



Food and Beverage Company Sustainable Sourcing Initiatives in Farming Regions

By Hal Hamilton and Elizabeth Reeves

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This publication was commissioned by AGree to inform and stimulate dialogue about policy reform; it does not represent official AGree positions. The views expressed here are those of the individual authors.

Foreword

AGree drives transformative change by connecting and challenging leaders from diverse communities to stimulate policy innovation and develop initiatives that address critical challenges facing the global food and agriculture system. AGree believes we must elevate food and agriculture policy as a national priority.

AGree's work addresses four broad challenges facing the global food and agriculture system:

- Meet future demand for food;
- Conserve and enhance water, soil, and habitat;
- Improve nutrition and public health; and
- Strengthen farms and communities to improve livelihoods.

We have taken a deliberative, inclusive approach to develop a policy framework and ongoing, complementary initiatives to meet these challenges. To overcome traditional obstacles to change, we engage a broad array of stakeholders whose insights and commitment contribute to meaningful solutions. AGree's work, building on our research to better understand problems and assess options, aims to stimulate creative ideas and encourage new perspectives while fostering the linkages key to catalyzing effective action.

In this paper, lead authors from the Sustainable Food Lab describe the experiences of food companies to date with sustainable sourcing initiatives involving large-scale commercial agriculture based on interviews with food company executives and farmers. They summarize six specific domestic and international projects and detail lessons learned from each, focusing mainly on environmental impacts. The authors conclude that sustainable food production is inherently collaborative and requires leaders who are able to work effectively with people across their organizations and in different sectors. Sustainable sourcing leaders need to work with landowners and producers to develop strategies to address key challenges, including the difficulty of measuring and verifying environmental outcomes in complex agricultural systems, a proliferation of metrics and standards, and the need for stronger partnerships among diverse supply chain actors. The public sector should support private sector success through landscape-scale data aggregation, articulation of thresholds for an adequate pace of improvement in each landscape, and incentives for practices with off-site impacts.

This publication is part of a series intended to broaden discussion and complement AGree's consensus recommendations on policies and actions focused on food and agriculture. While the concepts presented in this paper have greatly enriched the deliberations of the AGree Co-Chairs and Advisors, the perspectives and positions do not represent consensus among them.

We hope you find this paper a helpful resource.



Deborah Atwood
Executive Director

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About the Authors

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The paper is based on interviews with dozens of people responsible for sustainable sourcing and includes specific contributions from Sean McMahon, The Nature Conservancy; Steve Peterson, General Mills; Jan Kees Vis of Unilever; and an extraordinary group of farmers from around the U.S., who participated in a workshop in Cambridge, Massachusetts, in February, 2014.

Executive Summary

Sustainable sourcing is in its childhood; only its earliest innovators have been at it for more than 10 years. Most food companies began their sustainability journeys with what they directly control; their factories, truck fleets and stores. Now the whole life cycle of products is within its scope, and agriculture is where much of the complexity lies.

Food companies generally follow one or more of the following approaches to sustainable sourcing: self-verification, third-party certification, direct investment in places of origin, or encouraging innovation within a framework of outcome metrics.

Because “you can’t manage what you can’t measure,” companies and their partners have developed a plethora of metrics and calculators, which they ask processors and farmers to use for data collection. Everyone is still learning how to measure impacts effectively, and of course biological systems are more complex than factories. Most of the calculators use data from specific fields or specific livestock enterprises, although eventually data management in agriculture will happen at multiple scales simultaneously: sophisticated large-scale farmers manage crops in square meters with precision agriculture technologies, and landscape management requires information from crop rotations over several seasons, including relationships between livestock and crops, and impacts on whole watersheds or aquifers.

No one company, commodity association, location on the supply chain, or stakeholder group can do all this by itself. Sustainable food production is therefore inherently collaborative and requires leaders who are able to work effectively with people across their organizations and in different sectors.

Several complex issues face sustainable sourcing managers. Definitions of sustainability and measurement systems need greater alignment, even though the systems have become competitive. Companies are still designing verification measurements for undifferentiated commodity systems and the roll-up of information so that it is useful for intervening and tracking progress across multiple farms and supply chains. As companies and collaborations like

Field to Market support continuous improvement, it’s not clear “what counts” as sufficient progress, and it’s not clear how to validate a claim that will satisfy both scientists and consumers. For example, one can imagine continuous improvement in water use efficiency while the production system in a region is still drawing down its aquifer.

Leadership inside and between organizations and sectors will need support and connections.

Ultimately, the public sector will need to work with value chain players and make contributions that are unlikely to be accomplished in the market alone, including landscape-scale data aggregation, articulation of thresholds for an adequate pace of improvement in each landscape, and incentives for practices with off-site impacts. Leadership inside and between organizations and sectors will need support and connections.

Introduction: Current State of Food Company Engagement in Sustainable Commodity Production

Ten years ago, a senior vice-president of one of the world’s largest food brands said, “We just don’t have sustainability on our radar yet.” In 2013, most food companies already have a sustainability profile, all can report reductions in energy, water and waste, and many are focusing on the sustainability of the production of the raw materials they use. By 2020, virtually all food companies in the United States, Europe, and in many other parts of the world will have made public commitments to source food that is sustainably produced. Unilever has perhaps the tightest metrics-bound commitment so far, but similar goals are part of the business strategies of companies as diverse as Walmart, McDonalds, General Mills, and Annie’s.

- **Many consumer facing brands and retailers are challenged by public perceptions that mainstream food is “factory” produced and therefore unhealthy.**

Retailers, brands, and processors occupy different places in food value chains and have different reasons to adopt sustainability as a pillar of their corporate strategy.

In general, the continuum stretches from cost-saving reduction of inputs, to building brand value, to enhancing corporate reputation, to ensuring a reliable supply of ingredients.

Resource efficiency, whether in a company’s operations or on farms, results in cost savings and is usually the low hanging fruit of innovation. For example, the Smithfield Corporation calculates the value created by their environmental programs from 2004 to 2012 in the following way: Their capital costs for improvements were \$57.5 million, whereas their total savings were \$285.6 million, which came from a reduction in cardboard usage, biogas generation, wind energy leasing, and bacon grease revenues.

Product brand and corporate reputation are harder to quantify, but nevertheless crucial. When a senior Unilever executive was asked a few years ago why they were investing so much in sustainability, he answered simply that he considers sustainability crucial to their “license to grow.”¹ Many consumer facing brands and retailers are challenged by public perceptions that mainstream food is “factory” produced and therefore unhealthy. Consumer insight research points toward widespread demand for food that is “real.” Furthermore, the notion that issues associated with upstream suppliers, whether poverty, poor labor conditions, or the unavailability of water and other ecological stresses, are someone else’s problem has brought many large corporations up short in recent years. Non-governmental organization (NGO) critics have global

databases at their disposal and focus on impacts of the whole value chain to evaluate and publicly communicate social and environmental costs.

Just as corporate managers need effective sustainability strategies to enhance marketing and reputation, sourcing managers have come to realize that sustainability strategies are an integral part of securing a supply of reasonably priced raw materials. A reliable supply is dependent on farmers increasing productivity without using up inputs like water or soil nutrients faster than they are regenerated or produced. It is equally important that the farmer earns a viable livelihood to remain in business and be able to pass along the enterprise to the next generation.

For raw materials, the *old strategy to simply shift sources of supply* when current sources are no longer able to meet buyers’ requirements assumes that there will always be another supplier to choose from. This assumption is becoming less tenable, as there are fewer and fewer untapped sources of supply, and as NGOs continue to raise consumers’ and policymakers’ awareness of the consequences of unsustainable business-as-usual practices.

Recognizing that these pressures will not go away, private businesses find themselves in natural partnerships with non-business organizations with a stake in rural development or clean environments. More and more work is being done to develop *metrics, indices and certifications* so that consumers can gauge which products are more beneficial to the environment and farming communities, retailers can judge among the competing claims of different vendors, and upstream suppliers can direct investments toward specific practices they deem beneficial.

Progress toward sustainability in the food industry is halting and uneven, however. Goals and metrics are not aligned, and the complexity of agriculture bedevils those who have implemented process improvement programs in operations but find the time scales as well as the place-specific and weather-dependent nature of agriculture confounding. Multi-stakeholder initiatives can also be frustrating because they seem to require years of investment in dialogue and the development of common statements that precede action on the ground.

Retailers and restaurant chains face immediate market pressures and want quick “proof points” of progress. As a result, questionnaires pile up in the inbox of every food supplier, although many of these companies still ask themselves why sustainability is important to them and how compliance could be streamlined and easier. All too often, companies implement new systems of measurement and management without clear thinking and commitment as to how the measures will be used and by whom, or for what ultimate purpose they are being implemented.

Sometimes, retail or food service companies reduce sustainability to measurable tick-boxes, and suppliers respond with answers and numbers that might ultimately mean very little. Some of the approaches to the supply chain seem to assume that “one size fits all” of agriculture, even though different farming systems and geographies function quite differently. Along with this misperception is a lack of recognition of the formal and informal rewards systems, norms, traditions, and power structures that have shaped decisions for many years before any new management system is implemented. *Resistance to measurement and performance management* is greatest when the upstream suppliers are farmers who see little benefit for themselves and whose culture and reward systems are very different from those of their customers. New sustainability metrics and certifications can mean significant new expenses to be borne by farmers operating on narrow margins and the sharing of information that is generally considered private.

To make faster progress, sustainable supply from healthy value chains requires *high quality engagement and continuous learning* up and down the chain to deliver value for all. It is important that building such a culture be seen as an ongoing, permanent responsibility of management at all levels. In the context of the cross-boundary, cross-institutional realities of complex value chains, building such a culture means building trust, shared knowledge, and a sense of mutuality among very different stakeholders, including diverse businesses, farmers’ organizations, NGOs, and governmental actors. This capacity-building is an immense challenge – again, one that goes far beyond just implementing new metrics and practices. In many ways it

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will redefine key management practices and competencies and shape winners and losers in the competitive marketplace.

Sustainability is a field of innovation that will shape the future and require the engagement and intelligence of everyone in each value chain. *Sustainability is also a field of leadership.* One of the critical needs for the field to make faster progress is increasing the number of people who are able to facilitate change initiatives across regions. These needed leaders have agronomic or farm experience, they can speak the language of farmers, the language of buyers, the language of brands, the language of investors, the language of NGOs and the language of governments, and they can cultivate a social network for change that includes all the important players in any one place. They are not traditional Leaders with a capital “L,” but rather people gifted at supporting shared leadership.

Synthesis of Lessons

This paper distills lessons from projects in large-scale commercial agriculture, primarily in the United States, focusing mainly on environmental impacts. See Appendix for a description of specific projects and lessons learned from each.

A future version of this paper will add learning from farming systems in unstable economies, run by smallholder farmers with simple farming practices.

Engage producers as innovators and partners

Farmers and intermediary suppliers manage primarily for productivity, and “high yield” farmers are rewarded in the marketplace and on the covers of the farm magazines. Sustainable sourcing managers are learning how to engage farmers in the most productive way without engendering resistance.

The most successful initiatives produce conservation improvements that escalate over time. In the cases of the Skylark Initiative in the Netherlands, a network of corn farmers in central Indiana, and the Country Natural Beef cooperative, farmers who began the conservation improvement process with simple planning guided by a technical consultant have been able to move on a path to improvement that fit their farm, their financial

Box 1 | Producer Perspectives

The following are drawn out of **a presentation from a group of farmers** to a group of people responsible for sustainable sourcing at food and beverage companies.

How we think about “sustainability”

It’s very personal – it’s about our families, our homes, our lives, our financial security, and pride in stewardship. It’s focused on priority outcomes: passing on a profitable operation and fertile ground to the next generation, managing for soil health; managing costs, including opportunities to reduce inputs; and building consumer/public trust.

The “Proposition”

Companies and producers should develop partnerships to set and achieve goals, commitments, and outcomes that are flexible enough to allow farmers and resources to adapt as technology, science, and climate evolve and communicate across the supply chain in a manner that engenders trust and confidence. Achievement of a pre-competitive baseline performance need not require an incentive.

Program design

Recognize the value of producers’ time and make processes efficient. Focus on continuous improvement to achieve outcomes. Start with low-hanging fruit – efficiencies that contribute both to short term returns and to environmental improvements. Use modules that start with easier goals and engage producers in increasing complexity over time. Avoid prescriptions/checklists that lead to managing for minimum compliance. Enable individual producers to set their own goals using common metrics for benchmarking. Ensure availability of good technical support. Assess sustainability goals based on the full crop rotation. Focus on trends over time rather than annual comparisons to accommodate exceptional circumstances (e.g., floods, droughts, pest outbreaks).

circumstances, and what they were able to manage. This process resulted in conservation steps that made the farmers more profitable over time, beginning with efficiencies gained through better management of inputs and water, and eventually leading to land management practices that built soil health and improved yields. We heard many stories in which farmers made multiple improvements managing for soil health that also made them more money, and then reached a place in their conservation thinking and business planning where they were able to move to building habitat buffers around fields and waterways from which no economic benefits were going to be quickly realized. Though clear alignment between improved environmental outcomes and profitability may be required to engage most farmers, sophisticated early adopters of new technology are not always driven by immediate financial returns. They like being leaders.

This process can seem slow in the face of pressing resource use and environmental issues associated with agriculture, but the most successful initiatives balance the farmer's need for short-term profitability with long-term economic and environmental sustainability. Yield increases due to improving soil take at least three years, and gradually more farmers, seeing the success of the early-adopters, seek to join these efforts. The central Indiana and the Skylark regional networks initially began with 10-15 farmers and each grew to include 100 farmers or more.

Recognize the limits of demand-driven requirements

There are some top-down approaches in which a retailer or brand manufacturer, because of its market size, can initiate change across commodity systems. Current examples include:

- Walmart's requests of its animal protein and cereal products suppliers to develop plans to promote fertilizer optimization upstream, with consequent decreases in greenhouse gas emissions;
- Whole Food's shift in procurement goals for beef that demanded finishing on grass (and pushed large suppliers out of Country Natural Beef); and
- Unilever's requests that suppliers comply with its Sustainable Agriculture Code.

These approaches can result in improvements even if farmers and intermediate suppliers are not included in developing the goals. All consumer-facing food companies that have made public sustainability commitments are under great pressure to deliver results in a context in which the pathways are not well scouted. We have heard retailers say, "They (suppliers) might not like it, but we get results this way." Over the past 10 years, demand-driven sustainability requirements have shaken up the mainstream food system and generated a rush to comply.

The downside of this approach is that compliance is a weak platform upon which to deliver results that become part of the core business models of all the value chain partners. According to Dennis Treacy, Executive Vice President and Chief Sustainability Officer at Smithfield Foods, "No two customer guidelines are the same. Many have different focal points and some even conflict. As a result, there can be confusion and inefficiency in the supply chains." A large supplier caught up in one of these demands commented that, "We all know that they (the retailer) won't audit our answers. Some people get a high supplier score because they answer all the questions, even if there's not much substance behind their answers. Others, with more integrity, answer questions honestly and reveal when required information is just not available, and they get a low supplier score."

Supplier scorecards are useful, but they are one tool that is likely to be most useful when complemented with good supplier engagement and shared learning. Furthermore, retailer compliance models sometimes result in prescriptive checklists that don't measure or account for performance and therefore miss out on opportunities to drive continuous improvement.

Box 2 | General Mills' Approach

From Steve Peterson, Director of Sourcing Sustainability

We use Field to Market as the “roundtable” to develop shared definitions and metrics, and these outcome measures can prompt discussion with farmers about better management practices. Our experience is that checklists alienate farmers. By engaging in conversations about practices, we are able to link sustainability to profit. We are not looking toward 100 percent certification but rather to regional verification. We focus on the most progressive growers in each region because those are the growers whom others follow. Furthermore, 13 percent of the farmers produce 81 percent of commodities.

After farmers use the Fieldprint Calculator, we analyze data with the help of agronomists and environmental scientists, and then hold regional grower workshops. Eventually the outcome metrics and data collection need to be embedded in the tools farmers already use, provided by companies like Ag Horizons (Cargill), Monsanto, Syngenta, etc. And eventually continuous improvement within an outcome based metrics framework needs thresholds (so sourcing regions don't draw down aquifers, for example). We can't start the engagement with thresholds because we need producer buy-in first.

Collaborate with other companies

Sustainable sourcing programs for key raw materials can lead to multi-buyer collaborations for different products from the same farming regions: Some key commodities are grown

in rotation with other commodities, and conservation improvements are easier to achieve when they are focused on whole system rotations. For example, the Snake River pilot of Field to Market by General Mills began with wheat farmers for regional flourmills. Steve Peterson, the Sustainability Director at General Mills, along with his partners at Syngenta, realized that the wheat farmers have a rotation with potatoes, sugar beets or sometimes barley, and so Peterson is reaching out to buyers of those other commodities to align sustainability goals, engage farmers together, and eventually validate improvements in farming systems across the entire watershed.

In the somewhat similar Skylark project in the Netherlands, which began with Heineken's interest in sustainable barley, farmers had been shifting out of small grains into higher value crops. Through years of collaboration, however, during farm meetings where they shared with one another and heard from experts, farmers learned more about how rotations build soil health. Reincorporation of small grains into the rotation on many farms over time led to measureable increases in product value and yields.

Even without collaboration among buyers of different crops, collaboration among value chain partners is frequently important. For example, Unilever is collaborating with ADM in order for the soy oil for Hellman's mayonnaise produced in one Iowa plant to meet Unilever's sustainable sourcing goals. ADM has a full-time person on the project. Syngenta is a strong partner in more than one General Mills sourcing pilot. Kellogg's partners with Bunge where corn is grown for Corn Flakes.

The effectiveness of these projects might be advanced even further through collaborations with additional partners who provide management advice, fertilizer, seed, crop protection products, farm equipment and other inputs. These sorts of partnerships would have to be carefully facilitated to avoid the pitfalls of competition among partners for their farmer customers.

Use support services and networks trusted by farmers

Farmers rely on advisors and support services (such as input suppliers, Natural Resources Conservation Service [NRCS], commodity groups, crop advisors) to bring them knowledge, technical advice, and industry information. These trusted people, management systems, and networks are opportunities to reach more farmers with environmental performance support. The Indiana corn farmer example is a

network of leading farmers built around one trusted crop advisor. Field to Market's Paw Paw River pilot is led by the conservation district office. Syngenta is building the Fieldprint calculator into farm management software for General Mills' Snake River pilot.

NRCS (formerly Soil Conservation Service) and Cooperative Extension have long had a role in advising producers and delivering conservation and farm management. They are also, in the case of NRCS, key

Box 3 | The Nature Conservancy (TNC) approach

From Sean McMahon, TNC North American Agriculture Program Director

Improving the sustainability of agriculture in the U.S. Corn Belt and achieving long-term conservation outcomes at scale is dependent on farmers adopting both better in-field practices as well as edge-of-field and in-stream practices. Producers are most likely to adopt practices that result in clear economic returns in the short-term, such as nutrient management. Other practices that improve soil health such as conservation tillage (primarily no-till and strip-till) and cover crops are likely to increase yields and profitability in the long term, but greater documentation of economic benefits for these practices is still needed. These practices are proven to result in reduced nutrient loss, reduced GHG emissions and improved water quality at the field scale.

Influencing producer's practices is not a goal that TNC is likely to achieve on its own. TNC has learned through experience that, understandably, producers are wary of agronomic advice from environmental organizations; agriculture is not our business. Instead, producers trust solutions from ag retailers, other input providers, and Certified Crop Advisers (CCAs). By partnering with a handful of companies in each segment, including fertilizer and equipment companies, The Nature Conservancy can engage and spur alignment across the entire sector and is more likely to reach enough producers with our message to result in transformational conservation outcomes. In addition to corporations, partnerships with farm organizations

can be important to informing farmers about improved practices. The Nature Conservancy has formed a partnership with the National Corn Growers Association and state corn growers associations in Iowa, Indiana and Illinois to promote soil health and adoption of conservation BMPs such as nutrient management, conservation tillage and cover crops. This project, known as the **Soil Health Partnership**, involves Monsanto, Environmental Defense Fund, the Natural Resources Conservation Service, the Agricultural Research Service, and universities.

There are several thousand ag retailers in the U.S., so it is strategic to work with a handful of the largest regional ag retailers as well as their professional associations. The Nature Conservancy is partnering with The Fertilizer Institute and recently became the first conservation organization to be an official partner of the 4R Nutrient Stewardship, an approach that fosters improved nutrient management resulting in improved uptake of fertilizer by crops, reduced nutrient loss, improved water quality and reduced greenhouse gas emissions.

Once producers realize efficiency gains and improved profitability at the farm level from in-field practices, they are more likely to work towards edge-of-field and in-stream practices that have less immediate economic benefit. Many of these practices will require a different type of engagement and resources than the ag retailer or crop advisor is able to provide alone. It is here that TNC can link the supply chain to the public sector through the U.S. Department of Agriculture cost-share program funds that provide to producers additional incentives for implementation.

Box 4 | The Unilever Approach

Jan Kees Vis, Sustainable Sourcing Director at Unilever

Jan Kees Vis argues that an evolution to landscape level measurement, aggregating field and farm level data to farming regions, is necessary to address sustainability risks at a larger scale: “In order for sustainable sourcing to become mainstream, there is a need for collaboration. There are too many farmers, too many possible interventions, too many potential touch points with local and regional authorities, too many different standards, too many different sustainability risks, to expect that the whole system will become more sustainable as a result of multiple individual, uncoordinated interventions.”

He suggests beginning with mapping tools that can overlay interventions, farms, fields, soils, yields, precipitation, water stress, biodiversity hotspots, and other relevant issues. The purpose of all this would be to show:

- Who does what where?
- What sustainability risks need to be addressed in a specific region?
- What potential yield improvement could be realized in a specific region?
- What are improvements over time? and
- What data is already available and what is not?

to helping farmers comply with conservation incentives and requirements. They are part of the farmer’s existing and trusted network of advisors (although the extent of influence varies greatly from region to region). Recent trends in agriculture appropriations have resulted in decreases in technical assistance funding and the numbers of NRCS staff. As a result, NRCS has to administer larger programs with fewer staff resources and consequently has

become less proactive regarding outreach to producers. It is widely acknowledged that NRCS employees are for the most part not well versed in cutting-edge precision ag practices, whereas ag retailers and Certified Crop Advisors may lack NRCS’ expertise in Farm Bill conservation programs.

Facilitating networks for farmers to share knowledge, test new ideas, compare results, and strengthen relationships stimulates learning. Farmers always innovate for their own specific needs, but they benefit from peer communities in which to learn and share new ideas.

Many of the regional collaborations identified for this paper include learning networks. Some are more intentional than others, as in the Skylark, Indiana corn growers, and Snake River projects. The Skylark Initiative places the learning network at the center of its methodology. The Skylark Foundation coordinates groups of 10 farmers in a region. Each farmer presents his sustainability plan to the group and it is discussed on site together. These groups meet eight times per year and the objective is for the farmers to challenge and learn from each other.

Use measurement in service of strategy

Impact measurement is important because it provides producers and companies with a baseline and comparisons with one another from which to benchmark future progress. For farmers, the ability to measure allows them to manage for improvements, and for companies, the ability to measure allows them to report on progress.

If complemented with high quality engagement, measurement tools are an important part of the learning network strategy. TNC staff working in the Snake River Basin told us of “aha moments” for farmers when they came together to talk through results of using the Fieldprint Calculator, from which they noticed their water use and soil loss compared to neighbors, and immediately started thinking through how to reduce their impacts. Use of the Cool Farm Tool with Costco egg suppliers had the same result—being able to compare numbers among peers creates motivation for those who are performing at less than optimum.

In the Paw Paw region, entering data into the Fieldprint Calculator is used as an engagement strategy and educational experience for the farmer, as well as an opportunity for the conservation district manager to get to know the farmer and the farmer's practices and philosophy. They are able to work through different scenarios to see how certain practice changes affect output metrics. The Cool Farm Tool enables such practice scenarios to be changed on-the-fly as a producer enters data into fields.

In some cases, the development of metrics and tools seems to have been advanced without first having a clear pathway to impact. One metrics expert from a major brand described the results of three years of field measurement in a value chain as “reams of data and no evidence of improvement.” According to Rena Stricker, consultant to Coca-Cola for their watershed projects, “It’s like weighing a cow; you’ve got the weight, but that doesn’t tell you what you need to do to improve its health.”

Measurement by itself without a strategy of support and engagement can appear to farmers as a demand unrelated to their own business goals, and they sometimes fear the use of this data by NGOs or their customers in ways that might harm their profitability.

In a couple of metrics initiatives, the tools are not designed in such a way that farmers can easily correlate impacts with practices. In one multi-stakeholder metrics program, a limited capacity to correlate impacts with practices is due to the desire of input suppliers to compete on practice recommendations. The result of such disassociation, however, is the impossibility of measurement tools serving the purpose of helping producers to ask and answer “what if?” questions as they enter their data.

Many actors realize it would be beneficial to have such a tool, although most actors find the initial investment (in bringing ALL data together) too high. In the United States, this might be a logical collaboration among public and private organizations.

Incentives for farmers

In all conversations with farmers who are engaged with food companies on sustainability initiatives, *the issue of “who pays and who benefits?”* always arises in one form or another. Farmers suspect that brand manufacturers gain market value from farm-level implementation of sustainability practices. Some of them consider prescribed practices to be hoops to jump through that are tangential to their own goals. During a conversation about better practices by beef producers, one Oklahoma rancher told retailers that, “If you want me to turn my Hereford cows upside down and paint their toenails pink, I’ll do it if you’ll pay me.” This comment is funny and revealing of farmer attitudes even if it misses the bigger picture of the benefits of sustainable management practices that extend to everyone, including the farmer.

Sustainability innovation has to be framed and measured as a win-win. Premiums or unique market access might be required sometimes, especially when the value proposition for producers isn’t clear. Even more important is transparency of information up and down the supply chain and clear economic valuation of benefits to each player for improving water efficiency, water quality, biodiversity, soil health, the wellbeing of people, and reducing emissions or runoff. Everyone needs to know who really benefits. For example, when Costco wanted to expand specialty green bean supply from one cooperative in Guatemala, they partnered with the International Center for Tropical Agriculture to conduct a complete analysis of value through the whole chain, after which interventions were co-designed at a summit of all the actors.

Sometimes, of course, dealing with negative impacts is beyond the capacity of commercial actors, and some investments might need to be made by the public sector in the form of cost-shares or market credits (e.g., carbon credits), or by the donor/NGO sector in the form of special programs. For example, when Green Mountain Coffee Roasters (GMCR) studied poverty and hunger through the year in coffee source communities, GMCR learned that even farmers participating in Fair Trade certified systems suffered from very difficult “lean months” before

- ***A mass balance system avoids the costs of traceability in bulk commodities, and it accomplishes the objective of providing incentives for a shift to better practices.***

the harvest each year. As a result, GMCR partnered with a number of civil society organizations to improve conditions in their sourcing regions in several parts of the world, and they have also raised this need across the industry inside the Specialty Coffee Association.

Many companies do invest in farmers where they see high leverage. Unilever’s Knorr brand has a Partnership Fund for suppliers who are early adopters of production methods to meet their sustainability code. Ben and Jerry’s pay modest amounts to dairy farmers participating in their Caring Dairy program. Many companies invest in the enabling environment—roundtables to develop multi-stakeholder agreements about impacts and practices, metrics systems and measurement tools, and research to solve specific problems. For example, Grain Millers serves both conventional and organic markets, but they are losing organic farmers because of moisture and weed issues, and so they are investing in research on soil cover in organic systems.

As commodity markets face significant demand for products with sustainability attributes, *a big choice is between traceability and mass balance* (e.g., Green Palm Certificates, which manufacturers purchase in quantities to match their use of palm oil, with revenues going for incentives toward sustainable production, but the specific tons of palm oil are not traceable). A mass balance system avoids the costs of traceability in bulk commodities, and it accomplishes the objective of providing incentives for a shift to better practices. A mass balance approach enables

companies to make sustainability claims in the absence of traceability when a majority, though not all, of a particular ingredient is sourced according to certain specifications. Mass balance does not enable a manufacturer to claim that all of the specific ingredients are produced sustainably. Nonetheless, it is a logical next-step approach for many U.S. commodities whose origins are very difficult to trace, such as corn, soy and wheat.

Leadership capacity

Leadership capacity is a lynchpin for all steps toward more sustainable agriculture, although the word “leadership” is misleading. We do not necessarily need more charismatic leaders at a microphone, but we do need more and more people who are capable of enabling diverse groups to find and act on common purpose.

Farming region initiatives arise from different starting points—for example, a food company’s sustainable sourcing needs or a farmer-learning network around a crop advisor or NGO. Wherever an initiative begins, success depends upon leadership, collaboration, and attention to the self-interest and motivations for *all* the players who could contribute to success.

In each collaborative agriculture initiative, someone must connect food companies, processors, producers, and support services to one another in an effective way. They need technical competence with sustainability issues and metrics, but even more important, they need to be able to speak the multiple languages and engage in the multiple cultures of farm communities, food companies, and NGOs.

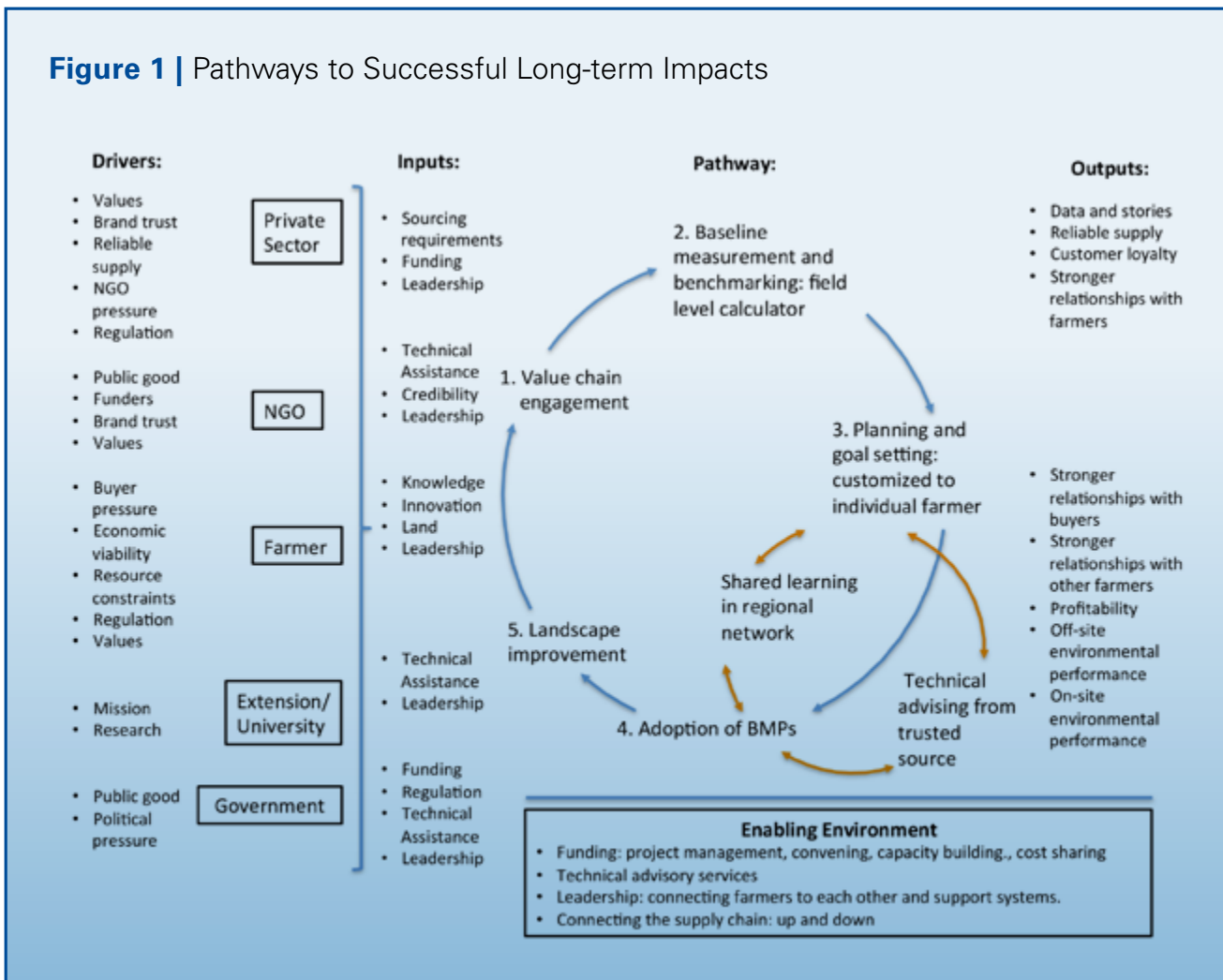
The same need exists *inside* organizations as well as *among* organizations and sectors. A recent article in the Harvard Business Review, “Triple-Strength Leadership,”¹ asserts that, “To solve our most vexing problems, we need executives who can move easily among the business, government, and social spheres.” In agriculture, this means moving among all the sectors in the value chain, including farming as well as the NGOs who have a strong voice and credibility with the public.

Strategy for Impact

A pathway to impact, represented graphically, might look something like the figure below. Key actors in place-based collaborations come from different sectors and engage for different reasons. For example, food companies want to preserve trust in their brand, they need a reliable supply of ingredients, they respond to pressure from NGOs and the media, and they will anticipate regulations. As a result, food companies establish sourcing requirements as well as providing funding and leadership for projects that improve the sustainability of supply and enhance their reputations. The food companies cannot do this alone, however. They need NGOs for technical assistance and credibility, and of course they need farmers and frequently, cooperative extension and government agencies.

The pathway to impact includes engagement among players in the value chain, baseline measurement, planning and goal setting, and adoption of improved practices. Impacts at a watershed or landscape scale result from the field and farming system management changes that farmers make. Farmers learn and adapt most effectively when they can learn from both peers and experts over time, as they try out new practices and share results. The different actors value the outputs of this pathway differently, although all benefit from the long-term benefits of effective collaboration, and society from improved water and soil quality. Food companies also need data and stories with which to communicate.

Figure 1 | Pathways to Successful Long-term Impacts



Appendix: Learning from the Cases

Snake River: General Mills, Syngenta, and the National Association of Wheat Growers Association (NAWG) have partnered with 25 wheat growers in the Snake River Basin to generate an environmental Fieldprint baseline of wheat growing from the 2010, 2011, and 2012 growing seasons using the **Fieldprint Calculator** (which has been incorporated into a Syngenta farm management software package). Partners in the project will use the baseline data to identify opportunities to improve production practices and profitability through a better understanding of the relationship between resource use and crop management. Beginning in 2014, the pilot will expand to include the grower's complete crop rotation with the inclusion of potatoes and sugar beets. The baseline data collected over the past three years identified nitrogen and water use as key opportunities for gaining efficiencies through better management of these two resources. Early results from the **Fieldprint Calculator2** show growers in the pilot performing at or above county averages and participants report making field specific improvements as a result of better knowledge of resource use at the field level.

The major lessons that can be drawn from the **Snake River** case are:

- Create trust between the partners and the growers;
- Communicate the value of participation up and down the supply chain;
- Provide technical education to the grower to use the software and make it easy for the producer to input data;
- Insure that the reports and analysis resulting from data collection are accurate and actionable;
- Facilitate a learning network, creating opportunities for sharing and feedback between participating growers and technical experts whom they trust; and
- Engage and involve more intensively the crop trade associations to achieve broader endorsement and engagement with more growers.

Country Natural Beef: In 1976, ranchers Doc and Connie Hatfield began to explore market opportunities for selling their neighbors' naturally raised beef, a product that they felt reflected their region's commitment to creating harmony between people, cattle, and the land. The group of ranchers agreed to form the consumer-driven beef marketing cooperative Oregon Country Beef (now called Country Natural Beef [CNB]), originally comprised of 14 ranching families. The cooperative now consists of close to 70 family ranches and includes more than 100,000 mother cows managed on millions of acres of private and public land lands. The group has formed important working relationships with leading restaurants and retailers across the nation who are willing to pay a premium for the values CNB applies to raising beef. Ranchers who are part of CNB write simple stewardship plans and make commitments to common sustainability goals around animal welfare and good grazing (which includes water and biodiversity). They use Food Alliance Certification (although this certification system is in transition).

The major lessons that can be drawn from **Country Natural Beef** are:

- Develop simple strategic plans that allow ranchers or farmers to identify what they are doing now and what they will improve on in the future;
- Link sustainability goals to long-term economic profitability; and
- Identify common priority areas (grazing, water, animal welfare) but allow each rancher to develop their own practices and pace for improving in each area.

Central Indiana: In 1977, a young crop advisor arrived to an Indiana farming landscape where the majority of farmers were still using moldboard plows, soils were pulverized, and, according to Jim Moseley, Indiana Farmer and Former Deputy Secretary, U.S. Department of Agriculture, the top layer of any field was "bug dust." When rain fell, a hard crust would form on the top of fields. The new crop advisor helped farmers improve productivity and design fertility programs. He also began slowly to engage his clients with methods that

focused on improving the soil for the long term. A few farmers eventually turned into about 100 farmers on more than 100,000 acres of cropland, engaged in a process that involved both planning and learning from one another. Although plans are private, the sharing of improvements within the farmer network is an important part of the process, including organized farmer meetings and field trips. These meetings and trips are devoted both to delivering education, but also to creating roundtable forums for farmers to discuss what their challenges are and how they are developing innovative solutions.

The major lessons that can be drawn from the **Central Indiana** case are:

- The importance of a trusted, third party regional facilitator/knowledge provider holding the collaboration together;
- The use of a simple planning strategy that incorporates both short “what are we doing right now” and long-term thinking “where can we improve” that is tailored to each farmer’s individual circumstances;
- A focus on soil health as the base for improvements;
- The use of farmer learning networks to build relationships, deliver knowledge, share experiences/challenges/solutions and build sense of shared identity;
- Measuring the outcomes to which farmers manage (e.g., soil health, productivity, yield, and profit);
- Begin with improvements tied to economics and move towards improvements that have less tangible economic benefits (called a “a virtuous slippery slope” by one producer);
- Drop farmers who are resistant to change from the collaboration; and
- Build ownership and commitment by having farmers pay for the planning services.

Skylark: The Skylark initiative in the Netherlands began as a Heineken project with seven growers to sustainably produce barley and has evolved to a multi-buyer collaboration with more than 100 farmers and companies

including McCain, Unilever, and Lamb Weston. To enable this collaboration a specific Skylark methodology is applied that focuses on creating regional networks of 8-10 farmers who develop individual sustainability plans with a certified Skylark consultant. Every farmer is responsible for the activities and improvements they make on their farm. Farmers are supported by a platform of regional consultants, experts and their peers. Within their peer network they share their sustainability goals, knowledge and continuous improvement practices. Each network has access to professional guidance from an accredited consultant. If needed, the regional group also can make use of specialists for specific topics. The Skylark Foundation developed a set of 10 sustainability indicators by which each farmer measures annual improvements.

The major lessons that can be drawn from the Skylark case are:

- The sustainability mindset for farmers and food companies is based in both the long-term health of farms and the long-term reliable supply of ingredients;
- Farmers achieve short-term profitability by reducing costs through improvements in management practices with the goal of long-term continuous improvement;
- Farmers challenge and learn from each other and technical advisors in regional networks that meet eight times per year;
- Farmers have the autonomy to determine their own sustainability goals. They start from where they are and commit to continuous improvement;
- Farmers benchmark improvements against 10 sustainability indicators;
- Everyone pays to play and everyone agrees to play. The foundation is supported through membership fees from both the farmers and the food companies. Farmers and food companies agree not only to pay for membership, but also to actively participate;
- Farmers and food companies engage in shared learning and trust building through field trips to farms and to downstream suppliers;

- Farmers and food companies who cannot commit to continuous improvement and participation are not invited to participate; and
- Soil health is the most important indicator of sustainability and the key management focus for farmers.

The **Field to Market pilots** in the **Paw Paw River Watershed** in Michigan and the **Boone River Watershed** in Iowa present a deviation from the buyer-driven model and are more like a traditional conservation projects. The farmers in the Paw Paw conservation district are not faced with buyer pressure to engage in measurement and environmental improvements. Rather, the **Coca-Cola Foundation** provides funding to The Nature Conservancy and the conservation district to work with farmers to improve water quality in the region. Coca-Cola has an interest in protecting the water source, but it does not have any way to directly apply pressure to farmers as a buyer of their soy and corn crops. The conservation district uses grant funding to pay farmers \$50 when they enter data into the **Fieldprint Calculator** and then offers cost-share incentives to the farmers when they make practice improvements such as no-till, reduced-till, cover cropping, and other practices that lead to groundwater recharge. There is less emphasis on the learning network, although farmers who participate come together once a year for a results dinner to see how they are improving using outputs from the **Fieldprint Calculator**, and more emphasis on one-on-one planning with the conservation district. As one of the longer running projects collecting data with the **Fieldprint Calculator**, the Paw Paw Conservation District will be able to observe three years of practice changes and productivity effects in 2014.

Similarly, in the **Boone River Watershed** in Iowa, Coca-Cola has donated funds to the county conservation district to work one-on-one with 15 farmers on nutrient management planning. Each will also use the **Fieldprint**

Calculator to determine corn farm “field print” impacts on soil, water and air, comparing fields operating with and without best management practices. Using this awareness-building tool, NRCS, Iowa Soybean Association and The Nature Conservancy are helping farmers transition to better management practices such as cover crops and conservation tillage and using wetlands as bioreactors to treat nutrient runoff to help return water to nature. This project has more of a value chain component than the Paw Paw project because of the engagement of Cargill, Walmart and other downstream companies that want to learn how to improve environmental impacts of corn production that goes through their systems.

Endnotes

- 1 In a phone call with Hal Hamilton during the initiation of the Sustainable Food Lab.
- 2 In a personal conversation with Hal Hamilton and Peter Senge.
- 3 Don Seville and Stephanie Daniels of the Sustainable Food Lab recently completed for SAB Miller an overview of why and how companies engage with smallholder supply chains. Contact the Sustainable Food Lab for a summary.
- 4 The authors of this paper are associated with development and management of the Cool Farm Tool.
- 5 Nick Lovegrove and Matthew Thomas, “Triple-Strength Leadership,” *Harvard Business Review*, September 2013, <http://hbr.org/2013/09/triple-strength-leadership/ar/1>.
- 6 The Fieldprint calculator is a tool developed by Field to Market. See <http://www.fieldtomarket.org/fieldprint-calculator/>.

About AGree

AGree seeks to drive positive change in the food and agriculture system by connecting and challenging leaders from diverse communities to catalyze action and elevate food and agriculture policy as a national priority. AGree also recognizes the interconnected nature of agriculture policy globally and seeks to break down barriers and work across issue areas.

AGree is a collaborative initiative of nine of the world's leading foundations, including the Ford Foundation, Bill & Melinda Gates Foundation, The David and Lucile Packard Foundation, W.K. Kellogg Foundation, The McKnight Foundation, Robert Wood Johnson Foundation, Rockefeller Foundation, Surdna Foundation, and The Walton Family Foundation, and will be a major force for comprehensive and lasting change.

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