

Building resilient and sustainable food systems:

**A decade of best practices
from leading companies**

Acknowledgments:

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Campbell's



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Kellogg's



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About EDF:

One of the world's leading international nonprofit organizations, Environmental Defense Fund (edf.org) creates transformational solutions to the most serious environmental problems. To do so, EDF links science, economics, law, and innovative private-sector partnerships. With more than 2.5 million members and offices in the United States, China, Mexico, Indonesia and the European Union, EDF's scientists, economists, attorneys and policy experts are working in 28 countries to turn our solutions into action.

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Executive summary

For companies that source agricultural commodities, building resilient supply chains, setting ambitious climate goals and implementing plans to meet these goals can be daunting. Progress takes resources and expertise, which can be a barrier for companies starting their sustainability journey. True progress also takes time, a luxury many companies today don't have.

Business leaders are under immense pressure to double down on sustainability action, because the stakes have never been higher. Environmental disasters are becoming more frequent and the devastation and disruptions to agricultural supply chains more extreme. Climate change is an immediate risk to businesses and financial markets.

Stakeholders are also increasingly becoming engaged. Investors, employees and customers are holding companies accountable for building a more sustainable and resilient future. Together, these pressure points have ignited new urgency around the need for all companies, and not only the leading ones, to bend the curve on climate change and to support sustainable agriculture.

To build resilient supply chains and get the world to net zero emissions by mid-century, companies must not only set ambitious climate commitments, but develop and implement plans for meeting them. They, too, must embrace collaboration in order to drive change at scale.

This report gathers lessons learned by leading companies over the past decade of trial and error, in order to streamline environmental progress for companies early on in their sustainability journey. Using their first-hand experiences, we address common barriers and pitfalls when implementing sustainability in agricultural supply chains, and provide best practices for overcoming them.

In conversations with nearly a dozen industry leaders, six best practices were identified as being critical for successfully implementing sustainability initiatives in global agricultural supply chains.

- 1 Catalyze corporate buy-in**
- 2 Embrace strategic partnerships**
- 3 Prioritize sustainability engagements**
- 4 Commit to aggressive goals**
- 5 Partner with farmers and suppliers**
- 6 Harness data for impact**

Companies who are just getting started on their agricultural sustainability journey don't need to reinvent the wheel. The findings from this report can be a launchpad for action. By zeroing in on these strategies, companies in the agricultural sector can supercharge their efforts to build more resilient, equitable supply chains today.

Introduction

The global coronavirus pandemic has underscored the vulnerability of global supply chains. It has proven the need for companies to prepare for disruptive events or risk a decline to their bottom line. In the face of unprecedented challenges from COVID-19, resilient companies have taken swift action, such as shifting production priorities to avoid significant disruptions in their supply chains.¹

Climate change is another enormous and immediate risk to consumer goods companies and their supply chains. The increased frequency and impact of natural disasters, such as droughts, flooding and wildfires, has already impacted business operations and those of their suppliers, forcing companies to make strategic, longer-term changes to their supply chains and underscoring the need to become more resilient.

Recent studies predict that if greenhouse gas emissions continue on their current trajectory, agricultural yields will become more highly variable with vegetable and legume yields predicted to fall by as much as 30% and corn yields by as much as half by 2100 due to water scarcity, increased temperatures and increased salinity. And yet, food production is a significant driver of climate change.^{2,3}

The agriculture sector represents 20% of the total share of global GHG emissions when considering near-term impacts.⁴ This raises the urgency for companies in the food and agricultural sector and their partners to identify and implement sustainability initiatives now in order to build resilient supply chains and improve water and air quality in the communities that feed our nation.



Our company will not be here tomorrow if we don't solve the challenge in front of us today.

Participating company



While dramatically increasing mitigation efforts across all sectors is critical to achieving climate change goals, agricultural and forestry emissions reductions and carbon sequestration can be a [substantial part of the solution](#) while also providing valuable co-benefits for people and ecosystems.⁵ Employing proven agricultural technologies and practices (such as improved livestock management, reduced livestock and rice methane emissions, precision agriculture, reduced on-farm energy use and increased adoption of renewable energy) have the [potential to get U.S. agriculture 20% of the way to net zero emissions in this sector by 2050](#) while also improving air and water quality.⁶

Today we're seeing a surge in corporate sustainability commitments, as stakeholders like retailers, consumers, employees and investors are demanding action. To date, [113 food and agriculture companies](#) are in the process of setting or have set a Science Based Target (SBTi) and are moving towards more sustainable agricultural



We want to be a model of success for other brands.

Participating company

production. In order to meet these goals, business leaders will need to embrace pre-competitive collaboration — going beyond a company's direct operations to engage product supply chains and drive progress at scale.

This report aims to make that pre-competitive collaboration possible. It summarizes the major lessons learned by companies who have worked on agricultural sustainability over the past decade. Companies newer in their sustainability journey can use this report to quickly learn from the expertise of these leading companies and supercharge their implementation.



Building resilient and sustainable food systems





Sustainability is becoming one of our core values and part of our culture. It is ingrained in decision making, how we talk to customers, and how we think, operate and measure teams on performance.

Participating company

Leading food and agriculture companies have paved the way for resilient supply chains and are taking real, science-based actions to meet ambitious climate targets. These companies are showing leadership as they work to minimize the climate impacts of their global supply chains. But it didn't happen overnight.

Forward-thinking companies have spent decades using trial and error to find solutions for building more resilient supply chains and driving down greenhouse gas emissions. Each company also experienced a unique set of challenges and

successes, influenced by factors such as company culture, commodities purchased and sourcing. This trial and error approach is necessary in the early stages of innovation, but it can be expensive and time consuming.

These leaders have an opportunity today to help companies new to supply chain sustainability meet their goals by minimizing the trial and error element and sharing context-based solutions and best practices. Through interviews with these leaders, six foundational strategies for driving successful supply chain sustainability initiatives were identified:

1. **Catalyze corporate buy-in**
2. **Embrace strategic partnerships to build sustainability expertise**
3. **Prioritize sustainability engagements**
4. **Commit to aggressive science-based sustainability goals**
5. **Partner with farmers and suppliers**
6. **Harness data to show progress, impact and credibility**

What follows is a deep dive into those best practices to enable companies that are just starting out or are early in their sustainability journeys to quickly become sustainability leaders by learning from companies who have walked the path before them. Despite the investments needed for achieving this level of ambition, all the companies we spoke to underscored that the **business benefits were worth the investment.**

Methodology

Environmental Defense Fund conducted interviews with sustainability professionals from 11 companies. The companies interviewed were selected based on their record of engaging in agricultural supply chain sustainability initiatives during the past decade. The companies include Bayer, Campbell Soup Company, Cargill, Danone, The JM Smucker Company, Kellogg's, Lewis Bakeries Inc., PepsiCo, Smithfield Foods, Tyson Foods and Unilever.

The same set of questions were asked of all respondents to ensure we gathered feedback on consistent topics. The questions fell into four categories: 1) their sustainability journey; 2) success and failures; 3) challenges and opportunities; and 4) results and future plans.

This approach allowed us to identify best practices that helped these practitioners and companies achieve success as they transformed their supply chains. These findings, combined with EDF's knowledge gained from working with both retailers and consumer goods companies, are the basis of this report.

Best practice #1

Catalyze corporate buy-in

Sustainability initiatives transcend multiple business functions — from procurement and sourcing to marketing and finance — fostering collaboration across departments is key to delivering impact at a truly meaningful scale. Further, securing corporate buy-in is critical for building a resilient agriculture supply chain and delivering a return on investment. Several approaches exist to getting corporate buy-in. But, before deciding on an approach, it is essential to determine where the company is on its sustainability journey.



The following questions can help determine where a company is on its sustainability journey:

What is the company's perspective on sustainability, and how does that tie into its values, beliefs, behaviors and structures?

How has the company successfully implemented internal initiatives in the past?

Is internal change driven by a top-down approach stemming from the CEO or bottom-up approach by the departments materially impacted?

Is the company externally driven due to influence from a key customer, media trends or investor interest, or a mix of internal and external factors?

Does the company currently have the resources (in terms of finances, expertise and staff time) to devote to this effort?

The following are the most common approaches taken by the companies we interviewed for getting buy-in when engaging in sustainability initiatives.

Internally Driven

Interview respondents pointed to either a top-down approach or a bottom-up approach at companies where sustainability is internally driven. A top-down approach is one in which sustainability is driven at the C-suite or Board level. This directive is often a result of business planning, including identifying upcoming issues that the company needs to be aware of.

A bottom-up approach is when key departments, such

as procurement, might be experiencing challenges, including disruptions in supply, or increasing prices due to climate change impacts. As these departments seek solutions to address climate disruptions to the supply chain, they drive sustainability up the organization's ladder into the C-suite level.

Regardless of the approach, getting buy-in from employees is integral to prevent sustainability from becoming a "check the box exercise" to suffice management demands and instead is an

opportunity to build a more competitive business.

Many interviewees overcame the employee buy-in challenge by creating working groups to align on which issues were a priority. By giving employees at different levels and different functions of the organization a voice in the process, sustainability initiatives became a core part of achieving business goals.

To get senior management buy-in, respondents noted that their companies worked with key business functions, such as procurement or finance, to build a clear business case for sustainability, highlighting ways to benefit the business financially while also reducing risk, improving the company's reputation and cultivating customer loyalty.



“It was an internally driven risk mitigation strategy. It is the right thing to do and keep doing.

Participating company

Externally Driven

The most notable external drivers for addressing agricultural sustainability in companies' supply chains mentioned in the interviews included governmental regulation at the state level to address environmental concerns; investor requests for information about supply chain sustainability; the opportunity to get better rates from banks because of

sustainability initiatives; the use of sustainability to pitch retail customers for shelf space; or to buy a new product offering from the company or to improve a company's reputation. External factors are often tracked closely by the C-suite, which can help accelerate buy-in from the top. Like an internally driven approach, it is still essential to engage employees in key departments when developing a sustainability program.



When one of your big customers asks you to do something, it gets attention from your leadership.

Participating company



PEPSICO

Case study: Catalyze corporate buy-in

PepsiCo gathered team members from across the organization to look at their future supply chain and understand the risks and opportunities.

CEO Indra Nooyi showed support for the vision by leading the global launch of the sustainability proposal. She also supported creating a sustainable agriculture team and put resources behind the team to implement the vision or

sustainability that had come out of the multi-stakeholder group, in concert with a large number of internal champions from across multiple regions and functions.

By starting the sustainability plan with multi-stakeholder engagement and strong CEO buy-in, PepsiCo has been able to garner support across all levels and departments of the organization, which has been a key part of the success of their sustainability efforts.⁷

Best practice #2

Embrace strategic partnerships to build sustainability expertise

Before implementing an effective sustainability program, a company must have an in-depth understanding about what sustainability practices are needed on the ground and how to enact change. All the interviewees used external resources to build their knowledge, guide their work and eventually achieve their company's sustainability goal.

Many looked to external help to identify what they needed to learn in order to implement sustainability work successfully and where to gain that missing knowledge. They actively sought opportunities to learn from others to understand the key players in sustainable agriculture, how the current system works and how to influence change effectively.



You need partnerships that bring knowledge and give direction to do the work well.

Participating company

The following are some of the resources that were referenced by interviewees.

Academic Fellows

Bayer's fellowship program for Ph.D. students was a unique strategy used to expand sustainability knowledge. Fellows were tasked with helping the company do an independent assessment of climate change science and providing recommendations for how to apply it to their operations. For additional details on this strategy, see the Bayer case study at the end of this section.

Advisory Groups

Many interviewees spoke of creating advisory groups composed of a mix of key thought partners, for example, farmers, representatives of farm organizations, non-profits, or scientists, to ensure their input was considered before decisions were made. Advisory groups are helpful in providing guidance, access to information, support, or identifying potential barriers to project implementation. They can also bolster the credibility of the resulting efforts and help influence other businesses considering sustainability initiatives.

Consultants

Some interviewees spoke of hiring consultants to advise on both strategy and implementation. Consultants can

help identify material issues to the organization or industry, research what approaches competitors are taking, and identify partnership opportunities.

Farmers, Suppliers and Vendors

Farmers were the most commonly cited external resource. Almost all interviewees stated that one of the best sources for information came directly from farmers — through visiting farms, asking questions, and observing farm operations. Some respondents found speaking with their suppliers and vendors to also be a good source of knowledge about sustainability given that they were often engaged in initiatives with farmers and other customers.

NGOs, Nonprofits and Implementation Partners

Another frequently cited source of information on agricultural sustainability from respondents was NGOs, nonprofits, and on-the-ground implementation partners. Many interviewees noted that these organizations provided strategic guidance and insights into the science behind agricultural sustainability work. These types of partners were also beneficial for facilitating introductions to other organizations, like farmer cooperatives, to help a company accomplish its sustainability goals, whether in an advisory role or a formal partnership.

Universities

Many companies engage universities to provide insights into research, partner on pilots, or conduct new research on emerging science in agricultural sustainability. When asked why they sought out university assistance in their work, one interviewee responded that literature reviews were simply not something they had internal capacity to do, so university support provided this much needed scientific insight. Many companies engaged universities with farm extensions in the key states of their

operations to better understand the local political and economic complexities of agriculture in those states.

Working Groups and Coalitions

A few company representatives found it helpful to join working groups to understand the industry's key issues. Others attended events held by working groups or coalitions to find people with whom to brainstorm or to partner with on agricultural supply chain initiatives.

Building successful partnerships is vital to maximizing the value of these external resources. In order to do that, companies must also consider what they can contribute to their partnerships whether it is compensating advisors for their time or increasing the visibility of a valuable on-the-ground partner that helps shape how a company implements a supply chain initiative.



Case study: Embrace strategic partnerships to build sustainability expertise

The Bayer Fellowship Program targets students and apprentices in scientific and medical disciplines. Its goal is to support the next generation of researchers and teachers as they engage in "Science for a Better Life."⁸

From 2008 to 2009, as part of Bayer's business planning process, the company tasked its science fellows that year to research climate change. The fellows were responsible for looking at the science, determining what the science was telling them, and identifying if potential outcomes would threaten the business. These science fellows helped Bayer build their knowledge to determine if and how to proceed in tackling agricultural sustainability in their supply chain.

Best practice #3

Prioritize sustainability engagements

Prioritizing sustainability projects is essential for ensuring that a company's investments are focused on the opportunities with the biggest potential return on investment. During the course of the interviews that we conducted, it was clear that there is no one single or recommended approach to prioritizing projects. Rather, the three approaches we identified were a commodity approach, a relevance approach and a geographic approach. Some companies used a combination of all three. What is important is to find an approach to prioritization that maximizes environmental impacts while fitting your company's overall business strategy and desired sustainability outcomes.

Commodity approach

Identifying the agricultural commodities that are most important to an organization's supply chain was one approach to project prioritization shared in interviews. For example, one interviewee prioritized commodities based on procurement cost, whereas

another chose a commodity because it is frequently used across products. Regardless of how a company chose to prioritize when using the commodity approach, this approach helped secure the long-term sourcing of a commodity that was important to the company's business and environmental goals.

Relevance approach

Another approach cited was to consider what agricultural issues are most relevant to meeting a company's sustainability goals. One interviewee prioritized a commodity because it provided an opportunity for significant GHG reductions and moved the company towards a more economically, environmentally, and socially sustainable supply chain. Although the company had commodities that were used more frequently in production, they chose to prioritize commodities that could make a bigger impact in meeting the company's sustainability goals.

Another reason for taking a relevance approach might be because a company can only address some but not all of their agricultural sustainability issues. For example, when there are not currently scalable GHG reduction solutions, companies should see how they can simultaneously support innovation to spur a new solution while working on other opportunities for GHG mitigation.



Geographic approach

Respondents also mentioned choosing where to focus their efforts based on the geographies in which they source key ingredients. Focusing on key sourcing geographies allowed companies to leverage existing infrastructure, relationships and trust in order to pilot and eventually scale sustainability initiatives. Companies that use this approach should consider which geographic areas present the biggest opportunity to make an impact and where relationships exist that could lead to more formal partnerships.



We looked at what are the things we can really influence? What is in our scope and capacity to do and do well?

Participating company

Regardless of what approach a company took, many respondents spoke of soliciting input from, and engaging, key parts of their companies as an integral part of the process of prioritizing projects. Teams such as procurement helped identify what the key commodities were in a company's supply chain. Finance departments helped identify what agricultural products most impacted the bottom line. Marketing and communications teams helped identify which sustainability issues were of interest to customers, investors and other stakeholders. Risk and strategy departments helped identify barriers to achieving sustainability goals, recommended which barriers could be overcome, and how or which barriers could not be overcome and therefore deprioritized certain projects.



Case study: Prioritize sustainability engagements

Kellogg's used Environmental, Social and Governance (ESG) relevance to guide project prioritization. The company focused on where they could have the biggest impact using a three-pronged approach: engaging internal stakeholders, conducting an external landscape assessment and doing an assessment of stakeholder interest.

To engage internal stakeholders, the Global Sustainability team put together a cross-functional team across Procurement,

Corporate Affairs, and Research and Development to examine industry developments, competitor initiatives, supply chain opportunities, and reporting and benchmarking tools. The team also did an ingredient materiality assessment using both a regional lens and a brand-specific lens which helped the company identify how to prioritize its projects.⁹ Kellogg has continued this approach since first building its global responsible sourcing goals. In 2020, Kellogg updated its global ingredient materiality assessment and external stakeholder engagement process to inform its next generation of priority ingredients for responsible sourcing.

Best practice #4

Commit to aggressive science-based sustainability goals

Goal setting is important not only because it will be your “north star” that will guide you to success, but also because it’s a public statement — to employees, customers, shareholders, investors, suppliers and competitors — about your company’s values and business acumen. Interviewees generally took one of two approaches to goal setting and implementation. The first, a pilot first approach, is when an agricultural supply chain sustainability initiative was piloted to determine actual results from which a scaled-up goal was set for the company. In the second approach, companies determined their total overall goal such as a science-based target or net zero goal and then assessed how the projects they prioritize can help them meet that larger total goal.

Pilot First Goal Setting

Early on many of the companies we interviewed set their goals using a pilot first goal setting approach. The pilot first approach integrated early-stage performance into the goal setting process. A multi-stakeholder outreach process combined with on-the-ground pilot programs informed implementation plans, opportunities for scale and the final public goals that were set. Organizations that took this approach set a Specific, Measurable, Achievable, Relevant and Time-Bound (SMART) goal based on the results of a pilot program. The pilot enabled companies to establish criteria for measuring impact and determine how to scale and even replicate the process with other key ingredients.

While this was an appropriate tactic several years ago, in recent years leading companies have transitioned to science-based goal setting.



In the beginning we were very reactionary. In the last few years we’ve changed our focus to a science-based approach to goal setting and a focus on outcomes, impact and GHG emissions reductions.

Participating company



Science-based Goal Setting

The science-based goal setting approach does not involve a formal pilot process or implementation strategy before stating a public goal. Instead, companies created corporate targets that were aligned with current global climate science and guidelines. Some companies narrowed down to their largest markets and estimated their company's emissions based on market share or used a lifecycle analysis to estimate their total emissions and determined what would be a significant contribution on a global scale to help prevent a 1.5° or 2° Celsius global temperature increase above pre-industrial temperatures.

EDF strongly promotes SMART science-based goal setting as the basis for corporate ambition.

Regardless of the approach taken, many companies were simultaneously considering how to weave their goal setting, implementation and reporting processes into existing organizational structures. In some cases, this meant understanding how sustainability work would tie into performance evaluations, procurement contracts and even hiring (i.e., if they needed to bring on additional staff members) or expanding work roles (i.e., expanding procurement functions to include managing farmer relationships).



Case study: Commit to aggressive science-based sustainability goals

Although Tyson Foods had previously reported their GHG emissions and efforts to lower their environmental footprint annually, in 2018 they announced a commitment to reduce Scopes 1, 2 and 3 GHG emissions 30% by 2030 (absolute contraction for Scopes 1 and 2 and intensity for Scope 3)

from a 2016 base year. The goals set by Tyson are consistent with reductions required to keep warming to 2°C and were accepted by the [Science Based Targets initiative \(SBTi\)](#).¹⁰ Tyson was the first U.S. protein company in the food and beverage sector to have its GHG targets accepted by SBTi. Tyson Foods collaborated with the World Resources Institute (WRI) on validating its GHG baseline and setting these bold science-based targets.

Best practice #5

Partner with Farmers and Suppliers

The only way for a consumer-packaged goods company to have a resilient, sustainable, and equitable supply chain is to partner with the farmers and suppliers that provide the company's agricultural commodities. These commodities are both essential to a company's products and the largest source of any consumer goods company's GHG emissions. It would be impossible to successfully tackle any agricultural sustainability projects without building meaningful, trusting relationships with the farmers and suppliers that grow and purchase these commodities and who can provide a wealth of expertise on implementation.

Finding the right approach to partnering with farmers is key to achieving your sustainability goals. This approach is directly informed by how a company sources. Do you engage in direct sourcing for agricultural commodities — buying

directly from farmers — or indirect sourcing — buying agricultural commodities through a middleman or supplier? Whether sourcing directly or indirectly from farmers, it's critical to understand what's possible on the ground to determine the best approach for creating long-term change.

Direct Sourcing

Interviewees who said their company sourced directly from farmers cited two common approaches for engagement:

- Engaging the farmers in the development of goals and sustainability initiatives.
- Learning from and partnering with farmer cooperatives, crop advisors and farmer groups to help implement on-the-ground initiatives.



You make progress faster if you make it easier for the farmer.

Participating company

Indirect Sourcing

For most commodities, companies are sourcing from suppliers or other intermediaries and have limited touchpoints with farmers. In these cases, finding ways to support the shift towards sustainable farming practice to help a company meet its sustainability goals can be complicated.

However, respondents cited three approaches as being successful:

- Identify and work with suppliers that have experience, knowledge and capacity in sustainability.
- Work with suppliers that have limited experience and knowledge in sustainability but want to develop their expertise by partnering and implementing initiatives together.
- Work collaboratively with competitors to build industry demand for sustainably sourced agricultural commodities.

Building Trust

Whether companies sourced directly or indirectly, all interviewees stated that building trust was key to effectively engaging farmers in their supply chain. By engaging directly with farmers, companies cultivate trust and facilitate open dialogue and cooperation.

Companies can build trust with farmers by:

- Asking about and listening to the concerns, barriers and needs of farmers that must be addressed in order for them to successfully adopt sustainable management systems on their farms.
- Attending farming events and visiting farms.
- Understanding the data privacy issues for farmers.
- Thanking farmers for sharing their time and knowledge.
- Understanding how the company can help farmers improve with additional resources.

Once trust is established, getting farmer buy-in and cooperation is essential to making an impact on the ground. To do this companies should consider what is needed to make improvements and reduce the risks to the farmer of changing their practices. Companies have addressed these barriers several ways including offering cost-sharing, price premiums, no-cost access to agronomists, or contracts with a guaranteed margin of return while farmers transition their practices.

Smithfield
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Case study: Partner with farmers and suppliers

Smithfield Foods developed a program called Smithfield Agronomics to enhance farmer productivity and sustainability, develop partnerships with farmers and ensure a sustainable grain supply for Smithfield's operations. The program, which offered free assistance to farmers who grew grain in Smithfield's grain sourcing regions, focused on improving

nutrient management practices, reducing costs, increasing profits from higher yields, and reducing the environmental impact of Smithfield's supply chain.

For more information on how Smithfield achieved its sustainability goal, read [Shared Value: How Smithfield Foods Creates Environmental and Business Benefits Through Supply Chain Partnerships](#), a Datu case study.¹¹

Best practice #6

Harness data to show progress, impact and credibility

Standardized, accurate and — where possible — automated data collection, management and analysis are essential for a company to understand where it is starting from (i.e., its baseline) in order to identify opportunities for improvement; assess progress towards a goal; maintain credibility when reporting publicly on progress; and provide value back to farmers. Many respondents mentioned that their companies experienced challenges with the data collection process, especially in the early days of their work. Often, though, the process is continuously improved.



We use data to understand project results and outcomes. Getting everyone to report in the same way is an area where we are constantly challenged but data consistency is important.

Participating company



As companies have addressed the early issues of data collection and management, many of the respondents found that the key elements of a robust process are as follows.

Establishing Trust around Farmer Data and Privacy

Several companies emphasized the importance of assuring farmers that any data shared would not be used against them if current performance was low, but rather to work collectively towards improved sustainable production. Anonymized data helped to build trust and willingness from farmers to share their data.

Simplifying the Data Collection Process for Farmers

Farming is a time-intensive activity, and farmers get paid for their harvest, not for data collection. Farmers are often already collecting data through their equipment or personal record keeping, so the first step one respondent recommended is to see if the farmers' existing data is enough to help your company communicate progress. If it isn't enough, understand the minimal additional data you need and the ease of getting it from the farmer.



Investing in Financial and Technical Support for Farmers in the Data Collection Process

When additional data collection was needed, some companies paid to hire someone to collect data from the farmers and input the data into the tool of choice — anything from a spreadsheet to a farm management information software (FMIS) platform. Some of the companies helped finance the purchase of FMIS software or other farming equipment that automated the data collection process.

Providing Value for Farmers in Exchange for Their Data

Even after sharing the analysis of a farmer's data with them, it is important to support farmers as they decide how to act upon the information. Almost all the respondents we spoke with provided access to an agronomist, crop advisor or other trusted resource to analyze what the farmer's data meant for their production practices. Doing so helped inform farmer decision making around transitioning their farming practices to more sustainable production, with the least amount of risk to the farmer's bottom line.

The companies we spoke to emphasized that data is fundamental for driving improvement and impact. Leaders are moving beyond collecting data to set baselines or for public reporting and are now using it to assess which initiatives are delivering the desired outcomes. Behavior change is difficult and seeing impact will take time. Consistent follow-through and incentives, such as companies providing no-cost access to agronomists to farmers as they make practice changes, will help companies achieve their public goals.



Case study: Harness data to show progress, impact and credibility

As Cargill continues to focus on how to take the burden off farmers and how to bring additional value to farmers, it has engaged platforms that provide reports to help farmers make sense of what their data means.¹² These reports provide guidance on practice changes that can help farmers improve yield while

reducing environmental impacts. To do this, it was important to Cargill that these platforms collect baseline data in a meaningful way to feel more confident in assessing outcomes.

An example is for Cargill to be able to pull data directly from farm equipment with a grower's approval, which allows for a consistent data format, more accuracy of the data and, therefore, more confidence in the impact of practice changes.¹³

The Future of Supply Chain Sustainability

Building more resilient supply chains and driving progress against science-based targets or net zero carbon emissions by midcentury requires business leaders to not just champion sustainability in their own operations, but to make it possible for others to follow in their footsteps.

We asked respondents what was next on the horizon for their sustainability work and three priorities emerged for what it would take to transform their supply chain and the entire sector: raise the level of ambition, catalyze opportunities for collaboration, and innovate and advocate.



We need to stop watering down to the least common denominator. [We must] think outside the box, stop having the same conversations, and take action.

Participating company



Raise the Level of Ambition

Most respondents noted that their companies are nearing, or have already reached, the deadline for the sustainability goals they set. As a result, companies are setting more aggressive goals and are working back within their supply chain to influence supplier behavior. Interviewees shared some of the questions and barriers they are working to address as they work toward more ambitious goals, including:

- How can we harmonize standards and accounting frameworks for measuring and reporting various agricultural metrics?
- How can companies demonstrate that sustainable agricultural practices have a benefit to the farmer?
- Who else should companies engage with on sustainability work?



EDF Perspective

To achieve the ambitious sustainability targets that companies have set there are two steps companies can take today. The first is immediate action to unlock how to scale the adoption and use of proven agricultural technologies and practices. The second is advocating for policies that help create the necessary enabling environment that is imperative to the success of their sustainability endeavors.

EDF with support from Deloitte Consulting, LLP, and input from members of the Transform to Net Zero coalition, published a report, [Pathways to Net Zero: A Guide for Business](#), that makes clear the urgent case for food and agriculture companies to ramp up ambitions and the pathways for how to get there.¹⁴

Catalyze Opportunities for Collaboration

Business leaders today recognize that the biggest environmental challenges can't be conquered alone. To accelerate agricultural sustainability, companies need to foster collaboration.

Most interviewees noted that they are looking for a learning platform to collate knowledge and find resources for accelerating agricultural sustainability. They, too, emphasized the need for more shared learning platforms to showcase case studies, common experiences and best practices. Learning platforms also create an on-ramp for companies that want to engage in sustainability but don't know where to begin. Below are some of the questions our interviewees hope can be answered through shared learning:

- What initiatives are helping farmers to adopt new farming practices?
- What approach did people use to help build the case for sustainability with a supplier who was not interested?
- What is the next material issue or priority ingredient to be addressed?
- What does agricultural sustainability work look like for a company early on in the process and what does it look like for a more experienced company?



EDF Perspective

EDF sees collaboration as essential, which is why we worked with an ever-growing community of trusted experts from more than 10 environmental, corporate sustainability and supply chain organizations to create the [Supply Chain Solutions Center \(SCSC\)](#).¹⁵ SCSC is a digital hub for sustainability resources, best practices, thought leadership and news. The platform cuts through the confusing complexity typical of supply chains to connect sustainability teams with solutions that are relevant to their company and enable them to bring sustainability to every node of their consumer-packaged goods supply chain.

[The Guidebook for Resilient Animal Agriculture](#) is an example of the types of shared learning resources available on the SCSC.¹⁶ It is a step-by-step guide on supply chain best practices for beef, poultry, pork and dairy companies.

Innovate and Advocate

Companies want to advocate beyond their footprint and activate growers globally on critical environmental issues. Below are some of the questions that came up during interviews about enabling true systems change in the food and agriculture industry whether through policy, blockchain, carbon offsets or other means:

- What are the new risks in agricultural supply chains?
- What does sustainability success and leadership look like in the future?
- How does innovation and R&D become affordable and scalable on things like manure management, anaerobic digesters and feed additives for enteric emissions?
- How can companies activate their consumers to drive systems change?

EDF Perspective

Food and agriculture companies have an opportunity today to reduce the climate impacts of their products — a critical part of creating a more resilient, sustainable food system. To help companies drive the future of sustainable and transparent shopping, EDF created [SustainaBuy](#), an innovative online shopping prototype that shows how companies can integrate expertly sourced sustainability data to help consumers make more informed purchasing decisions.¹⁷

The time is now for companies to use their influence to help customers shop sustainably, whether online or in the store, so that every dollar spent goes toward products that are safer for the environment and for the people who use them. Helping people change their shopping habits is good for their health, the planet, food companies and a retailer's bottom line.



Case study: The future of supply chain sustainability

As part of its next frontier for sustainability leadership, Danone North America has set an ambitious goal for their [Horizon Organic](#) milk brand to be carbon positive from farm to table by 2025 and after 2025, across their full lifecycle. Horizon conducted and recently published a [lifecycle assessment](#) of the carbon footprint of a half-gallon of whole milk to create a baseline for improvement and identify specific steps needed to achieve their goal.

Danone North America is progressing their sustainability impact work and messaging to best connect with consumer interests and decision making. The company

is using messaging to support shoppers understanding of how regenerative farming practices can ensure dairy is part of the solution to climate change and not part of the problem. Horizon Organic is also working to share the benefits of its practices for the farm, the farmer, the consumer, and the planet.

Through their Horizon Organic brand, Danone North America is making a case to consumers about why they should not only buy Horizon Organic milk but advocate for regenerative practices as well. In partnership with EDF, Danone North America launched an advocacy campaign focused on getting consumers to [join the "Moovement"](#) and tell their congressional representatives to support regenerative climate-friendly practices.

Conclusion

Companies that want to remain operationally and financially sustainable in the long term can no longer afford to ignore the risks of future supply chain disruptions from climate change.

As you begin to consider your company's next steps to address sustainable agriculture in your supply chains, these lessons learned from over a decade of experience and a dozen organizations can help start your journey off on the right foot.

The sustainability experts we spoke to at 11 leading food and agriculture companies have learned building a resilient supply chain requires:

Catalyzing buy-in from the larger organization.

Understanding your knowledge gaps in sustainability and building partnerships to close those gaps.

Researching to understand which sustainability issues are most important for your organization to prioritize projects.

Setting ambitious science based goals.

Cultivating trust and facilitating open dialogue and partnerships with the farmers, vendors and suppliers in your supply chain.

Establishing a clear framework for how to harness data from farmers and suppliers to show progress, impact and credibility.

The next decade of sustainability in food and agriculture and the next wave of leadership will call for even more innovation, advocacy and action from companies if we are to shift to a sustainable, equitable and resilient food system that remains viable under an increasingly extreme and changing climate.

Based on the past decade, EDF is fully confident that the number of leading food and agriculture companies with resilient agricultural supply chains will have grown significantly by the end of this decade. These companies will be the driving forces to ramp up ambitions for the sector and catalyze cross pollination and shared learnings. They will do this while also funding and testing new innovations and advocating for the systems change that will make achieving their targets possible.

Endnotes

- 1 [Big Food and coronavirus: The response so far \(April, 2020\)](#)
- 2 [Effect of environmental changes on vegetable and legume yields and nutritional quality \(June, 2018\)](#)
- 3 [Future warming increases probability of globally synchronized maize production shocks \(June, 2018\)](#)
- 4 [McKinsey & Company: Agriculture and Climate Change \(April, 2020\)](#)
- 5 [Natural climate solutions are not enough \(March, 2019\)](#)
- 6 [McKinsey & Company: Agriculture and Climate Change \(April, 2020\)](#)
- 7 [Performance with Purpose. The Promise of PepsiCo. Sustainability Summary 2010](#)
- 8 [Bayer. Promoting the Most Valuable Resource: Knowledge](#)
- 9 [Source: Kellogg's Better Days 2019/2020 Corporate Responsibility Report Executive Summary](#)
- 10 [Science Based Targets initiative](#)
- 11 [Shared Value: How Smithfield Foods Creates Environmental and Business Benefits Through Supply Chain Partnerships](#)
- 12 [Cargill to advance regenerative agriculture practices across 10 million acres of North American farmland by 2030 \(September, 2020\)](#)
- 13 [The Farm of the Future Demands Digital](#)
- 14 [Environmental Defense Fund + Business. Pathways to Net Zero: A Guide for Business](#)
- 15 [Environmental Defense Fund + Business. Supply Chain Solutions Center](#)
- 16 [Environmental Defense Fund + Business. The Guidebook for Resilient Animal Agriculture](#)
- 17 [Environmental Defense Fund + Business. The future of sustainable e-commerce is here](#)

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