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SUSTAINABILITY

Exploring its impact on the global food supply chain





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Viewpoint

Achieving Sustainability



Industries and businesses around the globe are becoming increasingly aware of the need to incorporate sustainable business practices into their own operations.



ustainability can be broadly defined as the capacity to endure, or to last or continue for a long time. The related caveat is that the activity should not deplete or permanently damage the resources being consumed in the process.

Industries and businesses around the globe are becoming increasingly aware of the need to incorporate sustainable business practices into their own operations. To the food and beverage industry, this takes on a critical importance, as providing the nutrition needed for more than 7 billion people—expected to top 8 billion within 10 years to endure is taxing resources to what some believe is a breaking point.

Companies throughout the industry are thinking of sustainability as more than just a buzzword, or the section on corporate social responsibility (CSR) in their annual reports. Instead, they're coming up with innovative ways to reduce their carbon footprint, develop more nutrition with less waste, and help educate consumers on how their own decisions will impact the future.

In this debut issue of The Boardroom Journal, we've asked experts from industry, academia, nonprofits and market research firms to share their perspectives on sustainability—what it means, how it is affecting their business and what the future holds. Whether you're seeking consumer trend data, insights on global supply partnerships or case studies that illustrate how incremental changes can yield great returns, you'll find information that we hope will provide fodder for your own C-suite discussions around the conference table.

And if you have a story of your own to share, don't hesitate to reach out. As upcoming issues tackle topics such as the obesity situation, ingredients and the activist consumer, and global nutrition/malnutrition, we'd like to include your perspective in our own discussions.

Best regards,

leather franato

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Sustainability as a Design Lens for our Food Future

BY GEORGE BASILE

ood is fundamental. Yet, for something so basic and universal, people tend to think of food in terms of specific examples that have personal meaning, from today's sandwich at lunch to that special something-extra we each crave. As a result, when people think about eating and food, they don't typically think about the food system. The dominance of this perspective deserves some thought given that food-including each individual food item or product-is actually an emergent output from the most comprehensive and complex system we know: our planet, including all of us on it. When thought of in this latter light-i.e., something that arises from the complex interplay of numerous interacting systems from elemental to solar, microscopic to ecologic, and environmental to economic-it seems almost stunning that so many of us happily ingest away without any thought of how it all gets here or what we all need to do to keep it coming.

of emergent issues and challenges, including environmental issues such as climate change, biodiversity loss, changing global soils and resource depletion, combined with social hurdles such as poverty, resource access, security and equity. If one simply looks at sustainability issues and overlays the idea of food upon them one-byone, the sustainability/food connection can be made in an almost infinite variety of ways. Just to pick a few, our food systems impact biodiversity through the use of land, numerous natural resources, and plants and animals themselves; at the same time, food-production capacity depends on biodiversity for stabilizing ecosystems, pollination, fertilization and a host of other services that natural systems provide. Climate change may impact every aspect of the current and future potential for food production, as will waterresource availability, access to energy and soil nutrients, and much more. And, food, in turn, is the most basic of resources for a sustainable

When people think about eating and food, they don't typically think about the food system.

Thus, the need for new ways to look at food and food production via a sustainability-systems lens. Sustainability (in short, doing today in such ways that we can all thrive both today and tomorrow) is also often described as a growing set global society. Without secure food supply and access, sustainability is no more possible than the running of a machine is without fuel. However, given the typical perspective that food is not a system but a set of things, even these readily

Existing and Potential Social and Environmental Flash Points



Q U E S T I O N S

Is There a Pattern? | How To Priortize? | Are these Issues on the Radar? | How Will this Look Tomorrow?

Source: Basile G, Broman G, Robert KH. "A Systems-based Approach to Sustainable Enterprise: requirements, utility and limits." In The Business of Sustainability, Praeger. 2011;1:3-28.

identified interactions are often typically invisible to consumers and many key decision makers alike. Or, at best, are hazy concepts fluttering on the horizon.

No food strategist worth his or her salt would argue food and all that goes into its production, delivery and use can be aptly described simply by listing examples of individual food types—no matter how long the list grows. Similarly, we should be concerned when sustainability is presented as a growing list of issues that we must address one-by-one. This would be as unfair as describing your soul mate as some collection of habits and observable characteristics. "Counting the ways," in this case, can only be thought of as a simple jumping-off point at best. At worst, it presents a potential Catch-22 with respect to strategic action for anyone who is part of the food industry, from an individual farmer to the global mega-corporation: Specific examples are the typical way one knows the system, but specific examples can actually impede the larger systems' view. In order to use sustainability as a tool for better and more sustainable food success, sustainability and food must both be brought together in terms of being emergent properties of highly complex systems.

The challenge then becomes two-fold: First, how to bring to bear systems perspectives of both food and sustainability that are strategically empowering along all dimensions of food from concept to waste. And second, how to translate the outputs of this into today's context. As an example, we can look at a modern corporate food retailer that brings together many aspects of food, from the farm to the plate. As seen above, a quick sorting of potential issues against emergent sustainability challenges creates a rather overpowering suite of potential risks.

However, if a more systemic sustainability lens is applied, one that utilizes a combination of basic principles for sustainability success combined with basic operational areas for a

THE TWO-FOLD SUSTAINABILITY-FOOD CHALLENGE

How to bring to bear systems perspectives of both food and sustainability that are strategically empowering along all dimensions of food from concept to waste.

How to translate the outputs of this into today's context.

Categorizing Challenges Using Sustainability Principles

S	Supply chain	Operations	Products
1 Mined substances	Fossil fuel intensitySoil nutrient overloadCadmium, selenium contamination	 Rare and heavy metals in building, equipment materials Energy use 	 Petroleum use for packaging, premiums Mercury and other metals in premiums and food
2 Produced substances	Synthetic additivesAntibioticsEndrocrine disruptorsRefrigerants	Persistent materialsEquipment materialsCleaning solutions	Persistent additivesPesticide residuesPlastic wasteDyes in packaging
3 Natural capital	 Overharvesting Loss of soil fertility Decreasing water Biodiversity & GMOs 	BiodiversitySprawlWater use in manufacturing	 Fiber packaging Solid waste disposal sites (landfills, incinerators)
4 Social sustainability	 Labor conditions Access to farming inputs and outputs Pesticide exposures 	 Urban sprawl Loss of local businesses Local impacts 	 Narrow customer base Children's health Wellness focus Children's marketing

Source: Basile G, Broman G, Robert KH. "A Systems-based Approach to Sustainable Enterprise: requirements, utility and limits." In The Business of Sustainability, Praeger. 2011;1:3-28.



business (in this case a global food retailer), a more organized and useful picture appears above.

The latter perspective enables decision makers to understand how the emergent and systemic aspects of sustainability will increasingly impact food systems and, in turn, their businesses and overall success and leverage points for action. Rather than creating more issues, a systemic mapping of food production and sustainability goals provides an organizing framework that highlights not only the breadth of issues that one must consider, but also the linkages between seemingly disparate issues—and how one may act strategically across any number of challenges and opportunities within all three spheres of food, sustainability and enterprise.

Understanding the issues and opportunities at a whole system level can supports a reshaping of visions for success that build-in the larger and improved perspective on reality. With that success in mind, one can then ask strategic questions about how best to get there. This can reshape the discussion from "should we" or "shouldn't we" to "how do we." It can also help decision makers shift their conversations and mindsets from a choice between lesser evils and poor tradeoffs to one of making strategic investments towards systemic success.

Sustainability is here to stay. The majority of scientific evidence points to increasing impacts from existing and newly emerging sustainability challenges. Likewise, food, its access and availability across the globe will be a major growth area for a world that expects to see population increases in regions that today have much of the poorest food production and access. While this can be painted as a grim scenario—and we should not stick our heads in the sand—bringing more systemic sustainability perspective to bear provides a platform for more successful innovation, better planning and decreased risks. ■

George Basile, Ph.D., is a professor in the School of Sustainability (sustainability.asu.edu), Arizona State University (ASU), as well as an affiliate professor in ASU's School of Public Affairs, and senior sustainability scientist with the Global Institute of Sustainability.

Editor's Note: George Basile, Ph.D. has written more on the topic of sustainability in business in "In The Business of Sustainability", volumes 1 and 2; Praeger, New York, 2011.

Sustainability and the New Normal for the Food Industry

BY SARAH BOUMPHREY

e have reached a new normal of increased awareness of the true value of natural resources—whatever their physical price. It's fair to say, green concerns have an impact on the purchasing decisions of almost all consumers from the "casual green"—who purchase private-label green products and place sustainability behind convenience or price or quality—to deep green consumers, who demand every aspect of a product is unquestionably green. Euromonitor International believes regulatory and consumer demands for sustainable goods and services will continue to intensify pressures on business and, as a result, sustainability must be embedded into every aspect of the supply chain from suppliers through to transport and disposal. Coupled with growing demand and competition for natural resources globally and government demands for sustainability, this makes resource management a priority for all companies whatever their sector.



Walkers Crisps' potato factory

The Risks of Ignoring Sustainability

A lack of awareness of sustainability issues or a lack of engagement brings real risks to businesses. For instance, without a back-up plan, companies may struggle to secure supplies of raw materials should an unexpected bottleneck arise. This could disrupt production or increase costs steeply. Looking at it from a different angle, the public perception of a brand or a company as a whole can be damaged if the business is exposed as using unsustainable sources of materials or damaging ecosystems or habitats for instance, by consuming large amounts of water in a water-stressed locale. In today's increasingly connected world, previous local disputes can swiftly become global.

Companies also risk losing sight of changes in consumer trends and demands. Consumers may switch to a competitor's more efficient products or more sustainable products and services as a result of increasing awareness and interest in environmental matters. As an example, consider how consumer demands for sustainable sources of palm oil have forced many food and beverage manufacturers to switch to sustainable sources or other palm-oil alternatives.

These business risks combine to create a new normal for companies, which must act to secure their supplies of key natural resources while also accommodating the increased demand for sustainable practices. Doing nothing is not an option and is at any rate likely to cost more in the long run.

Incorporating Sustainable Practices

Working to incorporate sustainability into all aspects of the business should be a key aim. This might sound costly, but it doesn't have to be expensive and the best measures can actually save money. Working to improve resource efficiency is perhaps the first step a company should take. Ask yourself: As a business, can we save energy? Reduce water consumption? Use fewer raw materials? Encourage suppliers to meet similar sustainability standards? The answer to at least some of these questions is likely yes.

One example of this was cited in a World Economic Forum report and involved Walkers Crisps, a PepsiCo company. The study found:

The most energy-intensive part of the process of making crisps was in the drying of raw potatoes. These potatoes had been soaked with water by farmers to increase their revenue, due to a price structure based on weight of potatoes.

Walkers changed its price structure based on volume rather than weight, removing the incentive

to soak potatoes. In addition, Walkers worked with farmers to find new varieties of potato that are drier. The outcome was a win-win scenario.





Adnams's distribution centre



Agriculture is responsible for 70% of freshwater consumption globally, and industry a further additional 22%. Walkers saved money and also reduced its carbon footprint at the same time.

Another example comes from Adnams, a U.K.-based brewer, hotelier and retailer. Adnams invested in an energy-efficient distribution centre and improvements to its brewery, which it calculates saves £50,000 a year—cutting its gas bill by 56 percent a year and its electricity bill by 67 percent a year.

A second option that does not have to have cost-implications and can also save money is to recycle and reuse more. Incorporating recycled products into the supply chain should be a must. This can include using remanufactured machinery, incorporating recycled material into packaging or designing packaging in such a way that it can be reused by end consumers.

Substitution is another area in which companies can look to find cost savings, mitigate risk, improve resource efficiency and build reputation. It can bring reductions in weight, price and risk, and also improve a product's functionality.

The Food Industry at the Forefront

The Organisation for Economic Cooperation and Development (OECD) projects almost half of the world's population will be living in areas with high water stress by 2030. Agriculture is responsible for 70 percent of freshwater consumption globally, and industry a further additional 22 percent. The food industry is a particularly heavy user—unsurprisingly, as water is a key ingredient and is also used for cleaning, cooling, boiling and transport purposes. Water reuse is a key area of concern to many companies; spent water can be reused in cleaning and cooling in particular.

Agricultural supplies tend to be subject to strong seasonal production patterns. Demographic growth, pressure on agricultural land (also driven by the use of biofuels) and the impact of climate change add to growing stresses on agricultural markets. Food supply issues have a big impact on countries that import a large proportion of their food. Like energy, food security is highly vulnerable to external shocks. Food price spikes in 2008 combined with the global financial crisis had the combined effect of dampening purchasing power among vast swaths of the population. Food shortages and fears tend to be more apparent in poorer countries, or for the poor within any country. This is because a larger proportion of their budgets are devoted to food. [See Figure 1, next page]

Outside of food and water, risks to energy supplies, metals and minerals also affect all industries including food. We can see this in the impact that rising energy prices has had on food prices in the past.

Sustainability To-Do List

Conduct a thorough study of your reliance on key raw materials, constantly reviewing and updating plans and processes.

Increase resource efficiency. This is a win-win scenario and of all the options available, increasing efficiency is the most important and rewarding.

Engage with the public in sustainability issues. Publicize your credentials and enfold sustainability into CSR campaigns.



Miss Joyce and a Sheren hand sorting the dried and roasted Grococo beans. Each bean is sorted by hand to ensure every bean is perfect. The heart of each bean is the nib, which can be likened nature's chocolate chip. To expose it, the shell must then be cracked and the result is then winnowed to separate the bean shell from the nib.

Taking Sustainability to Heart

Many smaller producers are already closely associated with being more sustainable than multinationals. This is visible in the trend for local, artisan-produced products. A fine example is Gru Grococo, a deep green brand marketed by Rococo Chocolates, a super-premium British manufacturer and retailer. The cocoa beans used in this chocolate are roasted at a solar-powered micro factory, minutes away from the cocoa farm in Grenada. The chocolate is then transported across the Atlantic to the United Kingdom on a sailing ship. To complete the environmentally sustainable circle, all profits are re-invested in the plantation.

There are many opportunities for companies to take sustainability to heart. Start by studying your reliance on key raw materials; move on to increasing resource efficiency; and then engage with the public to raise awareness.

Sarah Boumphrey is the head of countries and consumers for Euromonitor International.



Cocoa pods on the Grococo farm are split by hand using a cutlass. This is actually a delicate task since leaves and stem sprouts grow where the fruit was. The continued growth of the tree depends on avoiding damage to the stem. It is not possible to harvest the pods by machine.

[Figure 1]

World's Smallest and Largest Spenders on Food: 2012

% of consumer expenditure devoted to food and non-alcoholic beverages



% spent on food and non-alcoholic beverages

Source: Euromonitor International from national statistics/ Eurostat/UN/OECD Note: Data refer to a ranking of 85 countries



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How Sustainable is Your Business?

BY KARA HARTNETT HURST

ustainability is not a new concept. The fact that humans are still surviving and evolving on this planet, that our ecosystems are functioning and our air is generally breathable is a testament to the idea. However, the idea of a sustainable business has seen tremendous growth in the past few decades. Sustainable businesses look to balance the environmental, social and economic impacts they have in relation to the products and services they produce in the communities and places where they site their workplaces, develop and manufacture their products, and employ their people.

Sustainable businesses care about what they do with the money that they make good shareholder returns, reinvestment in the business, philanthropic investments in the cultural life of the communities where they operate. They care more, however, about how that money was made in the first place.

Working in this field for more than 15 years, I have seen a tremendous evolution in corporate approaches to integrating sustainability. Initially, the purview of the community relations teams, generally outside of the core business functions, "corporate citizenship" was all about environmental, health and safety compliance, and community philanthropy. Essentially, these two functions de-risked the brand.

Many of the early changes companies implemented were based on stakeholder concerns or "best practices," which, while good to have, were not based in much of anything besides one or two companies' willingness to try something and then share the learning along the way. Sustainability became as much a catchall as terms like "value-add" or "responsible." In order to see this clearly, all one has to do is to look at the corporate social responsibility (CSR) reports published by many companies in the early 2000's. Not wanting to leave anything out of CSR, these reports occasionally numbered in the hundreds of pages, with every issue receiving equal weight.

There was a shining light: Companies had started to collect data, and the marketplace—with initiatives such as the Global Reporting Initiative (GRI)—had started to coalesce around what CSR metrics and indicators looked like. Granted, there were still far too many, but movement in the measureable direction had started. This has evolved over the years to more transparency from business, and an enhanced approach to engagement with stakeholders to include a more diverse array of perspectives and opinions. When these doors were cracked open, companies found better ways of entering and serving new markets, more fully understanding the needs of different and future customers and anticipating their needs. Environmental, health and safety compliance grew to eco-efficiency. This moved corporate responsibility from riskmitigation to something that helped to create value (financial and otherwise) within the business and demanded the attention of core business functions and the C-suite.

While some companies have come far—consider Unilever's Sustainable Living Plan, Marks & Spencer's Plan A and Nike's approach to sustainable business—others are just starting their journey on corporate sustainability.

The path may be similar but the expectations about how fast to move, what practices to implement and where the bar of "basic" sustainability stands in each industry has shifted dramatically. Once the domain of special-interest groups, transparent information about where and how our food was grown, produced and brought to market is now the expectation of many consumers. While consumers remain highly price-sensitive, they increasingly also expect companies to operate responsibly and sustainably without passing those costs along. This trend increases with younger generations, whose broad access to

Investing in understanding and mitigating

The social and environmental impacts of your business enhances your fiduciary responsibility by ensuring your business

has addressed embedded environmental costs;



will have ongoing access to the natural capital required to produce your goods; and de-risks your supply chains to ensure high productivity and continuity of supply.



information via the Internet and expectations of radical transparency have always been their norm.

Even more true today, what companies are making is as important as how they are doing it.

We know generally what a sustainable company looks like today: transparent practices; ambitious goals for reducing water, waste, energy; adherence to the UN Guiding Principles framework for human rights: protect, respect and remedy; and, where appropriate, one that is engaged to use its corporate influence to work collaboratively for the collective good.

But, who defines what a "sustainable" product really is?

Once general corporate practices and a governance system have been established, many companies look more deeply at the products and services they are producing. The inherent trade-offs in environmental, social and economic decisions involved in each product make it extremely difficult to understand what "sustainable" truly means on a product or commodity level. By almost any measure, global consumption is growing rapidly; yet, many businesses still struggle to produce sustainable products and most consumers don't know how to identify and differentiate them. The result: We continue to waste valuable natural resources, compromise ecosystems and threaten human health.

Businesses and consumers desperately need a better system for assessing the sustainability of consumer products. To be viable, the system must be one that businesses can trust and consumers can easily apply to make informed decisions.

Such an assessment system must also be rigorously science-based, simple to understand and fully transparent. And it must earn the buy-in of a vast cross-section of corporations, watchdog organizations and governments.

The Sustainability Consortium $\ensuremath{\mathbb{B}}$ (TSC^TM) has been working to create such a system



since its launch in 2009. Conceived as a global multistakeholder organization, TSC has grown to encompass nearly 30 colleagues at four global locations across the United States, Europe and China. Its primary goal is to develop science-based tools that advance the measurement and reporting of consumer product sustainability. The research required to meet that goal is comprehensive.

TSC currently covers more than 150 product categories across nine consumer product industry sectors, including food, beverages, agriculture, electronics, toys, paper, pulp, forestry, and home and personal care products; it will cover 600 categories by 2015. The work is made more robust and complete through partnerships with civil organizations that help us better understand important stakeholder views, while collaborating with more than 100 member companies and organizations to gather critical information and integrate research findings into business operations and strategies.

For these efforts, TSC was selected by *Scientific American* magazine as one of the top 10 World Changing Ideas for 2012. *Scientific American* not only described

only described TSC's work as the "ultimate sustainability index," but also called it a superior sustainability measurement and reporting system, largely because of its comprehensive nature and cross-sector approach that factor in sensitive data from companies on emissions, waste, labor practices and water usage, among other factors.

nging

TSC is just one organization among many making great strides in sustainability. We need fewer and more efficient approaches to measurement—but a multiplicity of companies—working on harmonizing sustainability information to evolve our work over time. If your company has not started on this journey, and if you are not involved in a collaborative industry effort, I would urge you to get started now.

Only then will we continue to find more efficient ways of creating systemic changes

to our production and consumption, better lives for workers globally, and a better use of natural resources.

What your company does matters a great deal. How we all manage our natural, physical, human and financial resources together matters even more.

Kara Hartnett Hurst was appointed as the CEO of The Sustainability Consortium (TSC™) in September 2012. TSC (sustainabilityconsortium.org) produces scientifically based information, innovation projects and business tools to drive the creation, purchase and use of more sustainable consumer products. Prior to TSC, Hurst spent 11 years at BSR (Business for Social Responsibility), where she last served as vice president, playing a crucial role in BSR's global expansion. Hurst's areas of expertise include corporate transparency, responsible supply chain management, social enterprise and industry collaboration. She holds a master's degree in public policy from the University of California, Berkeley, and a bachelor's degree from Barnard College of Columbia University.



We know generally what a sustainable company looks like today

- transparent practices
- ambitious goals for reducing water, waste energy
- adherence to the UN Guiding Principles framework for human rights: protect, respect and remedy
- where appropriate, one that is engaged to use its corporate influence to work collaboratively for the collective good

Sustainability Reporting as a **Strategic Tool for the Boardroom**

BY SUSANNE KATUS AND MAAIKE FLEUR



ome call it Corporate Social Responsibility (CSR) and Citizenship, others simply "acting sustainably." These terms are becoming progressively more common in everyday business language both at an operational level and in the boardroom, and they signify more than an effort to reduce carbon emissions and produce healthy food; they offer a key opportunity to enhance the value and resilience of your business.



Used by more than 5,000 organizations worldwide By making abstract issues tangible and concrete, sustainability reporting helps organizations to set goals, measure performance and manage change. But while it is a crucial means of meeting the information needs of key stakeholders, truly robust sustainability reporting is much more than a data gathering or compliance exercise. The insights generated by reporting can have direct relevance for C-suite decision making, with the capacity to spark operational improvement and innovation and inform core business strategy.

One option for companies to explore in ensuring their sustainability reporting will deliver actionable information is to use a set framework, such as that developed by the Global Reporting Initiative (GRI). Used by more than 5,000 organizations worldwide, the GRI Sustainability Reporting Framework consists of Sustainability Reporting Guidelines and sector guidance to assist organizations in the preparation of sustainability reports—to better identify strategic opportunity, gain better oversight of risks and opportunities, and enhance corporate value. This framework helps organizations-regardless of their size, sector or location-to measure and report their economic, environmental, social and governance performance: the four key areas of sustainability.

The process of sustainability reporting supports organizations in overcoming the following four challenges of being sustainable in today's turbulent economy:

- identifying the value of environmental and social impacts, and measuring risks;
- aligning sustainability and financial goals;
- converging the interests of shareholders and stakeholders, internally with senior management and externally with investors and consumers; and
- 4) managing the supply chain to enhance sustainable practices.

The geographically diverse multistakeholder Food Processing Working Group contributed to the development of the Food Processing sector guidance. The Food Processing Sector Supplement (FPSS) provides organizations in the sector with a tailored version of GRI's Sustainability Reporting Guidelines. The content of the sector documents is currently being reorganized in line with the latest version of GRI's Sustainability Reporting Guidelines, G4, which were launched at the 2013 Global Conference on Sustainability and Reporting in May 2013.

The G4 version has an enhanced focus on materiality to help ensure sustainability reporting focuses on the critical information needed to inform decision making by reporters and information users alike. The guidelines



include a four-step process to define material aspects and boundaries. This methodology applied to define material aspects may vary according to the individual organization. The business model, sector, geographic location, cultural and legal operating context ownership structure, and the size and nature of impacts affect how the organization identifies the material aspects.

Enabling robust, comparable reporting on the issues that matter most for food processors, the sector guidance covers: traceable and sustainable sourcing practices; community investment; the impact of governmental subsidies; labor and management relations; promoting healthy and affordable food; customer health and safety; product information and communication to consumers; and animal welfare including breeding and genetic, animal husbandry, and transportation, handling and slaughter.

By using the sector guidance to carry out a materiality assessment in dialogue with key stakeholders, food and beverage sector companies will be able to focus on their key sustainability challenges and opportunities—identifying risks, managing their impact and creating opportunity at the senior level.

A member of the Food Processing Working Group, Leigh Ann Johnston, EHS training, communication and sustainability manager at Tyson Foods Inc., said the application of the GRI Guidelines was key to improving the company's internal and external stakeholder process, an important element of its sustainability activities and overall business process. "Our use of the GRI Guidelines and FPSS helped us achieve a higher degree of transparency and to identify opportunities for strengthening our reporting efforts in the future," she said. The company's 2012 Sustainability Report was its fourth developed using the GRI Reporting Framework and its first applying the FPSS.

"Part of the transparency was to acknowledge that we were not able to address each FPSS indicator, but we have made substantial progress nonetheless in improving our internal and external stakeholder engagement through the application of the internationally recognized GRI Sustainability Reporting Framework," Johnston said. "This helps us better communicate our business strategy and enhance our company's performance."

Food Processing & the Framework

A global multi-stakeholder network contributes to the development of the Framework through GRI's Due Process. Offering Reporting Principles, Standard Disclosures and Performance Indicators for the preparation of sustainability reports by organizations, GRI's Guidelines and sector guidance are developed through this due process, which involves representatives from business, labor, civil society and financial markets, as well as auditors and experts in various fields; and in close dialogue with regulators and governmental agencies in several countries.

The GRI Sector Supplements contain tailored reporting guidance including

sector specific issues that are not adequately addressed by GRI's G4 Guidelines. They are intended to help organizations produce sustainability reports that address the main sector specific impacts in an internationally comparable way. Convening in Working Groups, these representatives volunteer their expertise to develop recommendations on new and revised Reporting Framework content, including sector guidance to make reporting more relevant and user-friendly for organizations in diverse sectors.

The following companies are members of the working group for the

Food Processing Sector Supplement (FPSS): Allianz Global Investors, Archer Daniels Midland, Bunge, Compassion in World Farming, Danisco, Findus Group, Green Mountain Coffee Roasters, FNV Bondgenoten, Interface Trading, International Fair Trade Organization, International Federation of Agricultural Producers, International Union for Conservation of Nature, Nestlé, New York University, Punjab Education Sector Reform Program, Société Générale de Surveillance, Tyson Foods, Wilmar, WWF. Part of the transparency was to acknowledge that we were not able to address each food processing sector supplement (FPSS) indicator, but we have made substantial progress nonetheless in improving our internal and external stakeholder engagement through the application of the internationally recognized GRI Sustainability Reporting Framework

— Leigh Ann Johnston, EHS training, communication and sustainability manager, Tyson Foods Inc.

More than 50 organizations worldwide reported using the FPSS in 2012. GRI's Sustainability Disclosure Database, which stores and tracks critical reporting and associated organizational data, includes a benchmarking tool to facilitate easy comparison of GRI disclosure within this sector—and others—across regions around the globe. As demonstrated by the increasing number of reports included in the database, sustainability reporting is making strides to becoming mainstream in a very short period of time.

In May 2013, GRI published a collection of sustainability topics by sectors: "What do stakeholders want to know?" For each sector, sustainability topics were identified through researching more than 700 resources. The identification of potentially material and internationally accepted topics by sector or industry is fundamental for high-quality sustainability reporting, both for organizations that report and for users of the reports. It aids other management activities which aim to evaluate the sustainability performance of companies.

Over the last 10 years, GRI has worked with a large number of organizations to develop Sector Supplements, which are now called Sector Disclosures in the G4 Guidelines' context. This work entailed discussions with a variety of investors, rating agencies, regulators, companies and other stakeholders about the need to establish an international reference list of relevant sustainability topics, taking into consideration different stakeholders' perspectives.

Today, 95 percent of the largest 250 companies in the world produce a sustainability report, four out of five of which choose to use the GRI Guidelines. In fact, more than 5,000 organizations worldwide report on their sustainability performance using the GRI Guidelines.

43 REPORTS 2000 **2,486** REPORTS 2012

Research from the Governance & Accountability Institute, GRI's Data Partner in the United States, revealed the number of S&P 500 and Fortune 500 companies reporting on their environmental, social and governance performance more than doubled from 2010 to 2011. Drivers contributing to the uptake of sustainability reporting by companies and interest in sustainability issues by business leaders include investor decision-making, brand reputation, and increasing regulatory pressures, central to which are relationships with key stakeholders-in every level of the supply chain, from farmer to diner. Market capitalization hinges on these relationships and the ability of senior-level decision-makers to identify and manage risks, and create opportunities, in order to improve the quality of their corporate strategy and ultimately, their corporate value.

Ultimately, GRI's aim is more reporters and better reporting. The goal is to help organizations in the food and beverage industry to overcome the four main challenges of being sustainable in today's turbulent economy mentioned at the start

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of this article: identifying the value of environmental and social impacts, and measuring risks; aligning sustainability and financial goals; converging the interests of shareholders and stakeholders, internally with senior management and externally with investors and consumers; and managing the supply chain to enhance sustainable practices.

Maaike Fleur is senior manager at the Global Reporting Initiative (GRI), where for the last six years she has mainly been involved in developing the reporting framework. Susanne Katus joined GRI in early 2012 to advance development of the Sustainability Disclosure Database and coordinate the 2013 Global Conference on Sustainability and Reporting.

GRI promotes the use of sustainability reporting as a way for organizations to become more sustainable and contribute to a sustainable global economy. GRI's mission is to make sustainability reporting standard practice. To enable all companies and organizations to report their economic, environmental, social and governance performance, GRI produces free Sustainability Reporting Guidelines.GRI is a not-for-profit, network-based organization; its activity involves thousands of professionals and organizations from many sectors, constituencies and regions. Learn more at globalreporting.org.

Current Trends in Sustainability

BY GWYNNE VILLOTA

ustainability, or the act of balancing profits with the needs of people and the environment now and in the future, is a subject that has garnered a great deal of interest in recent years. Sustainability takes root at the intersection of societal, environmental and economic concerns (sometimes referred to as "people, planet and profit"). More often, companies are seeing the value in promoting their sustainability efforts in order to appeal to socially conscious consumers and create business value.



Only when all **three** are balanced is sustainability truly achieved.

Who Cares About Sustainability and What Do They Care About?

Demographically speaking, all generations have a reasonable amount of familiarity with the concept of sustainability. Nearly two-thirds (64 percent) of adult American consumers surveyed in NMI's 2012 LOHAS Consumer Trends Database® responded that they are aware of the term "sustainability." Boomers lead in awareness (68 percent) among generations, as do those with higher incomes, more education and without children under 18 in their households.

Depending on the dimension of sustainability, different demographic cohorts' interest piques. For instance:

- Consumers with incomes below \$75,000 care more about worker rights.
- Millennials, or Gen Y, care more about using products made from recycled materials.
- Blacks care more about reducing chemicals in agriculture and socially responsible business.
- College grads care more about renewable power.

I care about						
Protecting the rights of workers		Reducing the use of pesticides, herbicides and chemicals in agriculture	are rned			
Protecting the environment	in 5 Incel	Socially responsible business	in 3 Ince			
Use of renewable energy sources	N 8	Using products made from recyclable materials	- 8			

(Source: NMI's 2012 LOHAS Consumer Trends Database®)



The idea of Fair Trade—a movement with the goal of helping producers in developing countries to get a fair price for their products so as to reduce poverty, provide for the ethical treatment of workers and farmers, and promote environmentally sustainable practices—has come to the forefront of the sustainability movement in recent years.

Sustainability encompasses a rainbow of issues, concerns and corporate practices, each appealing to a slightly different segment of the population. Aligning your target's concerns with your corporate practices ensures you will get the most mileage out of your sustainability efforts. For instance, the latest tech gadgets, such as smartphones or gaming devices, could incorporate recycled materials to leverage Gen Y interests.

Sustainability's Link to Personal Health

Health and environmentalism have long been intertwined (through such initiatives as the Clean Air and Clean Water Acts, for example). And, of course, sustainability has manifested itself in the food and beverage market often via products that also offer health benefits, such as organic or local food. Given that one's personal health is generally more motivating than planetary health, attracting consumers on the basis of the personal health benefits a product or service offers can be an effective gateway to introducing them to other dimensions of a sustainable lifestyle.

Increasingly, the mindset, "If it's good for the environment, it must be good for me" is taking hold. As consumers become more attuned to the idea that what is around their body affects what's in their body, the link between health and sustainability solidifies. In fact, 70 percent think "a healthy body and a healthy environment go hand-in-hand," and consumers have difficulty putting many perceived potential risks, such as genetically modified (GM) ingredients, into strictly "environmental" or "health" buckets.

Because of blurring lines, it is important to speak to both benefits in marketing communications. Not only will this strengthen the position, but it will also demonstrate an understanding of consumers' values.

The Emergence of the Fair-Trade Concept

The idea of Fair Trade—a movement with the goal of helping producers in developing countries to get a fair price for their products so as to reduce poverty, provide for the ethical treatment of workers and farmers, and promote environmentally sustainable practices—has come to the forefront of the sustainability movement in recent years. Both Millennial and Boomer consumers lead the way in their recognition and understanding of the Fair-Trade certified seal.

Notably, while awareness is similar among Millennials and Boomers, Fair-Trade purchases skew toward Millennials. This suggests a disconnect between Boomers' concerns and their behavior. While they do care more about a range of sustainability topics (and have a longer history of doing so), that concern is disconnected with purchase behaviors. Perhaps their favorite brands don't come in a Fair-Trade variety, they are more price sensitive, or they are skeptical about the legitimacy or true impact of the certified products. It is also true that compared to some other "sustainable" products, such as organic food, there is not as immediate or tangible benefit to the consumer; that may also be giving Boomers pause.

Another significant implication is that among all generations, there is a gap between those who care about worker rights and those aware of or purchasing Fair-Trade products. With four in 10 consumers agreeing "completely" that they care about the rights of workers, the Fair Trade community has a much larger audience to tap into than it is currently reaching. Ensuring the primary benefits—to the consumer—are conveyed clearly and via the right channels can help to close this gap. ■

Gwynne Villota is the senior business director at the Natural Marketing Institute (NMI), an international strategic consulting, market research and business development company specializing in the health, wellness and sustainable marketplace. For more information on NMI's proprietary research tools, customized research services and insightful market reports, visit nmisolutions.com.

Generational Awareness of Fair Trade Logo/ Recent Purchase of Fair Trade Foods/Beverages



Regardless of the degree of Fair Trade logo recognition, actual purchase of fair trade products declines with age



I recognize and understand the Fair Certified logo

I've bought Fair Trade foods/ beverages in the past 3 months

Creating a Virtuous Cycle for Sustainable Change

BY JEFF DYKSTRA

n an increasingly connected global supply chain, sharing business and technical expertise can prove critical to finding long-term success and creating a more sustainable world. This is the founding principle of Partners in Food Solutions (PFS), a nonprofit, skills-based volunteer organization, that aims to strengthen the capacity of African-based food processing companies to produce high-quality, nutritious and safe food at affordable prices. Doing so improves the competitiveness of the food processing sector, while increasing demand of smallholder farmer crops, resulting in a virtuous cycle for sustainable change.



This virtuous cycle transfers to people like Mary Maritim, the owner of Cherubet, an innovative food business in Kenya. With help from her husband and three daughters, Maritim launched her business and discovered there was a strong demand for her products but she lacked industry knowledge and faced challenges in technology and management. As just one example, her lack of experience in finance often resulted in cashflow problems. She had no business plan, and her production processes were ill-equipped to keep up with Cherubet's growth.



Mary Maritim, owner of Cherubet

To help overcome these challenges, she requested assistance through the African Alliance for Improved Food Processing, a partnership between PFS, the U.S. Agency for International Development (USAID) and TechnoServe. Humphrey Otita, a finance expert and PFS volunteer from General Mills, worked with TechnoServe to help Maritim develop a business plan. The plan has given her a forecast for Cherubet's future growth. She hopes to double production by 2014, and has recently acquired a boiler and a delivery truck as part of the company's growth plans.

In addition, Cherubet employees have received training on good manufacturing practices (GMPs), hazard analysis and critical control points (HACCP) and aflatoxin testing/control through AAIFP sector-wide trainings. The trainings were organized and facilitated by TechnoServe, with assistance from PFS volunteers in developing the training manuals. TechnoServe recruited experts in the field to conduct the training sessions.

Other projects at Cherubet include a financial management system and improvements in production that will help the business produce higher-quality products at a lower cost. Maritim is happy she has found "someone to walk with" in her business. "TechnoServe and PFS have taught me how to grow," she said. "I have stopped being satisfied with doing business in a small way."

In a society where men typically provide for families, Maritim is proud to be able to support her family through her own business. She sources her grains from smallholder farmers who earn a better price by selling directly to Cherubet instead of middlemen. Cherubet now employs 10 people, with plans to create new jobs as the business grows.

Notably, this entire knowledge transfer process was done remotely. Technology is now connecting food scientists and engineers with food technologists, processors and mill operators 8,000 miles away. PFS builds relationships, shares ideas and solves problems electronically to engage African partners directly on the ground.

PFS is working with more than 400 food companies in Kenya, Ethiopia, Malawi, Tanzania and Zambia...

and impacting more than 137,000 local smallholder farmers who support an estimated 822,000 family members. Employees of PFS's corporate partners have provided nearly 500 skilled employees who have volunteered more than 40,000 hours on 192 individual projects 137,000
local smallholder farmers
822,000
family members
500
skilled employees
40,000
hours
192
individual projects

PFS brings a broad range of expertise to these food companies in Africa that include: protecting food safety; providing guidance on local regulations and certification requirements; enhancing nutrition for vulnerable populations; improving sourcing, logistics and distribution to reduce costs and improve customer service; creating sustainable knowledge transfer through remote access, web-based training and onsite training; and more.

"I feel my work as a volunteer for PFS is a perfect way to share my knowledge and expertise with people who want to improve their lives," said Jim Borek, General Mills retired senior principal engineer and PFS project volunteer. "My biggest surprise has been how simple the needs are for the School of Governing Bodies (SGBs) in Africa. If we speak the same technical language, we can take care of issues, work on projects and reach viable outcomes via phone conversations, emails, drawings and photographs." PFS is working with more than 400 food companies in Kenya, Ethiopia, Malawi, Tanzania and Zambia, and impacting more than 137,000 local smallholder farmers who support an estimated 822,000 family members. Employees of PFS's corporate partners have provided nearly 500 skilled employees who have volunteered more than 40,000 hours on 192 individual projects.

Furthermore, the benefits to businesses such as Kenya's Soy Afric are far reaching. Soy Afric's stated mission is to help reduce malnutrition in the Horn of Africa and the Great Lakes Region by producing fortified foods and sourcing grains procured locally.

Soy Afric's approach has affected more than 8,000 smallholder farmers in the region. The assistance to Soy Afric began with a brand design and marketing project and has since grown into the design and implementation of an improved process line for corn soy blend (CSB). PFS volunteers helped Soy Afric to lay out a new process blueprint for Corn Soy Blend (a common food aid product) production that included a new InstaPro extruder. The increased extrusion capacity created a need to improve the cooling step capacity. Dave Allen, a PFS volunteer, recognized that a project recently done with another client, a movable bin dryer, could be easily refitted to become the mechanized cooling system needed by Soy Afric. This new cooling system, which has since been installed, helps reduce chances of contamination, increases overall production rates and has opened new markets for Soy Afric.

Soy Afric's products are sold at 6,000 small kiosks, generating additional income for the kiosk owners. In total, about 50,000 people directly benefit from the improvements and expansion plans Soy Afric is implementing with PFS' help.

"This activity was done within a very short time. It goes to show how projects implemented in one country can be adopted



to another country," stated Johnson Kiragu, food technologist with TechnoServe in Kenya.

PFS's work in Africa is, in part, philanthropy, but it's much more than that. It's about creating shared value, and unlocking business opportunity for our African partners through knowledge sharing. Technology bridges our communities and helps unite people with purpose.

Bruce McNamer, president and CEO of TechnoServe, and PFS's implementing partner, put it this way: "The partnership we share with PFS has the potential to transform the food-processing sector and improve local access to affordable, nutritious foods. Together with USAID and volunteers from PFS, TechnoServe works with local enterprising people to strengthen their businesses and build a sustainable industry. This effort creates jobs with processors, establishes a regular market for smallholder farmers that pays them a good price for their crops and increases food security for people in poor communities." In partnership with USAID and the United States President's Emergency Plan for AIDS Relief (PEPFAR), TechnoServe hires and manages small, incountry staff to identify promising companies, and then facilitates the development and management of projects supported by skilled experts from the United States and Europe who volunteer their time and share their knowledge. A Salesforce cloud-based, remote technical platform—PFSConnect aggregates, organizes and connects this much-needed knowledge and expertise with

opportunities between corporations, continents and cultures. We have built the necessary tools, processes and partnerships, most notably with TechnoServe, that enable an end-to-end system for identifying promising companies, scoping projects, building project teams, deploying expertise and measuring impact. Now that the model and platform is built, cost to grow the network and impact are incremental. This is the primary innovation and, to our knowledge, has not been done at this scale with the caliber of companies that comprise the PFS consortium.

By 2016, PFS plans to broaden its work to include as many as 10 corporate partners, working with 500 Africa-based food processors that purchase from more than 500,000 local smallholder farmers in as many as 12 African nations, thereby, benefitting tens of millions of consumers.

Jeff Dykstra is the CEO of Partners in Food Solutions, a consortium of leading global food companies committed to improving food security by sharing the knowledge and expertise of their employees with small and growing food processors across Africa. If you'd like to be a part of creating sustainable change, please contact susan@partnersinfoodsolutions.com to learn more about how you can become a partner with Partners in Food Solutions.

PFS Corporate Partners							
Royal DSM	Buhler	Cargill	General Mills				



By 2016, PFS plans to broaden its work to include as many as 10 corporate partners, working with 500 Africa-based food processors that purchase from more than 500,000 local smallholder farmers in as many as 12 African nations, thereby, benefitting tens of millions of consumers.

Collaboration: The Key to Sustainable Agriculture Practices

BY PETER ERIK YWEMA

s executives at food and beverage companies, you know the continued commercial success of your business depends on a sustainable supply of raw agricultural materials. No cocoa beans equals no chocolate; no barley equals no beer; no tomatoes equals no sauce. More universally, no water equals no crops. Therefore, working with the whole supply chain to develop sustainable agricultural practices becomes a priority. But how can companies achieve this alongside all the other pressing priorities? How can they address issues that are bigger than their supply chain alone?



The belief is by enhancing relationships throughout the supply chain, the benefits to all are long lasting. Collaboration is the key. That is where Sustainable Agriculture Initiative (SAI) Platform comes in. SAI Platform is a global initiative helping food and beverage companies to achieve sustainable production and sourcing of agricultural raw materials. SAI Platform brings together members who share, at precompetitive level, knowledge and initiatives to support the implementation of sustainable agriculture practices. Through collaboration with millions of farmers around the world, these global members have the potential to influence farming practices in every agricultural producing country.

SAI Platform was created in 2002 by food and beverage companies sharing a common concern about the undervalued and critical state of global agriculture. Today, the mission is to provide business support to enable members to forge the way to sustainable agriculture. The belief is by enhancing relationships throughout the supply chain, the benefits to all are long lasting.

"SAI Platform leverages the power of what the food and beverage industry can achieve in the field of sustainable agriculture," said Ernesto Brovelli, Ph.D., president, SAI Platform, and senior manager, sustainable agriculture, The Coca-Cola Company. "We do this by informing the industry on pressing issues, and by creating synergies that amplify what any given company can do on its own. SAI Platform understands that sustainability is a complex issue that requires collaborative input, and we help our members define strategies that provide specific value in situations ranging from governance to implementation."

SAI Platform now has more than 50 members, from global food and beverage manufacturers to farmer co-operatives. These members represent one-fifth of the world's 100 top companies, and seven of the world's 10 top companies are members. This global network means SAI Platform facilitates huge potential impact in every agricultural region. These members are connected on a global basis to the sustainable agriculture community and have unique access to strategic organizations such as the United Nations Food and Agriculture Organisation (FAO) and Environment Programme (UNEP).



Working Together

SAI Platform members meet on a regular basis to share knowledge, identify issues and generate business solutions for sustainable agriculture, in full respect of the antitrust laws. Members are organized in six Working Groups—Arable and Vegetable Crops, Beef, Coffee, Dairy, Fruit and Water-with opportunities for expansion to other areas. Bringing together cross industry collective intelligence on a pre-competitive basis accelerates development and speed of change. Building consensus leads to joint investment and therefore cost savings for members. In addition, SAI Platform helps other organizations achieve their sustainable agriculture goals.

SAI Platform helps members of all sizes at whatever stage they have reached in their sustainable sourcing development. There is guidance, training and support for those starting out with their sustainable sourcing strategy. Organizations with advanced sustainable agriculture practices benefit from working together on better ways to implement, assess and measure sustainable agriculture practices.

Key Achievements

Principles and Practices

SAI Platform members agree the definition of sustainable agriculture is:

"Sustainable agriculture is the efficient production of safe, high-quality agricultural products, in a way that protects and improves the natural environment, the social and economic conditions of farmers, their employees and local communities, and safeguards the health and welfare of all farmed species."

Through the Working Groups, member companies have defined Principles and Practices for the sustainable production of specific commodities and are exploring ways to implement them on a wide scale. Drawing from key existing internal and external standards, SAI Platform compiled a robust set of Principles and Practices along the economic, social and environmental pillars of



sustainability. This was done for arable and vegetable crops, coffee, dairy, fruit and beef. The Principles and Practices were tested on the ground through various companies' pilot projects and programs, and are revised periodically to reflect current better practices in sustainable agriculture.

Sustainable Sourcing of Raw Agricultural Materials – A Practitioner's Guide

In March 2013, SAI Platform and six other global organizations launched the world's first practitioner's guide to sustainable sourcing of agricultural raw materials. It is intended to help practitioners in companies that are seeking to source their agricultural raw materials sustainably. The guide contains real-life best practices and experiences from global corporations within a strategic, business logicfocused framework. It empowers managers by providing a user-friendly step-by step roadmap to building and rolling out sustainable agriculture sourcing strategies effectively.

The Sustainable Sourcing Guide is the result of collaboration between the Sustainable Agriculture Initiative (SAI) Platform, the CSL learning platform of IMD's Global Center for Sustainability Leadership (IMD-CSL), the International Trade Centre (ITC), and the Sustainable Trade Initiative (IDH). Supporters are BSR, the Sedex Information Exchange (Sedex) and the Sustainable Food Laboratory (SFL).



"Sustainable agriculture is the efficient production of safe, high-quality agricultural products, in a way that protects and improves the natural environment. the social and economic conditions of farmers, their employees and local communities, and safeguards the health and welfare of all farmed species."

Farmer Self Assessment

A new tool is currently being piloted by SAI Platform members in order to help farmers assess their level of implementation of the Principles and Practices, and the sustainability impacts of such implementation. This is the world's first globally aligned Farmer Self Assessment of sustainable agriculture practices. Thirteen companies have committed to test and use SAI Platform's Farmer Self Assessment in their agricultural supply chain-Barilla, The Coca Cola Company, Danone, HEINEKEN, Innocent Drinks, Kellogg Europe, McCain Foods, Mondelez International, Nestlé, PepsiCo, CIO Parma, Unilever and Yakima Chief. The tests will run from May to November using varied crops in multiple regions.

The Farmer Self Assessment has been created for farmers to assess their level of sustainability with the aim of securing a viable production that is able to prosper and develop, economically, environmentally and socially. The Farmer Self Assessment is designed to easily assess if they are meeting the sustainable agriculture standards agreed by a large group of processors of their agricultural raw materials. The Farmer Self Assessment includes approximately 100 questions based on SAI Platform's Principles and Practices, already approved and used by members and consulted upon with many stakeholders. Using one assessment that all food and beverage companies agree adequately defines sustainable agriculture practices will reduce the assessment workload on farmers.

Sustainability Performance Assessment (SPA)

In addition to Farmer Self Assessment. SAI Platform is developing Sustainability Performance Assessment (SPA) guidelines to help measure the real impacts of practices on the sustainability of a farm. SPA is designed to provide guidance for identifying a good impact calculator to help farmers assess the level of implementation of the Principles and Practices, with regard to the economic, social and environmental pillars of their farm sustainability. SAI Platform is currently benchmarking the best calculators available to see which are consistent with the guidelines and completing the scope from primarily environmental to including indicators for animal welfare and socioeconomic performance.

High-level Sustainability Training for Executives

To help executives establish sustainability programs within their organizations, SAI Platform, together with IMD, one of the best business schools worldwide, developed a Master Class for executives on why and how to move companies towards sustainability, for the benefit of all (business, environment, society). The program has been attended by more than 100 executives during the last few years in North America, Europe and Latin America.

The next session is taking place Oct. 22 to 24, 2013, in Florida. The two-and-a-half day session has been specially developed by

Rollins College, Winter Park, FL, to include the information and activities developed in the general training program—and Practitioner's guide—while at the same time adding U.S.-specific concerns and approaches. It will include an exciting day trip to a well-known company to explore, analyze and discuss the pros and cons of their sustainable sourcing strategy and activities. More information on the training and registration is available at rollins.edu/execed/sustainability/index.html. ■

Peter Erik Ywema is the general manager of SAI Platform; reach SAI Platform at info@saiplatform.org.



X Online Resources

SAI Platform offers a robust online archive of materials, including downloadable versions of the Working Groups' Principles and Practices; the Sustainable Sourcing of Raw Agricultural Materials – Practitioner's Guide. Organizations can also become a member of SAI Platform, join the pilot for Farmer Self Assessment or to find out more information on the organization at saiplatform.org.

The Biotechnology Opportunity

Agricultural biotechnology's potential contribution to global food security and stewardship of the Earth's resources

BY MARTINA NEWELL-MCGLOUGHLIN AND KENT J. BRADFORD, PH.D.

he ultimate grand challenge of our times is nothing less than the sustainability of the biosphere and our place in it. Can we learn how to meet our needs today without compromising the ability of future generations to meet theirs? With the 7 billionth member of humanity having joined the planet, achieving global food security sustainably is the single-most important issue facing civilization and, by implication, the planet in the next 30 years.

> During the coming decades, food and agricultural production systems must be significantly enhanced to respond to a number of transformative changes, such as a growing world population; increasing international competition; globalization; increased meat consumption in developing countries; and rising consumer demands for improved food quality, safety, nutritional content and convenience. New and innovative techniques will be required to ensure an ample supply of healthy food by improving the efficiency of the global agriculture sector.



In 2012, the United Nations issued an unprecedented warning about the state of global food supplies.

To meet the world needs by 2030, it is estimated that 40 percent more food must be produced from less land and fewer inputs, using less water, energy, fertilizer and chemical pest controls. The inequities between the affluent and developing countries must be addressed using technologies that are scalable across these economic imbalances. Of immediate concern is the state of current global food reserves. In 2012, the United Nations issued an unprecedented warning about the state of global food supplies.¹ They noted failing harvests in the United States, Ukraine and other countries in 2012 eroded global food reserves to their lowest level since 1974, when the world's population was much lower. World-grain reserves are so dangerously low that economists warn another year of severe weather in the United States or other food-exporting countries could trigger a major hunger crisis. Clearly, unprecedented needs require innovative solutions.

Over the millennia, many technologies have been developed to enhance productivity of the original coterie of cultivated crops and to bring more into the domestic fold. In the latter half of the 20th century, major improvements in agricultural productivity were largely based on selective breeding programs for plants and animals, intensive use of chemical fertilizers, pesticides and herbicides, advanced equipment developments and widespread irrigation programs. This has been a successful model, more than tripling agricultural productivity and maintaining per capita food production in the face of rapid population growth. On the other hand, these improvements have brought associated problems of narrowing of the genetic base of crop plants and domestic animals, development of pest resistance to chemical control agents, adverse impacts on environmental guality and capital-intensive production methods. In addition, from a global perspective, these advances have been most intensively applied in the more affluent regions. Farmers in less developed countries

To meet the world needs by 2030, it is estimated that 40 percent more food must be produced from less land and fewer inputs, using less water, energy, fertilizer and chemical pest controls.



Food and Agriculture Organization of the United Nations

(LDCs) have had less access to many of these technologies and have lacked the capital to adopt these production methods.

In 2009, the United Nations' Food and Agriculture Organization (FAO) determined that farming in developing countries needs an annual investment of \$83 billion for production to feed the world in 2050. The 2008 World Bank Development Report emphasized, "Agriculture is a vital development tool for achieving the Millennium Development Goals that calls for halving by 2015 the share of people suffering from extreme poverty and hunger."² It recognizes that overcoming abject poverty cannot be achieved in Sub-Saharan Africa without a revolution in agricultural productivity for resource-poor farmers, many of whom are women. Innovation is essential for sustaining and enhancing agricultural productivity, especially for these resource-poor producers. New science-based products and processes that enable reliable methods for improving quality, productivity and environmental sustainability are required to meet and transcend these challenges. Erecting barriers to the development and commercialization of these new technologies and innovative methods will instead ensure less productive

and more environmentally damaging practices will expand inexorably onto more marginal lands to meet food demands.

A 2005 paper from the Royal Society suggested intensive high-yield farming on less land leaves more land free and is better for wildlife than "wildlife friendly" farming.³ In addition, slowing the pace of conversion of new land to agriculture is critical to prevent large releases of greenhouse gases that accompany such conversion.⁴ Biotech is already contributing by saving 108.7 million hectares of land from being converted to agricultural production due to increased productivity.⁵ Going forward, this technology will enable breeders to more readily adapt crops to the consequences of climate change. It is estimated merely 10 percent of the world's arable land may be categorized as free from stress and this fraction is decreasing as we anticipate niche shifts in response to climate change. To address this, we must not only develop plants for current conditions but must anticipate changing conditions by developing rapidly deployable adapted crops as the changes in environmental conditions are likely to override the adaptive potential of current crop varieties. Within the time frames available, crop improvement approaches utilizing biotechnology are likely the only ones capable of developing varieties that can maintain productivity in the face of coming abiotic and biotic stressors, including drought, salinity, cold, freezing, high temperatures, waterlogging, high light intensity, UV-radiation, nutrient imbalances, metal toxicities, nutrient

deficiencies, diseases and insects.

At its most basic level, food is the source of nutrition to meet daily requirements, but is now taking on an ever greater role in optimizing health. From the basic nutrition perspective, there is a clear dichotomy in demonstrated need between different regions and socioeconomic groups, the starkest being injudicious consumption in the developed world and under-nourishment in LDCs. Both extremes are forms of malnourishment, one resulting from inadequate supply and the other, in many but not all instances, from imprudent choices, the latter often influenced by economic considerations. From the "food deserts" of inner cities to the barren wastelands of some regions, access to a healthy diet remains elusive for many. Dramatic increases in the occurrence of obesity, cardiovascular disease, diabetes, cancer and related ailments in developed countries are in sharp contrast to the chronic malnutrition in many LDCs. Both problems require a modified food supply, and the tools of biotechnology, while not the sole solution, do have a significant role to play. Plant-based products comprise the vast majority of human food intake, irrespective of location or financial status. In some cultures, either by design or default, plant-based nutrition from a staple crop comprises virtually the total diet, while poverty also restricts the diversity of foods accessible. Thus, significant nutritional improvements can be achieved via modifications of staple crops. Ingo



In 2009, the United Nations' Food and Agriculture Organization (FAO) determined that farming in developing countries needs an annual investment of \$83 billion for production to feed the world in 2050.



Potrykus's Golden Rice is a seminal example of this opportunity.⁶ Incorporation of betacarotene biosynthesis and accumulation into rice cultivars and widespread distribution of this "packaged technology in the seed" could prevent one million to two million deaths each year by alleviating vitamin A deficiency. Yet, despite being under consideration for over a decade and subjected to a barrage of risk assessments, it is still awaiting release from regulatory purgatory and was recently the target of anti-GM vandals at the International Rice Research Institute.⁷ One has to ask what conceivable environmental risks could possibly result from Golden Rice that would offset the benefit of preventing millions of agonizing deaths from malnutrition.

Agricultural biotechnology already has helped farmers around the world boost their productivity and grow crops in more ecologically healthy fields while allowing much more efficient use of resources. This technology allows reduced tillage, which cuts down on greenhouse gas emissions, water runoff, soil erosion and fuel consumption. Improved pest control increases vields on existing acreage and reduces the pressure to convert forests and wildlands into farmland. Of the 17 million farmers who grew biotech crops in 2012, more than 15 million (90 percent) were in developing countries and, for the first time, developing countries grew more of global biotech crops than industrial countries (52 percent versus 48 percent).8 Biotechnology can speed conventional breeding programs and may offer solutions where conventional methods fail, which is good for growers, consumers and the environment. The benefits experienced by larger-scale farmers in both industrialized nations and LDCs are already considerable. Research by Brookes and Barfoot showed from 1996 to 2011, biotech contributed to increasing crop production valued at \$98.2 billion and reduced the environmental pesticide footprint by more

than 15 percent by removing 473 million kg (active ingredient) of pesticides from the environment.9 Insect-resistant maize also has a beneficial collateral effect: less insect damage results in much less infection by fungal molds, which reduces mycotoxin contamination, a serious health hazard. Likewise, insect-resistant Bt maize has led to cumulative benefits over 14 years of between \$3.2 billion and \$3.6 billion with \$1.9 billion to \$2.4 billion of this total accruing to non-Bt maize growers through a "halo" protective effect by reducing overall pest populations. In addition, there was a reduction in carbon dioxide emissions in 2011 alone of 23.1 billion kg, which is equivalent to taking 10.2 million cars off the road.

In addition to the large-scale commodities, the technology has also helped some specialty crops. Virus-resistant "Rainbow" papaya developed using biotechnology literally saved the industry in Hawaii, as no natural resistance exists in the cultivated plant to the papaya ringspot virus.¹⁰ The Rainbow papaya has also helped organic growers by reducing the viral reservoir on the island. A similar scenario may be needed to save the Florida citrus industry from a bacteria (C. liberibacter) that causes citrus greening.¹¹ As there are no known effective and sustainable control systems for this devastating pathogen, current radical and largely ineffective control methods resort to cutting down whole orchards. Biotech solutions in the form of resistance genes from other plant species have been developed for this pernicious pathogen. Likewise, antibiotic spraying to control fireblight disease in apples is utilized, even in organic production, while a resistant variety of Gala apple that was

Source: AP



Agricultural biotechnology already has helped farmers around the world boost their productivity and grow crops in more ecologically healthy fields while allowing much more efficient use of resources.



While innovation cannot occur without recoupment of investment, there is a negative public attitude toward ownership of intellectual property (IP) in seed technologies and perceived enhancement of corporate power with possible negative impacts on employment, especially on small farms.

developed using biotechnology in the late '90s lies languishing in the lab as the cost of taking it through the deregulation process is unnecessarily prohibitive.

Commercialization of the products of this technology should be just another step in a long history of human interaction with nature to meet societal needs and, as such, the same parameters of risk-based assessment should apply. Genetic modification through breeding has a long history of safe utilization for crop improvement; biotechnology simply extends those benefits through more precise methods. Most essential is a regulatory framework that ensures adequate protection of the consumer and the environment while not stymieing innovations that enable beneficial consequences.^{12,13} Biotech offers efficient and cost-effective means to produce high-quality food, feed and fiber, and a diverse array of novel, value-added products. Disproportionate regulatory burdens will force reliance on older, less effective and unsustainable systems that will inevitably have a negative impact on food security. A case in point is the Fortuna potato that contains two genes from a wild relative that confer robust resistance against late blight disease, a \$5 billion problem, obviating the need to spray with fungicides, including the organic-approved copper sulfate. Yet its developer is abandoning the EU, as it sees little hope of winning regulatory approval despite the potential benefits to growers and the environment. Similarly, transfer of a bacterial spot-resistance gene currently present in pepper varieties to tomatoes could increase yields and eliminate applications of copper pesticides.¹⁴ While farmers in the EU can afford to continue to utilize fungicides, low-input farmers with few other alternatives could greatly benefit from such genetically delivered disease resistances.

Clearly, there are a number of challenges

inhibiting development and deployment of novel resource-enhancing technologies, including technical and translational complexities that must be resolved to enable development of desirable traits. The ever-evolving toolbox for trait modification includes new tools for genome editing that will enable subtle modifications to facilitate the rapid introgression of desirable traits. In addition, mechanisms should be put in place to facilitate the downstream development, deployment and commercialization requirements. While innovation cannot occur without recoupment of investment, there is a negative public attitude toward ownership of intellectual property (IP) in seed technologies and perceived enhancement of corporate power with possible negative impacts on employment, especially on small farms. Mechanisms must be in place to reduce IP barriers, improve commercialization strategies and facilitate the transfer of advantageous technologies. Unreasonable concerns about very low-level presence of the products of biotechnology are not proportionate to actual risk and lead to over-regulation and over-reaction in global markets. Coexistence between different production systems requires reasonable tolerances, and proportionate and workable thresholds. Worldwide regulatory regimens for crop biotechnology are not harmonized among countries and are largely not science-based. Regulatory frameworks should ensure adequate protection of the consumer and the environment while not stymieing innovations that enable deployment of beneficial technologies and do not, by default, force reliance on older, less effective and less sustainable systems. The status quo is often not the most sustainable or least harmful option. An effective misinformation campaign has grown up around this technology and the agenda has been

ceded to those with questionable motives.¹⁵ More effective communication strategies must be developed using evidencebased science and appropriate context to realistically compare potential risks and benefits of new technologies versus defaulting to existing practices.

Ultimately, resources are finite and true sustainability can come only from an enlightened philosophy that promotes the development of resource-enhancing technologies. Paradoxically, those who claim to be the stalwarts of sustainability are, on occasion, the very ones who oppose the application of tools that can help to promote such sustainability. The only sure way to protect the planet's resources is not to settle into the complacency of maintaining the status quo but to engage in continual constructive change based on advancing scientific knowledge. Thus, if we are to be accountable to posterity it is not just our choice but our duty to promote and apply responsible science and technology in agricultural production and environmental stewardship.

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Adding Sustainability to the Supply Chain: **Smallholder Farmers Are the Solution**

BY PIERRE FERRARI

oday, our fragile and beautiful earth is home to seven billion people. Over the next 30 years, two, maybe three billion more will join us, putting stress on our already struggling global food system. Land grabs, increasing oil prices, biofuel development, food production, distribution failures and disturbing water shortages are converging and reshaping our world. As globalization accelerates and amplifies the challenges facing our world, it becomes increasingly clear that corporations have a direct stake in solving economic, social and environmental problems. In today's complex and competitive economy, sustainability has become an issue that companies cannot ignore. The good news is for a growing number of corporations, operating responsibly and sustainably is not just a smart investment, it's a requisite for long-term growth and profitability.



New trends in global and local sustainability are dramatically transforming today's food supply chains. In the United States, the localfood movement is expanding and people from Los Angeles to New York flock to farmers' markets where they can purchase organic produce, cage-free chickens and farmraised beef. On a global scale, corporations and nonprofits are teaming up to impact all aspects of the supply chain from empowering smallholder farmers in developing countries, many of whom are women living in poverty, to partnering with charities here in the United States to feed impoverished communities.

At Heifer International, we believe sustainable solutions begin at the very foundation of the supply chain with smallholder farmers. It is imperative for the private sector to invest in ways that empower and work fairly with these

Heifer International's Mission

To end poverty and hunger so our value chains ensure these farmers and others within the supply chain are able to live above the poverty line while creating "wealth," which we define broadly as encompassing financial, social, environmental, political and individual (health, business skills) factors. producers. Since 1944, our organization has been a recognized leader in smallholder agriculture, working to increase agroecological productivity, biodiversity, financial security and health in order to create the surplus needed to feed the world.

There are currently an estimated 650 million smallholder farmers worldwide. These smallholder farmers produce 80 percent of the developing world's food and yet many live below the poverty line, according to the Food and Agriculture Organization of the United Nations. By partnering with businesses, nonprofits and collaborative partners, Heifer works to develop "pro-poor wealth-creating value chains" in order to implement systematic change and satisfy market demand for products. Our mission is to end poverty and hunger so our value chains ensure these farmers and others within the supply chain are able to live above the poverty line while creating "wealth," which we define broadly as encompassing financial, social, environmental, political and individual (health, business skills) factors.

Green Mountain Coffee Roasters Inc. (GMCR) and Danone® have formed high-impact partnerships with Heifer that strengthen value chains, engage employees and enhance brand value while building knowledge and business skills, and strengthening the communities of rural farmers. Heifer brings many unique assets to our corporate partnerships, but it all begins with helping corporations deepen their





Green Mountain Coffee Roasters and Heifer began a partnership in 2002 that today is helping coffee-growing families in Guatemala, Mexico, Honduras, Nicaragua and Peru achieve healthy, sustainable livelihoods despite extreme seasonal changes in household income.

Source: GenBug via Flickr

relationships with smallholder farmers—this enables them to implement Fair Trade, source local ingredients to improve food safety and discover innovative ways to decrease food waste.

The first step corporations can take to meaningfully impact the sustainability of their supply chain is to review current commodities and understand where small-scale farmers can play a role. As part of our pro-poor value chain approach, we encourage corporations to review commodities where farmers can truly benefit. For example, commodities such as wheat, soybeans and rice are dominated on a global scale by industrial farming systems and a small-scale farmer simply would not be able to compete.

Danone, a multi-national corporation and one of the fastest-growing food companies in the world, identified a need in the Ukraine to source local milk and strawberries. In the Ukraine, where there is a growing domestic demand for dairy products, Danone's partnership with Heifer empowered rural farmers by implementing dairy cooperatives that provide training in modern techniquessuch as testing bacteria and fat levels of milk to ensure the highest quality-as well as negotiating contracts in their favor in order to sell products at a fair market price. In addition to agriculture and business development training, the cooperatives provide shared agricultural services (veterinarians, milk collection and cooling, fodder preparation, etc.) and milk and storage equipment to improve productivity and quality as well as ensure these rural farmers can compete in the national-and international-dairy market.

The wealth-creating value chain approach also includes building social capital (essentially, the ability to bring a community together), an indispensable component of a values-based, holistic community development model. When Danone approached farmers in this region, the farmers initially refused to participate as the aftermath of Soviet rule instilled distrust, leading to a significant divide and isolation in the community. As a result, farmers often became victims of middlemen who charged unfair fees and competitors who improperly handled their milk, resulting in poor quality. The cooperatives have directly improved trust among the community while improving the local dairy supply.

Once corporations identify an opportunity to engage with smallholder farmers, they must implement strategies for adhering to Fair-Trade policies—dealing "fairly" is core to achieving sustainability. To do this efficiently, corporations need to implement regular evaluations and surveys to ensure they are fairly paying the farmers engaged in their supply chain. To take this one step further, corporations can implement evaluations to ensure the livelihoods of their farmers by uncovering social, cultural or environmental issues that might affect them and implementing solutions. For example, there's cyclical food insecurity in the coffee supply chain that results in chronic hunger and malnutrition in the coffee growing communities around the world. Known as los meses flacos-thin months-in Central and Latin America, this period begins a few months after the coffee harvest, when families' coffee earnings are depleted and

prices for food staples such as corn and beans are high.

GMCR and Heifer began a partnership in 2002 that today is helping coffee-growing families in Guatemala, Mexico, Honduras, Nicaragua and Peru achieve healthy, sustainable livelihoods despite extreme seasonal changes in household income. This partnership focuses on improving food security and nutrition by diversifying farm production and promoting family consumption of highly nutritious food; increasing income by linking farmers to alternative markets for the sale of surplus organic and local produce; and strengthening the business, agricultural and community leadership skills of coffee growers through local and regional coffee cooperatives. Through a study conducted by the International Center for Tropical Agriculture (CIAT), GMCR learned farmers were suffering from three to eight months of seasonal hunger known as the thin months. This issue was raised through research. which businesses of all sizes can implement from the start to ensure the farmers engaged in their supply chains are better able to meet their daily needs.

For food and beverage businesses in the global food system, it is also imperative to demonstrate that products are safe, sourced from the highest standards and honestly labeled. From China to the Ukraine, there are many different challenges in the countries where products are sourced, and it is important to have a team of experts around the globe who work to ensure that product safety is standard and reliable. One key control to ensuring product safety is to bring food closer to home—shorten the supply chain—to create more transparency so customers can trace every step from farm to fork.

Heifer's partnership with Danone is a clear example of the benefits of locally sourced commodities. As mentioned earlier, Danone was experiencing a dairy sourcing problem in Ukraine. By marrying responsible, sustainable supply chain needs with our project partners in the field, a win-win collaboration ensured dairy farmers could lift themselves (and their families) out of poverty by connecting to a steady market demand for their milk. The partnership started with milk, but also expanded to include locally sourced strawberries.

Danone was importing strawberry puree from China and was, quite frankly, worried about food safety and quality—the company needed a local supply of strawberries that was safe and partnered with Heifer to train rural farmers to grow this commodity. This was also a "pro-poor" model since there was a need in the local market for strawberries and the farmers could diversify their sales. Through the agricultural training, the community was able to grow the strawberries efficiently and the project was expanded to neighboring villages. In the global supply chain, there are many ways to source locally for better efficiency, to create wealth, and lower transportation costs and emissions.

In addition to Fair Trade and sourcing ingredients locally, it's important to reduce food waste throughout the supply chain. In order to reduce food waste at the bottom of the supply chain, Heifer implements innovative solutions including storage devices, drying devices and collection devices. Depending on the commodity, there are many new technologies that can improve efficiency and reduce waste. For example, in Haiti we have built small granaries in the villages so people can bring their corn, cereal and other grains to dry and store them in order to decrease damage from bugs and rodents.

Heifer's East Africa Dairy Development



Project empowers dairy farmers in Kenya, Rwanda and Uganda to gain income by increasing their ownership of cross-bred cows, increasing the amount of milk their cows produce, and strengthening their relationship to formal markets so they can sell more milk. We've created cooperativehosted chilling plants to collect milk from farmers to be sold in bulk to the growing formal market. By pooling their milk, farmers make more money and also give the milk a longer shelf life—the product is refrigerated as quickly as possible so the milk doesn't spoil, reducing waste.

By implementing Fair Trade, sourcing local ingredients and reducing waste, corporations can take the steps necessary to add sustainability to the supply chain—and it all starts with the farmer. Typically smallholder farmers take the most risk, have the highest investment and receive the lowest return. If the power imbalances that hold these farmers back can be addressed now, with the cooperation of nonprofits, governments and the private sector, an end to hunger and poverty can't be far behind.

Fortunately, the issues of food security and smallholder agriculture are becoming front of mind for world leaders and successful companies. By improving sustainability in the supply chain, increasing the number of small-scale farmers in supply chains and ensuring they have a decent standard of living, we can play a major role in fixing the global food system and feeding the world. ■

Pierre Ferrari is the president and CEO of Heifer International. Learn more about Heifer at heifer.org.

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The Benefit Corporation: Balancing Profits and Social Welfare

BY JOSH LONG

op executives and board members of America's corporations are well aware of their raison d'être: to enrich shareholders. But an increasing number of for-profit companies recognize they can and should do more to benefit society.

> Legislators across the country are backing these efforts, with 19 states and Washington having passed "Benefit Corporation" legislation in an effort to promote environmental and social welfare.

In Delaware, home to more than one million legal entities and some of the nation's largest businesses, "public benefit corporations" must balance the interests of stockholders, "those materially affected by the corporation's conduct" and the "public benefit or benefits" that have been identified in incorporation paperwork.

The law is intended to ensure that benefit corporations are held accountable while still granting directors broad protection from liability. These board members are deemed to have met their fiduciary duties to balance the corporation's tripartite interests "if the director's decision is informed and disinterested and not such that no person of ordinary sound judgment would approve."

Such changes in state law are far from trivial. Traditionally, directors have owed fiduciary duties to maximize shareholder value—the environment and social welfare now and again be damned—or at least overlooked—if it interfered with the bottom line. That at least is the current philosophy in favor of benefit corporations. However, in a 2012 Harvard Law School blog, a retired attorney argued persuasively that current law doesn't restrict directors' ability to consider the interests of groups listed in benefit corporation statutes. But benefit corporation legislation makes explicit interests that a company must consider other than just the bottom line.

B-Lab Paves Way for Benefit Corporations

Without B Lab, a non-profit organization with offices in New York, San Francisco and Wayne, PA, it's hard to envision benefit corporations. Since 2007, B Lab has been certifying businesses as socalled B Corps. Among other requirements, companies seeking certification must pay a fee (ranging from \$500 to \$25,000 depending on annual sales) and meet a minimum score in an assessment that examines a company's overall impact in four main areas: governance (including the transparency of the company's practices), workers, environment and community.

"By voluntarily meeting higher standards of transparency, accountability and performance, Certified B Corps are distinguishing themselves in a cluttered marketplace by offering a positive vision of a better way to do business," B Lab explains on its website.

To date, the number of certified B Corps

Certified

(B) Corporation

WHAT IS B LAB?

A non-profit organization that certifies companies as B Corps "to meet rigorous standards of social and environmental performance, accountability and transparency." Many benefit corporations under state law are certified B Corps, but benefit corporations don't have to be certified through B Lab.



"We strive every day to be good stewards of each of these things; identifying and implementing ways to improve our environmental footprint, providing funding and service to community organizations, nurturing an employee-focused ownership culture, and maintaining the highest standards for our products and services."

---King Arthur Flour's annual benefit corporation report

totals 830 organizations in 27 countries with 60 industries participating, including food and beverage companies such as Andean Naturals, Ben & Jerry's, Bison Brewing Co., New Belgium Brewing Co., Sustainable Harvest and Plum Organics.

It was during a 2007 conference in Berkeley, CA, that 27 companies including King Arthur Flour, Give Something Back (GSB) and Comet Skateboards announced they would become the first B Corps. That was three years before Maryland signed into law the nation's first benefit corporation legislation.

Andrew Kassoy, a B Lab co-founder and former private equity investor who grew up in Boulder, CO, acknowledged the certification represented no advantage to the companies at the time. "They were adding more value than we were adding," Kassoy said in a phone interview. "It's a great example of the way in which leadership is a team sport."

Certified B Corp Holds Companies Accountable

Steve Voigt, the CEO of King Arthur Flour, was immediately sold on the B Corp concept upon meeting with B Lab's co-founders during the 2007 conference, according to Terri Rosenstock, a spokesperson for the 223-year-old company. (According to B Lab, its two other co-founders, Jay Coen Gilbert and Bart Houlahan, previously served as co-founder and president, respectively, of AND1, a \$250 million basketball footwear and apparel business).

"The reason we feel strongly about the B Lab certification is because we want to be kept accountable for the stewardship goals and promises we make," Rosenstock said. "We want to do well while doing good. Promises are easy to make and B Lab is making sure we are making good on them."

King Arthur Flour, which is entirely owned by its employees and was included in B Lab's "B Corp Best for Workers" list, also is a benefit corporation in Vermont. The Green Mountain State was the second state to pass benefit corporation legislation.

"The legal designation allows us to look beyond numbers if someone wants to buy us out," Rosenstock explained. "We can look at the impact a buy-out will have to our workers, to our community and other factors that are important to us beyond profit."

As a certified B Corp since 2008, Plum Organics recently submitted paperwork to become a public benefit corporation under Delaware law. The organic baby foods company is devoted to nourishing children and fighting childhood hunger and malnutrition in the United States. "Plum values the concept that companies should be legally accountable to operate in a sustainable and responsible manner and to balance the interests of shareholders with the broader interests of society," said Plum's co-founder and president, Neil Grimmer.

New Belgium, which makes Fat Tire Amber Ale, became a certified B Corp in the summer of 2012. B Lab's corporate assessment helped the Colorado-based brewer grade itself against third-party criteria and set goals, said Jennifer Vervier, the company's director of sustainability and strategic development.

Vervier said New Belgium—another company that is owned by its employees plans to become a public benefit corporation in Colorado, where legislation takes effect in April 2014. The public benefit will be consistent with New Belgium's practices of creating opportunities "for personal



development within the company" and functioning as "environmental stewards" and a "role model of sustainable business practices," she said.

One of New Belgium's sustainability practices can be found at its brewery in Fort Collins, where it stores methane gas—a byproduct of wastewater treatment—and uses it to generate electricity and heat. "It's always been part of our mission to use the corporate structure for social good," Vervier maintained.

The B Corp shows no sign of slowing down. B Lab welcomes roughly 25 to 30 new companies each month, according to a B Lab spokesperson, Katie Kerr.

B Corps Attract Global Interest

Twenty-three percent, or 194 B Corps, are firms in 27 countries outside the United States, according to B Lab. Some international food-related businesses include LQF in Argentina, Ouru Verde Amazonia in Brazil, Frutos in Colombia and Comercial Epullen in Chile.

"The most rapid growth of the community is outside of the United States today," Kassoy said. "Entrepreneurs in other parts of the world ... call us ... because they are inspired and don't want to feel alone in what they are doing."

In spite of growth at home and abroad, B Lab has been unable to crack the Fortune 500. Not one company on the prestigious list is a certified B Corp.

"While there are lots of large companies doing great, innovative stuff with sustainability or ESG practices, the vanguard of the movement—the leading companies—are still primarily private," Kassoy said, although he pointed out some B Corps such as Unilever's Ben & Jerry's and Campbell Soup Company's Plum Organics are subsidiaries of public companies. "The biggest way these companies are influencing the Fortune 500 today: As they are scaling, they will replace existing companies in the Fortune 500."

Environmental, Social Welfare Attracts Investors

Investors may be skeptical of the B Corp since generating monstrous returns is not the only end-game; but, Kassoy maintains the B Corp is attractive to financiers for various reasons. For instance, many investors want to mitigate environmental and social risks—think BP oil spill in the Gulf of Mexico. According to Kassoy, others realize the B Corp appeals to employees and consumers and "is critical to long-term value creation."

Finally, an increasing number of investors are looking to contribute to the greater good,

he said. "More and more investors ... are thinking about the purpose of their capital and recognize it isn't just about getting the highest financial return," Kassoy said. "They are interested in using their money to making a difference."

Josh Long is the legal/regulatory editor for Food Product Design.

Becoming a Certified B Corp

- Complete a B Impact Assessment and earn a minimum score of 80 out of 200 points
- Determine your corporate structure and state of incorporation
- Pay a fee ranging from \$500 to \$25,000 depending on annual sales
- Sign B Corp declaration of interdependence and term sheet

STATES THAT HAVE PASSED BENEFIT CORPORATION LEGISLATION:

Arizona, Arkansas, California, Colorado, Delaware, Hawaii, Illinois, Louisiana, Maryland, Massachusetts, Nevada, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia and Washington D.C.



LEED by Example, Build for the Future



ustainability continues to assert itself on the business agenda, and leading global brands are showing increased focus and innovation in the sustainability realm with defined corporate social responsibility (CSR) agendas coupled with significant financial investments.

HAN BUILDING GOUNCI LEED PLATINUM USGBC

The Best Global Green Brands 2013 Report notes consumers across all markets have a high level of mistrust when it comes to the information companies provide about their environmental efforts. For this reason, leading food and beverage brands are driving change, innovation and more efficient operations by making their sustainability efforts more transparent across every aspect of the supply chain.

In addition to this, many major corporations are investing millions to build or upgrade their infrastructure to "go green" by obtaining LEED® certification. And while the financial outlay won't show up on next month's or even next year's earnings report, the investment in the LEED green building program equals a lifetime of returns.

Why LEED?

Developed by the U.S. Green Building Council (USGBC), LEED certification is recognized as the premier mark of achievement in green building. LEED-certified buildings cost less to operate, reducing energy and water bills by as much as 40 percent. Businesses worldwide use LEED to increase the efficiency of their buildings, freeing up valuable resources that can be used to create new jobs, attract and retain top talent, expand operations and invest in emerging technologies.

Statistics from USGBC show more than 16,500 commercial buildings in the United

States have achieved LEED status, and 88 of the Fortune 100 companies currently use LEED.

Making a Difference One Footprint at a Time

The United Nations Food and Agriculture Organization (FAO) has identified food security as a major concern as the global population is estimated to reach more than 9 billion by 2050, which would double global food demand and cause considerable strain on the environment.

Forward-thinking food and beverage companies realize the need to develop new and innovative techniques to ensure an ample supply of healthy food for a growing population, while at the same time improving the efficiency of the global agriculture sector.

General Mills

In 2012, General Mills' Albuquerque operation was the first production facility, and the fourth company building, to earn LEED certification. The facility features a more aggressive recycling program that has practically eliminated the plant's waste paper, plastics, cardboard and packaging. Going green also provided a nearly 30-percent reduction in energy use over General Mills' most energy-efficient plant, primarily due to a proprietary high-efficiency oven on the production line that is used for toasting. The facility achieved more than 30-percent reduction in indoor water use due to the installation of high-efficiency faucets and low-flow plumbing, and a nearly 70-percent reduction in irrigation water after native vegetation was used for landscaping.

In 2011, ConAgra Foods Lamb Weston's Delhi, LA, processing facility was the first frozen-food manufacturing plant worldwide to earn LEED Platinum certification.

Perdue Farms

In 2013, Perdue Farms received LEED Platinum certification for the renovation of its corporate headquarters. The four-year, \$10.5 million renovation of the 94,000-square-foot building not only benefited Perdue, but also helped restore and protect the Chesapeake Bay area.

"Having LEED Platinum certification of our corporate offices helps underscore our ongoing commitment to environmental sustainability and corporate responsibility," said Jim Perdue, chairman of Perdue Farms.

Perdue's corporate office remodel incorporated technologies and methodologies to deliver a smaller environmental footprint. Key benefits include reusing 99.6 percent of existing building envelope during construction; a 42.3-percent water reduction through low-flow plumbing fixtures; integrated carbon dioxide sensors and rooftop fresh air handlers help exceed minimum air quality standards by 30 percent; a solar field supplies up to 40 percent of the total energy demand; and, a nearly 40-percent reduction in utility demand through energy efficient HVAC, lighting and on-demand hot-water heaters.

"LEED Platinum certification of the remodeled corporate offices reflects our corporate responsibility platform of 'we believe in responsible food and agriculture,' and conveys to all of our constituents an image consistent with our values, vision and aspirations," said Steve Schwalb, vice president of environmental sustainability and corporate responsibility.

ConAgra

In 2011, ConAgra Foods Lamb Weston's Delhi, LA, processing facility was the first frozen-food manufacturing plant worldwide to earn LEED Platinum certification. The plant, which primarily processes sweet potatoes, was built from the ground up



using the newest processing and packaging technologies. Operations began in September 2010.

The plant's state-of-the art equipment was uniquely designed to process sweet potatoes in the most efficient and environmentally responsible way—key for long-term, economic sustainability. The plant will eventually convert fresh sweet potatoes into many different consumer and restaurant products that will be prepared from frozen sweet potatoes.

The entire Weston LEED Platinum plant is climate controlled to increase worker productivity, safety and comfort. Climate control in such a hot, humid environment reduces condensation build up and water on the floors, reducing slip and fall hazards. Materials, such as low-VOC (volatile organic compounds) carpeting, cleaning products and paints, are used in the interior of the plant to reduce occupant exposure to airborne pollutants. Energy-saving equipment is projected to save 40 percent of the annual energy consumed at a comparable plant. Biogas, produced by treating process waste water, is piped back to the plant boilers to produce steam-the process is expected to offset approximately 20 percent of the annual natural gas demand of the plant. and prevents methane from entering the atmosphere.

Tate & Lyle

Earlier this year, Tate & Lyle's Commercial and Food Innovation Center in Hoffman Estates, IL, achieved LEED Gold certification in the Commercial Interiors category



ConAgra's state-of-the art equipment was uniquely designed to process sweet potatoes in the most efficient and environmentally responsible way.



Tate & Lyle's Commercial and Food Innovation Center in Hoffman Estates, IL, features a state-of-the-art culinary kitchen.



This year, Tate & Lyle's Commercial and Food Innovation Center in Hoffman Estates, IL, achieved LEED Gold certification in the Commercial Interiors category.

that recognizes working spaces in leased commercial buildings that are healthy, productive places to work, are operated and maintained efficiently, and have a reduced environmental footprint.

The facility achieved LEED rating for its water and energy efficiency, management of materials and resources, innovation in design and the quality of the indoor environment.

"From the outset, we were committed to designing and fitting out our new Commercial and Food Innovation Center in a responsible and sustainable way. Receiving LEED Gold certification represents a significant achievement for everyone involved in the project, and great credit goes to our employees for actively supporting a culture of efficiency and sustainability in the way we maintain and operate the center," said Karl Kramer, president, innovation and commercial development for Tate & Lyle.

In addition to receiving LEED Gold certification for its Commercial and Food Innovation Center in the United States, Tate & Lyle's new global headquarters in Central London received a BREEAM® Offices rating of Excellent at the design stage. BREEAM® is an environmental assessment and rating system for sustainable building design, construction and operation.

Starbucks

For Starbucks, one of the best ways to reduce its impact on the planet is to design and build stores in an environmentally responsible way by utilizing energy- and water-saving strategies, and by choosing to use green building materials and construction methods.



Starbucks joined USGBC in 2001 and collaborated with the organization to help develop the LEED for Retail rating system, an effort that incorporated retail business strategies into the LEED for New Construction and Commercial Interiors rating systems. The company opened its first LEED-certified store in 2005; in 2009, Starbucks became one of the first retailers to join USGBC's LEED Volume Certification pilot program.

In 2012, Starbucks announced it was implementing green building strategies in its

retail stores with the goal that all of its new company-owned stores are built to be able to be LEED certified. As the first retail company to take this building approach globally, Starbucks has experienced success in some geographic areas and challenges in others. In 2012, it built 69 percent of its new global company-owned stores to achieve LEED, but had difficulty applying the program in regions where LEED was not as established. Going forward, the company will explore additional strategies to bring 100 percent of its stores to a sustainable building standard.

Currently, Starbucks has certified 207 stores in 17 countries. Five of its stores are in Thailand, including Porto Chino—the first LEED Gold store for Starbucks in all of Asia. The store includes the use of recycled coffee grounds in table tops; and lowemitting materials for adhesives, sealants, paints, coatings and flooring. More than 10 percent of materials were extracted within 500 miles and more than 45 percent lighting power savings through the use of efficient LED fixtures.

Starbucks also has 30 stores pending certification, which will bring a total of 237 stores with plans to continue submitting stores for LEED certification each month. At the same time, the company is actively working to effectively adapt green building strategies in a variety of geographical regions.





In 2003, Nestlé Waters North America became the first food and beverage manufacturer in the United States to receive LEED certification for its Stanwood, MI, plant.



100 percent of all office equipment and appliances in the building are Energy-Star rated

Nestlé Waters North America

In 2011, Nestlé Waters North America announced its headquarters in Stamford, CT, received LEED Gold certification, marking the company's 10th LEED-certified building. Overall, Nestlé Waters has more than 3.7 million square feet designed and built to meet LEED standards.

In 2003, the company became the first food and beverage manufacturer in the United States to receive LEED certification for its Stanwood, MI, plant. In its 2008 Corporate Citizenship Report, Nestlé Waters pledged to have all newly constructed buildings meet LEED certification.

The Stamford headquarters opened in October 2010. Some of the its green features include a white roof to reduce use of heating and air conditioning; low-energy/ high-efficiency lighting systems and low-flow water fixtures in bathrooms; and convenient recycling in logical locations such as kitchens and coffee bars. Beyond LEED-certified buildings, the company also works to reduce its environmental footprint by advocating for improved bottle recycling and preserving more than 14,000 acres of land near its spring water sites.

Since 2003, Nestlé Waters' additional LEED-certified facilities have helped the company reduce energy use by 1.5 million kWh, carbon emissions by 2.1 million pounds and water use by 9 million gallons.

United Natural Foods

UNFI—an independent national distributor of natural, organic and specialty foods and related products, including nutritional supplements, personal care items and organic produce—has built multiple LEEDcertified buildings and is pursuing LEED certification on several new projects.

Its 535.000-square-foot distribution center in Denver was granted LEED status in July 2013 and is anticipated to achieve LEED Gold status. It was the first UNFI net zero-waste facility, with key achievements including: the use of LED lighting in freezers; 100 percent of all office equipment and appliances in the building are Energy Star rated; energy reduction of 50 percent when compared to a typical building of similar size and function; 100 percent of wood installed is Forest Stewardship Council (FSC) Certified; 20 percent of all building materials made with recycled content: and total water use reduction of 50 percent when compared to a typical building of similar size and function. ■

Judie Bizzozero is a senior editor with Food Product Design.

Nestlé also works to

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water sites

for improved bottle

Packaging Drives Home Sustainability Positioning

Cascadian Farm released the first-ever cereal box liner made from renewable plant sources

BY JENNIFER JORGENSEN

ccording to the fifth annual Tork Study, 78 percent of consumers say they purchase "green" products and services, up from 69 percent in 2012, illustrating consumers are looking to food companies to provide products that meet their needs, tastes and, more than ever, ethical and value standards.

In an initiative to do the right thing for our products and consumers, and to demonstrate our ongoing commit-ment to sustainability, Cascadian Farm recently rolled out the first cereal box liner made in part from biobased materials. The new liner, used in our Cinnamon Crunch cereal, features a new



inner bag is made from up to 57-percent plant-based polyethylene that carries a USDA Bio-Based Product certification versus conventional liners that are 100-percent petroleum-based. Using plant-based resources that can guickly and naturally be replenished allows us to take another small step toward being aligned with the land. The new liner does not change the recyclability of the package. It is still able to be recycled through in-store recycling programs in many communities. The hope is to package all of our oats, squares and flakes cereal products with the new liner by January 2014, and drive further innovation toward a 100-percent plant-based liner.

The hope is to package all of our oats, squares and flakes cereal products with the new liner by January 2014, and drive further innovation toward a 100-percent plant-based liner. Concurrent with the product release, we are using this opportunity to use our product packaging to communicate our initiative. The box features a "We're Growing a Better Package" logo that explains the plant-based material in the inner bag. The side of the box features a USDA certification noting the package is bio-based.

The effort to introduce new plant-based packaging is part of our mission to protect the earth; since the company was started more than 40 years ago, the founder recognized the delicate balance between nature and humans. From the very start at Cascadian Farm's original farm in the foothills of the North Cascade Mountains, we've farmed in a way that helps to preserve the soil and safeguard the rivers and streams around us. Through our farm-ing practices, manufacturing processes and our packaging, we strive to make conscious choices and find sustaina-ble solutions that we can all feel good about. ■

Jennifer Jorgensen is the marketing director for Cascadian Farm Cascadian Farm Cinnamon Crunch cereal To learn more about Cascadian Farm visit cascadianfarm.com. Vice President, Health & Nutrition Vice President, Sales, Health & Nutrition Strategic Account Director

Insight Through the Value Chain

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The FPD Boardroom Journal explores concepts being debated at the boardroom level that impact business planning and strategy in the food and beverage market in a digital format, delivering content in an easy-to-consume manner with complementary assets such as video,

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