HARVARD Kennedy School
Corporate Social Responsibility Initiative

Business Fights Poverty



Collaborating for Change in Sugar Production: **Building Blocks for Sustainability at Scale**

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All errors and omissions are the authors' own.

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Foreword

As part of a system that moves food and beverages from production to consumption, companies, industry associations, government bodies, and civil society groups share responsibility for addressing a complex set of challenges. These include improving food security and nutrition, ensuring environmental and economic sustainability, respecting human rights, promoting safe products and working conditions, and strengthening the livelihoods and resilience of low-income producers and workers. This is easy to say, but extremely difficult to achieve in practice.

The local, national and global value chains of the world's most important agricultural commodities are often highly complex. Whether a commodity's importance is defined in terms of levels of production and consumption, financial value, its relevance to food security or a combination of these, its value chain is usually influenced by a wide array of often conflicting political and economic interests and in many cases, by diverse cultural traditions. The value chains of most agricultural commodities are also populated by thousands if not millions of different actors. These actors range from producers, traders, processors, manufacturers and retailers to policy makers, regulators, investors and advocates. They almost always have diverse goals and incentives.

One of the greatest leadership challenges of our generation is to identify ways to align these diverse goals and incentives in a manner that will ensure food security and nutrition for a global population that will reach nine billion by 2050, without undermining the environmental and socio-economic systems needed to sustain such food production. The interaction between public policies and market dynamics will continue to play the central role in determining the outcome of this challenge. At the same time, we envisage that new models of dialogue and partnership between large food and beverage companies and other key stakeholders will play an increasingly important role.

For almost a decade, the CSR Initiative at the Harvard Kennedy School and Business Fights Poverty have worked together to explore different models of engagement between large companies and other key actors to tackle complex development challenges. This report is part of our ongoing effort to understand the challenges and the different ways in which companies can take action to help address them, both individually and in partnership with others. The focus of this report is sugar production and procurement. This is just one end of the value chain of one commodity, albeit a high-profile commodity that has been historically controversial and continues to be controversial today. We have identified six 'building blocks' that we argue can help align the incentives of sugar growers, millers, refiners, traders and buyers to achieve production that is sustainable from an environmental, social and financial perspective. We hope these 'building blocks' will serve as a useful basis for dialogue and action within the sugar sector. We also believe that they have relevance for other food commodities and in other sectors, where there are complex global value chains and a need for companies to work collectively with each other and with other stakeholders to improve social, environmental and financial performance.

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Collaborating for Change in Sugar Production: **Building Blocks for Sustainability at Scale**

Executive Summary

A higher level of environmental, social, and financial performance is now expected in sugar production and procurement—and all stakeholders must work together to achieve it.

This report aims to catalyze and frame greater dialogue among stakeholders about what a higher level of performance would look like, and the actions needed to get there.

Scope and Methodology of This Report

In this report, we use the terms "sustainability" and "sustainable production" to capture the goals of improved environmental, social, and financial performance, consistent with the United Nations Food and Agriculture Organization definition of a sustainable agricultural value chain: "profitable throughout, has broad-based benefits for society, and does not permanently deplete natural resources."

Our focus is on sugar production and procurement specifically for the food and beverage sector. Although we recognize the growing debate on the relative costs, benefits, and risks of using sugar for "food vs. fuel," the details of this debate are beyond the scope of this report. Within the food and beverage sector, we also acknowledge increasing concern about the relationships among sugar consumption, obesity, and chronic disease. The medical and public health communities are doing valuable research in this area, and the food and beverage sector is responding in a variety of ways. These are strategically important topics for all stakeholders, but are not detailed in this report.

This report establishes a framework of building blocks necessary to drive more sustainable sugar production and procurement at scale. It summarizes the progress a range of organizations and initiatives are making toward this end goal, as well as the challenges they are facing and key questions they will need to answer to accelerate change. It includes a case study on Bonsucro, which offers the only global sustainability standard focused exclusively on sugarcane and currently leads the world in certified production volume. It is based on extensive desk-based research and numerous interviews with companies across the value chain, civil society groups, and inter-governmental organizations. Interviewees and key sources from the literature are listed in the appendix.

Among commodities, sugar is one of the most familiar, and yet one of the most complex. It can be produced from two distinct raw materials, sugarcane and sugar beet, which can be grown on small family farms and massive industrial plantations. It can be used for such dramatically different purposes as food and fuel. More than 100 million tons are consumed annually. Sugar production supports as many as 100 million livelihoods—and yet many of these people remain in poverty. Environmental issues to be managed range from intensive water use to greenhouse gas emissions. Sugar is also one of the most highly regulated agricultural commodities in the world, subject to measures such as guaranteed minimum producer prices, production quotas, import quotas and duties, export subsidies, limits on the production of alternative sweeteners, and even state ownership. Partly as a result, the sector is highly fragmented, with more than 1,600 enterprises operating more than 2,500 mills and refineries in more than 100 countries.

These complex and often country-specific dynamics affect the incentives and disincentives of growers, mills, refiners, traders, and buyers to adopt more sustainable production and procurement practices. Historical levels of investment, agricultural input prices, mill capacity utilization, degree of vertical integration, and government intervention all affect production costs, market prices, and margins, and by extension the resources available for change within the system. These factors vary significantly from country to country and even company to company.

A wide variety of stakeholders within and outside the sugar value chain are working to drive more sustainable production and procurement practices. According to the International Trade Center, there are more than 40 voluntary sustainability standards applicable to sugar—and at least as many organizations and initiatives approach the challenge in other ways.

At the present time, however, incentives are not sufficiently strong or aligned across the value chain to enable more sustainable production and procurement at scale. Demand for sustainably produced sugar is still very nascent, and for the most part, it does not come with a willingness to pay higher prices. Evidence of the enhanced productivity or cost savings associated with more sustainable production is just beginning to emerge. Avoidance of risk seems like a long-term proposition for all but the biggest brand names. And the costs and competitive implications of change feel prohibitive for many companies that produce and procure sugar.

The report identifies six building blocks necessary to align the incentives of growers, mills, refiners, traders, and buyers in favor of greater sustainability at scale:

Awareness and mindsets: Sugar sector enterprises must perceive social, environmental, and economic impacts as sources of risk and opportunity, and be open to new practices.

Policy and regulatory support: Policy and regulation relating to industry operations, labor, competition, taxes, property rights, the environment, health and safety, and international trade must support, or at least not stifle, the adoption of sustainable production and procurement practices.

Business case: More sustainable production and procurement practices must be in the commercial best interests of enterprises all along the value chain, as a result of regulatory requirements, market demand, increased productivity, cost savings, mitigation of risk ranging from reputational risk to price risk, or a combination of these.

Voluntary standards and codes: Voluntary sustainability standards and company- specific codes laying out what constitute "sustainable" production practices or performance metrics must be developed and continuously improved.

Better management practices: Producers must have access to better management practices (BMPs) systems identifying environmentally, socially, and economically sustainable practices and offering operational guidance for implementing them. BMPs overlap in function with voluntary standards and codes that require the adoption of specific practices, and complement those that require the achievement of specific metrics.

Implementation capacity: Producers of all sizes, sector-wide, must have the skills and access to financing, inputs, and technologies required to implement more sustainable production practices at scale.

The next two pages summarize our findings about the progress a wide variety of stakeholders have made in putting these building blocks in place, as well as the challenges that remain and the key questions that must be answered in order to accelerate change. We are early in the game of understanding what will drive change in practices and outcomes at scale—and we hope this report helps catalyze dialogue, experimentation, and action that brings us closer to that goal.

AWARENESS AND MINDSETS

There has been notable progress raising awareness and changing mindsets, with a growing need to reach beyond the obvious targets and existing champions. How can we develop shared visions of sustainability across countries and companies?

There is some consensus on the major environmental, social, and economic issues in the sugar sector. Yet the issues vary in importance from country to country, as do trade-offs that may be involved in addressing them. At the same time, sustainability is not an end state but rather a moving target, changing as our understanding deepens and as our cultural norms and values evolve. For sustainability to go mainstream, the notion needs to be "owned" by all relevant stakeholders, including firms of all sizes, across the value chain, in different countries.

KEY TAKE-AWAY
Ongoing, multi-stakeholder dialogue that is strongly grounded at the country level and linked to the global debate will be important.

POLICY AND REGULATORY SUPPORT

Policy and regulatory support has been inconsistent, with relatively little being done to strengthen it. How are specific policies and regulations creating incentives or disincentives to produce and procure sugar more sustainably? How can coherence among policies and regulations be increased, and whose responsibility is it to advocate for any necessary reforms?

Many different kinds of policy and regulation affect incentives to produce and procure more sustainable sugar, both intentionally and unintentionally. They also affect the leverage that private approaches, such as standards and better management practices, can have.

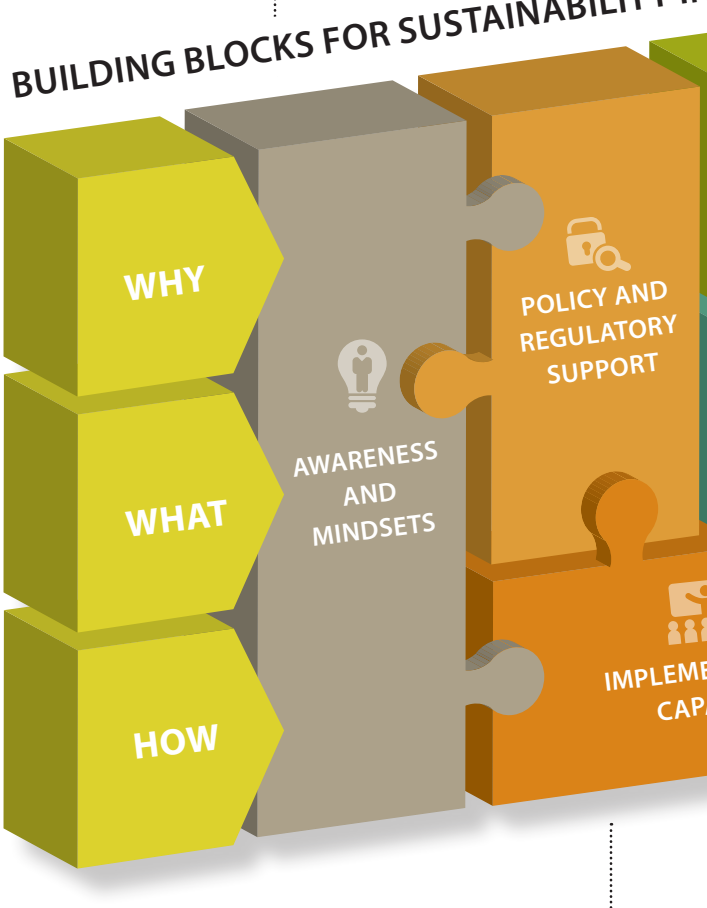
KEY TAKE-AWAY
Taking stock of what these policies and regulations are—and understanding their impacts—would help inform proactive governments and non-governmental stakeholders playing advocacy roles.

IMPLEMENTATION CAPACITY

There are good examples of implementation capacity-building, but the scale is small compared to the need, especially for smallholders. Where are the financially sustainable, scalable models of small-scale farmer capacity-building, how do they work, and how replicable are they?

Capacity-building is critical but will only scale if it becomes possible to break free from dependence on donor funding. There are promising models—for example, among national industry associations and mills that pay for capacity-building using membership fees and operating or investment budgets. Such models could enable donors to transition into more catalytic roles, helping reduce the up-front cost and risk of implementing them rather than funding them on an ongoing basis.

KEY TAKE-AWAY
Understanding these models' economics, key success factors, and enabling environments would reveal whether they can be replicated and under what circumstances.



BUSINESS CASE

The business case is currently insufficient to drive adoption of more sustainable production and procurement practices on a sector-wide scale on its own. How can we quantify the costs and benefits to inform communication and negotiation, and unlock action?

Costs and benefits will vary greatly for enterprises of different sizes, at different stages of the value chain, in different countries, with different performance baselines and levels of capacity. It is also difficult to quantify benefits like corporate reputation and long-term risk mitigation. But "it depends" is not a good enough answer to whether there is a business case for sustainability in the sugar sector. Understanding the different costs and benefits and how they accrue to different players along the value chain will help stakeholders communicate more convincingly and settle controversial issues like who should cover compliance and auditing costs.

KEY TAKE-AWAY
A number of business case studies have already been undertaken or are underway, and more are needed across a greater variety of regions and firms.

VOLUNTARY STANDARDS AND BETTER MANAGEMENT PRACTICES (BMPs)

A number of well-regarded standards have been introduced, but uptake is low, and BMPs demonstrate early results and broader, untapped potential. How can voluntary standards and BMPs work together to move a critical mass of producers to sustainability?

By offering choice in degree of difficulty, rigor and cost of verification as well as customization to local contexts, voluntary standards and BMPs could, as a group, help cover different segments of producers and facilitate progression from minimum to more advanced levels of performance. Greater comparative analysis and potentially harmonization of reporting frameworks could help, and this, too, is starting to happen.

KEY TAKE-AWAY
The growing number of voluntary standards and BMPs in the sugar sector could play complementary roles in moving a critical mass of producers to sustainability, rather than operating in parallel or in some cases competing.

1 Introduction and Objectives of This Report

There is increasing pressure on the agriculture sector to deliver food security, environmental sustainability, and economic opportunity. With the global population growing, demand for agricultural production is increasing, while natural resources are finite and climate change is adding volatility. The United Nations (UN) Food and Agriculture Organization (FAO) estimates that to feed the nine billion people expected to inhabit the earth by 2050, farmers will need to produce 60% more food than in 2005-2007.[1] Agriculture already accounts for 70% of all abstracted freshwater[2] and 30% of all human-induced greenhouse gas emissions, "a contribution comparable to that of the energy sector and far exceeding total emissions from transportation."[3] And agriculture is failing to support decent livelihoods for a significant percentage of those involved in it, especially small-scale farmers and farm workers. According to the FAO, approximately 2.5 billion rural people depend on agriculture for their livelihoods[4]; World Bank data suggest that as many as 80% of them may be living on less than $2 a day.[5] In 2013 the UN Commission on Trade and Development (UNCTAD), with contributions from experts in academia, civil society, and other intergovernmental organizations, issued a call for nothing short of transforming agricultural systems.[6]

Stakeholders across business, government, and civil society are working to transform agricultural systems using a variety of strategies. These strategies include:

- Improving production and business practices to increase profitability, environmental sustainability, and socioeconomic impact;
- Developing and adopting voluntary sustainability standards and certification schemes;
- Partnering to leverage the resources and capabilities of multiple organizations;
- Catalytic financing to reduce early-stage cost and risk; and
- Strengthening the regulatory and policy environment.

Stakeholders are employing these strategies at the company level, the country level, and the commodity level. At the company level, companies at every stage of the agricultural value chain are partnering with donors and civil society organizations to map and understand their supply chains, support small-scale suppliers, and promote more sustainable production and procurement practices. Just a few examples among many include agricultural input providers such as Jain Irrigation Systems and Syngenta, traders such as Cargill and ECOM, food and beverage manufacturers such as Mars, Mondelēz, Nestlé, SABMiller, The Coca-Cola Company, and Unilever, and retail chains such as McDonald's, Reliance, and Walmart.

At the country level, governments and national and international allies in business and civil society are developing and implementing initiatives for sustainable and inclusive agricultural development. The Beira Agricultural Growth Corridor initiative in Mozambique, for example, leverages existing transport and other infrastructure, stimulates investment, and ensures that investments are

coordinated to capitalize on synergies and address missing links in the agricultural value chain in the Beira Corridor. The initiative includes a Catalytic Fund that provides low-cost, long-term capital to early-stage businesses with demonstrated potential for commercial viability and direct benefits for small-scale farmers and their communities.[7] In Vietnam, the government and 15 companies have set up a public-private task force to drive sustainable agricultural growth by obtaining commitments to take action—for example, to pilot new business models that link small-scale farmers to markets or promote environmentally sustainable practices—and then evaluating and exchanging best practice, addressing policy issues, and combining public and private resources and capabilities to scale effective initiatives.[8]

There are also several similar efforts underway at the regional level. Grow Africa, an initiative of the African Union, the New Partnership for Africa's Development, and the World Economic Forum provides information, connections, and technical assistance to countries seeking to accelerate investments in sustainable agricultural growth across the continent in support of the Comprehensive African Agricultural Development Programme.[9] A similar initiative, Grow Asia, is being developed by the World Economic Forum in collaboration with the Association of South East Asian Nations (ASEAN).[10]

And at the commodity level, global cross-sector coalitions are tackling commodity-specific issues through a combination of local action and international market influence. The Roundtable on Sustainable Palm Oil, for example, is a membership organization comprising oil palm growers, processors, traders, consumer goods manufacturers, banks, retailers, and civil society groups that promotes a certification standard for sustainable palm oil and monitors and communicates about the impact of sustainable palm oil production around the world.[11] The Better Cotton Initiative is a similar group performing similar functions in the cotton sector.[12] There are many others—including the Forest Stewardship Council, Marine Stewardship Council, and Roundtable on Responsible Soy, to name a few.

Among commodities, sugar is one of the most familiar and yet one of the most complex. Sugar can be produced from two distinct raw materials, sugarcane and sugar beet, which can be grown on small family farms and massive industrial plantations. Processing and trading are fragmented, with large numbers of mills, refiners, and traders each handling a small share of worldwide production. Sugar can be used for such dramatically different purposes as food and fuel, and more than one hundred million tons are consumed annually. Sugar production supports as many as 100 million livelihoods—and yet many of these workers remain in poverty. Environmental issues to be managed range from intensive water use to greenhouse gas emissions.

Strong movement toward higher levels of social, environmental, and financial performance in sugar production—which, for the purposes of this report, we will call "sustainable production"—

dates back at least to the 1990s. Fairtrade International, a federation of national organizations working toward secure and sustainable livelihoods for farmers and workers, introduced Fairtrade-certified sugar in key European markets in the late 1990s, in the United Kingdom in 2000, and the United States in 2005. In that same year, the World Wildlife Fund (WWF) convened a group that would drive the development of a global, multi-stakeholder initiative that would produce a sugarcane-specific certification standard, originally known as the Better Sugarcane Initiative and branded Bonsucro in 2010. Rainforest Alliance applied the Sustainable Agriculture Network standard to sugar in 2009.[13] In 2013, Oxfam published the report "Sugar Rush," bringing attention to land acquisitions for large-scale sugarcane production and instances of negative consequences for small-scale farmers and their families.[14] Reports about kidney disease among sugarcane workers in Central America, sugarcane farmer suicides in India, and chemical runoff jeopardizing the Great Barrier Reef in Australia show that sustainability issues in the sugarcane sector are very topical indeed.[15]

The International Trade Center, a joint agency of the World Trade Organization and the United Nations, has identified more than 40 voluntary sustainability standards that apply to sugar today. These standards are incredibly diverse, ranging from the United Nations Global Compact principles for business to the industry-led BRC Global Standard for food safety and quality. They differ in the sustainability issues they cover, the type of behavior they require, the sources of leverage they employ, and the reporting and verification mechanisms they offer, ranging from self-reporting to independent third-party certification. Some of these standards apply to all industries, whereas others are specific to agriculture and one is specific to sugarcane.[16]

But sustainability is more than compliance with standards, and—conservatively—there are at least as many organizations and initiatives approaching the challenge in other ways, ranging from the civil society organization Solidaridad, which works with small-scale sugarcane farmers on the ground, to the International Finance Corporation (IFC), which invests in large sugar mills. These organizations and initiatives use different tactics to drive more sustainable sugar production. These include research, advocacy, training, facilitating access to finance, development of best management practices, consulting, and public policy dialogue with government at the global, regional, and national levels.

A higher level of environmental, social, and financial performance is expected of the sugar sector, and all stakeholders must work together to achieve it. This report aims to catalyze and help frame greater dialogue among stakeholders about what a sustainable sugar sector would look like, and how to get there—laying the foundations for more in-depth research and analysis, and for strategic planning by organizations interested in driving change from within and outside the value chain. We focus on the production of sugar for food and beverages from sugarcane, while explaining how

health concerns about the consumption of sugar, the use of sugar for fuel, and the production of sugar from sugar beet affect the overall context and drivers for sustainability. Specifically, this report:

- Provides important contextual information about the sugar sector (Section 2)
- Discusses the incentives and disincentives of enterprises within the value chain to adopt more sustainable practices, and identifies six building blocks that must be in place to align incentives all along the value chain and unlock sustainability at scale (Section 3)
- Begins to take stock of who is doing what to put those building blocks in place, and provides a very high-level summary of what is being achieved, as well as the challenges that remain (Section 4)
- Illustrates the dynamics at play through a case study of Bonsucro, which offers the world's only sugarcane-specific sustainability standard (Section 5)
- Highlights a number of key questions that sugar sector stakeholders will need to address to accelerate change going forward (Section 6)

This report has been developed on the basis of an extensive review of the literature and consultation with more than 30 stakeholders from across the value chain and in civil society, inter-governmental organizations, and the research community. Key information sources and interviewees are listed in the appendices.

2 Overview of the Sugar Sector

The sugar sector is large and complex. In 2013, small-scale farms, large plantations, mills, and refiners produced 178 million metric tons of sugar in more than 100 countries, generating $61.4 billion in revenues[17] and supporting as many as 100 million livelihoods.[18] 78% of sugar by volume and 51.6% by revenues come from sugarcane, a tropical crop, while 22% and 42%, respectively, come from sugar beet, a temperate crop, which has higher agricultural yields but is more expensive to process.[19]

Sugar can be used for food and fuel, with food uses dominating. Food and beverage manufacturers account for 51% of revenues in the sugar manufacturing industry, with grocery wholesalers and supermarkets contributing an additional 25%. Non-food users such as energy companies contribute 24%.[20]

Demand for sugar for human consumption has been increasing slowly over the past 50 years,[21] driven primarily by developing countries and emerging markets where populations are growing, incomes are rising, and processed foods are becoming more common. In developed countries, demand has been decreasing as concerns about health impacts mount.[22]

In many countries, governments intervene strongly in the sugar sector, though levels of regulation and industry assistance have been decreasing somewhat overall.[23] According to the FAO and World Bank, "The international sugar market is one of the most highly distorted agricultural commodity markets."[24] Measures such as guaranteed minimum producer prices, production quotas, import quotas and duties, export subsidies, limits on the production of alternative sweeteners, and even state ownership are used to prevent shortages, protect domestic producers, ensure trade balances, and support jobs and economic development. In many countries, sugar markets are effectively closed, although governments may grant exceptions in cases where domestic production falls short or does not meet buyers' quality requirements. As a result, approximately 70% of sugar is consumed in the countries in which it is produced; exports account for only about 30% of world sugar production.[25] Government policies promoting biofuels, especially in Brazil, also affect the sugar market, as sugarcane is currently the most efficient feedstock available for biofuels.[26]

As a result, the sugar sector is highly fragmented. Some level of vertical integration is common, with manufacturers owning refineries, mills, and plantations, and a number of the larger manufacturers are starting or acquiring manufacturing operations in multiple countries—but there are very few global players.[27] Altogether, 1,606 enterprises were involved in sugar manufacturing in 2013, owning 2,590 establishments among them.[28] The top four producers earned less than 40% of total industry revenue, a benchmark for low industry concentration.[29]

These sugar manufacturing establishments include both mills and refineries. Sugar mills process sugarcane and sugar beet into raw sugar, and refineries

FIGURE 1. **MAJOR COUNTRIES IN THE SUGAR SECTOR**

Top 5 Producers	Metric Tons Produced	Top 5 Exporters	Metric Tons Exported
Brazil	36,800,000	Brazil	25,250,000
India	27,900,000	Thailand	8,300,000
European Union	16,300,000	Australia	3,300,000
China	13,700,000	Mexico	2,158,000
Thailand	11,000,000	Guatemala	1,950,000
Top 5 Consumers	**Metric Tons Consumed**	**Top 5 Importers**	**Metric Tons Imported**
India	27,000,000	European Union	3,750,000
European Union	18,500,000	Indonesia	3,750,000
China	17,400,000	China	3,300,000
Brazil	11,355,000	United States	2,806,000
United States	10,614,000	United Arab Emirates	2,250,000

Figures are for centrifugal sugar in raw value terms. Source: United States Department of Agriculture Foreign Agriculture Service (USDA FAS). 2014. "Sugar: World Markets and Trade." Online at http://apps.fas.usda.gov/psdonline/circulars/Sugar.pdf (accessed September 10, 2014).

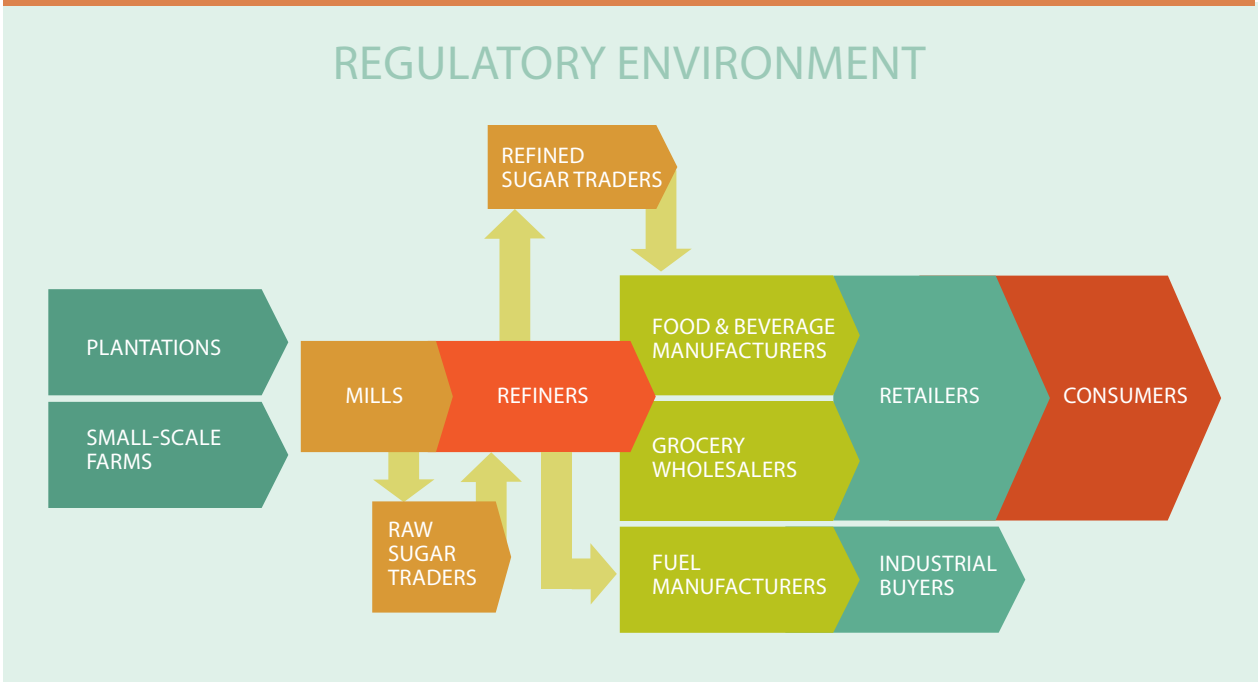
process raw sugar into refined sugar. Sugar mills typically have offtake relationships with local farmers because sugarcane, especially, is bulky and heavy, making it costly to transport—and its sucrose content deteriorates quickly, making time of the essence. Mills may own farms, and/or contract with independent farmers as "outgrowers." Sugarcane and sugar beet represent 67% of the cost of sugar production.[30]

Sugarcane farms range dramatically in size from one or two hectares (ha)[31] up to several thousand.[32] Large plantations dominate production in Brazil, the world's largest producer, whereas small-scale farmers dominate in India, the world's second-largest producer, and in many other developing countries. Data on the number, size, and production levels of sugarcane farmers worldwide is very difficult to come by, with stakeholders questioning the reliability of the various estimates—but it may be that as much as 40%[33] of sugarcane is grown by as many as 60 million small-scale farmers,[34] with the remainder grown on large plantations.

One area of the sugar sector that is not fragmented is international trading, with six traders handling approximately two thirds of world trade: Czarnikow, Sucden, Louis Dreyfus, Cargill, ED&F Man, and Bunge.[35] But as indicated earlier, world trade accounts for less than a third of the market.

Supply chain fragmentation and the bulk commodity nature of sugar make traceability

FIGURE 2. **SIMPLIFIED SUGAR VALUE CHAIN**



Source: Adapted from IIED, ProForest, and Rabobank. 2004. "Better Management Practices and Agribusiness Commodities Phase II Report: Commodity Guides." Research for International Finance Corporation (IFC) Corporate Citizenship Facility and WWF-US. Online at http://pubs.iied.org/pdfs/G00191.pdf (accessed September 10, 2014). Page 68.

challenging. Sugar is highly standardized, with little appreciable difference in taste or quality based for example on origin, as compared with other important global commodities like coffee. For this reason, it is commonly substituted or mixed based on universal grades and standards as it travels along the value chain, especially in raw form. Commodity exchanges, which account for greater than 40% of sugar purchasing worldwide,[36] use standardized sales contracts that explicitly allow for fungibility and purchase without inspection in order to facilitate trading.

Sugar production supports an enormous number of jobs, especially in isolated rural areas where it can be the main source of employment, and satisfies growing demand. At the same time, sugar production is associated with a range of social and environmental challenges. The challenges vary in importance from country to country and can be particularly troubling in developing countries, where they are compounded by a lack of government capacity or political will to address them. Developing countries produce more than 70% of sugar worldwide.[37] These challenges include:

- **Intensive water use:** Sugarcane is the third most water intensive agricultural commodity, requiring from 1,400 to 3,000 liters per kilogram. Even rainfed sugarcane cultivation can affect local water supplies by intercepting runoff into waterways and utilizing groundwater supplies. Sugar processing also requires water at several stages.[38]

- **Water pollution:** Water intensiveness is often associated with water pollution, for example from fertilizer runoff and sedimentation from fields. Sugar mills generate approximately 1,000 liters of wastewater for each ton of sugarcane processed.[39]

- **Reduced soil quality:** Sugarcane cultivation can reduce soil quality through loss of fertility due to monoculture and to erosion, when slopes are planted.[40]

- **Air pollution:** Sugarcane harvesting can be done mechanically or manually, in which case the rough stalks are generally burned first to make them easier for humans to handle, causing air pollution (and reducing sucrose content by up to 5%). In addition, many sugar mills burn bagasse, a sugarcane byproduct, as fuel, which can release fly ash into the air unless preventive equipment is installed.[41]

- **Hazardous working conditions:** Workers harvesting sugarcane manually can work long hours in intense heat and are prone to machete cuts and respiratory problems from cane burning.[42] Migrant workers may be provided with unsafe or unsanitary housing.

- **Child labor:** According to the United States Department of Labor, child labor is used to produce sugarcane in 15 countries, including such important producers as India, Thailand, Mexico, and Guatemala.[43]

- **Forced labor:** A number of countries have a history of using slave, bonded, indentured, or otherwise coerced labor in the sugar industry.[44] Force labor is still used in Bolivia, Brazil, the Dominican Republic, Myanmar, and Pakistan.[45]

- **Land ownership and land use conflicts:** Oxfam reports that at least four million hectares have been acquired for sugarcane production since 2000, often shifting land from smallholder, community, and wildlife uses to large-scale commercial use—sometimes without free, prior, and informed consent or rigorous social, environmental, or human rights impact assessments. According to WWF, the consequences have included human rights violations, loss of livelihoods for smallholders, and habitat loss for wildlife.[46]

- **Poverty among small-scale farmers:** The economics of sugarcane farming mean it is difficult to do profitably on a small scale. Small-scale sugarcane farmers in Tanzania earn an average of less than $1 a day, for example, whereas those in South Africa earn approximately $5 a day.[47]

The ubiquity and importance of sugar production, combined with the list of social, environmental, and economic challenges associated with it, is driving an increasing focus on sustainability among stakeholders within and outside the value chain. The next section will explore what sustainability means in sugar production and what is needed to achieve it.

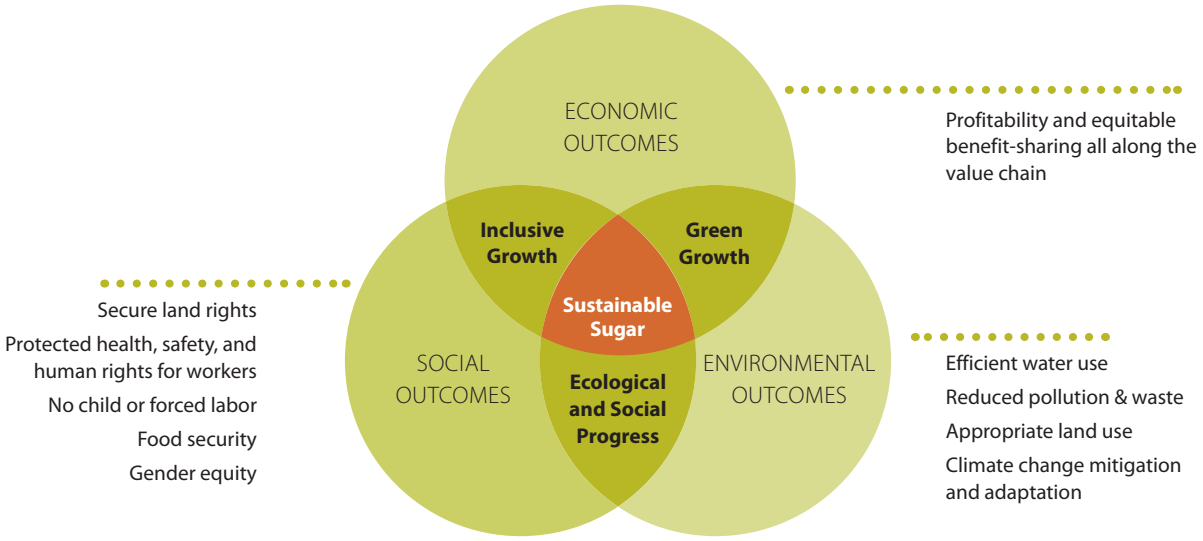
3 Building Blocks for Sustainability in Sugar Production

Sustainability is a broad term with economic, social, and environmental dimensions, and can mean different things to different people. According to the FAO, a sustainable agricultural value chain is "profitable throughout, has broad-based benefits for society, and does not permanently deplete natural resources."[48] In sugar, this could imply a range of outcomes, as depicted in Figure 3.

No matter which combination of outcomes one uses to define sustainability in the sugar sector, enterprises all along the value chain have roles to play in achieving it. From small-scale farmers to large multinational buyers, these enterprises are interconnected and interdependent, their actions affecting each other's opportunities and incentives. Very broadly speaking, growers, mills, and refiners must implement sustainable production and processing practices, and mills, refiners, traders, and large industrial buyers must procure in ways that support those practices.

Sugar sector enterprises currently have a mix of incentives and disincentives to play their roles. Generically, these are summarized in Figure 4. In reality, there is an enormous amount of specificity that is not captured here. For example, historical levels of investment, agricultural input prices, mill capacity utilization, degree of vertical integration, and

FIGURE 3. **DIMENSIONS OF SUSTAINABILITY IN SUGAR PRODUCTION**



Source: Adapted from FAO. 2014. "Developing Sustainable Food Value Chains: Guiding Principles." Online at http://www.fao.org/3/a-i3953e.pdf (accessed September 25, 2014). Page 24.

FIGURE 4. **ROLES, INCENTIVES, AND DISINCENTIVES OF SUGAR SECTOR ENTERPRISES TO ACHIEVE SUSTAINABILITY**

Enterprises	Roles	Incentives	Disincentives
Buyers	• Demand and incentivize sustainably produced sugar from suppliers (e.g. through procurement policies, premium prices, long-term contracts, forward contracts, credit trading, etc.) • Increase traceability	• Protect and enhance reputation • Reduce risk in supply chain • Satisfy niche consumer demand	• Absence of mainstream consumer demand • Cost and concerns about competitiveness, shareholder value
Traders	• Demand sustainably produced sugar from suppliers to fulfill buyer requirements • Increase traceability	• Satisfy nascent demand from large buyers • Protect and enhance reputation • Reduce risk in supply chain	• Limited customer demand • Cost and concerns about competitiveness, shareholder value
Refiners	• Improve own sustainability practices • Demand sustainably produced sugar from suppliers to fulfill buyer requirements • Increase traceability	• Satisfy nascent demand from large buyers • Protect and enhance reputation • Reduce risk in supply chain	• Limited customer demand • Cost (e.g. of sustainability and traceability measures) • Fluctuating world market prices
Mills	• Improve own sustainability practices • Demand sustainably produced sugar from suppliers to fulfill buyer requirements, and potentially support suppliers to implement improved practices • Increase traceability	• Satisfy nascent demand from refiners • Reduce risk in supply chain • Increase efficiency and productivity, including by maximizing processing capacity utilization	• Limited customer demand • Cost (e.g. of sustainability and traceability measures, certification audits, and supplier training) • Fluctuating world market prices
Large and Medium Farms	• Improve environmental, labor, and overall farm management practices	• Satisfy nascent demand from mills • Increase efficiency and productivity • Reduce risk	• Limited customer demand • Cost (e.g. of sustainability measures, certification audits) • Fluctuating world market prices
Small Farms	• Improve environmental, labor, and overall farm management practices • Aggregate to facilitate transactions with buyers and enhance access to training, inputs, technology and financing	• Satisfy nascent demand from mills • Increase efficiency and productivity • Where available, earn premiums associated with niche markets	• Limited customer demand • Cost (e.g. of sustainability measures, certification audits) • Fluctuating world market prices • Limited knowledge, skills, and access to inputs, technology and financing

government intervention all affect production costs, market prices, and margins, and therefore the financial resources available within the system to implement more sustainable production and procurement practices. These factors vary significantly from country to country and even company to company. In India, for example, it is estimated that as many as 45% of mills are cooperative-owned, and that most of these have a crushing capacity lower than what is needed to be economically viable.[49] Indian mills are further squeezed by government-mandated sugarcane prices that have risen faster than market-based refined sugar prices, and some mills have refused or been unable to pay sugarcane farmers, who worry about covering their costs of production.[50] Specific dynamics vary even within India, as evidenced by leading mills that have been able to invest in improving the sustainability of their operations and supply bases, such as DSCL, EID Parry, and Olam. The point is that specifics like these must be taken into account in order to draw any conclusions about the relative strength of any given company's incentives and disincentives to adopt more sustainable production or procurement practices.

FIGURE 5. **BUILDING BLOCKS FOR SUSTAINABILITY IN SUGAR PRODUCTION**

To catalyze sustainable sugar production and procurement on a sector-wide scale, it is necessary to strengthen and align the incentives of enterprises all along the value chain. In an ideal world, six building blocks would work together to bring this about, making it clear why enterprises must act, what sustainable production and procurement practices look like, and how to implement them.

Awareness and mindsets: Sugar sector enterprises must perceive social, environmental, and economic impacts as sources of risk and opportunity, and be open to new practices. If they do not, they cannot be expected to adopt more sustainable production and procurement practices. Some sugar sector enterprises have the necessary awareness and mindsets almost *a priori*, based on the moral values of their leaders—but most need regulation or a clear business case to convince them sustainability is important, or to enable them to act on moral convictions in competitive markets.

Policy and regulatory support: Policy and regulation relating to industry operations, labor, competition, taxes, property rights, the environment, health and safety, and international trade must support, or at least not stifle, the adoption of sustainable production and procurement practices. This is a matter of having the right policies and regulations in place as well as the political will and capacity to enforce them. Different types of policies and regulations must also be aligned in order to send clear signals to the market. Policy and regulatory support is critical to the adoption of more sustainable production and procurement practices on a sector-wide scale because it levels the playing field. By incentivizing or outright requiring value chain players to act—even if they are not driven to do so by their values, or cannot find a purely market-based business

case—policy and regulatory support ensures that players that shoulder the cost of implementing more sustainable production and procurement practices can still compete.

Business case: More sustainable production and procurement practices must be in the commercial best interests of enterprises all along the value chain. The business case could be based on regulatory compliance, market demand, increased productivity, cost savings, mitigation of risk ranging from reputational risk to price risk, or a combination of these, and would likely vary from enterprise to enterprise along the value chain. Assuming that implementing more sustainable production and procurement practices comes at some cost, at least in the short term, a link between sustainability and profitability is necessary to catalyze action at scale among businesses, which are motivated by and in some cases legally accountable for generating, if not maximizing, returns for their owners.

Voluntary standards and codes: Voluntary sustainability standards and company-specific codes laying out what constitute "sustainable" production practices or performance metrics must be developed and continuously improved. Voluntary standards, codes, and associated certification schemes typically require producers to comply with the law, and help fill governance gaps in places where the law is weak or weakly enforced. At the same time, voluntary standards and codes go beyond what is required by law, and therefore have potentially significant "pilot" roles to play—helping to shape definitions of sustainability and test different approaches that could, once proven, be adopted into law in order to raise the bar sector-wide. Voluntary standards developed through representative, consensus-based, multi-stakeholder processes could be particularly powerful in this regard, if done right.

Better management practices: Producers must have access to better management practices (BMPs) systems identifying environmentally, socially, and economically sustainable practices and offering operational guidance for implementing them. BMPs overlap in function with voluntary standards and codes that require the adoption of specific practices, and complement those that require the achievement of specific metrics. BMPs help producers understand what sustainability means in places where regulation isn't sufficiently clear or comprehensive, and where the market doesn't impose voluntary standards and codes. At the same time, even where regulation, voluntary standards and codes exist, BMPs go beyond by providing local context-specific "how to" guidance and tools.

Implementation capacity: Producers of all sizes, sector-wide, must have the skills and access to financing, inputs, and technologies required to implement more sustainable production practices at scale.

4 Progress and Challenges To Date

Many organizations and initiatives are working to bring greater sustainability to sugar production and procurement, both within and outside the value chain. These include leading growers, mills, refiners, traders, and buyers in the food and beverage and energy sectors as well as industry associations like the South African Sugar Association and Australia's CANEGROWERS, civil society organizations like Solidaridad and WWF, financial institutions like IFC and Rabobank, and research groups like Ethical Sugar.

A number of specific organizations and initiatives working to bring greater sustainability to the sugar sector from outside the value chain are listed in Figure 6, along with the building blocks they most focus on. These are some of the stakeholders most active at the global level; we hope the building blocks provide a useful dimension for more comprehensive stakeholder mapping at the country level.

Collectively, these and many other organizations and initiatives are making progress putting the building blocks for a more sustainable sugar sector in place—but significant challenges remain. The pages that follow provide a high-level description of what these organizations and initiatives are collectively achieving, and the challenges they are facing. Our goal is that this helps to catalyze and frame more detailed research and analysis, impact assessment, dialogue, and strategic planning going forward.

Progress and challenges can be summarized as follows:

1. **Awareness and mindsets:** Notable progress, with growing need to reach beyond the obvious targets and existing champions
2. **Policy and regulatory support:** Inconsistent, with relatively little being done to strengthen it
3. **Business case:** Insufficient to drive adoption of more sustainable production and procurement practices on a sector-wide scale on its own
4. **Voluntary standards and codes:** A number of well-regarded ones have been introduced, but uptake is low
5. **Better management practices:** Demonstrating early results and broader, untapped potential
6. **Implementation capacity:** Good examples, but scale is small compared to the need, especially for smallholders

FIGURE 6. **A SELECTION OF ORGANIZATIONS AND INITIATIVES AND THEIR STRATEGIES FOR GREATER SUSTAINABILITY IN SUGAR PRODUCTION AND PROCUREMENT**

Please note that the global landscape of organizations and initiatives working to bring greater sustainability to the sugar sector also includes growers, mills, refiners, traders, buyers, industry associations, and governments too numerous to list individually here.

● = Primary Focus ● = Secondary Focus ● = Not a Focus

Bonsucro: Launched in 2007, Bonsucro is a global nonprofit organization whose mission is to "foster the sustainability of the sugarcane sector through a metric-based certification scheme and by supporting continuous improvement for members." **www.bonsucro.org**

Fairtrade International: Bringing together Fairtrade organizations founded as early as 1988, Fairtrade International's mission is to "connect disadvantaged producers and consumers, promote fairer trading conditions and empower producers to combat poverty, strengthen their position and take more control over their lives." Fairtrade offers standards for a range of agricultural commodities. **www.fairtrade.net**

ProTerra: Founded in 2006, ProTerra is a nonprofit organization whose mission is "to advance and promote sustainability at all levels of the feed and food production system and assist economic operators to efficiently implement and demonstrate sustainability." ProTerra offers standards for soy and sugarcane. **www.proterrafoundation.org**

International Federation of Organic Agriculture Movements (IFOAM): Founded in 1972, IFOAM seeks to lead, unite, and assist stakeholders from all aspects of the organic movement. IFOAM includes 732 affiliates from 114 countries who certify a range of products, including sugar. **www.ifoam.org**

Rainforest Alliance (RA): Founded in 1987, RA is a global nonprofit organization whose mission is "to conserve biodiversity and ensure sustainable livelihoods by transforming land-use practices, business practices and consumer behavior." RA offers technical assistance and certification in sustainable agricultural practices, including in sugarcane. **www.rainforest-alliance.org**

South African Sugar Association (SASA): SASA provides diverse specialist services that promote the profitability, global competitiveness and sustainability of South African sugarcane growers and processors. SASA's South African Sugarcane Research Institute conducts research in crop protection, crop performance, and sugarcane varieties and offers extension services to farmers. **www.sasa.org/za**

CANEGROWERS: Representing about 80% of Australia's sugarcane growers, CANEGROWERS is a membership organization whose mission is to provide representation, leadership and services, and to promote unity in the interests of its members. It developed the CANEGROWERS Smartcane BMP program in 2013. **www.canegrowers.com.au** and **www.smartcane.com.au**

Solidaridad Network: Founded in 1969, Solidaridad is a civil society organization whose mission is to "ensure the transition to a sustainable and inclusive economy that maximizes the benefit for all." Solidaridad offers farmer training programs in a number of commodities, including sugarcane. **www.solidaridadnetwork.org**

Oxfam: A confederation whose purpose is "to help create lasting solutions to the injustice of poverty," Oxfam executes rights-based sustainable development programs, public education, campaigns, advocacy, and humanitarian assistance. Oxfam has 17 country affiliates. Its advocacy related to sugar is targeted at large food and beverage companies and their supply chains. **www.oxfam.org**

WWF: WWF is a conservation organization whose mission is "to conserve nature and reduce the most pressing threats to the diversity of life on Earth." WWF works in more than 100 countries on six continents. WWF founded the Better Sugarcane Initiative, now known as Bonsucro, and works with enterprises all along the value chain to improve sugarcane sustainability. **www.wwf.org**

Sustainable Food Lab (SFL): SFL is a consortium of business, nonprofit and public organizations that facilitates market-based solutions to accelerate the shift toward a healthy and sustainable food system. In the sugarcane sector, SFL advises companies on sustainable sourcing, conducts research, and facilitates dialogue. **www.sustainablefoodlab.org**

International Finance Corporation (IFC): IFC is the largest global development institution focused exclusively on the private sector in developing countries. Its vision is that people should have the opportunity to escape poverty and improve their lives. In sugarcane, IFC requires its clients to adhere to its Performance Standards and supports capacity-building for small-scale suppliers. **www.ifc.org**

Ethical Sugar: Ethical Sugar is a network of researchers that seeks to protect human rights and progress social and environmental standards in the global sugar industry by conducting research, sharing news, monitoring industry data, and engagement with the sector. **www.ethicalsugar.org**

AWARENESS AND MINDSETS

Notable progress, and growing need to reach beyond the obvious targets and existing champions

Sugar sector enterprises must perceive social, environmental, and economic impacts as sources of risk and opportunity, and be open to new practices. If they do not, they cannot be expected to adopt more sustainable production and procurement practices. Some sugar sector enterprises have the necessary awareness and mindsets almost *a priori*, based on the moral values of their leaders—but most need regulation or a clear business case to convince them sustainability is important, or to enable them to act on moral convictions in competitive markets.

Progress to Date

All of the stakeholders listed in Figure 6, and many more both within and outside the value chain, are helping to raise awareness and change mindsets.

Common tactics include research, dialogue, and advocacy as well as outreach and engagement in on-the-ground project work. Stakeholders have issued publications numbering in the hundreds. Some, such as Oxfam, are using their research as part of public advocacy campaigns targeting high-profile sugar buyers and traders (see Box 1). Others, such as WWF, are advocating privately for key value chain players to adopt more sustainable production and procurement practices (see Box 2). And stakeholders such as WWF and the Sustainable Food Lab are engaging companies in project-based work intended to build capacity to implement more sustainable production and procurement practices, which has the added benefit of raising awareness and helping to change mindsets of individuals within those companies—and by extension, their suppliers (see Boxes 2 and 3).

BOX 1. **OXFAM**

Oxfam provides perhaps the most notable example of global-level advocacy for change in the sugar sector. Its *Sugar Rush* report and *Behind the Brands* rankings are intended to influence consumer purchasing patterns and drive buyers to commit to more sustainable sourcing of sugar and other commodities, with ripple effects throughout their supply chains. Oxfam also advises buyers that make commitments on how to implement them.

BOX 2. **WWF**

WWF's Transforming Markets Initiative works with major buyers and their suppliers to change the way agricultural commodities including sugarcane are produced, processed, and consumed by developing voluntary standards and BMPs through multi-stakeholder processes, partnering with companies to improve outcomes in specific supply chains, and promoting sustainable financing. WWF advocates for global buyers to commit to Bonsucro-certified sugar and for South African producers to implement the SUSFARMS® BMP system.

Leading industry associations are playing important roles especially in taking awareness-raising beyond multinational buyers and their top-tier suppliers, including CANEGROWERS in Australia, UNICA in Brazil, and SASA in South Africa.

Finally, individual sustainability champions within companies and national sugar industries are helping to raise awareness and change mindsets among their colleagues and peers through dialogue, joint working, and leadership by example. Such champions include corporate social responsibility and sustainability staff and progressive procurement managers within large companies, as well as pioneering growers and mill owners.

It is worth noting that broader dialogues on sustainable agriculture and sustainable business also play a role, influencing the way issues are discussed in relevant circles and helping to get senior leaders bought into overall concepts. Prominent examples are convened by the likes of Sustainable Food Lab, the World Business Council on Sustainable Development, and the World Economic Forum.

BOX 3. **SUSTAINABLE FOOD LAB**

Sustainable Food Lab has run a multi-stakeholder forum on sustainable agriculture for many years. In sugar, it has worked with buyers to conduct research and assess risk, and organized learning journeys to help them understand their supply bases.

Moving Forward

Collectively, stakeholders have generated considerable awareness and mindset change, especially among big consumer brands and their top-tier suppliers. Sustainable sugar sourcing commitments signal the shift. For example, among the world's top ten food and beverage companies, six have explicit, quantitative sustainable sourcing targets that apply to sugar, seven have joined Bonsucro, and an additional one reports considerable work in the sugar sector.[51] There are many similar commitments by food and beverage producers and retailers outside the top ten.[52]

Notable numbers of growers and mills have also started to make the shift toward sustainability. These include, among others, more than 500 sugarcane growers implementing SUSFARMS® in South Africa,[53] more than 660 implementing Smartcane in Australia,[54] and 62,000 small-scale sugarcane growers holding Fairtrade certification in 17 countries.[55]

Nevertheless, evidence suggests that sugar sector stakeholders have a long way still to go in raising awareness and changing mindsets of players all along the value chain, sector-wide. Especially at the grower and mill levels, the sheer number of players is daunting. "Not invented here" syndrome complicates communications for global influencers, despite the cross-cutting expertise they often have, and is especially difficult to overcome in the absence of regulatory impetus or evidence of return on investment in more sustainable production and procurement practices. At the same time, it often takes time for new attitudes to become mainstream, so the scope of work remaining to be done is not necessarily cause for concern. It does suggest a need for stakeholders to sustain their energies and efforts over the long term.

POLICY AND REGULATORY SUPPORT

Inconsistent, with relatively little being done to strengthen it

Policy and regulation relating to industry operations, labor, competition, taxes, property rights, the environment, health and safety, and international trade must support, or at least not stifle, the adoption of sustainable production and procurement practices. This is a matter of having the right policies and regulations in place as well as the political will and capacity to enforce them. Different types of policies and regulations must also be aligned in order to send clear signals to the market. Policy and regulatory support is critical to the adoption of more sustainable production and procurement practices on a sector-wide scale because it levels the playing field. By incentivizing or outright requiring value chain players to act—even if they are not driven to do so by their values, or cannot find a purely market-based business case—policy and regulatory support ensures that players that shoulder the cost of implementing more sustainable production and procurement practices can still compete.

Progress to Date

Governments are influencing the drivers for sustainable sugar production through policies and regulations that apply broadly to agriculture and specifically to sugar.

Some of the most frequently cited policies and regulations have been developed in response to specific concerns. For example, concerns about deforestation led the Brazilian government to issue the National Agro-Ecological Zoning decree, known as ZAE Cana, which puts environmentally sensitive areas such as the Amazon off-limits to sugarcane expansion.[56] Concerns about child labor prompted the Salvadoran government to launch countermeasures that reduced its incidence in the sugar industry by 70% between 2002 and 2008.[57] And concerns about loss of coral cover on the Great Barrier Reef triggered an Australian government response that ultimately helped drive the development of Smartcane BMP (see Box 4).

BOX 4. **AUSTRALIAN POLICY AND REGULATORY SUPPORT FOR SMARTCANE BMP**

The impact of runoff from sugarcane farming on Australia's Great Barrier Reef triggered a variety of state and federal regulatory requirements subject to government auditing, with violators facing fines of up to AUD 10,000.[58] In 2011, the Queensland state government gave farmers the opportunity to self-regulate, agreeing to roll back these requirements if they met certain milestones and providing AUD 3.5 million in public funding to help them do it. CANEGROWERS, representing over 80% of sugarcane farmers in the country, has used this funding to roll out Smartcane BMP, a better management practices system with business, environmental, and social dimensions. Participating farmers self-assess their performance and can opt for accreditation through farm-level verification by CANEGROWERS staff including random audits by an independent environmental auditor. More than 660 farmers with more than 80,000 hectares under cane have registered for the program in less than a year of operation. Three have been accredited in one or more modules, and 46 are on the waiting list for a verification visit.[59]

There are also at least some instances of policy and regulatory support for specific voluntary standards of sustainable sugar production. Organic standards are perhaps the most significant example. No countries mandate organic production, but 88 have implemented regulatory requirements for producers wishing to market their products using the organic label.[60]

A small number of non-governmental and inter-governmental stakeholders are engaging with governments to strengthen policy and regulatory support for sustainable sugarcane production, whether specifically or as part of sustainable agriculture in general. These include the Fairtrade International Advocacy Office in Brussels, IFOAM, the United Nations Forum on Sustainability Standards, and the Donors' Network on Sustainability Standards. Similarly, bilateral and multilateral organizations such as the UK Department for International Development, Swiss State Secretariat for Economic Affairs, the World Bank, and the FAO commission research and advise governments on a wide range of sustainable agriculture matters applicable to sugarcane among other commodities.

Moving Forward

Despite these examples, and while regimes and results vary from country to country, overall policy and regulatory support has been insufficient to drive sector-wide adoption of sustainable sugar production and procurement practices to date. This is partly why voluntary standards and codes have arisen.

Stakeholders are divided as to what is needed. Some believe that current policies and regulations are to blame for the industry's problems; others suggest that a lack of political will or capacity to enforce are to blame. Some believe stronger social and environmental regulation is needed; others feel that market distorting intervention must be addressed first; still others wonder if market distortion might create opportunities for sustainable production and procurement that do not exist in more competitive markets.[61] For example, some buyers feel they lack the leverage necessary to incentivize suppliers in highly protected markets, where more sustainable alternative suppliers are not available. On the other hand, some feel that price regulation may offer suppliers sufficient margins to absorb the costs of adopting more sustainable production practices.

All of these things are probably true; more research is needed on the policies and regulations that affect the drivers for sustainable sugar, and how they do so.[62]

Another key question is which stakeholders are best placed to work with governments to strengthen and increase coherence among the wide range of policies and regulations relevant to sustainability in the sugar sector. Fairtrade certified farmers in some producing countries have said they would like Fairtrade to take a more active role in such discussions. Some stakeholders, such as Oxfam, believe that multinational buyers could effectively lobby governments to put stronger policies and regulations in place.[63] Others point out that lobbying is a common role for industry associations. Neither companies nor industry associations traditionally lobby for stronger regulation, but there may be a point at which it is in their best interests to establish clear expectations and a level playing field. When asked, most stakeholders, including standards initiatives and other civil society groups, say they lack the mandate or the capacity to advocate for public policy and regulatory reform. Developing clear plans of action will be a challenge for stakeholders who feel policy and regulatory support is needed to mainstream sustainable production and procurement practices in the highly regulated sugar industry.

BUSINESS CASE

Insufficient to drive adoption of more sustainable production and procurement practices on a sector-wide scale on its own

More sustainable production and procurement practices must be in the commercial best interests of enterprises all along the value chain. The business case could be based on regulatory compliance, market demand, increased productivity, cost savings, mitigation of risk ranging from reputational risk to price risk, or a combination of these, and would likely vary from enterprise to enterprise along the value chain. Assuming that implementing more sustainable production and procurement practices comes at some cost, at least in the short term, a link between sustainability and profitability is necessary to catalyze action at scale among businesses, which are motivated by and in some cases legally accountable for generating, if not maximizing, returns for their owners.

Progress to Date

Sugar sector stakeholders are building the business case for sustainable sugar in three primary ways: creating consumer demand, identifying risks for industrial buyers, and generating cost savings and productivity increases for producers.

Some stakeholders are working to create consumer demand at the company level. Oxfam, with its *Behind the Brands* rankings, is an example.

Other stakeholders are working to create consumer demand at the product level. For example, Fairtrade does consumer marketing and offers two different product labels intended to help consumers act on their concerns in the marketplace. While IFOAM does not offer a specific product label, the generic organic label functions much the same way.

Many sugar sector stakeholders focus on industrial buyers in addition to or instead of individual consumers, believing that they offer greater leverage and potential to catalyze change. The idea is that if a relatively small but influential set of buyers could be motivated to demand sustainable sugar, they could create a business case for traders, refiners, mills, and farmers all the way up the value chain. This business case could be based on pre-agreed price premiums (as envisioned by Fairtrade, for example) or procurement preferences, with pricing left to the market (as envisioned by the organic movement, Bonsucro, and ProTerra, for instance).

A common strategy for driving buyers to adopt more sustainable procurement practices seems to be to highlight the risks associated with failing to do so. The risks seem primarily reputational and related to brand value. Supply risk could materialize if large numbers of small-scale farmers were to abandon sugarcane for more lucrative commodities, or if climate change were to cause a persistent drop

in productivity and increase prices. At present, these risks appear less immediately motivating.

Stakeholders such as Oxfam are working in very public ways to highlight—and in the process possibly heighten—the risk that buyers face.

Others, such as WWF, Rainforest Alliance, Sustainable Food Lab, and ProForest, are working behind the scenes to help buyers map their supply chains and assess their risks.

Still others are providing mechanisms and tools to help buyers mitigate risks once they are identified. Most prominent among these are the voluntary sustainability standards initiatives discussed in the next section, which create access to certified sugar.

Finally, given difficulty on the demand side, some sugar sector stakeholders are working on the supply side business case, generating and then documenting productivity increases and cost savings associated with more sustainable production practices. These include standards initiatives such as Bonsucro, Fairtrade, ProTerra, and Rainforest Alliance, BMPs such as SUSFARMS® and Smartcane, and pioneering companies and their financial and extension services partners, such as DCM Shriram Consolidated Ltd, IFC, and Solidaridad (see Boxes 9-10 later in this report).

Moving Forward

Available evidence suggests that the business case is currently insufficient to drive sustainable production and procurement practices into the mainstream. Demand for sustainable sugar is low. Recognizing that certification is only one indicator of sustainability, it is nevertheless telling that in 2012, only 16% of certified cane sugar was sold as certified, equivalent to 0.3% of global production and 1% of exports.[64] At the same time, while some evidence of producer benefits such as improved productivity or cost savings is beginning to emerge, such evidence is not yet sufficiently widespread.

Fairtrade and the organic movement have had some success building demand among consumers, but the market is still small. Fairtrade and organic experienced compound annual sales volume growth of 22% and 13% from 2008-2011, but reached only about 550,000 and 340,000 tons of production in 2013 and 2011, respectively. Interestingly, an estimated 90% of organic production was sold as certified, compared to 40% of Fairtrade production.[65]

There may be several reasons that consumer demand for sustainable sugar remains low. One is that sugar is highly standardized, with little appreciable difference in taste or quality. Another is that more than 70% of sugar is consumed as an ingredient in processed foods and beverages,[66] and it is not the "hero" product in any of them. Few consumers have time to focus on just one of many ingredients in the products they purchase. At the same time, the number and country-specificity of sustainability issues in the sugar sector may make global consumer mass marketing a challenge. There have been relatively few high-profile advocacy campaigns on sugarcane, and as a result, it has not been associated with any single flagship issue in the public mind.

Despite limited consumer demand, stakeholders have had some success bringing about major commitments from large industrial buyers, as outlined earlier. A number of examples are provided in Box 5.

But there is little evidence of the extent to which buyer commitments have translated into more sustainable production practices up the sugar supply chain. Stakeholders generally feel that the impact to date has been limited in relation to the scale of the challenge. This may be because these are relatively early days. At the same time, it is challenging to turn these commitments into action that creates incentives for suppliers to change their production and procurement practices. There are a number of strategic choices to be made, including:

- **How high to set the bar:** Buyer requirements vary significantly, and there are mixed views on their strength. Some stakeholders feel that buyer requirements set the bar too high for the vast majority of the market, while others believe they set the bar too low to encourage truly sustainable practices. Still others believe that a low bar is needed at this time, to allow for mass market uptake and gradual strengthening as supplier capabilities improve and evidence of impact accumulates.

- **How to drive action:** Some stakeholders believe that ultimatums and short deadlines are essential to send strong signals to suppliers, and that such measures are especially needed among the worst offenders. Others point out that ultimatums do not resonate well in protected or monopolistic sugar markets, or more generally feel that partnering to help suppliers improve their practices over time is more likely to bring about lasting change in the industry as a whole—versus rewarding a small number of leading suppliers. Some stakeholders feel that price premiums are essential to enable producers to recoup the cost of more sustainable production practices. Others suggest that in some highly protected markets, producer margins may be high enough to cover costs—or more generally that leaving prices to the forces of supply and demand is the only way to break out of niche markets into the mainstream.

Anecdotal evidence suggests that many buyers today are taking a partnership approach based on preferential procurement rather than premium pricing. It is hard to tell exactly how buyers are influencing their suppliers since buyer-supplier negotiations are confidential. For example, it is not possible to determine if suppliers who produce more sustainably are being rewarded in terms of higher prices, longer-term contracts, or other benefits. In reality, it is likely that buyers are using a mix of approaches and moving at different speeds with different suppliers in different country contexts. The downside is that some suppliers feel unsure how, or how quickly, they need to act. Many suppliers feel the burden is mostly or entirely on their shoulders.

Finally, there are some compelling examples of productivity increases and cost savings associated with more sustainable production practices at both the farm and the mill levels—though they appear to be too few and far between to have motivated sector-wide adoption. A few such examples are given in Boxes 6, 8, 9, and 15. Keep in mind that levels of improvement depend on performance baselines and climactic and other differences at the farm and mill levels.

BOX 5.

BUYERS' SUSTAINABLE SUGAR SOURCING GOALS

Bacardi
"To demonstrate our commitment to promoting a sustainable sugarcane industry, we have reviewed our current plans and have set a new long-term target to source 40% of our sugarcane-derived products from sustainably-certified sources by 2017 and 100% by 2022." [67]

Ferrero
"100% refined cane sugar from sustainable sources by 2020." [68]

General Mills
"General Mills will source 100 percent of our sugarcane by 2020 from responsible and sustainable sources." [69]

Nestlé
"By 2015 – 40% of the volumes of 12 key commodities to be traceable (palm oil, soya, sugar, paper, coffee, cocoa, dairy, seafood, shea, vanilla, hazelnut, and meat, poultry and eggs)."[70]

PepsiCo
"Moving forward, PepsiCo will work with suppliers to meet a goal of sourcing 100% sustainable cane sugar by 2020." [71]

SABMiller
"By 2020, we will achieve local sustainable sugarcane standards for all of our sugarcane." [72]

The Coca-Cola Company
By 2020, "Coca-Cola will work to sustainably source its key ingredients, including cane sugar, beet sugar, corn, tea, coffee, palm oil, soy, pulp and paper fiber, orange, lemon, grape, apple and mango." [73]

Unilever
"By 2020 we will source 100% of our agricultural raw materials sustainably." [74]

BOX 6.

ASSESSING THE BUSINESS CASE FOR BONSUCRO IN BRAZIL

In 2014, the agricultural and environmental research agency Agroicone conducted a quantitative analysis of the business case for Bonsucro certification in Brazil, with funding from Solidaridad, IFC, and Shell.

Agroicone quantified costs and benefits in a number of categories:

Costs	Benefits
Compliance with the law	Higher prices
Compliance with other Bonsucro standards	Reduced inventory carrying costs
Cost of workers allocated	Reduced fines
Certification costs	Operational efficiencies
	Marketing benefits

The agency also analyzed the results by mill type: *traditional mills*, which are older with lower levels of mechanization, and *modern mills*, which are newer with high levels of mechanization.

Agroicone found that for modern mills, Bonsucro certification had a positive net present value (NPV) and a short payback period of less than two years. For traditional mills, certification had a negative NPV and a payback period of more than five years.

The biggest contributor to cost, for both modern and traditional mills, was compliance with the law—which was much higher for traditional mills. When the costs of compliance with the law were excluded from the analysis, Bonsucro certification had a positive NPV and a payback period of less than a year for both modern and traditional mills.

The biggest benefits were operational efficiencies such as reduced absenteeism and use of fertilizers and other inputs. However, the study relied on estimates, as most mills were not using those measures in their management processes. Given their importance to the business case, the authors recommend more in-depth analysis of these operational efficiencies and the use of management tools to help mills measure and maximize them.

There are a number of additional caveats about this research. The sample size was small (12 mills owned by 6 mill groups in the south-central region of the country) and not representative of all mills in Brazil or the rest of the world. According to Solidaridad, both the costs and the benefits are probably higher for most mills. Finally, analyzing the costs and benefits at the grower level was out of scope. Repeat studies that look at both mills and farms are recommended.

Source: Solidaridad commentary and presentation by Laura Antoniazzi. 2014. "The Business Case for Mill Compliance with and Certification to the Bonsucro Production Standard." Bonsucro Annual Conference, Manila, Philippines, November 13. Online at http://sugarcane-solidaridad.org/bonsucro-certification-results-benefits-sugarcane-mills (accessed December 10, 2014).

VOLUNTARY STANDARDS AND CODES

A number of well-regarded ones have been introduced, but uptake is low

Voluntary sustainability standards and company-specific codes laying out what constitute "sustainable" production practices or performance metrics must be developed and continuously improved. Voluntary standards, codes, and associated certification schemes typically require producers to comply with the law, and help fill governance gaps in places where the law is weak or weakly enforced. At the same time, voluntary standards and codes go beyond what is required by law, and therefore have potentially significant "pilot" roles to play—helping to shape definitions of sustainability and test different approaches that could, once proven, be adopted into law in order to raise the bar sector-wide. Voluntary standards developed through representative, consensus-based, multi-stakeholder processes could be particularly powerful in this regard, if done right.

Progress to Date

Voluntary standards and codes have been developed by independent initiatives, large industrial sugar buyers,[75] and public and private financial institutions.[76]

Independent, industry-wide standards are designed to create markets for sustainable sugar that go beyond the supply chain of any single buyer or the portfolio or any single investor. Certification enables producers to market their products as sustainable, and buyers to purchase them on that basis.

At the same time, the independent standards vary in approach, as summarized in Figure 7. There are several notable distinctions to be made. First, Bonsucro is the only standard that applies exclusively to sugar and that requires specific levels of performance to be achieved. The others apply to multiple commodities and require specific practices to be employed. Second, Fairtrade is the only standard that requires a premium to be paid (specifically, to the smallholders it works exclusively with). Sugar certified according to the other standards may still cost more, but supply and demand determine prices. Third, organic is a family of standards, with specifics varying from country to country.

Moving Forward

According to the Sustainable Commodity Initiative, only 2.7% of cane sugar was certified Bonsucro, Fairtrade, organic or Rainforest Alliance in 2011 and 2012, the overwhelming majority in Brazil.[77] ProTerra will add to this figure when it begins certifying the 44 mills in nine countries now working to close identified performance gaps.[78] Sugar produced in compliance with company-specific codes instead of independent standards can also be expected to increase this figure, but no data are publicly available.

Several factors are likely at play. First, the number and variety of voluntary standards and codes

FIGURE 7. **COMPARISON OF MAJOR INDEPENDENT SUSTAINABILITY STANDARDS INITIATIVES IN SUGAR**

Standards Initiative	Commodity	Issue Focus	Type of Standard	Target Group(s)	Pricing
Bonsucro	Sugar (from sugarcane)	General	Performance metric-based	*Production Standard:* Farms, Mills *Chain of Custody Standard:* Mills, Refiners, Traders, Buyers	Market-based
Fairtrade	Multiple	General, with special focus on sustainable futures for small-scale farmers	Management system-based	*Small Producers Standard:* Farms *Trade Standard:* Mills, Refiners, Traders, Buyers	Premium-based
Organic	Multiple	Special focus on personal and soil health	Management system-based	Farms	Market-based
ProTerra	Multiple	General, with special focus on avoiding genetically modified organisms (GMOs)	Management system-based	Farms, Mills, Refiners, Traders, Buyers	Market-based
Rainforest Alliance	Multiple	General	Management system-based	Farms, Mills	Market-based

appears to be causing some confusion among farms and mills. Large industrial buyers have, for the most part, been reluctant to commit to one standard over the others, instead recognizing several and/or requiring compliance with their own company-specific codes. There is very little mutual recognition among standards themselves, even those within the organic family.[79] Without comparative analysis of voluntary standards and codes on the productivity increases or cost savings they enable, it is difficult for producers to choose, and creates a risk that they may need to demonstrate compliance with multiple sets of requirements.

Second, voluntary standards and codes developed by global organizations may be technically inappropriate in some respects for local production contexts. Other times, they are considered unwelcome outside interference.

Third, the cost of compliance can get in the way. This includes the up-front cost of compliance and the ongoing cost of demonstrating compliance, which is higher when third-party auditing and certification are required. Many producers are willing to consider absorbing up-front compliance costs in order to reap benefits like productivity and cost savings. But they often want to stop short of third-party auditing and certification unless buyers are willing to pay for it, believing that buyers stand to benefit more from the added assurance in the form of reputation and brand value. Many buyers, on the other hand, would prefer to reward certified producers through greater shares of overall procurement, and do not believe it is feasible to absorb certification costs at scale.

Many see these dynamics as natural and even healthy in a sector grappling with the challenge of driving sustainable production and procurement at scale. Some stakeholders expect the controversy about costs to drive greater effort to measure the benefits, and the competition among voluntary standards to drive continuous improvement and consolidation over time. Others point out that the variety of standards on the market now could help bring a majority of producers along—with those setting a lower bar encouraging the novices to get started, and those setting a higher bar challenging the pioneers to continuously improve. Some standards attempt to facilitate such progression in and of themselves, offering different targets to be achieved at different stages.

At the same time, uptake of voluntary standards and codes is likely to remain low until further progress is made on some of the other building blocks for sustainability in the sugar sector—especially the business case for and the capacity to implement them.

BETTER MANAGEMENT PRACTICES

Demonstrating early results and broader, untapped potential

Producers must have access to better management practices (BMPs) systems identifying environmentally, socially, and economically sustainable practices and offering operational guidance for implementing them. BMPs overlap in function with voluntary standards and codes that require the adoption of specific practices, and complement those that require the achievement of specific metrics. BMPs help producers understand what sustainability means in places where regulation isn't sufficiently clear or comprehensive, and where the market doesn't impose voluntary standards and codes. At the same time, even where regulation, voluntary standards and codes exist, BMPs go beyond by providing local context-specific "how to" guidance and tools.

Progress to Date

BMPs are growing in number, developed by public institutions, private companies, and associations and partnerships for a range of different contexts and applications—from entire countries to specific companies' supply chains.

National industry associations representing the interests of farmers, mills, and/or refiners manage several notable BMPs. CANEGROWERS' Smartcane BMP in Australia, profiled in Box 4, is one example. Two others are the South African Sugar Association's SUSFARMS® and the Association of Cane Suppliers of Bariri's Assobari Protocol in Brazil (see Boxes 7 and 8).

BOX 7. **THE SOUTH AFRICAN SUGAR ASSOCIATION'S SUSFARMS®**

Managed by its research and extension division, the South African Sugarcane Research Institute (SASRI), SASA's SUSFARMS® includes business, environmental, and social practices that are required by law, that are generally expected, and that are leading edge. SUSFARMS® is currently being implemented among commercial farmers. SASRI is developing a version for small-scale, rural growers that takes into account illiteracy levels. SUSFARMS® is presently voluntary for SASA members, though some local canegrowers associations in conjunction with their local mills have made it mandatory. Since 2012, the system has been adopted on farms representing approximately 26% of land under cane in South Africa, and SASRI, through its Extension Services, is working toward an adoption target of 100% by 2020.[80] Illovo, Africa's largest sugar producer, has committed to implement the system on its estates Africa-wide.[81]

BOX 8. **THE ASSOCIATION OF CANE SUPPLIERS OF BARIRI'S ASSOBARI PROTOCOL**

In partnership with WWF, the Association of Cane Suppliers of Bariri (Assobari) created the Assobari Protocol to help its members—more than 300 farmers working an average of 50 hectares apiece—comply with environmental and labor laws and meet market demand, such as for major certifications. This means that mills procuring from farms verified as compliant with the Protocol could be considered compliant with the Bonsucro Production Standard. 24% of Assobari members have implemented the Protocol thus far, achieving productivity and revenue per hectare 15% and 22% higher, respectively, than the national average.[82]

BOX 9. **DCM SHRIRAM CONSOLIDATED LTD'S MEETHA SONA PROJECT**

DCM Shriram Consolidated Ltd (DSCL), which operates sugar mills in the state of Uttar Pradesh in India, has developed the Meetha Sona or "Sweet Gold" project in collaboration with IFC to improve the productivity of its 150,000 small-scale sugarcane suppliers in a sustainable way. The project involves training based on a pictorial manual encompassing seed management, soil improvement, water use, planting techniques, and other practices. The 2,000 suppliers that participated in the first year of the project saw average productivity increases of 23% that year, and 86% the following year.[83]

Individual mills are also developing and managing BMPs specifically for their supplier bases, sometimes in partnership with public sector and civil society partners. Australia's New South Wales Sugar Milling Cooperative and India's DSCL (see Box 9) are two examples.

Other BMPs are being developed and managed by public and private financial institutions and civil society organizations. IFC's Good Practices Management Manual for Sugarcane[84] and Reef Catchments and WWF-Australia's Project Catalyst—which has financial support from The Coca-Cola Foundation, Bayer, Syngenta, Rabobank, ANZ, John Deere, and the Australian Government—are two examples.

Moving Forward

Many sugar sector stakeholders believe that BMPs have significant potential to help drive progression from compliance with the law to continuous improvement, and to certification against voluntary sustainability standards and codes if the market demands it. Some stakeholders feel that BMPs are better-positioned to achieve uptake and impact than global standards, as a result of greater local context-specificity and industry embeddedness—often being developed and implemented by national associations or mill procurement divisions. **Some of the examples above appear to support this potential, though these are early days.**

At the same time, traditional mindsets, insufficient policy and regulatory support or business cases, and limited implementation capacity present constraints. In an interesting example, Australia's Smartcane BMP, developed as an alternative to regulation, has met with resistance from some growers who feel it is even more onerous than regulation.[85]

Confusion about the relationships among voluntary standards and BMPs may also limit their potential to serve as complementary forces for sustainable sugar production sector-wide. Management system-based standards and BMPs do not always align on the practices they require producers to implement. There may be greater potential for synergies between BMPs and performance metric-based standards such as Bonsucro, which set targets and leave it to the producer to determine how best to meet them. CANEGROWERS has applied for Bonsucro membership and comparative analysis of Bonsucro and SUSFARMS® and Smartcane BMP is taking place; some stakeholders believe that formal recognition—as between Bonsucro and the Assobari Protocol—would be valuable.

Finally, producers may require training and access to inputs, technology, and financing to implement BMPs. Implementation capacity is discussed in the next section.

IMPLEMENTATION CAPACITY

Good examples, but scale is small compared to the need, especially for smallholder farmers

Producers of all sizes, sector-wide, must have the skills and access to financing, inputs, and technologies required to implement more sustainable production practices at scale.

Progress to Date

Efforts to build producers' capacity to implement more sustainable production practices abound. Many of them focus on small-scale farmers, for whom access to information, skills, financing, inputs, and technologies is often most difficult. Examples of organizations providing these services are given in Boxes 10-14.

Perhaps most common are projects delivering training. For example, all of the organizations developing and promoting BMPs discussed in the previous section also provide training. Standards initiatives, companies, and civil society organizations also provide training.

Some sugar sector stakeholders also facilitate access to inputs and technologies. A number of governments subsidize fertilizers, for example, though this can inadvertently encourage overuse.

BOX 10. **FAIRTRADE'S PRODUCER SUPPORT SERVICES**

Fairtrade works with 1.4 million farmers and workers in 74 countries, including more than 62,000 small-scale sugarcane farmers in 17 countries. As part of its core standard, Fairtrade requires and helps farmers to form audited democratic organizations, which hold 50% of the voting rights in its highest governing body, Fairtrade International's General Assembly. Its Producer Support Services provide these small-scale farmers' organizations with training on achieving and sustaining certification, sustainable production practices, market access, financial management, succession planning, and other topics at least once a year (for 35% of the 1,200 certified sugarcane farmers' organizations, it is more than five times a year). In 2013, sales of Fairtrade sugar generated $13.3 million in premiums paid directly to these organizations.[86] Fairtrade monitoring data show that these organizations tend to reinvest more than 80% of premiums in their own institutional capacity and in services for farmers.[87] Fairtrade's Access Fund also makes loans available in collaboration with Grameen Foundation and Incofin Investment Management.

BOX 11. **SOLIDARIDAD'S FARMER SUPPORT PROGRAM**

With funding from the Netherlands Ministry of Foreign Affairs, Solidaridad's Farmer Support Program works with mills in seven countries to train farmers in better crop management practices, reaching 229,981 farmers working 194,691 hectares of land between 2012 and May 2014.[88] Solidaridad has also partnered with IFC to build awareness and support mills in the process of obtaining Bonsucro certification, for example through gap assessments of their performance against the Bonsucro standard—including four mills owned by Olam and EID Parry in India.

BOX 12. **SASA'S EXTENSION AND FINANCING SERVICES**

In South Africa, SASA is working with the government and local mills across the country to provide small-scale farmer training and facilitate access to improved sugarcane varieties suitable to specific climactic and soil conditions. One impact study showed that these efforts helped improve yields, reduce vulnerability in low rainfall years, attract more people to sugarcane farming, and increase sugarcane income in the community.[89] SASA also runs Umthombo Agricultural Finance to provide micro-loans on behalf of various funders, including industry, though South African government grants have in recent years reduced small-scale farmers' need for loans.[90]

BOX 13. **TECHNOSERVE'S DIVERSIFICATION AND MANAGEMENT SUPPORT**

Civil society organization TechnoServe is helping more than a hundred small-scale sugarcane farmers in South Africa build a management company structure to improve their yields and diversify into vegetable production in order to increase their incomes.[91] The management company will help farmers sustain new production practices and maintain market connections when TechnoServe's support comes to an end.[92]

BOX 14. **ILLOVO AND TATE & LYLE**

Mills and even refiners also provide implementation capacity-building support to farmers in their supply bases. Illovo, for example, works in partnership with canegrowers associations, the government, and development institutions to offer technical support to small-scale farmers, including some 6,000 in South Africa.[93] UK-based refiner Tate & Lyle Sugars works with seven mills sourcing from 20,000 small-scale farmers in four countries to offer training and technical advice in areas such as cane variety selection, planting techniques, land preparation, and harvesting.[94]

There are also a number of examples of stakeholders facilitating access to financing, which is often used to procure inputs and technologies and cover other operating costs.

Finally, some stakeholders help small-scale farmers organize into groups or work to strengthen existing groups, which can help counteract some of the disadvantages of small-scale production. For example, groups may be able to negotiate better prices for inputs, transport, financing, and other services or for the sugarcane they produce.

Moving Forward

Despite the number of capacity-building projects, and the number of producers they reach, sugar sector stakeholders have the sense that they pale in comparison to the scale of the need—and that the need is particularly great for the tens of millions of small-scale farmers who may account for as much as 40% of global sugarcane production.[95] Of course, small-scale farmers vary in number and share of production from country to country, and some are relatively well-positioned while others operate on the razor edge of business viability. Country-level analysis is necessary to assess the level and nature of the need. And the FAO has questioned whether strengthening small-scale farmers is a viable strategy for poverty reduction and environmental protection in the long run, saying that "the ultimate objective […] is to facilitate the transition of some of them to become sufficiently large, commercially viable farming operations and help others to transition out of agriculture altogether."[96] Projects like that of TechnoServe, profiled in Box 12 above, may help with this transition.

But in the short run, and "for the foreseeable future," more needs to be done.[97] This challenge is not unique to the sugar sector. Across commodities, organizations working to build small-scale farmers' capacity and access to financing face significant capacity and funding constraints themselves. These organizations need to be able to recruit, train, and pay a sufficient number of personnel with the right combination of technical and interpersonal skills to deliver high-quality capacity-building services to large numbers of small-scale farmers in very hands-on ways despite poor communications and transport infrastructure in many rural areas. Even large-scale farmers can require hands-on support when learning how to undertake a self-assessment or document their farm practices for the first time, particularly when regulatory compliance or standard certification is on the line. There is some sense that embedding farmer capacity-building into the business model of industry associations and mills, with membership fees and sales revenues covering the costs, holds promise. There is little data to suggest whether this is broadly replicable, but SASA, DSCL, Illovo, and others demonstrate that it is possible. Greater documentation of what works and what doesn't would be helpful.

5 Case Study: Bonsucro

Bonsucro works across all six building blocks for sustainability in the sugar sector, and offers the only global standard focused exclusively on sugarcane. The organization's experience illustrates many of the dynamics discussed in Section 4 above.

Bonsucro is a global nonprofit organization whose mission is to "foster the sustainability of the sugarcane sector through a metric-based certification scheme and by supporting continuous improvement for members."[98] Bonsucro started in 2005 as the Better Sugarcane Initiative (BSI), a collaboration of sugar buyers in the food and fuel sectors, retailers, investors, traders, producers, and civil society organizations seeking to drive more sustainable sugar production through the establishment of principles and criteria that could be applied globally using region-specific strategies and tools.[99] In 2007, core members of this group appointed a secretariat and three Technical Working Groups to begin developing a sugarcane-specific certification standard. BSI incorporated as a not-for-profit company in the UK in 2008, and after several rounds of consultation, development, testing, and refinement, officially launched the standard in 2010 using the trading name Bonsucro.

Bonsucro has a multi-stakeholder, membership-based structure, drawing together sugarcane sector representatives across the value chain and beyond in five categories:

- Farmers
- Mills
- Intermediaries (such as traders, consultants, banks, technology providers, research bodies, and others)
- End users (including food and beverage and energy companies)
- Civil society organizations

To join, members must agree to abide by a Member Code of Conduct requiring them to promote Bonsucro in their own operations, supply chains, and networks and pay annual fees ranging from £0 to £13,000 according to stakeholder type and size (smallholders are invited to join free of charge). Members elect representatives from all five stakeholder groups annually to the Board of Directors. Bonsucro draws its funding from membership fees, certification commissions of $0.075 per metric ton of certified sugar or ethanol, grants and sponsorships, training fees, conferences, and certification body licenses. Of these, membership fees and certification commissions are the largest sources, accounting for 69% and 13% respectively in fiscal year 2012-13. Bonsucro is managed by a small group of 10 staff based in London, two in Brazil, and one in Australia.

Bonsucro works across all six building blocks for sustainability in the sugar sector, though with different degrees of strategic emphasis. Roughly in order of emphasis, the sections that follow describe the organization's activities, results to date, and challenges going forward in each area.

Voluntary Standards: Currently leading the world in certified production volume, but with some distance to travel to reach its uptake goals

The Bonsucro Standards are at the heart of the organization's strategy for improving sustainability in the sugar sector. They have been developed in consultation with farmers, mills, traders, industrial buyers, financial institutions, civil society organizations, government representatives, academics, and certification bodies, including via face-to-face and online meetings in Australia, Brazil, the Dominican Republic, East Africa, the European Union, India, South Africa, Switzerland and the United States. Pilot studies were also conducted in Australia, Brazil, Dominican Republic, Honduras, India, and South Africa.[100] The standards, now in their fourth version, continue to be refined over time.

Production Standard: The Production Standard applies to mills and their sugarcane suppliers. Certification is awarded at the mill level. The Production Standard includes 18 criteria and 53 indicators that apply to mills, farms, or both. Bonsucro is agnostic as to the practices that mills and farms use to come into compliance.[101]

A mill starts by defining the sugarcane supply area for which it seeks certification. A mill may choose its entire supply area or start with a select area and expand thereafter. If desired, the mill then conducts a gap analysis to compare its current performance to the level laid out in the Bonsucro Production Standard. This enables the mill to develop strategies to improve in both its own operations and its supply base. Implementation is more complicated when mills do not own the plantations or small-scale farms that supply them, which is frequently the case.

To monitor progress, both the mill and its sugarcane suppliers are required to input data into the Bonsucro Calculator, a tool that compares performance against Production Standard metrics. They must comply with a minimum of 80% of indicators, including 100% of the indicators associated with five core criteria. When this target is reached, the mill contacts a Bonsucro-licensed certification body for an audit.

A certified mill receives a quota of certified product to sell. The mill may either allocate this quota to a physical shipment or sell it in the form of credits. Credits may be sold anytime within three years. As with physical sugar prices, credit prices are negotiated between buyers and sellers; Bonsucro charges the buyer a credit trading fee of $1.30 per ton. Credits can also be resold.

The ability to sell credits creates a market for certified sugar outside of the physical supply chain. This is important because mills may not have access to buyers who can physically off-take certified product at better prices than non-certified product, and interested buyers may not have physical access to certified suppliers.

Mass Balance Chain of Custody Standard: The Mass Balance Chain of Custody Standard applies to any company wishing to sell product as certified, or make public claims about certified sourcing.

As a mass balance system, the Bonsucro Chain of Custody Standard permits mixing of certified and non-certified product at different stages of the supply chain as long as the volume of certified product sold does not exceed the volume bought.[102]

To obtain Chain of Custody certification, the applicant must identify suppliers certified and implement a system to reconcile volumes bought and sold and track shipments from origin to destinations.

By late 2014, 20 refiners, traders, and end users had been certified against the Bonsucro Mass Balance Chain of Custody Standard.[103] 40 mill groups representing 3.74% of global land under sugarcane

had been certified against its Production Standard. Bonsucro aims to certify 20% of global land under sugarcane by 2017.[104]

Some stakeholders consider Bonsucro's results very good for a new initiative; others are concerned that it may not be on track to meet its targets.[105] Either way, Bonsucro is at the beginning of an ambitious undertaking and faces a number of challenges with respect to the uptake of its standards. Stakeholders have questioned its technical relevance across countries and debated whether it sets the bar too high or too low to move the needle on key sustainability issues. For example, some have pointed out that the Bonsucro standard leaves gaps on human rights and that mills are permitted to certify only a portion of their supply bases, issues that are problematic for companies intent on full supply chain accountability. Stakeholders have also highlighted perceptions among some mills that Bonsucro is a top-down, outside initiative that works best for large, relatively well-resourced mills sourcing from small numbers of large sugarcane farmers—as well as perceptions among farmers that it requires a lot of them while providing little recognition in return (since certification takes place at the mill level). Competition from other standards is also considered a factor, though Bonsucro certified production currently exceeds that of Fairtrade, organic, ProTerra, and Rainforest Alliance combined.[106]

Consensus-based, multi-stakeholder standard development is a long and complex process that is still ongoing, and a newly revised standard was introduced in late 2014, which could assuage some of these concerns. For example, the revised standard includes new indicators targeting land use rights, water rights, water use efficiencies, water access for workers, fertilizer management, and production yields. Bonsucro is also working on plans to recognize farmers and achieve mutual recognition with other standards and BMP systems, as described below.

FIGURE 8. **BONSUCRO RESULTS AS OF 2014**

Indicator	Results
Hectares of certified sugarcane	888,704
Percentage of global sugarcane surface	3.74%
Tons of certified sugarcane production	56,724,647
Percentage of global sugarcane production	3.41%
Tons of certified sugar produced	3,793, 274
Percentage of total sugar produced	2.51%
Cubic meters of certified ethanol production	2,678,539

Source: Bonsucro. 2014. "In Numbers." Online at http://bonsucro.com/site/in-numbers/ (accessed September 12, 2014).

Stakeholders have suggested additional measures such as:

- Operational models tailored to mills of different sizes with different supply bases
- A step-wise approach to certification, with formal recognition at each step
- Openness to national interpretation or a risk-based approach to implementation

Continued work to build awareness and buy-in, the business case, and implementation capacity are also necessary, and greater policy and regulatory support could help—as discussed below.

Business Case: A work in progress, with the business benefits of achieving Bonsucro standards still being proven

Bonsucro seeks to increase the availability of certified sugar in mainstream markets, where most sugar is used as an input in a wide range of everyday products in non-premium categories, and where consumer preference for sustainable sugar is low. As a result, it is working to build the business case for sustainable sugar production and processing in two ways.

First, Bonsucro is soliciting commitments from large industrial buyers in the food and beverage and energy sectors. To date, eight of Bonsucro's buyer members have set quantitative targets for sustainable sourcing: Bacardi, Ferrero, General Mills, PepsiCo, SABMiller, Shell, The Coca-Cola Company, and Unilever. Six of these are aiming for 100% sustainably sourced sugarcane products by 2020-2022. The seventh, Shell, does not disclose its target publicly. Importantly, only one of these companies has made a commitment to Bonsucro certification specifically, and that is Unilever, which aims to purchase 100% Bonsucro-certified cane sugar for its operations in Brazil only.[107]

Second, Bonsucro is evaluating the supply side benefits of compliance with its standards, such as increased productivity and cost savings. For instance, the organization reports that the 31 mills certified during 2013-14 used just over half as much fertilizer and pesticides and just under half as much water as industry standards, and that sugarcane yields in dry land farms were 44% above the industry standard for similar conditions of production.[108] Operational efficiencies such as reduced absenteeism and fertilizer use were the most significant benefits of Bonsucro compliance in a 2014 study of Brazilian mills by the research agency Agroicone, summarized earlier in Box 6. The results of an internal study on the business case for Bonsucro certification at Azunosa, a sugar mill in Honduras owned by SABMiller, are summarized in Box 15.

Much of this data comes from Brazil, which has the lowest cost of production in the world, and may not be representative of other regions. There is, of course, a bit of a chicken-and-egg problem in that most experience with Bonsucro to date has been in Brazil. But in the absence of greater and more representative data on the supply side business case, many stakeholders feel that more explicit commitments from buyers, more immediate and consistent follow-through, and ideally higher prices are necessary to justify producers' investments in Bonsucro certification. Greater documentation of exactly what those investments might be, particularly outside Brazil, would help inform the debate about how to reduce, finance, and recover them.

BOX 15. **ASSESSING THE BUSINESS CASE FOR BONSUCRO CERTIFICATION FOR AZUNOSA IN HONDURAS**

About Azunosa

Founded in 1974, Azucarera del Norte S.A. de C.V. (Azunosa) is the third largest sugar manufacturer in Honduras. Honduras is the second poorest country in Central America, with nearly two thirds of its approximately eight million citizens living in poverty. One third live in extreme poverty—including more than half of the rural population. Approximately 20,000 mostly rural Hondurans depend on the sugar sector for their livelihoods.

Azunosa was acquired by SABMiller, the second largest brewer in the world and a major bottler of Coca-Cola products, as part of its Honduran business in 2001. SABMiller is Azunosa's largest customer, purchasing 80% of the company's sugar for use within Honduras. The balance is exported to customers in other Central American countries, the United States, Europe, and Asia. In Honduras, which is closed to imports, 68% of production is consumed domestically, while 5% is exported to the United States and the remaining 27% exported to other countries.

Azunosa also generates energy from sugarcane mash during the production season, 50% of which it uses to power its own operations and 50% of which it sells to the national energy company.

Azunosa employs 414 people in management and milling operations and 405 in agriculture. Azunosa owns 46% land in its supply base. Local farmers own the remaining 54%. Some farmers manage their lands independently, to Azunosa's technical specifications, while others manage their lands jointly with Azunosa or allow Azunosa to do it on their behalf. Independent contractors, who hire more than 1,500 workers over the course of a season, are used to cut the cane.

Azunosa has taken measures to ensure that children under the age of 18 are not employed anywhere in the mill or on farms. In 2006, Azunosa built a school and continues to finance students' transportation, uniforms, materials, and meals. The company also employs supervisors who monitor the fields for underage workers on a daily basis. Azunosa is also an active member of the Association of Honduran Sugar Producers, which works to drive environmental stewardship in the industry and provides education and health services in communities dependent on the country's sugar mills. The company was FSSC 22000 certified in 2013.

Azunosa's Rationale for Investing in Bonsucro Certification

Azunosa is investing in Bonsucro certification to become best in class in the sugar manufacturing industry. On taking the helm in 2009, Managing Director Miguel Angel Yagüe sought a comprehensive, sugarcane-specific framework spanning the environmental, social, and economic dimensions of performance, all of which he considered essential to doing business in the future.

Azunosa's Investment in Bonsucro Certification

Azunosa achieved Bonsucro certification in November 2014. To do it, Azunosa made significant changes to its business practices over the course of approximately five years. The most significant had to do with process management and documentation, enabling the company to generate the information needed to demonstrate compliance. For example, Azunosa has instituted a voucher system to measure the time cutters spend working in the fields, allowing the company to control their working hours even though it does not contract them directly. The company now records attendance at trainings and keeps minutes from all stakeholder meetings. Azunosa has also had to learn new ways to

measure and report on fertilizer usage, workplace accidents, and research and development expenditures.

Additional changes the company has made have included:

- Formalizing its agreements with the independent farmers in its supply base that allow Azunosa to control the technical aspects of production, which enables the company to ensure Bonsucro standards are met while reducing the risk of conflicts over land
- Conducting a legal gap analysis to determine changes needed to comply with evolving local laws, resulting in new strategies to limit working hours, retire older employees, and mitigate environmental risks, for example by keeping cane fields 50 meters away from water sources
- Conducting environmental impact assessments for all areas where the company plans to expand sugarcane production
- Optimizing route planning and employing trucks with multiple bins to increase efficiency in the delivery of cane to the mill
- Establishing formal grievance and dispute resolution mechanisms for stakeholders at the farm and mill levels

Azunosa's Return on Investment in Bonsucro Certification

Azunosa is optimistic about the prospects for cost savings as a result of changes implemented to achieve Bonsucro certification, including greater operational efficiency and reduced use of inputs such as fertilizers and pesticides. Better documentation and controls are also revealing opportunities for continuous improvement, and the company is now evaluating technology to eliminate particles from its emissions, testing new sugarcane varieties that might be better suited to local climactic conditions, and piloting drip irrigation that would further reduce fertilizer, labor, and fuel costs. The time voucher system has reduced conflicts with workers and more agile legal compliance has reduced risk on that side. As an added benefit, a number of the changes implemented for Bonsucro are also helping the company come into compliance with the ISO 9000 standard for quality.

Azunosa does not necessarily expect an increase in production, which is sensitive to variables the company cannot control, such as weather; in any case, a significant increase in production would require an increase in the amount of land under cane. The company also doubts whether it has the market for a large increase, as a vertically integrated operation of SABMiller.

Azunosa does expect its investment in Bonsucro certification to help keep the company competitive in the long run—aligning it with the evolution in values and procurement policies underway in the sugar market today.

Source: Hennings, Enrique. 2014. "Technical Assessment of the Costs and Benefits of Bonsucro Certification at SABMiller's Azunosa Sugarcane Mill in Honduras." Internal document produced for SABMiller PLC.

Policy and Regulatory Support: An opportunity for greater engagement, but not without its challenges

Limited regulatory recognition achieved to date provides some reinforcement of the business case for sustainable sugarcane production and processing under Bonsucro standards. In 2011, Bonsucro was recognized by the EU Commission as a tool for mills outside of Europe to demonstrate compliance with the EU Renewable Energy Directive 2009/28 for shipment of ethanol into the EU. All Bonsucro-certified mills in Brazil are now qualified to export ethanol into the EU.

Some stakeholders would like to see Bonsucro delve more deeply into the ways national policy and regulation and international trade rules may be affecting producer incentives to seek Bonsucro certification, and perhaps tackle a few key roadblocks. It could be difficult for a global initiative representing a variety of sugarcane sector interests to be very active, especially with limited staff resources. But it could be useful simply to highlight those roadblocks and their relevance for further analysis and dialogue in academia and the inter-governmental arena.

Awareness and Mindsets: Significant influence, with room to grow

Raising awareness and changing mindsets is a key part of Bonsucro's strategy to expand its member base and increase uptake of its standards. By the same token, Bonsucro's standards are a key vehicle for the organization and its stakeholders to define and communicate about what sustainability means.

Bonsucro uses a nine-stage engagement approach customized to each country of focus. Bonsucro identifies countries of focus based on market data, sustainability issues, and member interest, maps relevant stakeholders in those areas, and then undertakes a host of activities to engage them, including one-on-one meetings and hosting or presenting at workshops and conferences.[109] A high priority is to connect companies all along the supply chain with each other and with government regulators and civil society organizations to reflect on how to address sustainability issues in a pre-competitive way. Bonsucro also hosts an annual global event called Bonsucro Week, which in 2014 was held in Manila.

As of 2014, Bonsucro had 216 members from 27 countries. At the buyer level, these included 12 major global buyers of sugarcane-based sugar and ethanol, including some of the biggest names in the food and beverage industry: Bacardi, Ferrero, Frieslandcampina, General Mills, Mars, Mondelēz, Nestlé, PepsiCo, SABMiller, Shell, The Coca-Cola Company, and Unilever. While these companies may be few in number, they could have significant influence. They each have annual revenues in excess of $1.5 billion and enormous purchasing power, making them potentially important catalysts of awareness and mindset change as they work to promote Bonsucro within their operations, value chains, and networks in compliance with the Bonsucro Member Code of Conduct.

At the farm and mill levels, Bonsucro's membership numbers are higher but far less significant in terms of firm size or influence: 106 farmers in 10 countries and 43 mill groups operating 167 mills in 11 countries, compared to the thousands that exist in more than 100 countries worldwide.[110] Due to the cost and commitment it requires, membership can be considered a lagging indicator of Bonsucro's influence in raising awareness and changing mindsets in the sugar sector, which is generally considered to be significant.

Better Management Practices: Beginning to explore scope for collaborative action at local levels

Bonsucro is engaging with organizations promoting BMP systems to help facilitate compliance and encourage certification against the Bonsucro production standard. This engagement could work in two ways. First, it could help facilitate certification among farmers already interested in seeking it by providing the practical, context-specific guidance they need to meet Bonsucro's performance metrics. Alternatively, engagement with BMPs could encourage farmers already implementing BMP systems—but not seeking certification—to do so by offering mutual recognition, reducing the additional effort they must put forth to obtain certification. Bonsucro is working to achieve mutual recognition with a number of BMP systems. For example, farmers who have implemented the Assobari Protocol in Brazil could be considered compliant with the Bonsucro Production Standard without having to undergo an additional audit, something that would save time and money for them and for the mills they supply. Bonsucro has also benchmarked a number of locally-based better management practices systems, such as SUSFARMS®, and is working with them to determine how best they can work together to achieve common goals.

Implementation Capacity: Expanding reach through networks and partners

Finally, Bonsucro is working to build the implementation capacity required for broad uptake of its standards. First, the organization offers training for mills, for other enterprises along the sugarcane value chain, and for certification bodies, both directly and through authorized trainers it also trains. Training has been provided in Argentina, Bolivia, Brazil, Colombia, El Salvador, India, Mexico, the Philippines, South Africa, and Thailand, reaching 500 people to date. Bonsucro plans to increase its reach through a Licensed Bonsucro Trainers program that allows companies to provide training using material developed and controlled by Bonsucro, and trainers that have been trained and tested by Bonsucro.

Second, Bonsucro hosts a Farmer Community, offering a platform for farmers to share questions and answers with one another and discuss common issues related to sustainable sugarcane production. As with all engagement activities, the Farmer Community is open to all stakeholders interested in sustainable sugarcane, regardless of Bonsucro membership status.

Bonsucro also partners to help train small-scale farmers who cannot access its regular training program for reasons of geography or cost. One partner is the civil society organization Solidaridad, a Bonsucro member that is leading a multi-commodity Farmer Support Program (FSP) with funding from the Dutch government that focuses on sugarcane in seven countries. The program aims to help small-scale sugarcane farmers increase yields, improve water use efficiency, and manage fertilizer and pesticide use, and helps prepare participants for certification against the Bonsucro Production Standard if the mills they supply opt for certification. Bonsucro has organized training programs in four of these countries: Brazil, India, Mexico, and South Africa, the latter bringing stakeholders together from all over the continent. Stakeholders underscore the importance of even greater support for small-scale farmer capacity-building for Bonsucro to make significant inroads among mills that rely upon that segment in priority countries.

6 Concluding Questions

A higher level of environmental, social, and financial performance is now expected in sugar production and procurement—and all stakeholders must work together to achieve it.

A wide range of stakeholders within and outside the value chain are working to drive more sustainable production and procurement practices in a context of enormous complexity and country-specificity. Markets as diverse as food and fuel, limited product differentiation and traceability, fluctuating world prices, and a range of company-specific factors influence the incentives and disincentives of enterprises all along the sugar value chain. And many of these factors are highly country-specific. Sugar is one the most political commodities in the world, with high levels of regulation and government assistance, and many markets that are effectively closed. Limited numbers of large plantations dominate cultivation in some countries, while massive numbers of small-scale farmers dominate in others. Processing is similarly fragmented with few truly global players.

Right now, incentives are not sufficiently strong or aligned across the value chain to drive more sustainable production and procurement practices at scale. Demand for sustainable sugar is still very nascent, and for the most part, it does not come with a willingness to pay higher prices. Evidence of the enhanced productivity or cost savings associated with more sustainable production is just beginning to emerge. Avoidance of risk seems like a long-term proposition for all but the biggest brand names. And the costs and competitive implications feel prohibitive.

This report has identified six building blocks necessary to align the incentives of growers, mills, refiners, traders, and buyers in favor of greater sustainability at scale. It has taken stock of progress made by a wide variety of stakeholders to put these building blocks in place, and of the challenges that remain. And yet we are early in the game of understanding what will drive change in practices and outcomes at scale.

Figure 9 on pages 48-49 summarizes where we stand—and poses a number of key questions that will be critical to address to accelerate change.

A final, overarching question is how the wide variety of sugar sector stakeholders can work together. There is room and need for a range of different activities and approaches led by a range of players; a single global mastermind or grand coalition may not be necessary or appropriate, even if it were practically feasible. At the same time, the challenges in the sugar sector are systemic, and it is necessary to be mindful of the full array of interdependencies in order to communicate, coordinate, and where useful, catalyze collaboration to ensure that the whole is greater than the sum of the parts. In this respect all stakeholders have roles to play, at the national level just as much as the global level. Experiences in Australia, Brazil, and South Africa have demonstrated that a sense of ownership and adaptation to the local context offer significant potential to fuel the

adoption of more sustainable sugar production and procurement practices at scale. There is an opportunity for national governments and industry associations to innovate, and for global brands to leverage their names and reputations just as much, or even more, than their buying power. There is an opportunity for multi-stakeholder organizations to facilitate knowledge transfer and to help build the trust necessary for knowledge transfer to be effective.

Working together, sugar sector stakeholders can collectively build awareness and mindsets, policy and regulatory support, the business case, voluntary standards, better management practices, and implementation capacity, thereby aligning incentives in favor of more sustainable sugar production and procurement sector-wide—helping to satisfy consumer demand, improve working conditions and incomes, and preserve the natural resources necessary to sustain the industry into the future.

AWARENESS AND MINDSETS

There has been notable progress raising awareness and changing mindsets, with a growing need to reach beyond the obvious targets and existing champions. How can we develop shared visions of sustainability across countries and companies?

There is some consensus on the major environmental, social, and economic issues in the sugar sector. Yet the issues vary in importance from country to country, as do trade-offs that may be involved in addressing them. At the same time, sustainability is not an end state but rather a moving target, changing as our understanding deepens and as our cultural norms and values evolve. For sustainability to go mainstream, the notion needs to be "owned" by all relevant stakeholders, including firms of all sizes, across the value chain, in different countries.

KEY TAKE-AWAY
Ongoing, multi-stakeholder dialogue that is strongly grounded at the country level and linked to the global debate will be important.

POLICY AND REGULATORY SUPPORT

Policy and regulatory support has been inconsistent, with relatively little being done to strengthen it. How are specific policies and regulations creating incentives or disincentives to produce and procure sugar more sustainably? How can coherence among policies and regulations be increased, and whose responsibility is it to advocate for any necessary reforms?

Many different kinds of policy and regulation affect incentives to produce and procure more sustainable sugar, both intentionally and unintentionally. They also affect the leverage that private approaches, such as standards and better management practices, can have.

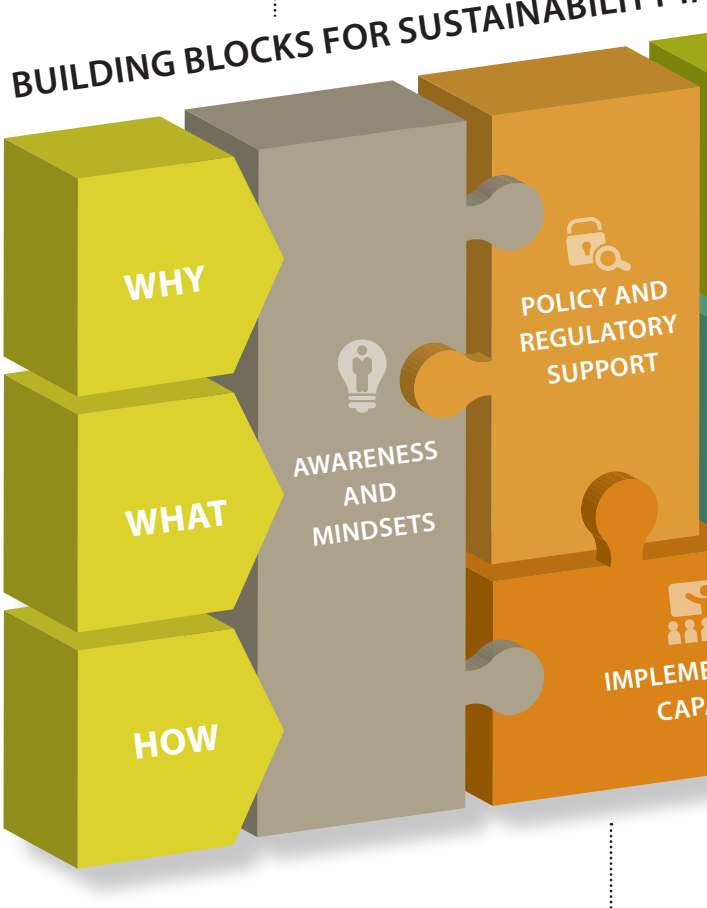
KEY TAKE-AWAY
Taking stock of what these policies and regulations are—and understanding their impacts—would help inform proactive governments and non-governmental stakeholders playing advocacy roles.

IMPLEMENTATION CAPACITY

There are good examples of implementation capacity-building, but the scale is small compared to the need, especially for smallholders. Where are the financially sustainable, scalable models of small-scale farmer capacity-building, how do they work, and how replicable are they?

Capacity-building is critical but will only scale if it becomes possible to break free from dependence on donor funding. There are promising models—for example, among national industry associations and mills that pay for capacity-building using membership fees and operating or investment budgets. Such models could enable donors to transition into more catalytic roles, helping reduce the up-front cost and risk of implementing them rather than funding them on an ongoing basis.

KEY TAKE-AWAY
Understanding these models' economics, key success factors, and enabling environments would reveal whether they can be replicated and under what circumstances.



BUSINESS CASE

The business case is currently insufficient to drive adoption of more sustainable production and procurement practices on a sector-wide scale on its own. How can we quantify the costs and benefits to inform communication and negotiation, and unlock action?

Costs and benefits will vary greatly for enterprises of different sizes, at different stages of the value chain, in different countries, with different performance baselines and levels of capacity. It is also difficult to quantify benefits like corporate reputation and long-term risk mitigation. But "it depends" is not a good enough answer to whether there is a business case for sustainability in the sugar sector. Understanding the different costs and benefits and how they accrue to different players along the value chain will help stakeholders communicate more convincingly and settle controversial issues like who should cover compliance and auditing costs.

KEY TAKE-AWAY
A number of business case studies have already been undertaken or are underway, and more are needed across a greater variety of regions and firms.

VOLUNTARY STANDARDS AND BETTER MANAGEMENT PRACTICES (BMPs)

A number of well-regarded standards have been introduced, but uptake is low, and BMPs demonstrate early results and broader, untapped potential. How can voluntary standards and BMPs work together to move a critical mass of producers to sustainability?

By offering choice in degree of difficulty, rigor and cost of verification as well as customization to local contexts, voluntary standards and BMPs could, as a group, help cover different segments of producers and facilitate progression from minimum to more advanced levels of performance. Greater comparative analysis and potentially harmonization of reporting frameworks could help, and this, too, is starting to happen.

KEY TAKE-AWAY
The growing number of voluntary standards and BMPs in the sugar sector could play complementary roles in moving a critical mass of producers to sustainability, rather than operating in parallel or in some cases competing.

Appendix 1: Stakeholders Consulted

Dr. Sibyl Anwander, Executive Director, ProTerra Foundation, Switzerland

Markus Arbenz, Executive Director, International Federation of Organic Agriculture Movements (IFOAM), Germany

Monika Berresheim, Global Product Manager, Sugar, Fairtrade International, Germany

Farideh Bromfield, Founder, Farideh Bromfield Consulting Limited, UK

Christine Carey, Network Coordinator, Donors' Network on Sustainability Standards, Switzerland

Julia Clark, Fairtrade Relationship Manager, Tate & Lyle Sugars, UK

Rob Cocco, Chief Executive Officer, Reef Catchments, Australia

Stephanie Daniels, Senior Program Manager, Agriculture and Development, Sustainable Food Lab, USA

Luz Díaz Rios, Senior Agribusiness Specialist, Latin American and Caribbean Region, World Bank, USA

Ant Edmonds, Co-Owner of Donovale Farms and Co-Founder of SUSFARMS®, South Africa

Gabriel Guzman, Global Category Director, Adjuncts and Sugar, SABMiller, Switzerland

Franklin Holley, Senior Program Manager, Agriculture, World Wildlife Fund, USA

Denise Knight, Director, Sustainable Agriculture, The Coca-Cola Company, USA

Neil La Croix, Associate Director of Sustainable Supply Chains, Global Commodities and Strategic Sourcing, Mondelēz International, UK

Roshan Lal Tamak, Business Head, Sugar, Olam, India

Geoff Maher, Extension Manager, South African Sugarcane Research Institute, SASA, South Africa

Edward Millard, Director, Strategic Partnerships, Rainforest Alliance, UK

Mandla Nkomo, Operations Director, TechnoServe, South Africa

Eduardo Pinheiro Cavalcante, Sugarcane Specialist, World Wildlife Fund, Brazil

Kevin Ogorzalek, Vice President Sustainability Metrics, Innovation Center for U.S. Dairy, USA

Jose Orive, Executive Director, International Sugar Organization, UK

Malcolm Petrie, Project Director, Smartcane BMP, CANEGROWERS, Australia

James Primrose, Head of Strategy and Analytics, Biofuels, BP, UK

Robert Quirk, Grower and Agricultural Scientist, Australia

Jennifer Ragland, Director, International Government Relations and Public Affairs, The Coca-Cola Company, USA

Shaun Ramsunder, Group Environmental, Risk & Quality Assurance Manager, Illovo Sugar, South Africa

Vidya Rangan, Senior Research and Impact Manager, Fairtrade Foundation, UK

Dr. Ben Richardson, Assistant Professor in International Political Economy, Department of Politics and International Studies, University of Warwick, UK

Don Seville, Co-Director, Sustainable Food Lab, USA

Lotar Schulz, Owner of Schulz Estate and Co-Founder of SUSFARMS®, South Africa

Natasha Schwarzbach, Head of Engagement, Bonsucro, UK

Rafael Seixas, Research and Policy Analyst, Bonsucro, UK

Eric Servat, Manager, Southern Europe, Sustainable Value Chains, Rainforest Alliance, UK

Sven Sielhorst, International Programme Coordinator, Sugarcane, Solidaridad Network, The Netherlands

Raj Pal Singh, Advisor, International Finance Corporation and formerly National Federation of Sugar Cooperatives, India

Diane Stevenson, Director of Sustainability Research & Development, CSC Sugar, USA

Anna Swaithes, Head of Water and Food Security Policy, SABMiller, UK

Matthew Swindall, Managing Director, Global Nutritive Sweeteners CEPG, The Coca-Cola Company, UK

Irit Tamir, Special Advisor, Private Sector Department, Oxfam, USA

Simon Usher, CEO, Bonsucro, UK

Harsh Vivek, Operations Officer, Global Agribusiness Industry Department, International Finance Corporation, India

Jon Walker, Product Manager, Sugar, Fairtrade Foundation, UK

Dr. Helga Willer, Department of Extension, Training, and Communication, Research Institute of Organic Agriculture FiBL, Switzerland

Bruce Wise, Global Product Specialist - Environmental, Social & Trade Standards, Sustainable Business Advisory Department, International Finance Corporation, USA

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