



BONSUCRO[®]

Monitoring and Evaluation System Report

V1.

31 March 2015

Bonsucro Secretariat

Bonsucro's mission is "to foster the sustainability of the sugarcane sector through a metric-based certification scheme and by supporting continuous improvement for members".

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Bonsucro is the trading name of the Better Sugar Cane Initiative Ltd, a company registered in England and Wales, company number 06798568.

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TABLE OF CONTENTS

1.	Executive Summary	4
2.	Scope and Boundaries of The M&E System	5
3.	Roles and Responsibilities.....	8
4.	Cooperation and Coordination	10
5.	Defining the Intended Change.....	12
6.	Performance Monitoring.....	24
7.	Data Management	28
8.	Outcome and Impact Evaluation	31
9.	Improving the Effectiveness of the M&E System.....	34
10.	Publicly Available Information about the M&E System	36
11.	Technical Appendix	37

1. EXECUTIVE SUMMARY

The Bonsucro M&E System Report provides an overview of the monitoring and evaluation practices employed by Bonsucro to ensure a transparent and credible standard for the sugarcane sector. The vision of Bonsucro is *a sugarcane sector that is continuously improving and verified as sustainable*. The Bonsucro Production Standard (and accompanying tools and standards) is the main mechanism for affecting this change toward sustainability in the sugarcane sector.

Bonsucro measures performance toward this vision by collecting information from annual member reports, monitoring external publications, and gathering data from certified mills and their supplying areas. The outcome and impact of Bonsucro's activities are measured against priority sustainability indicators for sugarcane and key performance indicators for the secretariat.

Bonsucro's Monitoring & Evaluation Programme serves three main purposes:

- Outcomes & Impacts Communication: To support the development of a business case, showcase positive results of certification, and to offer a platform for communicating on the outcomes and impacts of adoption of the Bonsucro Standards;
- Strategies behind the Standards: To enable Bonsucro to better understand the effectiveness of its Standards in making behavioural changes and to identify their strengths and weaknesses;
- Organisational Learning & Adaptive Management: To enable Bonsucro to better understand the effectiveness of the organisation and strategies, and to identify issues, trends, and areas for improvement.

The Bonsucro M&E System is going through a thorough revision to reflect the growing needs of the organization, the implementation of a new Bonsucro Production Standard, the revision of the Bonsucro Certification Protocol that guides data verification, and the release of Version 2.0 of the ISEAL Impacts Code. The upcoming changes are not reflected in this document, as Bonsucro is yet to seek involvement of stakeholders.

Bonsucro has developed and published this report to support compliance with ISEAL's Impacts Code. ISEAL provides codes of good practices that are a global reference for developing credible standards. Questions on the M&E System report can be directed to Sonia Slavinski, Bonsucro's Technical Manager, at Sonia@bonsucro.com.

2. SCOPE AND BOUNDARIES OF THE M&E SYSTEM

Scope

Bonsucro has developed and is maintaining a voluntary global metric standard with the objective of improving social, environmental, and economic sustainability of sugarcane farming and of production of sugarcane derived products, including sugar and ethanol. The scope of Bonsucro's M&E System reflects this objective, as it is designed to monitor compliance and measure improvements of [Bonsucro's certified members](#) in relation to the [Bonsucro Production Standard](#), and to help refine and continuously improve the changes that Bonsucro intends to achieve. It is also designed to monitor Bonsucro's organisational effectiveness, general awareness about Bonsucro and its Standards, and engagement with the sector.

Geographic Scope

The geographical scope of the M&E system reflects the locations of certified mills and where Bonsucro has organised engagement activities as well as where its members are located. To date, there are 45 Bonsucro certified sugarcane mills (39 in Brazil, 5 in Australia, and 1 in Honduras), and 437 members in 31 countries. Growth in membership since the founding of Bonsucro is shown in Figure 1. Figure 2 shows in the increase in land under certification. The scope continues to expand each year as membership and certification expands to new countries.

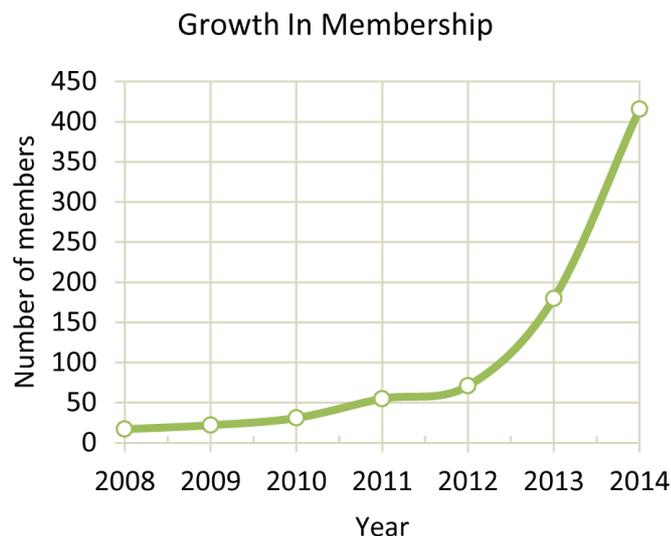


Figure 1: Growth in Bonsucro membership since Bonsucro was founded in 2008.

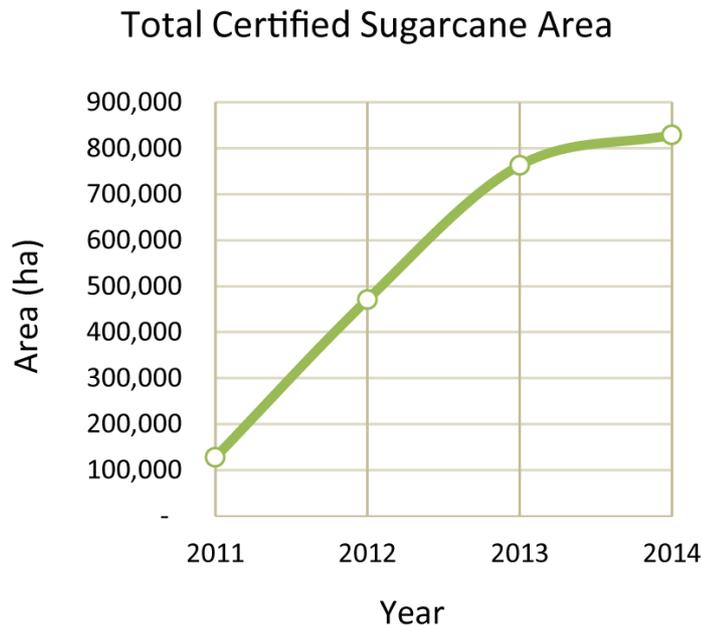


Figure 2: Growth in land under certified sugarcane.

Significant Effects Covered in the M&E System

The M&E system covers the following sustainability issues as defined in the Theory of Change (see section 3): Enterprise Resilience (including Efficiencies and Income), Labour Rights, Biodiversity & Natural Resources (including Water & Soil), Climate Change, and Land Rights. For each of these issues, Bonsucro has set short and medium term objectives which Bonsucro monitors by focusing on 14 priority indicators. These indicators are directly taken from the Bonsucro Production Standard. In addition, Bonsucro monitors a group of internal Key Performance Indicators for evaluating the effectiveness of its activities (see section 6). These activities seek to transform the sugarcane industry at the base of the supply chain, to promote adoption of Bonsucro's Standards, to enable a thriving market for certified sugarcane products, and to position Bonsucro as the prominent standard and learning platform for sustainability in the sugarcane sector.

Scope of Data Collection

Bonsucro collects information from various sources. Qualitative data regarding implementation of the Standard, market outlook, and the views and experiences from the adoption of the Standard and/or membership accession are collected

through reports against [Bonsucro's Code of Conduct](#) which are submitted to Bonsucro on an annual basis. Bonsucro also monitors publication of independent academic research, standard benchmarking studies and other reports relevant to its M&E system. Finally, Bonsucro collects quantitative data from audits and surveillance audits of certified mills, which cover all the sustainability areas described above.

Evolution of the M&E System

Bonsucro is undergoing an organization-level strategy refresh, led by CEO Simon Usher, which will redefine Bonsucro's ambition and how it will be successful in fostering a thriving and sustainable sugarcane industry. The refresh process began with a series of staff workshops, and several key strategic projects have commenced. Members have been asked to participate in the refresh through consultation and a series of surveys, which provide a real opportunity for stakeholders to feed into the formulation of Bonsucro's new strategy, and help Bonsucro become more globally credible and locally relevant.

In response to Bonsucro's strategy refresh and other factors, the Bonsucro M&E System is going through a thorough revision. The revision will reflect the implementation of Version 4 of the Bonsucro Production Standard, the revision of the Chain of Custody Standard, the revision of the Bonsucro Certification Protocol that guides data verification, and the release of Version 2.0 of the ISEAL Impacts Code. The upcoming changes are not reflected in this document, as Bonsucro is yet to seek involvement of stakeholders. The changes to the M&E System will reflect the standard and improve the overall effectiveness of monitoring, learning, and improving.

3. ROLES AND RESPONSIBILITIES

The Bonsucro M&E System is managed by the Sustainability Department with a designated staff member as the main person responsible for the scheme. The table below presents an overview of the roles, responsibilities and experience related to Monitoring and Evaluation, as well as [contact information](#). The M&E Team is expected to be able to understand how the certification system and data collection processes work as well as have sufficient knowledge in data management.

Bonsucro is increasing investment in M&E by appointing a full-time M&E position as part of the Bonsucro strategy refresh. A dedicated budget provision for the M&E Program has been made for the current and following financial year (running 1st April to 31st March) to ensure the organisation commits to maintaining and continuously improving the M&E System. Currently, five staff members are working on the M&E system to support the Bonsucro Calculator, its data collection tool, and the management of the data. Bonsucro may also consider hiring external consultants to carry out on the ground impact study. The current M&E team is as follows:

Position	Current person	Contact info	Role	Background
Head of Sustainability	Nicolas Viart	Nicolas@bonsucro.com Tel: +44 (0) 20 83410060	Responsible for supervision of M&E Programme and for the data collection tool (Bonsucro Calculator)	MSc in Quality Management, 5 years' experience in sustainability standards, technical expertise in sugarcane
Head of Engagement	Natasha Schwarzbach	Natasha@bonsucro.com Tel: +44 (0) 20 83410060	Responsible for Bonsucro Engagement Programme, Communications, and for Member Consultation (including Members' Annual Reports)	6 years' experience in sustainability 14 years' experience in consultations, communications and engagement.
Research & Policy Analyst	Rafael Seixas	Rafael@bonsucro.com Tel: +44 (0) 20 83410060	Responsible for managing the M&E programme. Responsible for research, analysis, and reporting of M&E data.	3 years' experience in outcome evaluation, MSc in International Public Policy
Certification Coordinator	Dayse Groves	Dayse@bonsucro.com Tel: +44 (0) 20 83410060	Responsible for data quality management, training and liaising with certification bodies	4 years' experience in Bonsucro data collection processes, BA Business Administration
Technical Manager	Sonia Slavinski	Sonia@bonsucro.com Tel: +44 (0) 20 83410060	Responsible for supporting analysis and reporting of the M&E System to ISEAL	1 years' experience in agricultural product certification, MSc in Environmental Policy

4. COOPERATION AND COORDINATION

Bonsucro's M&E System has grown stronger as data collection has become more robust, as development of tools has involved broad ranges of stakeholders, and as staff has participated in industry-wide dialogues and learning opportunities.

Bonsucro employs a multi-stakeholder approach to developing new tools and resources for the organization. This allows Bonsucro to ensure the new tools and resources are relevant to members, which leads to increased understanding and uptake. For any standard revision, Bonsucro acts in line with the ISEAL Code of Good Practice for Setting Social and Environmental Standards.

- Bonsucro has also consulted members about its Theory of Change and Priority Indicators for M&E in November 2013, and carried two public consultations (between 26 November 2013 and 10 January 2014) to seek input on the revisions.
- The Bonsucro Calculator was designed to support the assessment against the Bonsucro Production Standard.
- The Bonsucro Production Standard went through a revision process in 2012-2014 at the recommendation of the Bonsucro Secretariat and in line with the standard revision procedure set up in line with the ISEAL Code of Best Practice for Setting Social and Environmental Standards. The Secretariat called for the participation of members, and one representative of each class of membership formed the Standard Revision Committee (SRC). Stakeholders were involved in the project through the SRC, public and online consultations, six pilot audits, and the involvement of several external consultants and technical experts.

Bonsucro has participated in industry-wide dialogues and learning opportunities throughout the development of the M&E System, and will continue to engage in such. This took place predominately through ISEAL and all the activities organised by the organisation relevant to M&E activities, such as [webinars & workshops](#), ISEAL Effectiveness Days, [ISEAL Conferences](#) and other projects such as the [State of Sustainability Initiatives](#), the [Sustainability Standards Comparison Tool](#), and the GIZ



“Expert Consultation: Environmental and Biodiversity Protection in Sustainability Standards”. Bonsucro also prepares its staff through internal trainings and training opportunities with other institutions (the ISEAL webinar trainings for the Impacts Code, and the ISEAL “[Sustainability Standards Essential Trainings Workshop](#)”, for example). If knowledge gaps are identified Bonsucro provides tailored training for its staff, hires external consultants to support the work, or partners with other organisations.

5. DEFINING THE INTENDED CHANGE

As one of the most efficient photo-synthesisers, sugarcane is nature's chosen carbon capture and storage mechanism and is of huge importance to a renewable, low carbon future. Grown in some of the most challenging development contexts, Bonsucro believes it provides a vehicle for change that can foster the development of a globally sustainable supply chain for societies, economies, and ecosystems. Sugarcane is a commodity historically been associated with bad practices, whether social (slavery, forced labour, child labour), agricultural (overuse of pesticides, indiscriminate clearing of land in areas of high biodiversity and woodlands), industrial (poisonous wastes, smoke, noise), and economical (low replanting rate, aging and poorly maintained mills). Notwithstanding all these disadvantages, it is also an industry that has been growing steadily worldwide by over 2% yearly¹ for the last ten years, despite its adverse social and environmental results.

Inspired by the sugarcane sector and the need to create multi-stakeholder roundtables (such as FSC and RSPO), the founding members of Bonsucro (then called Better Sugarcane Initiative - BSI) first met eight years ago to set the objectives and long term goals of what is now known as Bonsucro. The objectives have been formalised in the five principles that frame the [Bonsucro Production Standard](#).

The five principles ensure the sugarcane sector complies with legislation, respects human rights and labour standards; manages input, production and processing efficiencies to enhance sustainability; manages biodiversity and ecosystem services; and continuously improves key areas of the business. Bonsucro uses a global metric standard, with the aim of continuously improving sugarcane production and downstream processing in order to contribute to a more sustainable future. Mills and their supplying areas report metric-based compliance with the principles of the standard using the Bonsucro Calculator, a tool developed by Bonsucro using a multi-stakeholder approach.

¹ FAOstat: <http://faostat3.fao.org/faostat-gateway/go/to/home/E>

Development of the Initial Version of the Bonsucro Production Standard

The process of developing the first standard began in 2008, when Bonsucro established three Technical Working Groups (TWGs). These expert groups covered the areas of (1) social and labour issues, (2) processing/mill issues and (3) agronomic practices, respectively. The experts were selected from the sugarcane producing areas and reflected a balance of interest groups and global representation. They were in charge of drafting the first version of the standard. They followed the [ISEAL Code of Good Practices](#) to ensure that the standards developed were robust and had the widest possible acceptance. By means of public consultations, they engaged extensively with the stakeholders in the widest possible spheres of operation and encouraged participation through comments, suggestions and input of all kind. The stakeholders included farmers, producers, traders, end-users, supporting industries, trade unions, social and environmental NGOs, indigenous groups, government, researchers, academics and certification bodies.

The TWGs embarked on a series of Stakeholder Outreach Meetings, engaging in face-to-face, field and factory meetings with producers and small-scale growers in Australia, Brazil, Dominican Republic, East Africa, South Africa, India, the European Union and Switzerland. Over the same period, pilot studies were conducted using the Standard in Australia, Brazil, Dominican Republic, South Africa and India.

The result of the consultation process was the approval and operation of the first global metric standard for sugarcane sustainability, covering the most important sustainability issues for the sugar and ethanol industry. The Stakeholder Outreach Meetings' records can be found on Bonsucro's website at: <http://bonsucro.com/site/previous-standard-development/>

Attached to the Production Standard, Bonsucro has developed a [Chain of Custody Standard](#) and [Bonsucro EU Production Standard](#). The Bonsucro Chain of Custody Standard is based on the mass balance principle, it ensures the traceability of the claims of sustainability related to the purchase of certified material produced by Bonsucro members. The Bonsucro EU Production Standard includes additional



requirements to enable mills to comply with the EU Renewable Energy Directive (2009/28), which, in addition to the requirements already in the standard, requires mills and supplying areas to calculate the global warming burden of sugarcane production including emissions from any land conversion, and excludes any sugarcane grown on land converted from high carbon stock or high biodiversity.

Development of Version 4 of the Bonsucro Production Standard

Since the first version of the Standard was published, the organisation has grown significantly. Bonsucro strives to constantly improve its Standards, to make sure they continue to match the reality and changes within the sugarcane sector, are state of the art in terms of sustainability, and support Bonsucro's long term goals. In June 2012, upon the recommendation of the Bonsucro Secretariat, the Board of Directors agreed to start the revision process of the Bonsucro Production Standard and Guidance. The Board instructed the Secretariat to follow the Standard Revision Procedure established in line with the ISEAL Code of Best Practice for Standard Setting. The Secretariat called for the participation of Bonsucro members, and one representative of each class of membership formed the Standard Revision Committee (SRC). The SRC first met in London in November 2012. The committee subsequently met remotely, and once in person in New Orleans in November 2013. The SRC was given the task to draft the new version of the Bonsucro Production Standard and Guidance. They based their work on six public and online consultations, six pilot audits and the involvement of several external consultants and technical experts. On 1st August 2014, the Bonsucro membership adopted the present Standard. The 4th Version of the Bonsucro Production Standard became effective on 6th September 2014 and can be downloaded on the standards page of the Bonsucro [website](#).

Bonsucro Strategy Refresh

Bonsucro is undergoing a strategy refresh at the initiative of the Board of Directors, led by CEO Simon Usher, which will redefine Bonsucro's ambition and how it will be successful in fostering a thriving and sustainable sugarcane industry. The key strategic projects will complement the Bonsucro Certification System described in this document, and will provide an opportunity for Bonsucro to significantly enhance the overall M&E System.

Bonsucro's Theory of Change

Bonsucro's Theory of Change was developed at the inception of the organisation, but like its Standards, it has since evolved. In November 2013, during [Bonsucro Week](#) (Annual General Meeting held in Manila, Philippines), the Theory of Change and its graphic version (below) were presented to Bonsucro members, which offered comments and insights. Following this meeting, a [public consultation](#) was also carried online between 26 November 2013 and 10 January 2014 to receive additional comments from any interested stakeholder.

The Bonsucro [Board of Directors](#) formally adopted the Theory of Change in the first quarter of 2014. The following figure and description explain Bonsucro's short, medium, and long term goals and the activities and strategies adopted by Bonsucro to reach them.

Bonsucro's vision is a *sugarcane sector that is continuously improving and verified as sustainable*. To achieve its vision, Bonsucro carries a set of activities (based on its Strategic Plan). The outcomes of activities are monitored by internal Key Performance Indicators. Bonsucro's activities contribute to adoption of the Bonsucro Standards, which are the main tool to achieving its short to medium term objectives. The short to medium term changes are the main drivers for evolving towards Bonsucro's long term objectives and contributing to transforming the sugarcane sector.

Bonsucro recognises that economic, environmental, and social sustainability are moving targets, and its Theory of Change reflects the current set of activities undertaken by Bonsucro to promote its vision. The Theory of Change diagram illustrates Bonsucro's mission to foster the **sustainability** of the **sugarcane sector** *through* a **metric-based certification scheme** *and* by supporting **continuous improvement** for members.

Bonsucro's Theory of Change is composed of three mutually reinforcing areas of operation (Engagement, Standards, and Organisation), which are fundamental to

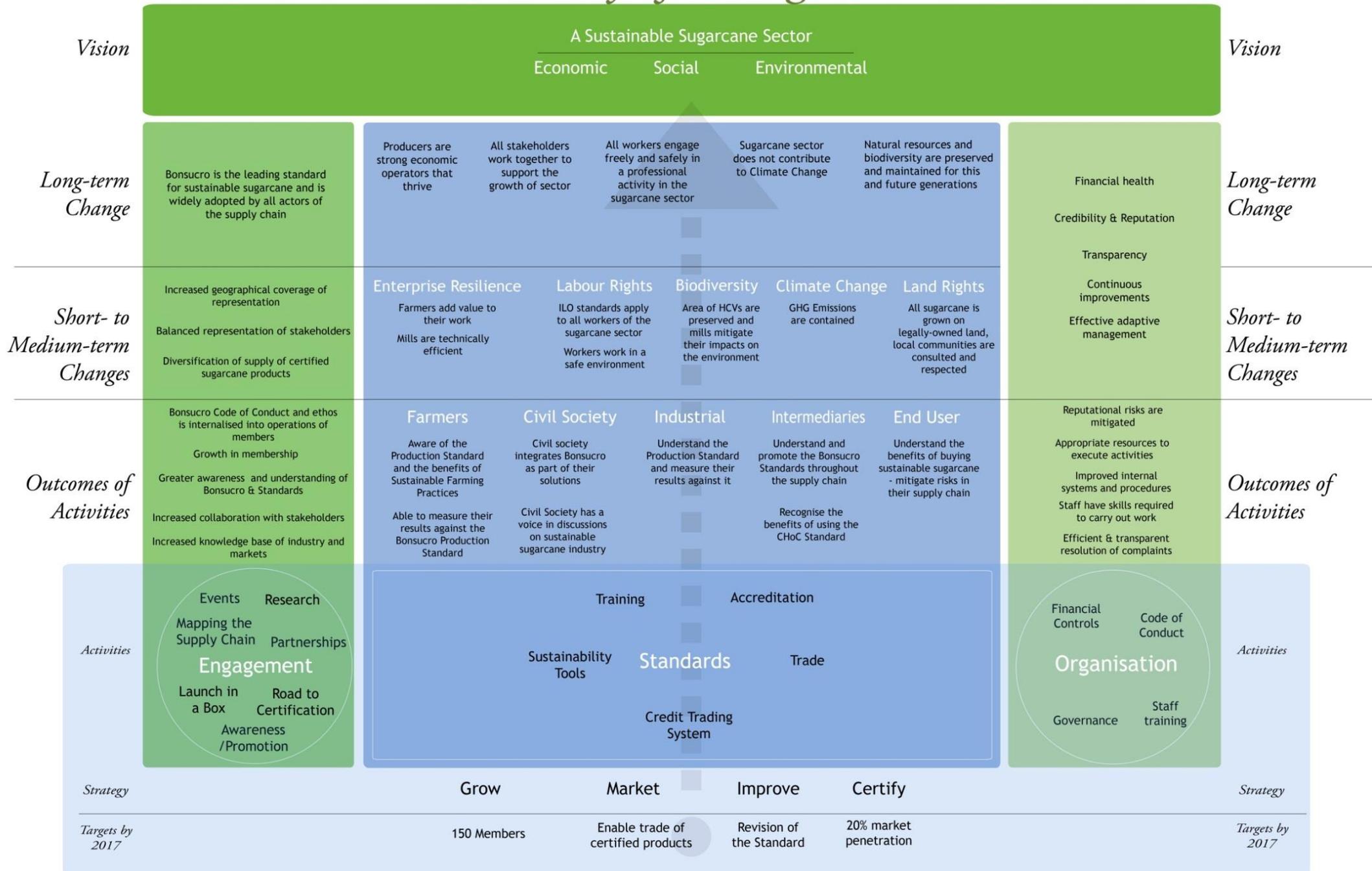


trigger the transformation to a sustainable sugarcane industry, to promote adoption of Bonsucro's Standards, to enable a thriving market for certified sugarcane products, and to consolidate Bonsucro as the principal and legitimate forum for sustainability of the sugarcane sector. Bonsucro Theory of Change aims at bringing changes to different stakeholders: the producers (millers and farmers), the sugarcane sector including buyers of sugar, ethanol other derived products, intermediaries, traders, etc.

For each of the areas of operation, the Board of Directors has defined a set of targets to be reached by 2017. They have been gathered in a document named the [Strategic Plan](#) which is divided in four chapters: Grow, Market, Improve, and Certify. The Strategic Plan helps the Secretariat design its activities to meet these targets.

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Theory of Change



THEORY OF CHANGE PER AREA OF OPERATION

1. Engagement

Activities: Research, Mapping the Supply Chain, [Events](#), Partnerships, Awareness & Promotion, “Road to Certification”, “Engagement Process”.

Description: This area of operation refers to activities undertaken to grow Bonsucro’s membership and representation, to develop commitment to the Bonsucro Code of Conduct, to increase awareness about the Bonsucro Standards, and to strengthen Bonsucro’s value to the sugarcane sector. Based on desktop assessment of where Bonsucro should be active around the globe (using members interest, sustainability hotspots, market information), the Bonsucro Secretariat ranks the countries/region of activities. Following desktop research and mapping of the relevant stakeholders in a given country or region, Bonsucro designs an Engagement Plan. These plans involve activities to foster partnerships and understanding of challenges in a given country (sustainability local hotspot, structure of the industry, key players and their decision-makers, government activities), leading to one-to-one meetings, workshops, or conferences to locally promote Bonsucro and aiming at its adoption, including membership. The follow-up of these activities lead to more in-depth interactions between Bonsucro members and all actors of the supply chain. These activities are reflected in stepwise approaches to 1- sugarcane mills certification (Road to Certification) and; 2- buyers of sugarcane derived products (Engagement Process) towards marketing of certified sugarcane products.

Rationale: By growing its membership, increasing knowledge about Bonsucro and its Standards, increasing collaboration within the sugarcane sector, and promoting Bonsucro’s Code of Conduct and ethos, Bonsucro expects to trigger a long term commitment of the sector to sustainability. Bonsucro aims at increasing its geographical coverage, promoting a balanced representation in the organisation, and encouraging diversification of the supply of certified sugarcane products. By serving as a forum for the sector, by growing its membership and representation,



and by stimulating a market for sustainable products, Bonsucro expects to achieve one of its long-term changes: “Bonsucro is the leading standard for sustainable sugarcane and is widely adopted by all actors of the supply chain”.

2. Standards

Activities: Accreditation, Sustainability Tools, [Training](#), [Credit Trading System](#), and [Trade](#).

Description: Bonsucro maintains and continuously improves its [Production Standard](#) (for sugarcane mills and sugarcane supply areas) and [Chain of Custody Standard](#) (for actors of the supply chain). Bonsucro acts as an Accreditation Body, and licenses [Certification Bodies](#) to carry independent third-party audits against its Standards. Bonsucro is full member of ISEAL and implements each of its internationally recognised Code of Good Practices (Standard-Setting, Assurance, and Impacts). Bonsucro offers producer (level 2) and auditor training (level 3) on its Standards and certification system. Bonsucro also authorises external training providers recognised for their skills to conduct level 2 training. Alongside engagement activities, the trainings enable operators to understand and use Bonsucro’s Sustainability Tools so as to allow farmers, millers, and other stakeholders to evaluate their practices against the Bonsucro Standards and make the necessary improvement to reach the level set by the Standards. Bonsucro also manages systems to provide trust in the trade and public claim of certified products using the Chain of Custody certification (physical trade) and the Credit Trading System.

Rationale: Bonsucro expects that by increasing awareness and providing capacity building, all actors of the sugarcane sector will be able to better understand the economic, environmental, and social benefits of the implementation of the Bonsucro system, and have the capacity to adopt practices which outcome meet the level set in the Production Standard and therefore to achieve certification, and ultimately to participate in the global market for certified sugarcane products. In the short- to medium- term, we expect to see farmers and millers increasingly implementing Bonsucro systems due to the added value (in terms of efficiencies enhancement and cost reductions) of adopting sustainable practices, leading to improvements in terms of production, labour practices, social rights, biodiversity,

natural resources preservation/recuperation, climate change mitigation, and respect for land rights and local rural communities. We also expect end-users of sugarcane derived products to increasingly support Bonsucro to mitigate risks in their supply chain and protect their reputation. The current causal logic considers that by applying the Standards and enabling a market for certified sugarcane products, Bonsucro and its members generate market incentives (triggering offer and demand) that will contribute to achieving Bonsucro's vision and long-term sustainability goals:

- “producers are strong economic operators that thrive”
- “all stakeholders work together to support the growth of sector”
- “all workers engage freely and safely in a professional activity in the sugarcane sector”
- “sugarcane sector does not contribute to climate change”
- “natural resources and biodiversity are preserved and maintained for this and future generations”

Finally to provide the trust in the overall system, the accreditation process ensure consistent evaluation of the Standard and compliance with the rules of certification which are key to guarantee the long-term goals of the organisation and safeguard the reputation of the Bonsucro brand.

3. Organisation

Activities: Financial Controls, [Code of Conduct](#), [Governance](#), and Staff Training.

Description: The set of activities under this area of operation reflects the internal objectives of Bonsucro. As with any organisation, Bonsucro needs to be fit-for-purpose to achieve its goals. This includes having the people with the right skills, and the material and financial resources to perform its activities.

Rationale: Bonsucro expects that, by following and promoting its Governance structure, by offering a transparent and effective [Complaint Resolution Process](#), [public consultation on member applicants](#), by introducing and continuously improving its financial practices and system, and by training staff appropriately, reputational risks will be mitigated, the organisation will have the resources and

people it needs, and will have improved internal procedures to deliver its mission efficiently. These factors will contribute to achieving Bonsucro's long-term and continuous organisational goals of financial health (to achieve and maintain self-sufficiency), credibility & reputation, transparency, continuous improvement, and effective adaptive management.

Strategic Plan

Bonsucro is undergoing a strategy refresh, which will significantly impact the role of the M&E System in supporting the work of Bonsucro and its members. The strategy refresh will redefine Bonsucro's ambition and how it will be successful in fostering a sustainable sugarcane industry. The current Strategic Plan—which is being revised—was approved by the Board of Directors and remains in effect. It is articulated around four pillars:

- Grow (increase the membership);
- Market (increase the availability and trade of certified products in different markets);
- Improve (manage Bonsucro systems and standards to support the uptake of sustainability practices across the supply chain);
- Certify (guarantee the credibility of the standards).

Each pillar is subdivided into action plans and measurable objectives that are under the responsibility of the secretariat staff. The plan is revised yearly. These supportive strategies include, amongst others:

- Grow: development a [Global Farmer Network](#) for the exchange of best farming practices; creation of forums for information sharing between industry stakeholders (events); expansion of external collaboration with the civil society and other roundtables (which are now meeting regularly and sharing their experiences); expand Bonsucro's presence in producing regions;
- Market: implementation of a Credit Trading System (already operational) to offer producers an alternative way of selling and further recognition for their investment toward sustainability as well as to support end-users to purchase claiming rights;
- Improve: active promotion of the claim and labelling policies; capacity building along the supply chain; revise the Standards;

- Certify: expansion and training of recognised certification bodies across the globe.

Besides these pillars, the Strategic Plan also considers organisational objectives, which include having a strong back office, achieving Bonsucro's financial self-sufficiency, maintaining and enhancing Bonsucro's credibility and reputation, increasing transparency, and continuously improve the organisation.

External Factors and Unintended Effects

Bonsucro has been working on the identification of external factors and unintended effects of the implementation and uptake of the Standard. The list of external factors and unintended effects was developed based on the continuous feedback of members working toward, and achieving certification. The stakeholder consultation is informal.

External factors that prevent implementation and uptake of the Standard:

- Uptake of other schemes. *Indicator: how many sugarcane mills are certified against international standards other than Bonsucro;*
- Change in the EU biofuel policy (monitored by Bonsucro);
- Changes in local legislation;
- Adverse financial context;
- Adverse meteorological environment;
- Lack of public commitment from end users (buyers). *Indicator: number of pledges received by Bonsucro end user members;*
- Corporate policies,
- Financial resources. *Indicator: revenue-expenditure, financial review against cost centres.*
- Lack of price premiums for growers,
- Lack of incentives for growers (e.g. impossibility to demonstrate long-term effectiveness of the programme, return of investments to achieve certification).

Unintended effects may include:

- A possible increase in unemployment and negative social impact on communities (due to harvest mechanisation resulting from the objective of reducing the atmospheric burden of burning cane pre-harvest coupled with insufficient training of workers);
- Overburdening costs (due to required technological improvements to comply with the standard to reach the minimum level of efficiencies. *Indicators: rate of uptake of certification, evidence from member mills*);
- Contributing to social, political, or land tenancy conflicts (such as between certified and non-certified mills, between mills and farmers, etc.). *Indicator: Number of valid complaints received by Bonsucro under the Complaints Resolution Process with regards to Land Rights*;
- The resources required to implement and verify the standard might be inaccessible to small-scale production, therefore certification would favour large-scale or corporate production increasing their market power and ability to negotiate. *Indicator: average size (in hectares) of supply areas within certification scope*;
- The Standard system implemented by Bonsucro should also be mindful not to excessively focus on documentation and rather make an effort to acquire complete understanding of what happens on the ground;
- By promising a gain in efficiencies of certified entities, Bonsucro might expose itself to disappointment of members if the promise can't be demonstrated or does not become real. *Indicator: rate of uptake of certification, reactions to outcome reports* ;
- Finally there is a risk that developing and enforcing a strict Standard would exclude groups that do not have the ability to match its requirements.

6. PERFORMANCE MONITORING

In all levels, Bonsucro operates by measuring performance. From its metric Standard to sugarcane mills, to the daily work of the staff, everything is measured and serves as evidence against pre-defined quantifiable and verifiable objectives. We believe that “what gets measured gets managed”. Performance monitoring is conducted using data from several sources, the primary source being reported in the Bonsucro Calculator by certified mills. The information is verified by certification bodies, with oversight from Bonsucro staff. The data from the Calculator is comprehensive, and it is interpreted to contribute to the M&E System based on priority indicators, which have been identified in Bonsucro’s Theory of Change.

Bonsucro Calculator (Certified Mills’ Data)

Aiming at understanding its outcomes and impacts, Bonsucro has developed a set of [Priority Indicators for Monitoring and Evaluation](#). These indicators reflect Bonsucro’s Theory of Change (see section 5) and are considered the most important for observing the intended changes that Bonsucro seeks to promote within the sugarcane sector.

The indicators were selected by the Bonsucro secretariat and were presented for consultation with the membership in November 2013 during [Bonsucro Week](#). They were also open to comments from any interested stakeholder during a [public consultation](#) that ran between 26 November 2013 and 10 January 2014.

The following table summarises Bonsucro’s short to medium-term goals and the respective indicator and metric for monitoring and evaluation in accordance with the Bonsucro Production Standard and the Theory of Change.

Area	Short to medium-term goals as per Theory of Change	Issue	Indicator of Bonsucro Production Standard Version 3	Indicator	Short to medium-term metric (as per Bonsucro Production Standard)	Compliance outcome
Land Rights	All sugarcane is grown in legally-owned land, local communities are consulted and respected	Land Ownership	1.2.1	The right to use the land can be demonstrated	Yes	Land where sugarcane is grown is legally-owned and not contested by local communities
Enterprise Resilience	Farmers add value to their work	Yields	3.1.2	Yield (tc/ha harvested/y)	45 for Dryland; 65 for Supplementary Irrigated Systems; and 85 for Irrigated Systems	Yields are improved
		Value Added	5.9.1	USD \$/t cane	Mill > 4; Agric >2	Sustainable sugarcane adds value to farmers and mills
	Mills are technically efficient	Mill Efficiency	3.1.4	Mill overall time efficiency (processing time as percent of total time)	>75	Mills are efficient economic operators
Labour Rights	Workers work in a safe environment	Workers Safety	2.3.1	Lost time accident frequency (number per million hours worked)	Mill <15; Agric < 45	Workers engage safely in a professional activity in the sugarcane sector
	ILO Standards apply to all workers of the sugarcane sector	Wages*	2.4.1	Ratio of lowest entry level wage including benefits to minimum wage and benefits required by law (\$/\$)	≥1	National minimum wage is ensured
		Minimum Wage of Workers*	2.1.1	Years (Minimum)	18 for hazardous work 15 for non hazardous work	Child labour is eradicated in the sugarcane sector
		Workers Rights* (regarding forced or compulsory labour, discrimination, and freedom of association)	2.1.1	To comply with ILO's Labour Conventions	Yes	ILO standards apply to all workers of the sugarcane sector

Climate Change	GHG emissions are contained	GHG Emissions	3.2.1	Net GHG emissions for sugar	<0.4 t CO ₂ eq/t sugar	Sugarcane industry does not contribute to climate change.
		GHG Emissions	3.2.2	Net GHG emissions for ethanol	<24 gCO ₂ eq/MJ	Sugarcane industry does not contribute to climate change.
Biodiversity & Natural Resources	Areas of High Conservation Value are preserved and mills mitigate their impacts on the environment	Water	5.2.1	Net water consumed per unit mass of product (kg/kg of product)	Mill , <20 kg/kg sugar; or <30 kg/kg of ethanol. Agric <130 kg/kg cane	Efficient use of water in agriculture and milling. Environmental burden of sugar milling is contained
		Environmental Impacts*	4.1.7	Herbicides and pesticides applied per hectare per year	<5 kg active ingredient/ha/y	Impact on biodiversity of sugarcane growing is managed
		Environmental Impacts*	4.1.6	Nitrogen and phosphorus fertiliser (calculated as phosphate equivalent) applied per hectare per year	<120 kg/ha/y	Impact on biodiversity of sugarcane growing is managed; Run-offs from fertiliser are reduced
		Biodiversity*	4.1.2	High Conservation Value areas (interpreted nationally as described in Appendix 1) used as a % of total land affected by a new project or an expansion	0	Areas with high conservation values are protected

* Core Criteria (compliance is required for certification)

By monitoring these indicators, Bonsucro aims to better understand and monitor its outcomes and impacts, so as to continuously refine its Theory of Change and adapt its strategies. It also seeks to develop a business case, and to communicate about the benefits of sustainability to all actors of the sugarcane sector.

In organisational terms, Bonsucro has a set of internal goals regarding its activities and supporting strategies, which are guided by the Bonsucro's Theory of Change and Strategic Plan, as explained in section 3.

To monitor this, Bonsucro collects data on Key Performance Indicators, to verify the implementation of its activities, which include, amongst others:

- Number of members per category and country;
- Number of certified mills per country;
- Volume and origin/destination of trades of certified products and credits;
- A formal human resources process for evaluating staff performance and identifying training needs;
- Percentage of success at Bonsucro Training Exam;
- Global area under certified sugarcane;
- Age of debt;
- A formal and structured monthly review of Bonsucro's financial performance against cost centres.

Finally, the monitoring of influencing factors and unintended consequences is continuous and carried out not only by Bonsucro staff but also by the sugarcane sector itself. A dedicated programme has not yet been implemented to measure the influencing factors or the unintended consequences as such. Nevertheless, Bonsucro events provide forums for the discussion of these factors, making sure that Bonsucro has contact with experts, and up-to-date information regarding the impacts of its activities from the viewpoints of all the industry's stakeholders (millers, farmers, intermediaries, NGOs, buyers, members and non-members etc.). In effect, this business-watch will allow the organisation to adapt to changes.

7. DATA MANAGEMENT

As explained in the Scope and Boundaries of the M&E System (Section 2), Bonsucro has three sources of information: 1-) Members' Annual Report against the Code of Conduct; 2-) Certified mills' data; 3-) Reports & benchmark studies commissioned and conducted by Bonsucro and independent research. The data collected is saved in a secure server, backed-up weekly and with controlled access.

Data collection, storage, and use are under responsibility of different staff members:

- *Head of Engagement*: Responsible for gathering and storing data from Members' Annual Reports (submitted yearly);
- *Certification Coordinator*: Responsible for liaising with certification bodies, acquiring, organising, and storing data collected from certified mills;
- *Technical Manager*: Responsible for monitoring, gathering, and assessing independent research about Bonsucro; Responsible for analysing certification data and writing M&E and outcome reports;
- *Head of Sustainability*: Responsible for M&E system; Responsible for supervision of data collection and organisation; Responsible for the data collection tool (Bonsucro Calculator); Responsible for supervision of data analysis and M&E and outcome reports.

Independent research, reports, and benchmark studies offer important information for Bonsucro; together with Bonsucro events, they may contribute towards monitoring influencing factors and unintended effects as well as towards understanding broader implications of adoption of the Bonsucro standards (e.g. community level impacts). We strive to take studies from respected organisations, researchers, and authors specialised in the sugarcane sector into consideration. Information from these sources is collected directly by the secretariat and by Bonsucro members. They are shared internally to relevant team members for their consideration and further actions.



The Annual Report against the Code of Conduct is a compulsory requirement for Bonsucro's membership. Members respond to questions designed by the Secretariat regarding their experiences with Bonsucro, their market, their plans, and their activities to support Bonsucro's goals. It is also an opportunity for members to let Bonsucro know about their concerns, challenges, and opportunities in the sugarcane world. The reports offer rich qualitative information about adoption of the standards, market of certified products, amongst others. Data are collated and studied by the secretariat to design global, regional, and local action plans.

Finally, and most importantly, with regards to mills' certification data, to monitor progress regarding the Priority Indicators for M&E presented above, Bonsucro has implemented a data collection protocol (captured in the [Production Standard Guidance for Implementation](#) and [Certification Protocol](#)), which guides what and how data should be collected for each of the Standard's indicators. Bonsucro implements quality assurance measures to ensure data quality, reliability and accuracy of data collected by (1) providing clear indicators on how data should be collected, (2) internal verification measures, and (3) closely working with the certification bodies to verify data accuracy. Bonsucro seeks to continuously improve these three measures of quality assurance in data collection.

For audit against the Production Standard the growers and millers are required to fill out the **Bonsucro Calculator**. It is used to evaluate conformity of an operator with each metric indicator of the Bonsucro Production Standard by calculating the performance of the operator and comparing it with the level set in the standard. The Bonsucro Calculator is therefore designed to collect, manage data and is used to perform analysis of data, both cross-sectional (comparing certified units' results) and longitudinal (understanding individual evolution over time).

Data verification is put under the responsibility of the [licensed certification bodies](#) which have the mission to collect sufficient evidence that justify any data entered in the tool. The guiding documents clarify how indicators should be interpreted and what is expected from auditors collecting data. As licensed certification bodies are the entities with full on-the-ground access to the data and the knowledge necessary to perform audits, ensuring they are skilled, trained and competent increases the reliability of the data, hence the certification decision.



Every auditor collecting data is trained on the Bonsucro Calculator as well as on the data itself, either by Bonsucro or internally, and has the necessary technical knowledge to understand and verify information collected from farms and mills and to report it. Bonsucro's Guidance for Implementation and Certification Protocol entail different methods to obtain data, including: interviews, sampling, documental and background checking, visual audits, among others.

Audit results and Bonsucro Calculators are sent to Bonsucro after validation by the certification body. This way, Bonsucro obtains individual-level data of certified member mills. It is important to note that the mills own their individual data and make them available to the certification body which relay them to Bonsucro. Individual-level data will never be disclosed publically. Bonsucro then uses the data in an aggregated way and considers it anonymously for purposes of evaluation and communications.

Through its role of accreditation body, Bonsucro monitors the activity and the compliance of certification bodies with the Certification Protocol and verifies specifically the quality of the work as data verifier of the certification bodies. This helps Bonsucro to have an increased confidence in the data received.

8. OUTCOME AND IMPACT EVALUATION

The Bonsucro M&E System is a tool used to continuously improve Bonsucro's operations in response to internal and external evaluations. As highlighted in the executive summary, the M&E System serves three main purposes:

- Strategies of Standards (see section 6): to enable Bonsucro to better understand the effectiveness of its Standards in making behavioural changes and to identify their strengths and weaknesses
- Outcomes & Impacts Communication (see section 5): To support the development of a business case, showcase positive results of certification, and to offer a platform for communicating on the outcomes and impacts of adoption of the Bonsucro Standards;
- Organisational Learning & Adaptive Management (see section 6): To enable Bonsucro to better understand the effectiveness of the organisation and strategies, and to identify issues, trends, and areas for improvement.

Annual outcome evaluations will be completed as part of the M&E System. The role of the outcome report as part of the M&E System is to:

- Enable Bonsucro to understand certified units' path towards compliance with the Standard;
- Enable Bonsucro to draw the picture of sustainability in the sugarcane sector;
- Support the continuous revision and improvement of the Standard and of Bonsucro's data collection procedures;
- Enable Bonsucro to monitor the work of certification bodies and to systematise the flow of communications and reporting from them;
- Enable Bonsucro to manage its training programme and support to members, focusing on areas where compliance is difficult or where technical expertise is needed;



- Strengthen the Bonsucro brand and reputation by improving public recognition through a transparent and accurate report of the outcomes and improvements of Bonsucro's adoption by mills and farms;
- And adapt its strategies to the evolution of the sector and efficiently use its resources to plan activities.

Certified units are audited on an annual basis and Bonsucro intends to publish yearly outcome reports. Outcome reports will be published annually. In this way, Bonsucro seeks to internalise the habit of performing evaluations as well as to increase stakeholder involvement and awareness of the reports.

Evaluations will be carried out by Bonsucro staff with support of external partners and consultants. Evaluations will be open to public comment and available at the [M&E System section of the website](#). All reports will be made with aggregated values, following anonymity rules: individual analysis will not be permitted to protect user's data (see confidentiality policy in Technical Appendix).

Comparisons between certified and non-certified units are still a challenge, since non-certified units either do not collect or do not disclose information regarding Bonsucro's indicators. Therefore, the initial focus is on certified mills. Additionally, Bonsucro is working very closely with its non-certified members to support their data collection journey and encourage them to communicate their results at the earliest stage possible.

Bonsucro has received requests from stakeholders to publish case studies on certification. The case studies provide concrete examples of the path followed by mills to achieve certification and the benefits and improvements they have observed. A first case study was published in the "[Bonsucro At A Glance](#)" brochure that was launched at the Bonsucro annual conference held in November 2012 in London.

Bonsucro published on 15 January 2014 its first [Preliminary Outcome Report](#), based on a subset of the Priority Indicators. It provides a picture of what certified mills have achieved since they became certified and helps to draw a preliminary picture of what Bonsucro certification means for the operators. It also offers baseline data



that will be used as reference in subsequent outcome reports. This first assessment will be refined every year as more data (more certified mills over a longer period of time) are collected and analysed.

To respond to the high level of interest and expectations by stakeholders observed during [Bonsucro Week](#), Bonsucro will endeavour to annually review, update, and expand the data presented in the annual outcome report. Bonsucro's annual outcome report will be published at the time of each Bonsucro Week (Annual General Meeting).

9. IMPROVING THE EFFECTIVENESS OF THE M&E SYSTEM

Bonsucro's information is always shared amongst team members to allow Bonsucro to effectively react to news and changes. Also, information is shared with all members via the Bonsucro Bulletin (every two weeks) and in the members' only area of the website.

Outcomes and impacts evaluation support discussions and stimulate reflection within Bonsucro, thus assisting the revision of the organisation's practices and goals, thus tailoring its global, regional and local actions.

In response to the Bonsucro's strategy refresh and other factors, the Bonsucro M&E System is going through a thorough revision. The revision will reflect the growing needs of the organization, the implementation of a new Bonsucro Production Standard, the revision of the Bonsucro Certification Protocol that guides data verification, and the release of Version 2.0 of the ISEAL Impacts Code. The upcoming changes are not reflected in this document, as Bonsucro is yet to seek involvement of stakeholders. The changes to the M&E System will reflect the standard and improve the overall effectiveness of monitoring, learning, and improving.

The Board of Directors meet four times per year and also have the opportunity to learn from the monitoring and reporting of outcomes as part of the monitoring indicators are reported within a dashboard used by the board to follow and steer the evolution of the organisation.

In the same way, interested stakeholders are presented with the M&E information during Bonsucro's Annual General Meetings and may access up-to-date information and outcome reports at the M&E section of the website. We expect it provides a better visibility of how the organisation is performing and encourage them to better engage and interact with it. Member stakeholder days are held annually and every quarter webinars are held with the various classes of membership.



Running the M&E System and working with data will also enable Bonsucro to assess whether there are any gaps in the information collected or disputes regarding reliability and validity of the data and methods used. These would feedback into the process of improving our internal systems, and of refining data collection protocols enforced by Bonsucro. The data also feed into any Standard revision process as they are providing information on how operators perform against the Standard. It also helps answering any question about the relevance of an indicator.

The results will also help Bonsucro to understand where members and potential members might need support (technical, financial) to achieve certification. This feeds into efficiently managing the human and time resources of the organisation.

Bonsucro has developed a claims and labelling requirements document to ensure any claims made on the outcome of certification is substantiated by data, thus preventing unsubstantiated claims regarding the program's impact, undermining its objective and work.

Finally an extended outcome is to support Bonsucro members in demonstrating their commitment to sustainability and extracting the benefit of implementing and running their sustainability strategies. Offering an M&E system will become part of the added value offered by Bonsucro to the sector.

10. PUBLICLY AVAILABLE INFORMATION ABOUT THE M&E SYSTEM

Bonsucro is also committed to transparency and has developed a [Monitoring & Evaluation section](#) on the website, whereby the general public will be able to access and comment on the full outcomes and impact reports, as well as independent research about the work carried out by Bonsucro. Announcements regarding Bonsucro events and other opportunities for stakeholder involvement will also be posted on this section.

Comments, questions or complaints about the Bonsucro M&E System are welcome from any source, and should be directed to Sonia Slavinski via email, Sonia@bonsucro.com.

11. TECHNICAL APPENDIX

PART A. DATA MANAGEMENT AND CONFIDENTIALITY

As informed in the report, Bonsucro collects data through recognised certification bodies (CBs). CBs are required to be trained by Bonsucro. They sign a License Agreement to become able to carry audits and surveillance audits. Recognised CBs must also agree to follow the guidelines and data collection rules required by the Bonsucro's Certification Protocol and the Bonsucro's Audit Guidance.

The information provided by certification bodies is disclosed to Bonsucro via the Bonsucro Calculator, a tool that enables the collection and management of the required metric indicators. Bonsucro will then analyse the data received and produce an annual report (either aggregating data or employing anonymity). The certification body summarizes the compliance of the unit of certification with an audit report and certification. The audit report contains production and certification volumes used for Bonsucro's external reporting.

The protection of confidential and proprietary data takes place in two fronts.

Firstly, Bonsucro and its members have to obey a Code of Conduct, which includes a section on Competition Compliance Policy. Members have to comply with the competition rules of the European Union (EU) and local, federal or national competition or anti-trust laws of other countries in which they operate. As Bonsucro provides a forum for members to meet and discuss issues concerning the industry in which they operate, members should be aware of the competition law risks this creates.

Bonsucro is against the sharing of trade sensitive and confidential information between members.

Extract of the Competition Compliance Policy Annex of the Bonsucro Code of Conduct:

2. Bonsucro reserves the right to expel a Member if it reasonably suspects that Member has been involved in any of the following practices at a meeting of any or all of Bonsucro's Members:

2.2.1 Discussing product prices and charges (including discounts and allowances), terms of sale, product or marketing plans and/or business relations with competitors.

2.2.2 Exchanging information with competitors which reduces or removes uncertainties in competition, e.g. price information.

2.2.3 Agreeing with competitors to fix the price at which the Member and competitor will acquire goods and/or services or agreeing to acquire goods and/or services only from specific suppliers.

2.2.4 Agreeing with competitors to provide goods and/or services on the same terms and conditions, leaving customers with little or no choice between suppliers.

In addition to the Competition Compliance Policy, Bonsucro also demands the protection of confidential information and proprietary data from recognised CBs.

Extract of the Confidentiality Section of the Certification Bodies' License Agreement:

11. CONFIDENTIALITY

11.1 Each party undertakes that it shall not at any time disclose to any person any confidential information concerning the business, affairs, customers, clients or suppliers of the other party or of any member of the group of companies to which the other party belongs, except as permitted by clause **Error! Reference source not found..**

11.2 Each party may disclose the other party's confidential information:

11.2.1 to its employees, officers, representatives or advisers who need to know such information for the purposes of carrying out the party's obligations under this agreement. Each party shall ensure that its employees, officers, representatives or advisers to whom it discloses the other party's confidential information comply with this clause **Error! Reference source not found.;** and

11.2.2 as may be required by law, court order or any governmental or regulatory authority.

11.3 No party shall use any other party's confidential information for any purpose other than to perform its obligations under this agreement.

11.4 All information (whether written, electronic, visual and/or verbal) disclosed by Bonsucro and/or to which CB may have access or develop for Bonsucro by virtue of this agreement (including without limitation, the existence of this agreement and the activities performed by the parties under this agreement) shall be deemed to be confidential information for the purposes of this clause **Error! Reference source not found..**

1.1 The license is valid for three years. Bonsucro carries yearly procedures to determine whether the Certification Body is complying with the agreement, these take the following forms:

- Office Audit: Bonsucro staff conduct an audit of the CB's office to check if the correct procedures for compliance with the license agreement are in place);
- Audit Witnessing: Bonsucro staff join the CB for an audit of a mill and/or farm to verify how the CB works and if the Certification Protocol and Audit Guidance documents are being respected;
- Documental analysis: Bonsucro assesses CB's documentation on audits to search for any non-compliance.

PART B. THE BONSUCRO CALCULATOR (EXCERPT)

Row	Category	Value	Unit	Notes
19	Direct consumption of transport vehicles	44000	litres	
20	Direct Energy per litre	37.84	kJ/L	Default value is 37.84 kJ/L. A more representative value for local fuel may be used if available.
21	For alternative way of calculation			
22	Average Case Transport Distance (T value)	1000	km	
23	Average Direct Consumption of transport vehicles	1.2	litres / L	
24	Direct Energy per litre	37.84	kJ/L	Default value is 37.84 kJ/L. A more representative value for local fuel may be used if available.
25	Average Fuel used	20.5	litres / case	
26	Milling/Processing			
27	Total Payroll expenses	1000000	litres	
28	Training Expenses	100000	litres	
29	Water from river / well	800	litres	
30	Other water used	1000000	litres	
31	Treated effluent water returned to water course	800	litres	
32	Fibre content of cane	14.5	%	
33	Raw juice purity	85	%	
34	Sucrose content of cane	13.5	%	
35	Total sugars content of cane expressed as reducing sugars (RTS)	13.5	%	
36	Reducing sugar / sucrose ratio in cane or raw juice	0.7	%	Must be obtained from laboratory analysis
37	Electric power imported	4000000	litres	
38	Energy efficiency of electric power supplied	40	%	To be obtained from local energy supplier. If not available, use 40 % for new units (after 2006) or 37.5 % for old units (before 2006) (MPC/CONICO)
39	Factory Coal Consumption	1000000	litres	
40	Lower heating value of coal (LHV)	29.7	kJ / kg	Calorific value to be obtained from Coal supplier.
41	Natural Gas Consumption	2000	litres / 10 cases	
42	Lubricants	0.2	litres / 10 cases	If not available, use default value of 0.28 from Wang et al. (2006)
43	Direct consumption in mill processing operations	40000	litres	
44	LHV of Diesel	37.84	kJ / L	Default value is 37.84 kJ/L. A more representative value for local fuel may be used if available.
45	Waste/losses	1000	litres / 10 cases	Includes transport and handling energy only
46	Live feed in factory	100000	litres / 10 cases	
47	Caustic soda consumption in mill	100000	litres / 10 cases	Excludes caustic used in effluent plant, required in cell CO2
48	Sucrose recovery and Sucrose to acid in mill	100	% / 10 cases	
49	Boiler feed water treatment chemicals used	10000	litres / 10 cases	
50	Factory effluent usage in effluent plant	1000	litres / 10 cases	
51	Caustic soda Consumption	1000	litres / 10 cases	Excludes caustic used in mill for chem cleaning etc. in cell CO2 above

Input Data spread sheet - 233 individual data entries are required

Row	Category	Value	Unit	Compliance	Notes
58	Fermentable total sugars content of cane expressed as invert (TSI)	130	kg / 10 cases	COMPLIANT	Must be obtained from laboratory analysis
59	Caustic soda 5.3.1	10000	litres	COMPLIANT	Used if ethanol is produced. If you don't have this value, fill in the next cell the reducing sugar / sucrose ratio in cane or raw juice. In order to calculate it.
60	Total sugars content of cane expressed as reducing sugars (RTS)	13.5	%		
61	Sucrose content of cane	13.0	%		
62	Reducing sugar / sucrose ratio in cane or raw juice	0.7	%		Must be obtained from laboratory analysis
63	Total sugars content of cane expressed as reducing sugars (RTS)	13.5	%		
64	Caustic Results 5.3.2	10000	litres / 10 cases	COMPLIANT	
65	Fermentable total sugars content of cane expressed as invert (TSI)	130	kg / 10 cases	COMPLIANT	
66	Primary Energy (stage per tonne of sugarcane)	100	kJ / 10 cases	COMPLIANT	See appendix 3 for details.
67	Caustic soda 5.4.1	10000	litres	COMPLIANT	
68	Diagn content of Nitrogen fertilizer	50	kg / 10 cases		Shannon et al (2004), Weirich (2006) 56.1
69	N application ratio, as elemental N	75.0	kg / ha		
70	N fertilizer energy	4371.1	kJ / kg		
71	Phosphorus	9.0	kg / 10 cases		Shannon et al (2004), Weirich et al. (2006) 7.5
72	P2O5 application	75.0	kg / ha		
73	P2O5 fertilizer energy	4973.0	kJ / kg		

Example of a calculation spread sheet - using the input data it calculates the compliance of an operator with the requirements of the standard