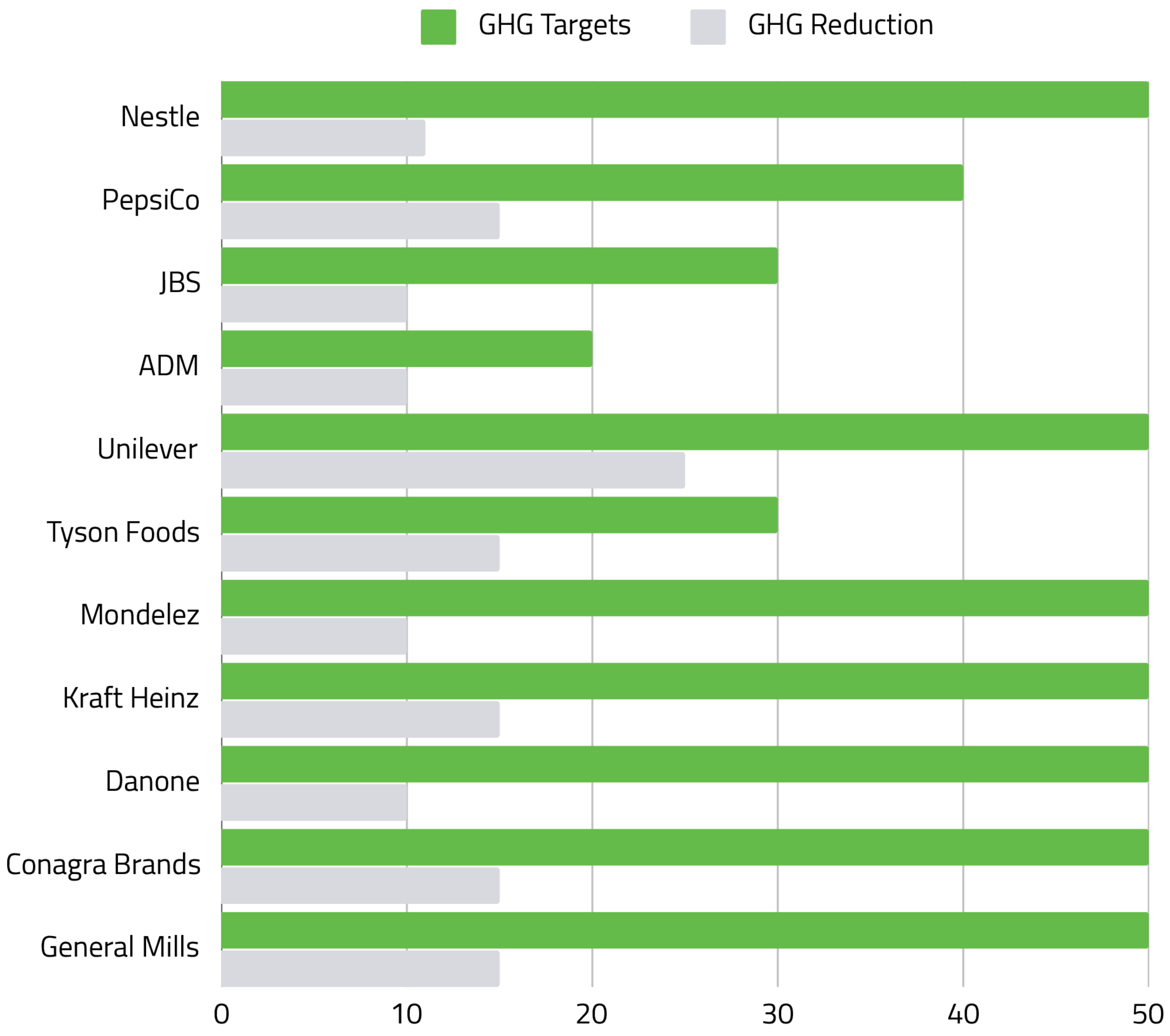
Nestlé

Nestlé has committed to reducing GHG emissions by 50% by 2030, with a long-term goal of achieving net-zero emissions by 2050.

PepsiCo aims to cut its absolute GHG emissions across its value chain by 40% by 2030.

Unilever is targeting a 50% reduction in the environmental impact of its products by 2030, with a focus on sustainable sourcing and reducing waste.

ESG targets and achievements vary significantly across the top food companies



The next 10 largest companies have similar targets, and achievements.

These companies have not only set these targets but have also made their progress publicly available, fostering transparency and accountability. This public declaration serves as a commitment to shareholders, consumers, and the global community, reinforcing their leadership in sustainability.

Progress and Challenges in Achieving ESG Targets

While the initial progress made by these companies is commendable, sustaining and advancing these efforts presents significant challenges. Early reductions in GHG emissions were often achieved through relatively straightforward measures, such as increasing energy efficiency, transitioning to renewable energy sources, and improving waste management practices. For instance, many companies reported a temporary reduction in emissions during the COVID-19 pandemic due to decreased transportation and commuting activities.

However, as companies move beyond these "low-hanging fruits," they face more complex challenges:

- **Granular Measurement of Emissions**: Accurately measuring Scope 3 emissions is notoriously difficult due to the vast and varied supply chains involved in the food industry. These emissions come from diverse sources, including raw material production, transportation, and waste disposal. Companies must develop more sophisticated methods to track and report these emissions accurately.

- **Supplier Collaboration**: Reducing Scope 3 emissions requires deep collaboration with suppliers, many of whom are small-scale farmers or manufacturers with limited resources. Achieving meaningful reductions in this area necessitates not just collaboration but also investment in capacity building and support for suppliers to adopt more sustainable practices.

- **Balancing Economic and Environmental Goals**: Companies must navigate the tension between driving financial performance and meeting ambitious ESG goals. This balance often requires making tough decisions about investments in sustainability initiatives that may not yield immediate financial returns.

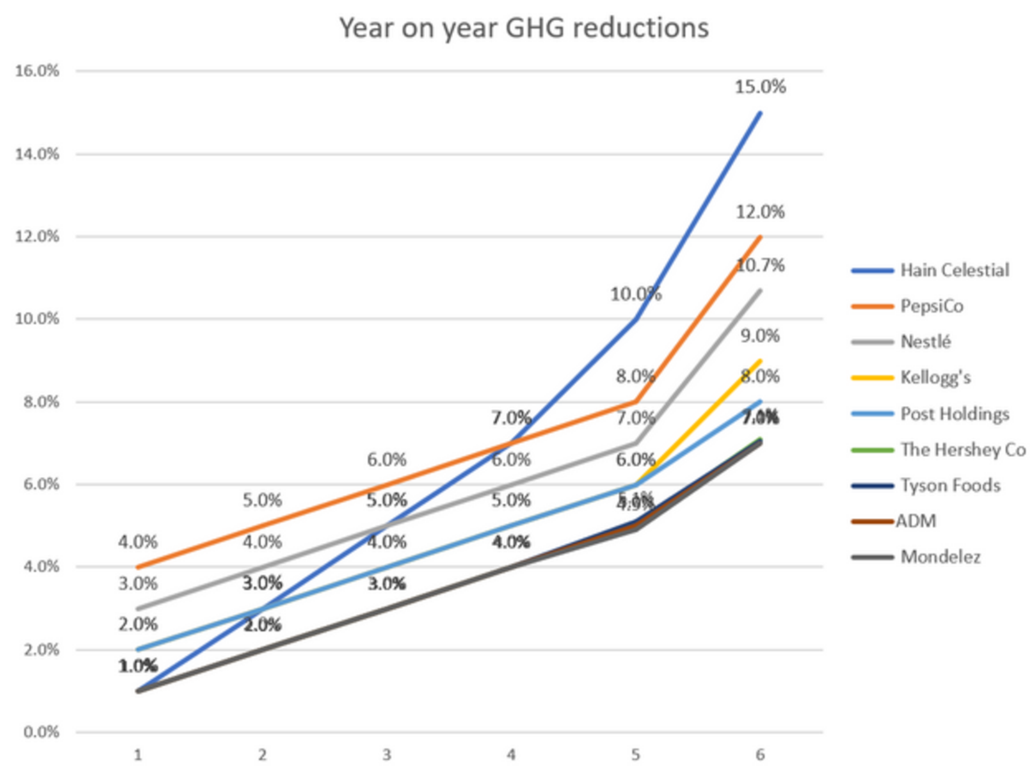
A Closer Look: ESG Achievements Across Top Companies

The progress made by these leading companies varies significantly. Some, like Nestlé and PepsiCo, have taken a leadership position by setting aggressive targets and showing substantial year-on-year reductions in their GHG emissions. For example, Nestlé has already achieved a reduction of 10% in its emissions, while PepsiCo has reduced its emissions by 15% from its baseline.

Other companies, however, have set more moderate targets or have struggled to achieve significant progress. For instance, some companies in the meat processing industry, such as JBS, face more substantial challenges due to the inherently high emissions associated with livestock farming. Despite these challenges, JBS has still managed to make incremental progress, reducing its emissions by 10% over the past few years.

The disparities in progress underscore the varying levels of difficulty associated with different sectors within the food industry. Companies that rely heavily on high-emission activities, such as meat production or intensive agriculture, face greater obstacles in reducing their carbon footprints compared to those with more diversified or less carbon-intensive operations.

As the food sector confronts the pressing need to reduce its environmental impact, companies are seeking effective strategies to lower their greenhouse gas (GHG) emissions. This chapter explores practical, actionable strategies that food companies can implement across their operations and supply chains to drive significant reductions in their carbon footprint. From optimizing agricultural practices to innovating in packaging and logistics, these approaches are critical to achieving the ambitious ESG targets set by industry leaders.



- Companies have made impressive progress against their ESG targets on GHG front
- GHG reductions were driven mainly by migration to more renewable sources of energy
- In 2020/ 21, the COVID-19 reduction in transport/ employee commute etc resulted in temporary reduction of GHG emissions
- However, the next phase of reduction will be proven to be difficult as procured goods & services (agricultural inputs, transportation, packaging etc.) are more complicated categories

Optimizing Agricultural Practices

Agriculture is the backbone of the food sector, but it is also a major source of GHG emissions, particularly from activities like livestock farming, crop production, and land use changes. Given the significant contribution of agricultural inputs to overall emissions, optimizing these practices is essential.

Key Strategies:

- **Improving Livestock Farming Efficiency:** Livestock farming, especially beef production, is one of the largest contributors to agricultural emissions. Companies can reduce these emissions by improving feed conversion ratios, selecting livestock breeds that are more efficient and emit less methane, and implementing better manure management practices. These improvements not only reduce emissions but also enhance the productivity and profitability of farming operations.

- **Sustainable Crop Production:** Crop production is another major source of GHG emissions, particularly through the use of fertilizers and pesticides. By adopting practices such as reduced tillage, crop rotation, and precision farming, companies can minimize the environmental impact of crop production. Additionally, selecting crops that require fewer inputs and are more resilient to climate change can further contribute to emission reductions.

- **Promoting Regenerative Agriculture:** Regenerative agriculture is an approach that focuses on restoring soil health and enhancing biodiversity. Practices like cover cropping, agroforestry, and holistic grazing not only sequester carbon but also improve the resilience of agricultural systems to climate change. By supporting farmers in adopting regenerative practices, food companies can play a pivotal role in reducing the sector's carbon footprint.

Innovating in Packaging and Logistics

Packaging and logistics are integral to the food industry, but they also represent significant sources of Scope 3 emissions. Companies are increasingly recognizing the need to innovate in these areas to achieve their ESG targets.

Key Strategies:

- **Sustainable Packaging Solutions**: Packaging materials such as plastic, glass, and metal are substantial contributors to a company's carbon footprint. To mitigate this impact, companies can explore sustainable alternatives like biodegradable materials, recycled content, and packaging that requires less material overall. Additionally, companies can innovate in packaging design to enhance efficiency in transportation and storage, further reducing emissions.

- **Efficient Supply Chain Management**: Transportation is another critical area where companies can reduce emissions. Strategies such as optimizing logistics routes, transitioning to low-emission vehicles, and improving the efficiency of freight operations can significantly lower the carbon footprint of supply chains. Moreover, adopting digital tools to track and optimize supply chain performance can lead to better decision-making and reduced emissions.

- **Reducing Food Waste**: Food waste contributes significantly to GHG emissions, both at the production level and throughout the supply chain. Companies can implement measures to reduce waste, such as improving demand forecasting, enhancing inventory management, and donating surplus food. Additionally, innovative packaging solutions that extend the shelf life of products can also help reduce waste.

Engaging Suppliers and Stakeholders

Reducing Scope 3 emissions requires a collaborative effort across the entire supply chain. Engaging suppliers and stakeholders in sustainability initiatives is crucial for achieving meaningful reductions.

Key Strategies:

- **Building Stronger Supplier Relationships:** Companies need to work closely with their suppliers to ensure that they are adopting sustainable practices. This can include providing training and resources to help suppliers measure and reduce their emissions, setting clear sustainability criteria for procurement, and offering incentives for suppliers who meet or exceed these criteria.

- **Promoting Transparency and Accountability:** Transparency is essential for driving progress in GHG reduction. Companies should require suppliers to report their emissions data and track their progress towards ESG goals. By creating a culture of accountability, companies can ensure that all parties involved in the supply chain are contributing to the overall sustainability goals.

- **Collaborative Innovation:** Innovation in sustainability often requires collaboration across the industry. Companies can partner with suppliers, research institutions, and other stakeholders to develop new technologies and practices that reduce emissions. This collaborative approach can lead to breakthroughs that might be difficult to achieve in isolation.

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Leveraging Technology for Emissions Reduction

Technology plays a crucial role in enabling companies to track, manage, and reduce their GHG emissions. From precision agriculture to digital supply chain management, leveraging the right tools can make a significant difference in a company's sustainability efforts.

Key Strategies:

- **Digital Agriculture Platforms**: These platforms enable farmers to monitor crop health, soil conditions, and weather patterns in real-time, allowing for more efficient use of resources and reduced environmental impact. By investing in such technologies, food companies can help their suppliers optimize agricultural practices and lower emissions.

- **Supply Chain Optimization Tools**: Advanced analytics and AI-driven tools can help companies optimize their supply chains, reducing emissions by improving efficiency in transportation, inventory management, and demand forecasting. These tools can also provide valuable insights into the carbon footprint of various supply chain activities, enabling more informed decision-making.

- **Carbon Footprint Calculators**: Accurate measurement is key to effective GHG reduction. Carbon footprint calculators that provide granular data on emissions from different parts of the supply chain are essential for tracking progress and identifying areas for improvement. These tools can also help companies comply with regulatory requirements and meet the expectations of environmentally conscious consumers.

The food sector faces significant challenges in reducing its carbon footprint, but by adopting innovative strategies in agriculture, packaging, logistics, and supplier engagement, companies can make meaningful progress towards their ESG targets. In the next chapter, we will explore the risks and challenges that could derail these efforts and how companies can navigate them to ensure continued progress in their sustainability journey.

As food companies strive to meet their ESG goals, they face several significant risks and challenges that can hinder progress. From the complexities of transparent reporting to the difficulties of managing a diverse and global supplier base, navigating these challenges is crucial to ensure sustainable growth and reduce the environmental impact of the sector.

Transparency and Control Issues

One of the main obstacles for food companies is ensuring accurate and transparent reporting of greenhouse gas (GHG) emissions, particularly Scope 3 emissions. Given that over 95% of the food industry’s emissions stem from Scope 3 activities—such as procurement, transportation, and packaging—it is critical for companies to accurately measure and manage these emissions.

However, transparency remains a challenge. The CDP's 2022 Global Supply Chain Report found that only 28% of suppliers are disclosing their Scope 3 emissions. Without full visibility into the supply chain, companies are at risk of underreporting or misreporting their environmental impact. Inaccurate reporting not only leads to reputational damage but can also result in financial penalties and loss of investor confidence.

Moreover, Scope 3 emissions are notoriously difficult to measure due to the vast number of indirect sources involved. Agricultural inputs, transportation, and packaging represent key areas where data collection is complex. For example, emissions factors (EFs) for agricultural commodities like milk or beef can vary significantly depending on the country and production practices, making standardized reporting a challenge.

Diverse Supplier Base and Lack of Control

The food industry relies heavily on a diverse and fragmented supplier base, ranging from small-scale family farms to large industrial operations. This diversity creates significant challenges in standardizing ESG practices across the supply chain. Many smaller suppliers may lack the resources or expertise to implement robust sustainability measures, let alone accurately report their emissions.

Companies must therefore foster closer collaboration with suppliers to ensure that ESG criteria are met. The SBTi's Net-Zero Standard highlights that lack of data and transparency are two of the most significant challenges to setting and achieving net-zero targets. To overcome these challenges, companies need to invest in capacity-building initiatives that support their suppliers, helping them to adopt sustainable practices and improve reporting accuracy.

Additionally, developing a one-size-fits-all approach is not feasible given the wide range of suppliers. For example, emissions from livestock farming, such as beef production, are dominated by methane and nitrous oxide—two potent GHGs that require specialized mitigation strategies. On the other hand, emissions from crop farming are more focused on land use changes and fertilizer application, necessitating different sustainability approaches.

The Need for Green Supplier Collaboration

Achieving ESG targets will require deeper collaboration with suppliers across the value chain. Food companies must create frameworks for “green supplier collaboration,” where they actively work with their partners to improve sustainability practices. This might include joint investments in technology, such as precision agriculture tools, which can help reduce emissions from crop production. Alternatively, partnerships could focus on improving feed conversion ratios in livestock farming to reduce methane emissions.

Robust governance around ESG is also critical. Establishing a culture that prioritizes sustainability within both the company and its supplier network can drive more meaningful change. This means setting clear targets, offering incentives for suppliers who meet these targets, and providing transparency on progress.

Risks of Inaccurate Reporting and Reputational Damage

Inaccurate or incomplete reporting can lead to significant reputational risks for food companies. Consumers, investors, and regulatory bodies are increasingly scrutinizing corporate ESG practices, and any discrepancies between reported data and actual environmental impact can erode trust. To avoid this, companies must prioritize accurate and granular data collection throughout their supply chains, as well as invest in technologies that facilitate this process.

For instance, digital tools that track emissions in real time or carbon footprint calculators that provide detailed insights into various supply chain activities can improve accuracy. These technologies also enable better decision-making by identifying which areas of the supply chain are most in need of sustainability improvements.

The Role of the CDP and SBTi in ESG Governance

Several external frameworks can guide food companies in overcoming these challenges. The CDP (Carbon Disclosure Project) encourages transparency in reporting, while the SBTi (Science-Based Targets initiative) provides guidelines for setting credible and ambitious emissions reduction targets. By aligning with these frameworks, companies can enhance the credibility of their ESG efforts and ensure that their strategies are based on sound scientific principles.

Conclusion: The Future of Social in ESG

The next phase of ESG progress for these companies will require innovation, investment, and a willingness to tackle complex challenges. To continue making strides in reducing their environmental impact, companies will need to:

Key Takeaways:

- Invest in Innovation: Developing new technologies and practices that reduce emissions, such as alternative proteins, regenerative agriculture, and more efficient supply chain logistics.
- Enhance Transparency: Strengthening reporting mechanisms to ensure accurate, granular data is available to stakeholders, thereby building trust and driving further progress.
- Foster Stronger Supplier Partnerships: Building closer relationships with suppliers to ensure they are equipped and incentivized to meet the stringent ESG criteria set by these companies.
- Address Consumer Expectations: As consumers become more environmentally conscious, companies must align their products and practices with these values, offering more sustainable options and communicating their ESG efforts effectively.

The top food companies have made significant strides in setting and achieving their ESG targets, but the journey is far from over. The next chapter will explore practical strategies for reducing greenhouse gas emissions across the food sector, providing actionable insights for companies looking to deepen their commitment to sustainability.