

Bonsucro EU Production Standard

Country/ Organization	Bonsucro – Better Sugar Cane Initiative	Year and status	December 2010; finalized
Initiative	Bonsucro EU Production Standard		
Membership	Consumer companies; commodity traders; NGOs; national and local producers; and oil companies		
Governing bodies	Supervisory Board; Management Committee; and Technical Working Groups		
Type and implementation approach	Certification scheme	Geographical coverage	Global
Feedstock covered	Sugarcane	Supply chain coverage	Production and primary processing
Type(s) of biofuels covered	Sugarcane; including for bioethanol		
Link	http://www.bonsucro.com		

Overview¹.

Bonsucro (Better Sugar Cane Initiative) is “a global multi-stakeholder [sugar retailers, investors, traders, producers and NGOs] association established to reduce the environmental and social impacts of sugarcane, by designing a standard and programme to transform the sugarcane industry”.

Bonsucro aims, in particular, to:

- define globally applicable performance-based principles, criteria, indicators and standards for sugarcane production;
- promote measurable improvements in the key economic, environmental and social impacts of sugarcane production and primary processing; and
- develop a certification system that enables producers, buyers and others involved in sugar and ethanol businesses to obtain products derived from sugarcane that have been produced according to agreed, credible, transparent and measurable criteria.

In 2008, Bonsucro established three Technical Working Groups (TWGs) to identify indicators that can be measured, which allow an assessment to be made of whether or not associated criteria are being met. Expert groups covered the three areas of:

- Social and Labour;
- Processing and Milling; and
- Agronomic practices.

Version One of the Bonsucro Standard was released in early 2009 and open for consultation from 2 March 2009 to 30 April 2009. Version Two was then prepared based on the comments received

¹ The information included in this section was excerpted and adapted directly from the web-site of Bonsucro: <http://www.bonsucro.com>

through relevant Technical Working Groups and the results of pilot studies. Version Two of the standard was open for consultation from 12 November 2009 to 12 January 2010. The result of this second consultation process was the release of the Bonsucro Production Standard in December 2010.

Bonsucro members agreed to develop criteria and indicators around the following five principles:

1. Obey the law;
2. Respect human rights and labour standards;
3. Manage input, production and processing efficiencies to enhance sustainability;
4. Actively manage biodiversity and ecosystem services; and
5. Continuously improve key areas of the business.

In order to obtain Bonsucro Certification, producers must achieve 80% compliance of the indicators contained in principles 1 to 5. Furthermore, a set of core criteria must be met before compliance can be considered, namely:

- 1.1 To comply with relevant applicable laws;
- 2.1 To comply with ILO labour conventions governing child labour, forced labour, discrimination and freedom of association and the right to collective bargaining;
- 2.4 To provide employees and workers (including migrant, seasonal and other contract labour) with at least the national minimum wage;
- 4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services; and
- 5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).

Producers must also achieve 80% compliance of the criteria contained in Section 7: Chain of Custody. For the production of ethanol intended to be put onto the European Union market and application for the Bonsucro EU Certification, producer are required to satisfy full compliance of additional requirements in Section 6: Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC).

For citation:

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BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1. ENVIRONMENTAL			
1.1 Land-use change (direct and/or indirect) Back to table of contents	5. Continuously improve key areas of the business	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	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. Applies to: Processing & milling; agriculture Verifier: % Standard: 0 NOTES: <i>Cut-off date 1 January 2008. NB This indicator duplicated in 4.1.2 but here it includes HCV categories 5 and 6.</i> [Also relevant to issue(s)/aspect(s): 1.2 Biodiversity and ecosystem services.]
	6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC).	6.1 To monitor global warming emissions with a view to minimizing climate change impacts.	See also indicator of criterion 6.1 on impacts of global warming emissions on land-use change at aspect/issue 1.6 GHG emissions.

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.2 Biodiversity and ecosystem services Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	<p>Percent of areas defined internationally or nationally as legally protected or classified as High Conservation Value areas (interpreted nationally and officially as described in Appendix 1) planted to sugarcane after the cut off date of 1 January 2008.</p> <p>Applies to: Agriculture Verifier: % Standard: 0</p> <p>NOTES: <i>To prevent expansion or new sugarcane development into areas of critical biodiversity (including HCVA categories 1-4). National definitions of HCVA to take precedence over international where both exist. In the absence of national HCVA maps or data base, credible documentary evidence required that no HCVA converted after 1 Jan 2008.</i></p> <p>See indicator of criterion 4.1 on assessing impacts of EMPs with reference to ecosystem services at aspect/issue 1.9 Environmental sustainability (cross-cutting).</p>
	5. Continuously improve key areas of the business	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	See indicator of criterion 5.7 on High Conservation Value areas affected by new project or expansion at aspect/issue 1.1 Land-use change (direct and/or indirect).

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.2 Biodiversity and ecosystem services (continued)	6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC).	6.2 To protect land with high biodiversity value, land with high carbon stock and peatlands.	See indicator of criterion 6.2 on conversion of land with high biodiversity value at aspect/issue 1.6 GHG emissions.
1.3 Productive capacity of land Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	<p>Use of co-products does not affect traditional uses (e.g. fodder, natural fertilizer, local fuel) or affect the soil nutrient balance or soil organic matter.</p> <p>Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes</p> <p>NOTES: <i>Use of agricultural co-products as inputs must not jeopardize local uses or adversely affect soil quality.</i></p> <p>[Also relevant to aspect(s)/issue(s): 2.2 Rural and social development; and 2.6 Energy security and access.]</p>
	5. Continuously improve key areas of the business	5.2 To continuously improve the status of soil and water resources.	<p>% Ground cover of tops or leaves after harvest</p> <p>Applies to: Agriculture Verifier: %</p>

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.3 Productive capacity of land (continued)	5. Continuously improve key areas of the business (continued)	5.2 To continuously improve the status of soil and water resources. (continued)	Standard: >20 NOTES: <i>To ensure the continuous improvement of soil organic carbon.</i>
			Soil surface mechanically tilled per year (% of area under cane) Applies to: Agriculture Verifier: % Standard: <20 NOTES: <i>To minimise the opportunity for erosion. Soil surface tilled per year. Hectares tilled as a percentage of area under cane.</i>
			Percent fields with samples showing analyses within acceptable limits for pH. Applies to: Agriculture Verifier: % Standard: >80 NOTES: <i>To ensure the maintenance of acceptable pH. Sampling to be carried out at least once per crop cycle.</i>
1.4 Crop management and agrochemical use Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services.	Fertilizer applied according to soil or leaf analysis Applies to: Agriculture Verifier: Yes/No

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.4 Crop management and agrochemical use (continued) Back to table of contents	4. Actively manage biodiversity and ecosystem services (continued)	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services. (continued)	Standard: Yes
			Nitrogen and phosphorus fertilizer (calculated as phosphate equivalent) applied per hectare per year Applies to: Agriculture Verifier: kg/ha/y Standard: <120 NOTES: <i>Environmental burden is kg phosphate equivalent as defined in Appendix 1 - measuring risk (i.e. amounts applied) rather than level in downstream water. Quantities of nitrogen and phosphorus fertilizer applied calculated as the phosphate equivalent as a measure of potential effects on eutrophication per hectare per year. To minimise losses from over application and consequent ground water or downstream contamination.</i> [Also relevant to aspect(s)/issue(s): 1.5 Water availability and quality.]
			Herbicides and pesticides applied per hectare per year Applies to: Agriculture

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.4 Crop management and agrochemical use (continued)	4. Actively manage biodiversity and ecosystem services (continued)	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services. (continued)	<p>Verifier: kg active ingredient/ha/y Standard: <5</p> <p>NOTES: <i>To minimise air, soil and water contamination. Quantities of pesticide (including herbicides, insecticides, fungicides, nematicides, ripeners) applied calculated as a measure of potential toxic effects on environment. Also note the requirement to use only products registered for use and at registered rates and to comply with the Stockholm convention on persistent organic pollutants and requirements in relation to agrochemicals rated as 1a, 1b or 2 under World Health Organisation (WHO) classification.</i></p> <p>[Also relevant to aspect(s)/issue(s): 1.5 Water availability and quality; and 1.7 Air quality.</p>
1.5 Water availability and quality Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services.	<p>Aquatic oxygen demand per unit mass product</p> <p>Applies to: Processing & milling Verifier: kg/t Standard: 1 kg COD or 0.5 kg BOD₅</p> <p>NOTES: <i>Oxygen demand by calculation of quantity and analysis of runoff. Environmental burden can be expressed in terms of either COD or BOD₅, depending on routine measurements available.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.5 Water availability and quality (continued)	4. Actively manage biodiversity and ecosystem services (continued)	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services. (continued)	See indicator of criterion 4.1 on assessing risks of nitrogen and phosphorus fertilizer in downstream water at aspect/issue 1.4 Crop management and agrochemical use. See indicator of criterion 4.1 on assessing risks of water contamination from herbicides and pesticides at aspect/issue 1.4 Crop management and agrochemical use.
	5. Continuously improve key areas of the business	5.2 To continuously improve the status of soil and water resources.	Net water consumed per unit mass of product Applies to: Processing & milling; agriculture Verifier: kg/kg Standard: Mill, 20 kg/kg sugar or 30 kg/kg ethanol. Agric <130 kg/kg cane NOTES: <i>In agriculture, water captured/bought for use in irrigation; in processing, water used less water returned from mill to water courses.</i>
1.6 GHG emissions Back to table of contents	3. Manage input, production and processing efficiencies to enhance sustainability	3.2 To monitor global warming emissions with a view to minimizing climate change impacts.	Global warming burden per unit mass product Applies to: Processing & milling; agriculture 1. Verifier: t CO ₂ -eq/t sugar Standard: Total <0.4 NOTES: <i>Only used if sugar is being produced. Field-to-gate emissions. Environmental Burden is t</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.6 GHG emissions (continued) Back to table of contents	3. Manage input, production and processing efficiencies to enhance sustainability (continued)	3.2 To monitor global warming emissions with a view to minimizing climate change impacts. (continued)	<i>carbon dioxide equivalent.</i> 2. Verifier: g CO ₂ -eq/MJ fuel Standard: Total <24 NOTES: <i>Only used if ethanol is produced. Environmental Burden is g carbon dioxide equivalent.</i>
	6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC).	6.1 To monitor global warming emissions with a view to minimizing climate change impacts.	Global warming burden per unit of energy Applies to: Processing & milling; agriculture Verifier: g CO ₂ eq/MJ fuel Standard: Total <50 NOTES: <i>Until 1 April 2013 this criterion applies only for operations which started their activities after 23 January 2008. To calculate the greenhouse gas emissions from the production and use of sugarcane ethanol, the following disaggregated default values provided in point D of the annex V of the EU Directive must be used. The default value is the sum of the default value for cultivation: 14 g CO₂eq/MJ + the default value for processing (including excess electricity): 1 g CO₂eq/MJ + the default value for transport and distribution: 9 g CO₂eq/MJ. Emissions from the manufacture of machinery and equipment shall not be taken into account. The operator may use this default value of 24 gCO₂eq/MJ fuel if the annualized emissions</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.6 GHG emissions (continued) Back to table of contents	6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC). (continued)	6.1 To monitor global warming emissions with a view to minimizing climate change impacts. (continued)	<i>associated with carbon stock changes caused by land use change after January 2008 are zero. If carbon stock changes due to land use change after January 2008 are not zero, greenhouse gas emissions resulting from changes in land carbon stocks must be added to the default values from the production and use of sugarcane ethanol. Emissions from carbon stocks changes must be calculated in accordance with Appendix 5 of this standard and Appendix 4 of the Audit guidance. The calculation of actual values is not permitted at present. In future revisions of section 6 of the Standard, the possibility of using actual or a combination of disaggregated default and actual values will be offered. The methodology to calculate actual values will follow the rules established by the Directive 2009/28/EC and the procedures will have to be submitted to the European authorities for formal approval.</i> [Also relevant to aspect(s)/issue(s): 1.1 Land-use change (both direct and indirect)]
		6.2 To protect land with high biodiversity value, land with high carbon stock and peatlands.	Percentage of land with high biodiversity value, high carbon stock or peatlands planted to sugarcane after the cut off date of 1 January 2008. Applies to: Agriculture Verifier: % Standard: 0% NOTES:

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>1.6 GHG emissions (continued)</p> <p>Back to table of contents</p>	<p>6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC). (continued)</p>	<p>6.2 To protect land with high biodiversity value, land with high carbon stock and peatlands. (continued)</p>	<p><i>Land with high biodiversity value. Land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status: (a) primary forest and other primary wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed; (b) areas designated by law or by the relevant competent authority for nature protection purposes; or for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition by the European Commission; unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes; (c) highly biodiverse grassland that is: (i) natural grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or (ii) non-natural grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.(d) new nature protection areas derived from a published European Commission decision. The</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>1.6 GHG emissions (continued)</p> <p>Back to table of contents</p>	<p>6. Additional mandatory requirement for biofuels under the EU Renewable Energy Directive (2009/28/EC) and revised Fuel Quality Directive (2009/30/EC). (continued)</p>	<p>6.2 To protect land with high biodiversity value, land with high carbon stock and peatlands. (continued)</p>	<p><i>Better Sugar Cane Initiative Ltd will communicate to economic operators any details of lists on protected areas as soon as they are available from the EC. Land with high carbon stock: Land that had one of the following statuses in January 2008 and no longer has that status: (a) wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year; (b) continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ (It does not include land that is predominantly under urban or agricultural use, understood as tree stands in agricultural systems, such as fruit tree plantations and agroforestry systems when crops are grown under tree cover);(c) land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that when GHG emissions savings is calculated, it complies with the minimum threshold established in criterion 6.1 of the Bonsucro standard.</i></p> <p><i>Peatland. Crops for biofuels cannot be grown on land that was peatland in January 2008 unless the soil was completely drained by January 2008 or there has been no draining of the soil since January 2008.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.6 GHG emissions (continued)	7. Chain of Custody Requirements	7.2 Identification, traceability and verification of sustainability characteristics The sustainability criteria are listed in the Bonsucro production standard and are in compliance with the EU RED art. 17. For each consignment at any stage of the chain of custody sustainability characteristics need to be identified and assigned to the consignment.	[Also relevant to aspect(s)/issue(s): 1.2 Biodiversity and ecosystem services.] See indicator of criterion 7.2 on the calculation of GHG emissions figures at aspect/issue 2.7 Good management practices and continuous improvement.
	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services.	See indicator of criterion 4.1 on assessing risks of air contamination from herbicides and pesticides at aspect/issue 1.4 Crop management and agrochemical use.
1.7 Air quality Back to table of contents	5. Continuously improve key areas of the business	5.5 To reduce emissions and effluents. To promote recycling of waste streams where practical.	Atmospheric acidification burden per unit mass product. Applies to: Processing & milling; agriculture Verifier: kg/t Standard: <5 NOTES: <i>Environmental burden is kg sulphur dioxide equivalent.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.8 Waste management	5. Continuously improve key areas of the business	5.5 To reduce emissions and effluents. To promote recycling of waste streams where practical.	<p>Non-hazardous solid residues per tonne cane.</p> <p>Applies to: Processing & milling; agriculture Verifier: t/t cane Standard: <1.0</p> <p>NOTES: <i>By-products of processing, namely compost, filter cake, soil/mud, boiler ash, bagasse.</i></p>
1.9 Environmental sustainability (cross-cutting) Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	<p>Existence and implementation of an environmental management plan (EMP) taking into account endangered species, habitats and ecosystems as well as reference to ecosystem services and alien invader plant and animal control. Coverage of issues required in Appendix 4.</p> <p>Applies to: Agriculture Verifier: % Standard: >90</p> <p>NOTES: <i>To protect any existing riparian areas, wetlands or other significantly affected natural habitats in a satisfactory state, to provide habitat corridors and to conserve any rare, threatened or endangered species.</i></p> <p>[Also relevant to aspect(s)/issue(s): 1.2 Biodiversity and ecosystem services; and 2.7 Good management practice and continuous improvement.]</p>
	4. Actively manage		

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.9 Environmental sustainability (cross-cutting) Back to table of contents	biodiversity and ecosystem services (continued)	4.2 To implement measures to mitigate adverse impacts where identified.	Documentation plan and implementation of mitigation measures Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Existence of a list of identified adverse impacts such as smoke, fallout from fires, water pollution downstream, drift from agrochemical spraying and noise. Existence of a mitigation plan, and verification of the implementation of mitigation measures, including consultation with affected stakeholders. Programs with objectives developed at the sectorial level can be considered.</i> [Also relevant to aspect(s)/issue(s): 3.2 Participation and transparency.]
	5. Continuously improve key areas of the business	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	Compliance with a recognized ESIA. Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Cut-off date 1 January 2008. The ESIA shall cover all aspects related to baseline surveys and assessments, implementation, mitigation, monitoring and evaluation plans as required. Transparency and participatory consultation with</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
1.9 Environmental sustainability (cross-cutting)	5. Continuously improve key areas of the business (continued)	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA). (continued)	<p><i>all relevant stakeholders required. Where an impact assessment is required by national, regional, and/or local laws, the process shall be integrated to avoid duplication of effort.</i></p> <p>[Also relevant to aspect(s)/issue(s): 2.7 Good management practices and continuous improvement; 2.8 Social sustainability (cross-cutting); and 3.2 Participation and transparency.]</p>
2. SOCIO-ECONOMIC			
2.1 Land tenure/access and displacement Back to table of contents	1. Obey the Law	1.2 To demonstrate clear title to land in accordance with national practice and law.	<p>The right to use the land can be demonstrated and is not legitimately contested by local communities with demonstrable rights.</p> <p>Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes</p> <p>NOTES: <i>Those rights can be related either to legal ownership or lease of the land or to customary rights. Legal ownership shall be the official title in the country (e.g. notary, government agency or other). Guidance for customary rights is provided in ILO conventions 169 and 117. See also Criterion on participation and Criterion on Environmental and Social Impact Assessment 5.7.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.2 Rural and social development	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	See indicator of criterion 4.1 on use of co-products not affecting traditional uses as fodder, fertiliser and local fuel at aspect/issue 1.3 Productive capacity of land.
2.3 Access to water and other natural resources	2. Respect Human Rights and Labour Standards	2.3 To provide a safe and healthy working environment in work place operations.	See indicator for criterion 2.3 on workers' access to safe drinking water on the field and/or mill at aspect/issue 2.4 Employment, wages and labour conditions.
2.4 Employment, wages and labor conditions Back to table of contents	2. Respect Human Rights and Labour Standards	2.1 To comply with ILO labour conventions governing child labour, forced labour, discrimination and freedom of association and the right to collective bargaining. (continued)	<p>Minimum age of workers</p> <p>Applies to: Processing & milling; agriculture Verifier: Years Standard: 18 for hazardous work; 15 for non hazardous work</p> <p>NOTES: <i>Definition of Child labour in Appendix 1 & Appendix 2 (Convention 138 and C182).As per ILO Art 3 C 138 and C182, the minimum age for admission to any type of employment or work which by its nature or the circumstances in which it is carried out is likely to jeopardise the health, safety or morals of young persons shall not be less than 18 years (see also art 16, Convention 184 Health and Safety in Agriculture). Work by children on family small holdings is only acceptable under adult supervision and when work does not interfere with the child's schooling and does not put at risk his or her health.</i></p> <p>Absence of forced or compulsory labor</p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.4 Employment, wages and labor conditions (continued) Back to table of contents	2. Respect Human Rights and Labour Standards (continued)	2.1 To comply with ILO labour conventions governing child labour, forced labour, discrimination and freedom of association and the right to collective bargaining. (continued)	Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Forced or compulsory labour as defined per ILO Convention 29 and ILO 105. The major forms of forced or compulsory labour are defined in Appendix 1. Verification shall address all male and female workers.</i>
			Absence of discrimination Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Discrimination as defined by ILO C111 (see full definition in Appendix 1). Verification to be done by interviewing workers</i>
			Respect the right of all personnel to form and join trade unions and/or to bargain collectively in accordance with the law. Applies to: processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Employers should respect such rights and should not interfere with workers' own efforts to set up</i>

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ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.4 Employment, wages and labor conditions (continued) Back to table of contents	2. Respect Human Rights and Labour Standards (continued)		<i>representational mechanisms in accordance with the law.</i>
		2.2 To apply BSI human rights and labour standards to suppliers and contractors	Percentage of contractors and major suppliers who have demonstrated compliance with human rights and labour standards Applies to: processing & milling; agriculture Verifier: % Standard: >95 NOTES: <i>Labour contractors and major suppliers to the mill and to cane growers shall demonstrate compliance with basic human rights (e.g. no forced labour, no child labour, no discrimination, freedom of association and labour standards, etc.). Effective compliance will be verified by auditors by sampling at mill and farm level. The existence of codes of conduct in contracts will be considered as proof of compliance. Sampling method based on volume provided by supplier to the mill.</i>
		2.3 To provide a safe and healthy working environment in work place operations.	Availability of sufficient safe drinking water to each worker present on the field and/or mill. Applies to: processing & milling; agriculture Verifier: Yes/No Standard: Yes

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.4 Employment, wages and labor conditions (continued) Back to table of contents	2. Respect Human Rights and Labour Standards (continued)	2.3 To provide a safe and healthy working environment in work place operations. (continued)	NOTES: <i>Visual check of access to sufficient drinking water especially under high temperature conditions, and of absence of contamination sources near the drinking water source.</i> [Also relevant to aspect(s)/issue(s): 2.3 Access to water and other natural resources 4.3 Food utilization.]
		2.4 To provide employees and workers (including migrant, seasonal and other contract labour) with at least the national minimum wage.	Ratio of lowest entry level wage including benefits to minimum wage and benefits required by law. Applies to: Processing & milling; agriculture Verifier: \$/\$ Standard: >=1 NOTES: <i>Minimum wage as fixed by legal requirement and in the absence of same, ILO C131 can serves as a basis for the definition.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.4 Employment, wages and labor conditions (continued) Back to table of contents	2. Respect Human Rights and Labour Standards (continued)	2.5 To provide clear, equitable and comprehensive contracts.	Existence of a contract or equivalent document. Applies to: Processing & milling; agriculture Verifier: % Standard: 100 NOTES: <i>All workers to be provided with a contract or equivalent document (e.g. national working card), to be aware of their rights, and to be paid in a form and at a frequency convenient to them. If not specified by the law the contract shall include at least the following elements: hours of work, overtime payment, notice, holidays, wages, and mode of payment. Payment of wages in conformity with ILO Convention no. 95 and ILO C110.</i>
	5. Continuously improve key areas of the business	5.1 To train employees and other workers in all areas of their work and develop their general skills	Training expense of workers as a percentage of payroll expenses Applies to: Processing & milling; agriculture Verifier: % Standard: 1.0 NOTES: <i>Total training expenses for all personnel, split between factory and basic workers, intermediate management and upper management.</i> [Also relevant to aspect(s)/issue(s): 2.7 Good management practices and continuous improvement.]

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.5 Human health and safety Back to table of contents	2. Respect Human Rights and Labour Standards	2.3 To provide a safe and healthy working environment in work place operations.	Lost time accident frequency Applies to: Processing & milling; agriculture Verifier: number per million hours worked Standard: Mill <15; Agric <45 NOTES: <i>A lost time accident is defined as an incident involving an employee which causes him to be unable to carry on with his/her normal duties on the next day or next shift due to injury. Where a fatal injury occurs, this to be noted separately.</i>
			Assessment of the main health and safety risks and measures implemented for mitigation of risk Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Key health and safety risks to be known and assessment formalized. Assessment to be performed at least once a year. Measures to be taken to either eliminate risk, prevent risk or reduce risk in agreement with national laws if existing. The recommendations 192 of ILO Convention 184, or national laws if any provide guidance for the list of key potential areas of risks to assess.</i>
			Appropriate personal protective equipment supplied to and used by all workers.

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.5 Human health and safety (continued)</p> <p>Back to table of contents</p>	<p>2. Respect Human Rights and Labour Standards (continued)</p>	<p>2.3 To provide a safe and healthy working environment in work place operations. (continued)</p>	<p>Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes</p> <p>NOTES: <i>Regular maintenance and effective use of personal protective equipment.</i></p>
			<p>Training for health and safety</p> <p>Applies to: Processing & milling; agriculture Verifier: % Standard: >90</p> <p>NOTES: <i>The standard is an average measure, of the % of new employees receiving training, and the % of existing employees getting updated training at least every 5 years (e.g. promotion and participation in health and safety seminars, lectures, campaigns, etc). Employees and workers (including migrant, seasonal and other contract labour) to have basic training in health and safety measures related to their operation upon starting work and then with regular updating. Effective compliance can be verified by sampling.</i></p>
			<p>Access to first aid and provision for emergency response.</p> <p>Applies to: Processing & milling; agriculture Verifier: Yes/No</p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.5 Human health and safety (continued)	2. Respect Human Rights and Labour Standards (continued)	2.3 To provide a safe and healthy working environment in work place operations. (continued)	Standard: Yes NOTES: <i>Access to first aid and proximity as defined by national legislation or in absence by ILO.</i>
2.6 Energy security and access	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	See indicator of criterion 4.1 on use of co-products not affecting traditional uses as local fuel at aspect/issue 1.3 Productive capacity of land.
2.7 Good management practices and continuous improvement Back to table of contents	3. Manage input, production and processing efficiencies to enhance sustainability	3.1 To monitor production and process efficiency; to measure the impacts of production and processing so that improvements are made over time.	Total raw materials used per kg product Applies to: Processing & milling Verifier: Kg/kg Standard: <11 if no ethanol produced; <20 for full ethanol production NOTES: <i>Sustainability measure includes cane as major raw material as well as material amounts of chemicals, fuels etc. Standard required varies between 2 limits depending on proportions of sugar and ethanol produced. If a mill exports power, any fuels purchased will not be recorded as raw materials consumed.</i>
			Sugarcane yield Applies to: Agriculture

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	3. Manage input, production and processing efficiencies to enhance sustainability (continued)	3.1 To monitor production and process efficiency; to measure the impacts of production and processing so that improvements are made over time. (continued)	Verifier: tc/ha harvested/y Standard: See Appendix 1 NOTES: <i>Standard values depend on whether rain-fed or irrigated. Value for reporting period or 5 year rolling average can be used.</i>
			Working hours lost as percent of total hours worked Applies to: Processing & milling Verifier: % Standard: <5 NOTES: <i>This represents working hours lost through absence (all unplanned causes - strikes, sickness, absenteeism etc. but not holiday, legal time off such as maternity leave, or training).</i>
			Mill overall time efficiency Applies to: Processing & milling Verifier: % Standard: >75 NOTES: <i>Processing time as a percentage of total time. Value for reporting period or 5 year rolling average can be used.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	3. Manage input, production and processing efficiencies to enhance sustainability (continued)	3.1 To monitor production and process efficiency; to measure the impacts of production and processing so that improvements are made over time. (continued)	Factory Performance index Applies to: Processing & milling Verifier: % Standard: >90 NOTES: <i>Used if sugar and not ethanol is produced. Ratio of actual sugar recovery to theoretical recovery of sugar from cane. In rare cases where high grade molasses is exported for fermentation, industrial efficiency can be used instead.</i>
			Industrial Efficiency Applies to: Processing & milling Verifier: % Standard: >75 NOTES: <i>Used if ethanol only or sugar and ethanol are produced in the same mill. It is the ratio of (sugar+equivalent ethanol+eq.sucrose in molasses)/(sucrose in cane+RS in cane converted to sucrose+RS in molasses converted to sucrose+yeast eq to sucrose), expressed as a %.</i>
	4. Actively manage biodiversity and ecosystem services	4.1 To assess impacts of sugarcane enterprises on biodiversity and ecosystems services	See indicator of criterion 4.1 on existence and implementation of environmental management plan (EMP) at aspect/issue 1.9 Environmental sustainability (cross-cutting).

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	5. Continuously improve key areas of the business	5.1 To train employees and other workers in all areas of their work and develop their general skills.	See indicator of criterion 5.1 on training for factory and basic workers, intermediate management and upper management at aspect/issue 2.4 Employment, wages and labour conditions.
		5.3 To continuously improve the quality of sugarcane and products from the sugar mill.	Theoretical recoverable sugar content of cane Applies to: Processing & milling; agriculture Verifier: % Standard: >10 NOTES: <i>The theoretical recovery normalized for juice purity and cane fibre content calculation shown in Appendix 1. Value for reporting period or 5 year rolling average can be used. Used only if ethanol not produced.</i>
			Fermentable total sugars content of cane, expressed as invert (TSAI). Applies to: Processing & milling; agriculture Verifier: kg/t cane Standard: >120 NOTES: <i>Used if ethanol is produced, on its own or in conjunction with sugar production. Based on a 90.5 % utilization of Total Sugars As Invert (TSAI). Known as ATR in Brazil. Value for reporting period or 5 year rolling average can be used.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)				
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS	
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>5. Continuously improve key areas of the business (continued)</p>	5.4 To promote energy efficiency.	<p>Total Net Primary Energy Usage per kg product.</p> <p>Applies to: Processing & milling; agriculture Verifier: kJ/kg Standard: Total <3000</p> <p>NOTES: <i>Direct and indirect energy inputs. See Appendix 3 for details.</i></p>	
				<p>Energy used in cane transport per tonne cane transported.</p> <p>Applies to: Processing & milling; agriculture Verifier: MJ/t cane Standard: <50</p> <p>NOTES: <i>See Appendix 3 for details.</i></p>
				<p>Primary energy use per tonne of sugarcane.</p> <p>Applies to: Agriculture Verifier: MJ/t Standard: <300</p> <p>NOTES: <i>See Appendix 3 for details.</i></p>
		5.6 To foster effective and focused research, development and extension expertise.	<p>Research and extension costs as a % of sales.</p> <p>Applies to: Processing & milling; agriculture Verifier: %</p>	

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	5. Continuously improve key areas of the business (continued)	5.6 To foster effective and focused research, development and extension expertise. (continued)	Standard: >0.5 NOTES: <i>Includes levies to research institutes for research and extension.</i>
		5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	See indicator of criterion 5.7 on compliance with ESIA for continuous improvement at aspect/issue 1.9 Environmental sustainability (cross-cutting).
		5.9 To promote economic sustainability.	Value added / tonne cane Applies to: Processing & milling; agriculture Verifier: \$/t cane Standard: Mill>4; agric>2 NOTES: <i>Value added by the operation is the value of sales less the price of goods, raw materials (including energy) and services purchased.</i>
	7. Chain of Custody Requirements	7.1 Traceability Each economic operator in the chain of custody is responsible for the data supplied in the product declarations submitted to the next economic operator.	7.1.1. Final certified products can be traced from the dispatch area of the processor until next owner Standard: > =90% traceable* *) The auditor takes a sample of 10 and when this sample shows 0 or 1 defects this will be qualified compliant and reported >= 90 % a.. When more than 1 defect is found the criteria score will be

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	7. Chain of Custody Requirements (continued)	7.1 Traceability (continued)	reported < 90% and the criteria will be checked for non – compliant. NOTES: <i>The processor keeps track of the transport until delivery to the next owner of the product. Next owner signs for reception of the product and takes over responsibility from the processor.</i>
		7.2 Identification, traceability and verification of sustainability characteristics The sustainability criteria are listed in the Bonsucro production standard and are in compliance with the EU RED art. 17. For each consignment at any stage of the chain of custody sustainability characteristics need to be identified and assigned to the consignment.	7.1.2. Each following link in the chain keeps track of the products Standard: > =90% traceable NOTES: <i>Each economic operator can trace back 1 step and trace forward 1 step.</i>
			7.2.1. Each consignment has a unique identification # Standard: > =90% identified NOTES: <i>The identification can be both physical and administrative and in that case needs to be identical. It is allowed to have only administrative control of consignments.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	7. Chain of Custody Requirements (continued)	7.2 Identification, traceability and verification of sustainability characteristics (continued)	7.2.2. Each consignment contains a specification with at a minimum the data specified in Appendix 4 of the Mass Balance Chain of Custody Standard. Standard: $\geq 90\%$ with specification NOTES: <i>The identification can be both physical and administrative and in that case needs to be identical. It is allowed to have only administrative control of consignments.</i>
			BONSUCRO EU REQUIREMENT 7.2.3. Consignments clearly specify the scope of compliance: Non compliant Bonsucro compliant Bonsucro EU compliant Standard: Major No false claims E.g. non compliant may not show up as compliant or Bonsucro compliant may not show up as Bonsucro EU compliant NOTES: <i>By taking ownership over consignments that are non compliant the owner takes full responsibility over the consignment and needs to provide evidence of compliance before a claim of compliance can be made.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>7. Chain of Custody Requirements (continued)</p>	<p>7.2 Identification, traceability and verification of sustainability characteristics (continued)</p>	<p>BONSUCRO EU REQUIREMENT 7.2.4. Each Bonsucro EU compliant consignment contains a specification with at a minimum the data specified in appendixes 4 and 5 of the Mass Balance Chain of Custody Standard. GHG emissions figures must be calculated according to specifications laid down in appendixes 2 and 3 of the same document.</p> <p>Standard: Major</p> <p>NOTES: <i>Only for option Bonsucro EU in addition to the above data for Bonsucro.</i></p> <p>[Also relevant to aspect(s)/issue(s): 1.6 GHG emissions.]</p> <hr/> <p>7.3.2. Validation of data before official entering in the accounting system. The management representative is responsible for validation, as indicated in Bonsucro Certification Protocol.</p> <p>Standard: $\geq 90\%$ validated within 1 week</p> <p>NOTES: <i>Once validated the data entered can not be changed (are fixed within the software) or are clearly marked as validated showing data and time. The management representative has physically signed the documents or either approved though digital procedures for validation.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>7. Chain of Custody Requirements (continued)</p>	<p>7.3 Control of Mass Balance System</p> <p>The mass balance system, according to article 18 of the EU RED means a system in which “sustainability characteristics” remain assigned to “consignments” and evidence showing compliance with these characteristics are required and need to be documented and recorded. See Appendix 6 of the Mass Balance Chain of Custody Standard for principles.</p> <p>The mass balance system must be controlled</p> <p>a) in periods of time in which the balance of Bonsucro certified sustainable product versus not sustainable product should be equal or positive at the moment of balance. Evidence of balance must be recorded and must be verifiable by periodic balance reports over that particular period, showing all inputs, mixes, conversions, stocks and outputs.</p> <p>The accounting year for Mass Balance includes a full annual harvest cycle, which is not allowed to be divided over 2 accounting years.</p>	<p>7.3.1. The accounting system for the control of the mass balance is documented and mass balance records and data are maintained on a daily base and verifiable</p> <p>Standard: $\geq 90\%$ validated within 1 week</p> <p>NOTES: <i>The economic operator may collect data and records within intervals as documented in procedures on site before entering these in the accounting system; data must be updated and verifiable within one week the latest, preferably within 36 hours.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>7. Chain of Custody Requirements (continued)</p>	<p>7.3 Control of Mass Balance System (continued)</p>	<p>BONSUCRO EU REQUIREMENT</p> <p>7.3.3. Mass Balance “in time periods” shows over the time period the evidence that the balance of certified sustainable product versus not certified sustainable product is at least equal or positive. The management representative or a third party (RE the above art 7.3.2) is responsible for validation.</p> <p>Standard: Major in case of absence of data or longer than 1 period (max month) no report of balance</p> <p>Major in case of negative balance and no actions taken to correct within next period</p> <p>NOTES: <i>The interval for the documented periodic mass balance reports is maximum 1 month. Each period (month) balance must be validated by the management representative. Cumulative month to date mass balance report must be recorded showing the development of the mass balance data during the harvest period and/or accounting year.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>7. Chain of Custody Requirements (continued)</p>	<p>7.3 Control of Mass Balance System (continued)</p>	<p>BONSUCRO EU REQUIREMENT 7.3.4. The mass balance is based on sugar or alcohol weight or volume calculation based on sampling and analysis by a qualified laboratory; using normative methods and results of measuring are validated by an accredited laboratory preferably (but not mandatory) holding an ISO IEC 17025 accreditation (RE: to reference list ISO IEC 17025 for the accreditation of testing laboratory). Metering and weighing equipment in the operations or used by subcontractors for volume or weight input and output of the mass balance is required calibration with a minimum frequency of 1 x year by a calibration and testing organisation preferably (but not mandatory) accredited for ISO IEC 17025.</p> <p>Standard: Major In case of total failure to calibrate Minor Otherwise: too late > 1 year Not complete</p> <p>NOTES: <i>Volumes may vary because of concentrating or diluting processes. For this reason and effective mass balance on volumes only is not possible. The basis for the balance is the combination of weight (mass), volume, and the content of the consignment</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	7. Chain of Custody Requirements (continued)	7.3 Control of Mass Balance System (continued)	<i>in either % of sugar (w/w) or alcohol % (v/v) Through conversion calculations sugar may be expressed in alcohol vice versa. Permitted methods for the calculation conversions are given in the Bonsucro P&C chapter 3 and in the Mass Balance Choc Appendixes 1, 2, 3 Methods applied require documentation and validation and cannot vary within one accounting year.</i>
			7.3.5. The total mass balance in the period is reliable within a tolerance of +/- 5% calculated over the total sugar and/or alcohol content input – output. In case of losses or spillage this is counted for. By-products are also counted for as these may contain sugar and/or alcohol rests that require to be reported Standard: >=90% of mass balance within tolerance NOTES: <i>The mass balance is the result of all inputs and outputs in a period. Many data entries occur and laboratory testing takes place. Given the fact that volumes, weight and % have tolerances the total result needs to give confidence that the whole accounting, measuring and testing system is reliable; Exceeding the level of 5% difference in balance might indicate errors that require correction.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>2.7 Good management practices and continuous improvement (continued)</p> <p>Back to table of contents</p>	<p>7. Chain of Custody Requirements (continued)</p>	<p>7.4 Control of Consignments</p> <p>Key for identification and traceability of sugarcane during the production stages, logistics and trading is to keep control over the consignments and keep records of production data including, volumes, weight, products specifications, sugar % and alcohol %, density etc. (minimum set of data as specified in the criteria) together with the records about the sustainability characteristics assigned to the consignment.</p>	<p>BONSUCRO EU REQUIREMENT</p> <p>7.4.1. Consignments have a unique # for identification; the # identifies the accounting year for the harvest, the unit of operation (farm, site etc.) and the # is generated by the accounting system in sequence of time when the consignment was first entered in the system. Each time when new consignments are created either by mixing or splitting new unique consignment # will be generated for the mixture or for each consignment that has been split off. Each new # contains references to the previous consignment # (see below mixing and splitting of consignments how to address these operations). From the consignment #, date and time the physical location of the consignment can be retrieved</p> <p>Standard: Major System is not operational Minor >=90% compliance</p> <p>NOTES: <i>The consignment and all attached information can be identified and traced back and forward by using the consignment #.</i></p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	7. Chain of Custody Requirements (continued)	7.5 Control of mixes of consignments It is common and often inevitable in sugarcane production, logistics and trade that consignments are mixed. Mixing of consignments with different sustainability characteristics is allowed and also the mixing of not sustainable with sustainable consignments is permitted as long as the balance (see 7.3) of sustainable product keeps positive. A mixture can have any form where consignments would normally be in contact, such as in a container, processing or logistical facility or site (defined as geographical location with precise boundaries within which products can be mixed). There are rules to be respected in order to control the mixing of consignments that are specified in the indicators on the right.	7.5.1. A new consignment # is generated for a mix; procedure is equal to the individual consignment Standard: $\geq 90\%$ compliance NOTES: <i>It depends on the accounting system how the mix will show up and which # is possible in terms of characters. Some systems allow for indicators identifying a mix.</i>
			7.5.2. The separate sizes and sustainability characteristics of each individual consignment remain assigned to the mixture Standard: $\geq 90\%$ compliance NOTES: See <i>Appendix 6</i> of the Mass Balance Chain of Custody.
			7.5.3. Provides the sum of all consignments withdrawn from the mixture to be described having the same sustainability characteristics in the same quantities, as the sum of all consignments added to the mixture. Standard: $\geq 90\%$ compliance NOTES: See <i>Appendix 6</i> of the Mass Balance Chain of Custody.

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
2.7 Good management practices and continuous improvement (continued) Back to table of contents	7. Chain of Custody Requirements (continued)	7.6 Control of splitting of consignments from mixtures Once the sustainability characteristics have been assigned to consignments the values can be calculated and added to the specification of the consignment. The calculation methods, terms, definitions, tools and default values are listed and referred to in the indicators on the right.	7.6.1. Any consignment split off from a mixture or split off from an individual consignment requires a new #; use procedure 7.5 for new consignment. Standard: $\geq 90\%$ compliance NOTES: <i>It depends on the accounting system how the split will show up and which # is possible in terms of characters. Some systems allow for indicators identifying a new consignment as split from previous mixes.</i>
			7.6.2. The sustainability characteristics of the mixture consignment remain assigned to the consignments # that have been split off in proportion of the volume that has been split off. Standard: $\geq 90\%$ compliance NOTES: <i>See Appendix 6 of the Mass Balance Chain of Custody Standard</i> No averaging
			7.6.3. To avoid double counting: at the moment a new unique nr. has been assigned to the to the split this will automatically be booked off from the previous # from the mix as “sold” to the new # of the split consignment. Standard: $\geq 90\%$ compliance

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
	7. Chain of Custody Requirements (continued)		NOTES: <i>The way this happens may be different depending on the possibilities of the accounting system.</i>
2.8 Social sustainability (cross-cutting)	5. Continuously improve key areas of the business	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	See indicator of criterion 5.7 on compliance with recognised ESIA for expansion or new sugarcane projects at aspect/issue 1.9 Environmental sustainability (cross-cutting).
3. GOVERNANCE			
3.1 Compliance Back to table of contents	1. Obey the law	1.1 To comply with relevant applicable laws	Relevant national laws and international conventions complied with Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Relevant legislation includes laws and international conventions, but is not limited to: regulations governing land tenure and land-use rights, labour, agricultural practices, environment, transportation and processing practices, acting with integrity. A list of relevant international conventions is included in Appendix 2. The more strict regulation or convention ratified by the country - national or international - should prevail unless otherwise specified. The principles and criteria in this standard provide some guidance for defining the relevant laws.</i>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>3.1 Compliance (continued)</p> <p>Back to table of contents</p>	<p>1. Obey the law (continued)</p>	<p>1.1 To comply with relevant applicable laws (continued)</p>	<p>APPENDIX 2 List of Relevant International Conventions:-</p> <ul style="list-style-type: none"> o No forced labour <ul style="list-style-type: none"> •ILO Convention 29 (1930) Forced Labour (Article 5) •ILO Convention 105 (1957) Abolition of forced Labour (Article 1) •Protection of children •ILO Convention 138 (1973) Minimum Age (Article 1-3) •ILO Convention 182 (1999) Worst Forms of Child Labour (Articles 1-7) •UN declaration on Rights of the Indigenous Peoples (2007) (Articles 17 (2), 21, 22 (2)) o Freedom of Association and Collective Bargaining <ul style="list-style-type: none"> •ILO Convention 87 (1948) Freedom of Association and Protection of Right to Organise (Articles 2-11) •ILO Convention 98 (1949) Right to organise and collective bargaining (Articles 1-4) •ILO Convention 141 (Articles 2-3) •UN Declaration of the Rights of Indigenous Peoples (2007) (Article 3) o Non discrimination and equal remuneration <ul style="list-style-type: none"> •ILO Convention 100(1951) Equal Remuneration (Articles 1-3) •ILO Convention 111 (1958) Discrimination (Employment and Occupation) (Articles 1-2) •UN Declaration on Rights of Indigenous

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>3.1 Compliance (continued)</p> <p>Back to table of contents</p>	<p>1. Obey the law (continued)</p>	<p>1.1 To comply with relevant applicable laws (continued)</p>	<p>Peoples (2007) (Articles 2, 8 (2e), 9, 15 (2), 16 (1), 21 (2), 22, 24 (1), 29 (1), 46 (3))</p> <ul style="list-style-type: none"> o Just employment of migrants <ul style="list-style-type: none"> • ILO Convention 97 (1949) Migration for Employment o Protection of plantation workers <ul style="list-style-type: none"> • ILO Convention 110 (1958) plantations (Articles 5-91) • Protection of small holders • ILO Convention 117 (1962) Social Policy (Basic Aims and Standards) (Article 4) o Just land acquisition <ul style="list-style-type: none"> • ILO Convention 169 (1989) on Indigenous and Tribal Peoples (Article 13-19) • UN Declaration on the Rights of Indigenous Peoples (2007) (Articles 25, 26) • UN Convention on Biological Diversity (1992) (Article 10 (c)) o Fair Representation and Participation of Indigenous and tribal peoples <ul style="list-style-type: none"> • ILO Convention 169 (1989) on Indigenous and Tribal Peoples (Articles 6-9) • UN Declaration on the Rights of Indigenous Peoples (2007) (Articles 10, 11 (2), 19, 28 (1), 29 (2) and 32 (2)) • Convention on the Elimination of All Forms of Racial Discrimination, International Covenant on Economic, Social and Cultural Rights, InterAmerican Human Rights System (UN CERD Committee, UN Committee on Social

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
<p>3.1 Compliance (continued)</p> <p>Back to table of contents</p>	<p>1. Obey the law (continued)</p>	<p>1.1 To comply with relevant applicable laws (continued)</p>	<p>Cultural and Economic Rights, InterAmerican Commission on Human Rights)</p> <ul style="list-style-type: none"> o Control or Eliminate Use of Dangerous Chemicals and Pesticides <ul style="list-style-type: none"> •Stockholm Convention on Persistent Organic Pollutants (2001) (Article 1-5) •FAO International Code of Conduct on the Distribution and use of Pesticides (1985, Revised 2002) (Article 5) •Rotterdam Conventions on Prior and Informed Consent Procedure for certain Hazardous Chemicals and Pesticides in International Trade (1998) (Article 1, 5, and 6) •UN Declaration on Rights of Indigenous Peoples (2007) (Articles 21 (1), 23, 24, 29 (3)) o Preserve wetlands <ul style="list-style-type: none"> •Ramsar convention on wetlands of International Importance •Cultural and natural heritage protection •World Heritage Convention concerning the Protection of the World cultural and Natural heritage o Conservation of biological diversity <ul style="list-style-type: none"> •Convention on Biological Diversity •Health & Safety •ILO Convention 184 (2001) Safety and Health in Agriculture (Articles 7-21) <p>[NOTE: Although list of relevant international conventions is not cross-referred to relevant</p>

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
	1. Obey the law (continued)		aspects/issues, it has implications on most of the aspects/issues.]
3.2 Participation and transparency Back to table of contents	4. Actively manage biodiversity and ecosystem services	4.2 To implement measures to mitigate adverse impacts where identified.	See indicator of criterion 4.2 on consultation with affected stakeholders for mitigating measures at aspect/issue 1.9 Environmental sustainability (cross-cutting).
	5. Continuously improve key areas of the business	5.7 For greenfield expansion or new sugarcane projects, to ensure transparent, consultative and participatory processes that address cumulative and induced effects via an environmental and social impact assessment (ESIA).	See indicator of criterion 5.7 on transparent, consultative and participatory processes during ESIA for expansion or new sugarcane projects at aspect/issue 1.9 Environmental sustainability (cross-cutting).
		5.8 To ensure active engagement and transparent, consultative and participatory processes with all relevant stakeholders.	Existence of a recognized grievance and dispute resolution mechanism for all stakeholders. Applies to: Processing & milling; agriculture Verifier: Yes/No Standard: Yes NOTES: <i>Existence of an official dispute resolution mechanism recognized by all stakeholders. Channel of communication (e.g. ombudsman, dedicated phone line) can be considered if recognized by all stakeholders.</i> Percentage of meetings of stakeholder engagement where agreement has been reached by consensus driven process.

BONSUCRO EU PRODUCTION STANDARD (BETTER SUGARCANE INITIATIVE)			
ASPECTS/ISSUES	PRINCIPLES/SECTIONS	CRITERIA	INDICATORS
3.2 Participation and transparency (continued)	5. Continuously improve key areas of the business (continued)	5.8 To ensure active engagement and transparent, consultative and participatory processes with all relevant stakeholders. (continued)	Applies to: Processing & milling; agriculture Verifier: % Standard: 90 NOTES: <i>Establish whether a process exists for consultation where all the stakeholders (gender sensitive and including indigenous people) are provided with information in advance of consultation and which results in consensus - driven negotiated agreements. Evidence of negotiated agreements to be demonstrated.</i>
4. FOOD SECURITY			
4.3 Food utilization Back to table of contents	2. Respect Human Rights and Labour Standards	2.3 To provide a safe and healthy working environment in work place operations.	See indicator of criterion 2.3 on the availability of sufficient safe drinking water in work place operations at aspect/issue 2.5 Human health and safety.