



State of
Sustainability
Initiatives

Certification and Beyond: Transforming the sugarcane sector

Commentary Report

May 2016

“Certification is not only about ticking a box, it is a process to improve skills, processes and impact livelihoods and the environment for the better.” -

Miguel Angel Yague Pila, General Manager, AZUNOSA

Shifting to Sustainable Commodities

Sustainable commodity supply chains matter, and their pursuit is a challenge taken up by an expanding array of voluntary sustainability standards (VSSs). VSSs can be a useful tool to incentivize change towards more efficient and sustainable practices along the supply chain. Over the past decade there has been a growing trend of the adoption of VSS compliant products within mainstream supply chains with over 10 per cent of global production of several major commodities now considered VSS compliant (Potts et al., 2014). The sugar cane market, although only flourishing relatively recently, now appears to be attracting mainstream interest as well with over 65 million metric tonnes being certified sustainable by 2016 (Potts et al., 2014). The growing adoption of VSS compliant production is bringing a new wave of opportunity for the transformation of supply chains toward sustainability.¹ However, taking full advantage of their potential requires a better understanding of field-level impacts and other strategic policy measures. It also necessitates a broader appreciation of how VSSs fit into the larger landscape of good governance in different commodity sectors.

A growing body of evidence suggests that VSS may have

¹ The review tracks market and performance trends of 16 leading standards initiatives across 10 leading commodity sectors, accounting for an estimated trade value of USD 31.6 billion in 2015, and an even higher market value.

to go beyond certification to bring about transformative change within any given sector (Committee on Sustainability Assessment, 2014). The risk is to certify the best and forget about the rest, which is a flaw that some VSSs are endeavouring to overcome. For example, Bonsucro, a leading VSS in the sugarcane sector, is doing so by broadening the scope for certification and compliance towards recognizing the benefits of changing the production process. The objective is to build a “culture of improvement” and a “community of best practices.”

Spotlight on Brazil

For over four decades, Brazil has been working at the forefront of shifting the sugar sector towards greater sustainability. Bonsucro Week 2015 (held in São Paulo and Campinas from October 26–29, 2015)² showcased the rise of Brazil to become the largest producer, exporter and innovator in the sugarcane industry.³ Brazil has prioritized increasing sugarcane efficiency for food and fuel since the oil shocks of the 1970s. Pursuing a clear vision to reinvigorate the agricultural sector, the country serves as a model for success, with state-of-the-art harvesters and mills, as well as research and development (R&D) centres collaborating with industry.

Creating a sustainability narrative for the sugar sector in Brazil has been based on a long-term objective to add

² The Standards Reporter prepared a summary of the events at Bonsucro Week 2015: <http://www.iisd.org/ssi/wp-content/uploads/2015/12/The-Standards-Reporter-Report-7.pdf>

³ According to UNICA, in 2013–14, Brazil produced 653.5 million tonnes of sugarcane, which yielded 37.7 million tonnes of sugar and 27.5 billion litres of ethanol. This makes Brazil the world’s largest sugar producer and second largest ethanol producer.

value to the agricultural supply chain in collaboration with all the stakeholders. According to Elizabeth Farina, CEO of the Brazilian Sugarcane Industry Association (UNICA), producers, millers and buyers, as well as policy-makers and research institutes have each played their role to build a dynamic cane-based bioeconomy over the past 40 years.

An example of this process is typified in the Food and Agriculture Organization-recognized RenovAção project, which is aimed at retraining thousands of agricultural workers displaced by the accelerated introduction of mechanized harvesting and the end of manual burning of the sugarcane crop in the state of São Paulo. This project benefitted from the involvement of several stakeholders from mills and equipment suppliers (Case IH, FMC, Ivecó and Syngenta), as well as the Inter-American Development Bank and Solidaridad Foundation. Brazil's focus on renovation has maintained livelihoods in the sector by providing alternative employment opportunities, while increasing yields and reducing environmental impacts.

As highlighted by Farina (UNICA), Brazil has successfully transitioned from importing almost 80 per cent of its total oil consumption in the 1970s to becoming virtually energy independent and a leader in renewable energy. Today, nearly half of Brazil's energy comes from renewable sources, compared to an average of less than 20 per cent for the rest of the world (Sugarcane.org, n.d.a).

Brazil is also an innovator in water use, a common indicator of agricultural sustainability (WWF, n.d.). In south-central Brazil, where the majority of the crop is grown, sugarcane is not irrigated due to abundant rainfall. According to UNICA, water usage in cane processing at the mills has been reduced by over 70 per cent (to 1.4 m³ per tonne) over the past two decades. Brazilian mills recycle nearly 95 per cent of the water used during processing.⁴

Brazilian mills are also leaders in second-generation (2G) ethanol production. Innovation has been led by the public Brazilian Agricultural Research Corporation (Embrapa); the Canavieira Sugarcane Technology Centre (CTC), the world's largest R&D centre for sugarcane; and the National Laboratory of Bio-ethanol Science & Technology (CTBE), established in 2005 to push for Brazilian leadership in 2G ethanol. In 2015, Raízen's Costa Pinto mill in Piracicaba in São Paulo state became the first Bonsucro-certified 2G ethanol plant.⁵

⁴ In her 2016 message to the Intergovernmental Panel on Climate Change, Géraldine Kutas states that technological advancements are expected to reduce water use further to 0.5 m³ per tonne. Sugarcane.org, n.d.b).

⁵ Operational in late 2014, the USD 100 million plant is expected to produce 40 million litres of cellulosic ethanol per annum from sugarcane bagasse and straw (Logen Corporation, n.d.).

Sustainability in the Sugarcane Sector

The UN expects the world's population will grow by over one billion people within the next 15 years, reaching 8.5 billion in 2030, with most of this increase in developing countries (United Nations, 2015). Providing food and energy for an expanding population is the agricultural challenge of the 21st century. For us to meet the challenge, it is imperative to increase efficiency and productivity, while using less agricultural inputs (land, water, fertilizers, pesticides).

Sugarcane is well positioned to provide solutions. It is a resilient plant produced in a diverse array of countries. It is also one of the most efficient plant photosynthesizers, turning sunlight into chemical energy. As sugarcane has to be milled close to where it is grown, it can create rural employment while powering rural communities with renewable energy. However, sugarcane also comes with its challenges: it is a water-thirsty crop; it can lead to deforestation; and, without properly managing inputs, it can have serious consequences for soil and ecosystem degradation, to name a few.

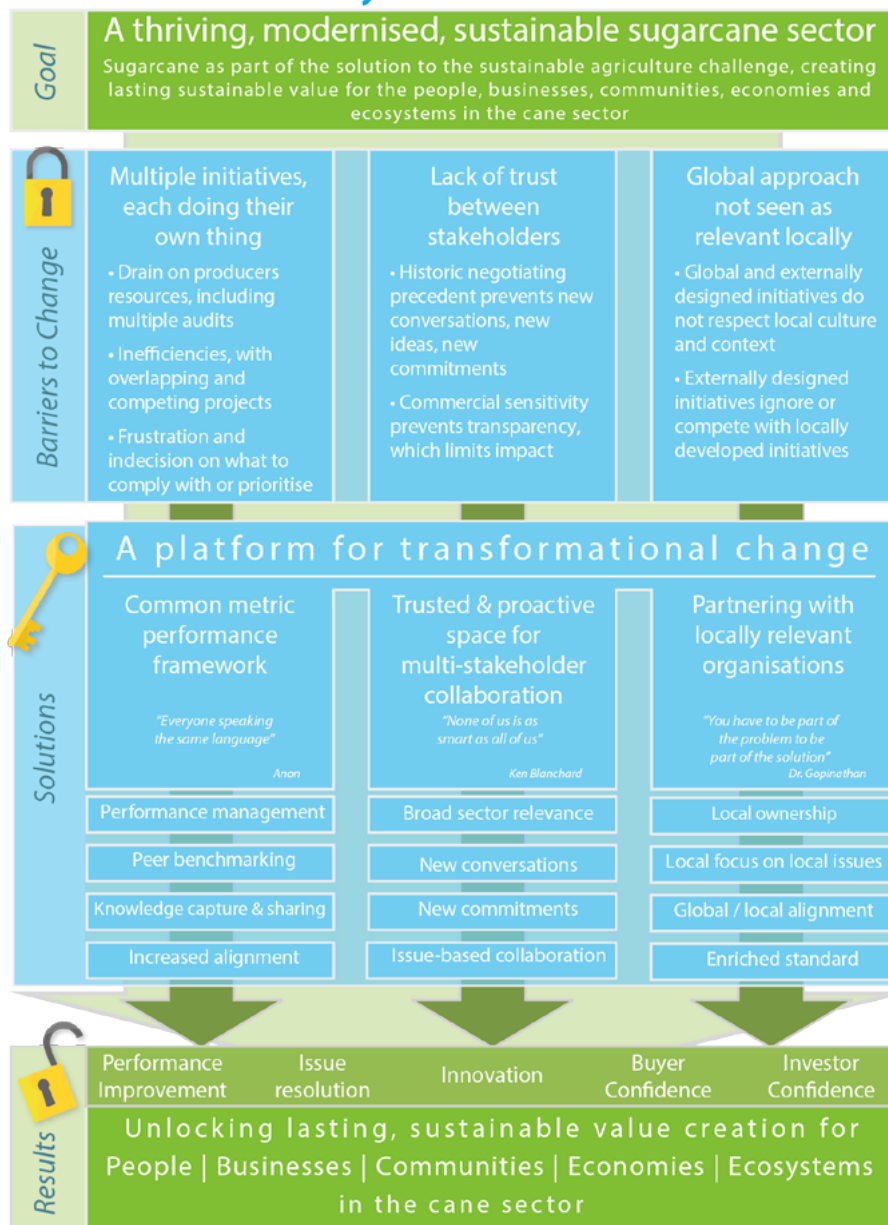
As sugarcane is an important intermediary input in the global agricultural supply chain, intensifying its production may be important. However, this must be done in a way that creates lasting value for people, communities, economies and ecosystems in all cane-growing origins. Changing supply-and-demand incentives to produce and purchase sustainable sugar is a complex endeavour that will require innovation, diversification, value addition and expanding markets.

Bonsucro

Achieving such a transformation towards sustainability in the sugarcane sector is the objective of Bonsucro, an international multistakeholder organization. Founded in 2007 as a non-profit body, Bonsucro has certified 51 mills in four countries, representing nearly 4 per cent of global sugarcane production and one million hectares of land under cultivation. Bonsucro is making important inroads to integrate sustainability in the sugarcane industry with a membership of over 450 organizations in countries as diverse as Australia, Brazil, India, Swaziland and Thailand. The organization includes a broad range of stakeholders, from Indian farmers with only a few hectares of land under production to large mill groups, global traders, refineries, multinational food and beverage brands, biomaterial companies, finance institutions and civil society organizations.

While Bonsucro has shown that certification is a useful tool in changing practices and promoting sustainability along the supply chains, does it go far enough? Will it enable the transformational change needed to redesign

Figure 1: Why BONSUERO?



Source: International Trade Centre (2016)

the dynamics of supply chains? Bonsucro has certainly been successful in verifying those players who are already doing what it takes to be sustainable. The issue now is to build the capacity of those without the means or the know-how to improve their practices. That is why, according to experts in the field, Bonsucro needs to do more than certification and “move beyond picking the low hanging fruit.” To this end, Bonsucro is committed to diversifying its membership and achieving 20 per cent market penetration by 2017 (Bonsucro, 2014).

Going beyond certification means addressing sustainability issues at their core and engaging farmers, millers, buyers and non-governmental organizations (NGOs) to change farming practices. This means tackling a range of barriers to change, including the existence of multiple initiatives to address sustainability, inconsistent messaging from suppliers, lack of trust

among stakeholders, and insufficient synergies between local initiatives and a global approach (see Figure 1). The growing number of VSSs in commodity sectors such as sugar places an emphasis on the need for them to craft complementary roles to move a critical mass of producers to sustainability, as opposed to operating in parallel or competing markets.⁶

Capturing Efficiency, Gaining Momentum

At the core of VSS strategic thinking is the importance of capturing efficiency and adding value to the production process. “This is where Bonsucro can and is making its presence felt along the entire supply chain,” according to Peter Dibella, Director of Birkalla Sugar (Australia

⁶ The International Trade Center’s (ITC) Standards Map provides information on over 210 standards, codes of conduct and audit protocols addressing sustainability hotspots in global supply chains.

and Bonsucro Board member. Value creation, in turn is accelerated by innovative collaboration among R&D centres and private sector stakeholders to commercialize a new generation of products.

To transform the industry, NGOs such as WWF are calling on buyers to source from Bonsucro-certified sugar. The initiative has gained momentum, since Bonsucro-certified sugarcane was first supplied to the market in 2011 from a Brazilian mill in the state of São Paulo (Solidaridad, 2011)⁷ and purchased by the Coca-Cola Company.

Bonsucro is driving change through certification based on two standards:

- The Production Standard applies to sugarcane mills and their supplying area. The standard evaluates the outcome of practices implemented at the mill and farm levels. Version 4.1.1 was adopted in September 2015 (Bonsucro, 2015c).
- Chain-of-Custody Standard (CoC) contains a set of technical and administrative requirements to enable the tracking of claims on the sustainable production of Bonsucro sugarcane along the entire supply chain. The revised European Union Renewable Energy Directive (EU RED) Mass Balance CoC Standard Version 4.0 was adopted in October 2015 (Bonsucro, 2015b).

Continuous Improvement

Bonsucro has become the largest VSS operating in the sugarcane sector based on total standard compliant area and production volume.⁸ It is designed as a model to move the sector towards sustainability by adopting its performance framework as a local industry standard.⁹ Based on the principle that “what is measured can be managed,” effective data collection is a vital component. As noted by Miguel Angel Yague Pila, General Manager of the Azunosa mill in Honduras: “Certification is not only about ticking a box, it is a process to improve skills, processes and impact livelihoods and the environment for the better.” By making significant changes to its business practices over five years, Azunosa achieved Bonsucro certification in 2014; it won the Bonsucro Sustainability Award and was featured as a Harvard

⁷ The Bonsucro Production Standard was used to certify the production of sugarcane at the Maracaí mill of Raízen in São Paulo state, with over 130,000 tonnes of sugar and 63,000 cubic metres of ethanol certified by an independent third-party certification body.

⁸ Since 2011, the Bonsucro sugarcane area has increased by 10 per cent. It is one of the VSSs in the sugar sector covered in The State of Sustainability Initiatives Review 2014 (Potts et al., 2014).

⁹ Other standards focus on certifying sugar as sustainable for a niche market with price premiums as the driving incentive (Fairtrade, Rainforest Alliance and IFOAM Organic, for example, account for less than 1 per cent of the global market [Potts et al., 2014]).

case study on sustainability in 2015 (Jenkins, Baptista, & Porth, 2015).¹⁰

As sustainability becomes increasingly relevant to doing business, companies are treating sustainable sourcing in a similar way to safety and quality. In addition, there are efficiency gains to be captured from tracking performance at the farm and mill levels to measure progress. The Bonsucro calculator is a data-collection tool that provides a picture of performance and demonstrates achievement to drive improvement, according to Nicolas Viart, Head of Standards and Innovation, Bonsucro.

Bob Norman, General Manager of GreenPalm, participated in Bonsucro Week 2015 to see how other VSSs compare with the Roundtable on Sustainable Palm Oil (RSPO), which has captured a significant share of the palm oil market. Norman’s role is to explain the win-win benefits of “opening up supply chain options and supporting certified growers and independent smallholders.” The rewards are increased sales and improved yields in commodity sectors such as palm oil and sugarcane.

Moving towards a greater level of sustainability for sugarcane entails, according to Simon Usher, Bonsucro CEO, “continuous improvement and sharing of best practices on a scale that impacts sustainability in the entire sector.” That is why Bonsucro is focused on expanding its membership and creating an enabling platform to facilitate stakeholder inclusion. Dialogue and knowledge exchange are vital to underpinning transformational change and to fast-track sustainability in commodity supply chains. Usher emphasizes that, since 70 per cent of global sugarcane production is consumed within the country of origin, “change will only happen when the Northern supply chain engages with local improvement initiatives in developing countries.”

Inclusive Governance

An issue raised by industry expert Sven Sielhorst, Global Programme Manager, Sugarcane, Solidaridad and Bonsucro Board member, is how to ensure that Bonsucro is relevant to the rest of the industry beyond the large production units in Australia and Brazil, which make up the majority of its membership. Notably, Bonsucro has served to encourage change in the operation of smaller mills, such as the Azunosa Mill in Honduras, as noted above, and the E.I.D. Parry mill, an R&D research centre in India, with the only certified mill composed of small-scale farmers.

¹⁰ The CSR Initiative at the Harvard Kennedy School and Business Fights Poverty have collaborated to explore models of engagement between large companies and key players to address development challenges in their 2015 Case Study Bonsucro: Assessing the Business Case for Bonsucro for Azunosa in Honduras.

Reaching the millions of smallholder farmers in the sugar supply chain is where experts, such as Manjunatha Rao, E.I.D. Parry (India), think the Bonsucro Standard needs to evolve: by broadening the scope for certification and compliance towards recognizing the benefits of changing the production process and building a “culture of improvement” and a “community of best practices.”

One way to address this challenge is to engage with local industry leaders who have adapted practices for their constituents based on local conditions, such as the sustainability standards developed by the South African Sugar Association (SASA) or Brazil’s Assobari (Associação dos Fornecedores de Cana da Região de Bariri). Industry expert Denise Knight considers that, in order to broaden its reach, Bonsucro “can’t be out digging the trenches farmer-by-farmer, mill-by-mill.” The way forward is to support community-based action and leadership and to give a greater voice to independent farmers.

At this stage in its development, Bonsucro is well placed to increase engagement at the local level. According to Mike Matsebula, CEO, Swaziland Sugar Association, “Now is the time to partner with local institutions that can lead the entire domestic industry to change farming practices.” This is critical to reach a broad base of farmers and build confidence in the value of certification and in the process of investing in sustainable farming practices.

In this regard, Bonsucro has benefitted from the producer support of the Brazilian Sugarcane Industry Association (UNICA), which has been involved in the development of the Bonsucro Production Standard since 2007. Local-level support, in turn, can lead innovation and incorporate technological advances throughout the industry.¹¹ Bonsucro is increasing recognition of local initiatives and best practices through partnership agreements, such as with Assobari in Brazil’s São Paulo state. According to Acácio Masson Filho, President of Assobari, the sector’s support for sustainable development has been a key source of local-level infrastructure investment. With local industry support and input, Bonsucro has proven to be successful at scale: 42 of the 51 mills with certification are in São Paulo state, illustrating the importance of local producer associations, such as UNICA and Assobari.

Surveying the Membership

As Bonsucro expands into other markets and branches out to work with other VSSs, there will be emerging opportunities to harmonize and streamline the Production Standard and build on stakeholder networks. A recent survey conducted by Bonsucro asked the membership

¹¹ To date, sugarcane is not a genetically modified crop. However, experts expect that GMO cane is a possibility to increase productivity and resilience, for example, to be more resistant to drought and pests.

to rate the importance of specific objectives to move towards continuous improvement and support change in the sugarcane sector. The survey result indicated the importance of process and incentive as drivers for change. For the farmer and mill groups, the priority to enable continuous improvement is transparency, with mills emphasizing the importance of developing credit trading (see Box 1). For buyers to support change, the priorities are similar to the farmer and mill groups: transparency and clarity of core messaging.

Scaling Up Best Practices

To bring best practices to scale primarily requires making the case for gains from economic efficiency. Discussion among stakeholders at Bonsucro Week indicated that shifting towards more sustainable production leads to “win-win economic and environmental benefits.” Robert Quirk, an Australian sugarcane farmer and Bonsucro Board member, refers to adopting sustainable cultivation practices that contribute to efficiency and ecological gains, including crop rotation and no-till cultivation; managing agrochemical inputs through satellite imagery and precision insecticide use; and mechanizing green cane harvesting by phasing out pre-harvest field burning.¹²

The benefits of these changes to production are improved yields and soil quality, decreased agrochemical inputs and greenhouse gas emissions. Initial data collected by Bonsucro (Figure 2) shows that, compared with the industry average, certified mills are able to improve yields, with the use of less agricultural inputs (fertilizers and pesticides), less water per kilogram of sugar produced and decreased greenhouse gas emissions (Bonsucro, 2015a).¹³

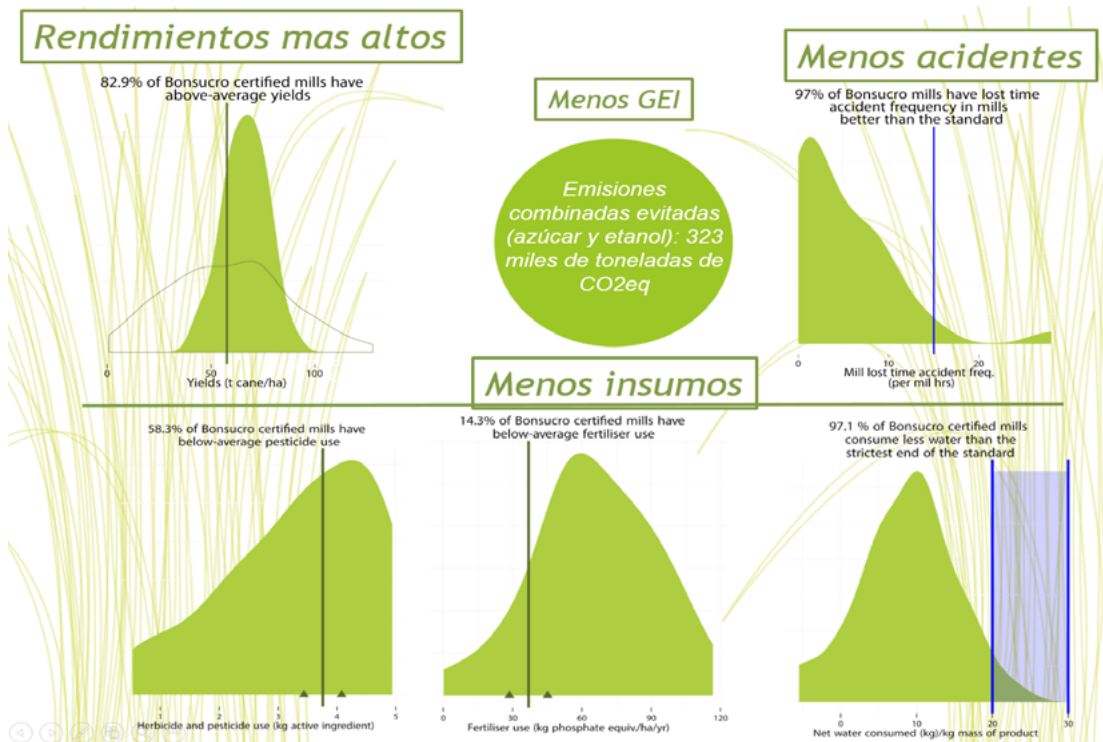
Sustainable Sourcing

Many of the global companies that are significant buyers of sugarcane-derived products are Bonsucro members who have made public commitments to sourcing 100 per cent Bonsucro-certified sugarcane by 2020 (Bonsucro, 2016). Public claims in support of sustainable production and procurement of sugarcane are powerful drivers for change. They provide credibility to the efforts of VSSs to secure transparency, consistent messaging and accountability along the supply chain. Public claims particularly are worthwhile when they are backed up by independent, third-party verification. It boosts confidence in the credibility of the claims and strengthens the benchmarking of performance. For example, Bunge Brasil recently traded 17 tonnes of bulk

¹² Bringing these changes to smallholders will be an important challenge since it will require capacity building and the adoption of more environmentally sustainable technology that may be beyond the reach of many.

¹³ Combined sugar and ethanol avoided emissions of 323,000 tonnes of carbon dioxide equivalent.

Figure 2: Efficiency Gains from Certification



Source: Bonsucro (2015a)

raw Bonsucro-certified sugar through a partnership with a refinery in Canada and a global food industry manufacturer, representing the first certified sugar exported as a physical product.

New Opportunities and Markets

Opportunities for the sector to produce bioenergy and biochemical products are widely recognized to have the potential to create value and open new markets. Increased sustainability will also drive demand for new cane-based products, such as biopolymers, as alternatives to petrochemicals; hence the call made at Bonsucro Week 2015 for certification to expand to include these products.

Bonsucro’s Production Standard already has provisions for certification of other sugarcane-derived products other than sugar and ethanol, including molasses, bagasse, vinasse and filter cake. There are also market opportunities arising from the compliance of Bonsucro-certified 2G ethanol with the Renewable Energy Directive of the European Union (Bonsucro, n.d.).

In addition, biotechnology for microorganisms is developing a novel class of plant-based renewable products. According to Walfredo Linhares, General Manager, Solazyne Brasil, they are developing renewable chemicals from algae-based, sugar-to-oil technology in a joint venture with Bunge.¹⁴

¹⁴ Bunge is a sugarcane producer in Brazil and one of the world’s largest vegetable oil distributors.

Did you know?

Credit trading is a tool companies use to demonstrate their commitment to the sustainable production of sugarcane products. When compliance with performance standards is certified, the certified products (or credits) can be traded. Bonsucro’s Credit Trading System allows organizations to sell their certified quotas independently of any physical shipment and gives businesses that purchase the credits the opportunity to make public claims of their support to the sustainable production of sugarcane. One credit represents one tonne of certified product.

According to Nahuel Tuñón, Bonsucro Engagement Coordinator, when a company is Chain of Custody certified and buys certified sugar, it can make a claim on-package, such as: The sugar used in this product contributes to the sustainable production of sugarcane.

If the buyer decides to buy credits instead, it has the right to make off-package claims, for example on its website or corporate social responsibility report, such as: Our company demonstrates support to the sustainable production of sugarcane by purchasing X per cent of Bonsucro Credits from X mill through credit trading.

The Landscape Approach

The next step will be to address the systemic challenges in the sugar sector. How can the sector be more efficient and effective from a larger perspective that goes beyond the farm or the mill? There is a need for collective action to foster debate and feed into policy making (Potts et al., 2014). A recent summit with end users in the industry¹⁵ A recent summit with end users in the industry claim that these are issues that are best addressed on a collective and collaborative basis. Moreover, some experts put the proposition forward to harmonize core elements in VSSs that are common in various sectors across a geographic region. This would mean that a given geographic area could be certified as sustainable for several crops (e.g., soy, palm oil, sugar).

At Bonsucro Week 2015, Simon Usher, Bonsucro CEO, reflected on the “landscape approach,” which is an emerging concept to evolve beyond certification as the main tool to bring about transformational change. This approach entails building a framework to help implement performance-based change by farmers, mills and buyers. Importantly, it is a concept that rests on inclusiveness, so that the Bonsucro Production Standard can evolve to reflect local realities and improve livelihoods in the diverse settings of the sugarcane supply chain, which range from large-scale production found in Australia and Brazil and smallholder farming practiced in India, Swaziland and Thailand.

Shifting Strategies for Sustainability

With sugarcane grown in over 100 mainly developing countries, the challenge for the evolving success of Bonsucro includes moving into new markets and engaging key players. The strategy will vary from country to country. That is why partnering with local organizations and government agencies—the model employed by Bonsucro in Brazil, is seen as an effective way to bring about change in the sugar industry, according to Natasha Schwarzbach, Head of Engagement, Bonsucro.

There are different ways to understand how “continuous improvement” can be achieved towards a specific goal over a period of time. A key step is to “map the supply chain to know where the risks are,” according to Claudio Oliveira, Director of Sustainability, Raizen, a joint venture between Shell and Cosan, Brazil’s main producer of ethanol from sugarcane.

“Bringing sustainable markets to life” and securing Bonsucro’s position as an internationally accepted standard involves the entire sugarcane supply chain, according to Diane Stevenson, Sustainability Director, CSC Sugar and Bonsucro Vice-Chair. It also entails

¹⁵ Bonsucro convened the Buyers Supporting Transformational Change summit in London on December 9, 2016.

increasing the supply of sustainably produced sugarcane, securing buyer commitment to purchase certified products, building consumer awareness and stimulating consumer demand.

Enabling Change

According to Michel Santos, Bonsucro Chair and Director of Global Sustainability at Bunge, Bonsucro has the elements to go beyond mere certification. For Santos, it allows members and certified sites to enhance governance, sustainability metrics and market positioning. It also builds a community to discuss how the whole value chain can go further, addressing the key aspects based on multistakeholder consultation. Now is the moment “to bring more actors into this equation, actors that not only support from a corporate level, but that grant resources to value the efforts of those engaged in the change.”

Clearly, the more the scope is expanded, the higher are the expectations. The challenge is to build a sufficiently robust platform for collaboration in such a complex and competitive sector. There are also market access issues that need to be addressed. Notably, trade in sugar is subject to a multitude of barriers (tariffs, quotas), which make it difficult to gain access to key export markets, particularly for developing country producers. In addition, the prevalence of low commodity prices, in general, reduces the income for producing countries and offers scant incentive to invest in increasing quality or enhancing sustainability.

That is why enabling transformational change in the sugarcane industry, first and foremost, will require addressing local issues, engaging farmers and seizing economies of scale efficiencies. The challenges of sustainability present opportunities as good governance and bring about improved economic performance while building environmental resilience. This type of change will require market knowledge and identification of local leaders to coordinate initiatives. In this way, the Bonsucro Production Standard acts as a vehicle for measuring continuous improvement and a platform for community-based change. It has been successful at certifying the best, now it needs to evolve to change the whole industry. This is the purpose of Bonsucro’s endeavour to engage the membership to move beyond certification and shift the sugarcane supply chain towards sustainability.

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The **SSI Commentaries** contribute to ongoing reflections on how voluntary sustainability standards can best address a range of sustainable consumption and production issues.

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