



BONSUCRO PRODUCTION STANDARD v5.2 IMPLEMENTATION GUIDANCE

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INTRODUCTION

The primary purpose of this document is to provide operators with guidance to implement the Bonsucro Production Standard V5.2 at the mill and farm level. The operators will not be audited against the guidance and the guidance is not a binding document. The Standard should be read in conjunction with the guidance for implementing and auditing against the indicators of the Production Standard.

STRUCTURE

The Bonsucro Production Standard Implementation Guidance document is structured around 5 principles (shown below), 20 criteria and 69 indicators:

- PRINCIPLE 1 – Assess and manage environmental, social and human rights risks
- PRINCIPLE 2 – Respect labour rights and occupational health and safety standards
- PRINCIPLE 3 – Manage input, production and processing efficiencies to enhance sustainability
- PRINCIPLE 4 – Actively manage biodiversity and ecosystem services
- PRINCIPLE 5 – Continuously improve other key areas of the business

Related documents:

- SCH Bonsucro Calculator
- SCH Bonsucro Production Standard
- GUI Bonsucro Certification and Auditing Guidance
- SCH Bonsucro Certification Protocol
- Other scheme and reference documents as published in the Bonsucro Document Library

PRINCIPLE 1 – ASSESS AND MANAGE ENVIRONMENTAL, SOCIAL AND HUMAN RIGHTS RISKS

CRITERION 1.1 – LEADERSHIP DEMONSTRATED THROUGH ELABORATION AND IMPLEMENTATION OF A SUSTAINABILITY MANAGEMENT PLAN

1.1.1 THE OPERATOR DEVELOPS AND IMPLEMENTS A SUSTAINABILITY MANAGEMENT PLAN TO COMPLY WITH THE BONSUCCRO PRODUCTION STANDARD

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator defines its sustainability goals, criteria and objectives, and to centralise management plans, risk assessments and monitoring systems needed for compliance with the Standard and continuous improvement. This indicator reflects the “Plan” stage of a Plan, Do, Check, Act (PDCA) cycle.

PDCA cycle

The PDCA cycle is a systematic series of steps for gaining valuable learning and knowledge for the continual improvement of a product or process. PDCA is an iterative four-step quality improvement and productivity improvement process. PDCA is a successive cycle that starts off small to test potential effects on processes, but then gradually leads to larger and more targeted change. The cycle starts with the Plan step. This involves identifying a goal, purpose or problem, formulating a theory, defining success metrics, and putting a plan into action.¹

The indicator comprises a broad Sustainability Management Plan, including:

- the sustainability policies and/or procedures and/or protocols and/or internal regulations requirements
- specific plans that are required in other indicators of the Standard.

The objective of grouping the plans, risk assessments and internal monitoring process is to provide the operator with a holistic approach to develop strategies to drive the implementation of sustainability in its operations by including all the steps of the PDCA cycle as follows:

1. Plan: Indicator 1.1.1 provides the tools to start planning compliance with the Bonsucro Production Standard and to guarantee continuous improvement.
2. Do: This step is the actual implementation of the Bonsucro Standard, where the plans are executed.
3. Check: This step corresponds to indicator 1.4.1 for the internal monitoring process, where the operator evaluates compliance by any internal process established, including the self-assessments and/or internal audits. All types of audits that the operator undertakes also form part of the “check” step, as they verify compliance and , and contribute to review the effectiveness of the Sustainability Management Plan. It is during this step that a root cause analysis is conducted to identify corrective actions and points for improvement.
4. Act: This step corresponds to the implementation of corrective actions identified during the “check” step by the internal monitoring process and audits and following a thorough examination of the root causes. This step brings the operator on track and generates lessons (the Dos and the Don’ts) to be implemented in the new cycle.

It is recommended that the certificate holder establish a multidisciplinary team with members who have different functions in the Internal Management System.

Sustainability policies

The sustainability policies and/or procedures and/or protocols and/or internal regulations specify the actions that the operator intends to take, or the goals, criteria or targets that the operator intends to meet with regard to its management of, or performance on, environmental, social and/or governance topics.² To be effective, the implementation of policies and/or procedures and/or protocols and/or internal regulations involves buy-in and engagement across the enterprise. Policies and/or procedures and/or protocols and/or internal regulations should be written by area experts and approved by top management, and should list the names, positions and roles of the people in the business who have specific responsibility.

At a minimum, the policies and/or procedures and/or protocols and/or internal regulations could outline the following elements:



¹ Patel, P.M. and Deshpande, V.A. 2015. Application of plan-do-check-act cycle for quality and productivity improvement – A review. *Studies*, 2(6), 23–34.

² <https://accountability-framework.org/wp-content/uploads/2020/03/Definitions-Mar2020.pdf>.

- objectives
- scope
- terms and definitions
- commitments to be accomplished, describing if they are subject to national or international regulations
- person responsible for the document
- the periodicity that the document will be revised and updated.

Top management should, therefore:

- demonstrate leadership and commitment, which are necessary for the Bonsucro Standard to be successfully implemented
- engage in, promote, communicate and monitor the performance and effectiveness of the Bonsucro Standard
- be accountable and responsible for the overall performance
- provide resources and lead others to support the sustainability policy, and communicate in relation to the importance of effective sustainability management
- ensure that processes for effective consultation and participation are established, implemented and maintained
- ensure that workers and other interested parties are protected from reprisals when they report issues
- set the mission, vision and values.

The operator should consider the organisation's context, needs and expectations of its interested parties, business objectives (including the sustainability policy and objectives), and the integration of Bonsucro requirements in general business processes.

Top management responsibilities include the sustainability policy, organisational roles, responsibilities and authorities, as well as the management review.

The sustainability policies and/or procedures and/or protocols and/or internal regulations can be a single document or the different commitments can be spread out over individual documents as follows:

- In relation to international human rights regulations, the operator should take into consideration the UN Guiding Principles,³ which is the global authoritative standard on a business's responsibility to respect human rights, unanimously endorsed by the UN Human Rights Council in 2011.
- In relation to indigenous peoples' rights and land rights, it is important that the operator reviews the ILO Convention report (No. 169) on Indigenous and Tribal Rights⁴ and the United Nations Declaration on the Rights of Indigenous People.⁵
- In relation to labour rights, the operator should refer to the various ILO Core Conventions, as well as any other conventions listed throughout the Standard and Guidance. As a minimum, the labour rights topics addressed in the Standard should be mentioned (see Principle 2).
- In relation to health and safety, the policy should state the general policy on health and safety at work, including the operator's commitment to managing health and safety and its aims. The operator should give details of the practical arrangements it has in place, and how it will meet the health and safety policy's aims.
- In relation to ethical conduct, anti-corruption, anti-bribery and money laundering, the OECD Convention on Combating Bribery⁶ and United Nations Convention against Corruption⁷ provide guidelines on how to prevent these actions. The policy should include elements such as: bribery, facilitation payments and disclosures of political contributions; guidelines for charitable donations and sponsorships; respect for fair conduct of business; proper disclosure of information in accordance with applicable regulations and accepted industry practices; and compliance with existing anti-corruption legislation.
- In relation to environmental protection, the policy should be specific to the operator and relevant to its activities. The policy should be realistic, achievable and a serious commitment to reduce the operator's environmental impact. It should include a commitment to continuously improve the environmental performance by: monitoring progress against targets and objectives on a regular basis; complying with relevant environmental legislation; and addressing the topics mentioned in Principles 3 and 4 of the Bonsucro Production Standard.

More information can be found at <https://www.oecd.org/corporate/mne/>

If any of the topics above are not applicable to their operations, the operator can present a justification explaining why the topic is not covered in its policies and/or procedures and/or protocols and/or internal regulations.

The operator should provide information about its policies and practices to all its personnel and stakeholders, and progressively to all the companies involved in the whole cane-supplying area.

The operator should keep records of adjustments made to the policies and practices and make them publicly available to personnel, suppliers, clients and other stakeholders. The operator should develop communication mechanisms to communicate these policies to stakeholders (workers, suppliers, providers, contractors and community members).

³ https://www.ohchr.org/documents/publications/guidingprinciplesbusinessshr_en.pdf

⁴ https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

⁵ https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

⁶ http://www.oecd.org/daf/anti-bribery/ConvCombatBribery_ENG.pdf

⁷ https://www.unodc.org/documents/treaties/UNCAC/Publications/Convention/08-50026_E.pdf

The implementation of the policies should be undertaken by the leader (top management) in charge of each area within the operation. This should be documented and addressed in the appropriate language, and methods for the workers, suppliers, clients and main stakeholders should be clear. For group certification, the sustainability policies, protocols and/or internal regulations may be developed at a group level.

Management plans, risk assessments and monitoring systems

The specific plans listed below are part of the Sustainability Management Plan and are required by other indicators of the Standard (for guidance on the elaboration of these plans, please refer to each indicator as listed):

- Stakeholder Mapping and Engagement Plan, as per indicator 1.2.1
- Risk Assessment on compliance against the Bonsucro Production Standard, as per indicator 1.2.2
- Improvement and Opportunity Assessments for the supply base, as per indicator 1.2.3
- Continuous Improvement Plan on areas outside the units of certification, as per indicator 1.2.4
- Internal monitoring process, as per indicator 1.4.1
- Health and Safety Management Plan, as per indicator 2.1.2
- Climate Mitigation and Resilience Plan, as per indicator 3.2.1
- Biodiversity Management Plan, as per indicator 4.1.2
- Soil Management Plan, as per indicator 4.2.2
- Water Stewardship Plan, as per indicator 4.3.2
- Integrated Pest Management (IPM) Plan, as per indicator 4.4.2.

In addition, the Sustainability Management Plan may include the Waste Management Plan (as per indicator 5.2.2) and the Training Plan (as per indicator 5.3.1). As they are non-core indicators, these plans may be included in the Sustainability Management Plan in case the operator shows compliance with these indicators.

The operator shall review the Sustainability Management Plan annually, with the exception of Soil Management, Water Stewardship and Integrated Pest Management Plans that are on a three-year review cycle.

CRITERION 1.2 – RISKS AND IMPACTS ARE SYSTEMATICALLY ASSESSED

1.2.1 THE OPERATOR MAPS INTERNAL, EXTERNAL AND VULNERABLE STAKEHOLDERS AND ELABORATES AN ENGAGEMENT PLAN FOR THESE STAKEHOLDERS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: The operator maps and understands the needs and expectations of key stakeholders and fosters trust among stakeholders. The operator elaborates an engagement plan to reach out to stakeholders and ensure they are heard.

The operator should have a general understanding of the expressed needs and expectations of workers and other relevant interested parties, to determine those that it has to, or chooses to, be addressed on the Engagement Plan.

Examples of interested parties are regulatory, statutory or governmental agencies, communities, owners, neighbours, other companies related to the operator, like contractors, suppliers, clients, customers, or people who might occasionally be in the facilities of the operator: visitors, consultants, transport workers, etc.

Particular various population groups are considered as vulnerable, including girls, women, young people, migrants, people with disabilities, the elderly and the indigenous population. The operator should identify those who may be affected by the operations and develop an Engagement Plan.

The process of engaging with indigenous and tribal communities should take into consideration ILO Convention 169, guaranteeing indigenous peoples the right to free, prior and informed consent (FPIC) consultation and guaranteeing good faith (see indicator 2.5.1).

The mapping should not be limited to a general stakeholders' group but be as precise as possible. This will allow the identification of engagement plans that are adapted to the various stakeholders who influence, or are influenced by, the operations. As such, the group of "workers" could be sub-divided into direct workers, contracted workers, seasonal workers and daily workers. It could also be sub-divided according to their job, e.g. mill workers, agriculture workers or laboratory workers. The sub-categories can also reflect the different challenges, needs and expectations of stakeholders and facilitate the identification of actions.

The operator should have – and keep records of – an Identification, Prioritisation and Engagement Plan in place. The plan shall be reviewed annually.

As a minimum, the plan should include the elements described below.

Planning:

- The scope, goals and description of the actions taken to engage with the stakeholder.
- The periodicity of activities.

Identification:

- Identification of internal, external, directly and indirectly impacted stakeholders, specifying their role, type of impact and vulnerability level.
- Mapping the main issues and relationships among stakeholders using a participatory mechanism.
- An analysis specifying the interests and perspectives of stakeholders.
- If applicable, a mechanism to approach identified stakeholders.

Prioritisation:

- Prioritisation of stakeholders, ranking them based on the findings from the identification phase.
- A map demonstrating the area of influence (AOI). The AOI can be the unit of certification, the land owned and managed by the operator, or the whole supply area. But it can also include the wider landscape; for example, it is possible to consider a whole watershed as part of the AOI even if the area planted with cane is only on a small part of the watershed – this is because the water extracted from, or the water released in, the water stream might potentially have an impact much beyond the limit of the supply base (or be impacted by what is happening beyond the supply base). Such wider landscape features can be determined by environmental characteristics (e.g. watershed, national parks) or social ones (e.g. urban areas, indigenous communities, country borders). The rationale for the determination of the wider boundary should be provided, along with a map showing the boundaries of the unit of certification and the wider landscape.

The operator can decide to engage with stakeholders in the unit of certification first, before gradually engaging with stakeholders in the whole supply base.

Engagement:

Following the mapping of stakeholders, the operator should develop an Engagement Plan. The plan will lay out the type of engagement mechanism (e.g. public and open meeting, private meeting, 1-to-1 engagement, webinars, field visits, mailing) planned for each stakeholder group and any specific issues. The plan should define the expected level of participation to be achieved, timeframe and expected outcome of the engagement activities. It should include:

- the main communication mechanism(s) to be used with stakeholders
- the main strategies to achieve a better understanding of stakeholders, challenges, risks and how to improve relations.

Once the mapping of stakeholders and the Engagement Plan have been developed, the operator should carry out the implementation and also document the relevant interventions or activities accordingly.

1.2.2 THE OPERATOR CONDUCTS A RISK ANALYSIS ON COMPLIANCE AGAINST THE BONSUCCRO PRODUCTION STANDARD

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: The operator continuously manages the risks of falling out of compliance against the Bonsucro Production Standard, both for regular operations and for new sugarcane-related operations.

The actual or potential impact assessment should seek to determine and understand the various internal and external issues typically experienced by an operator that can have positive or negative impacts. For example, these could be:

- External: cultural, social, political, regulatory, financial, economic or market expectations, whether international, national, regional or local
- Internal: the organisation's activities, products, services, strategic direction and capabilities (people, knowledge, processes, systems).

A risk is determined by the probability and the negative impact on compliance that a hazard may cause.

Because hazards have the potential to cause negative social and environmental impacts, hazards should be identified before the risks associated with them can be assessed. For that reason, the expectation is to implement effective controls according to the hierarchy of controls.

When performing a hazard identification, the operator should proactively identify all sources, situations or tasks and their combinations arising from its activities that have the potential to cause negative impacts. Also, the operator should consider any hazard that could arise from a reorganisation of or changes in processes, changes in knowledge, and potential emergency situations.

The operator should establish specific hazard identification tools and techniques.

The analysis shall be reviewed or revised annually.

The Risk and Impact Assessment should consider a range of relevant contextual factors, including national/regional financial health, conflict risks, transportation/logistics challenges, opportunities associated with trade innovations, political stability, social dialogue issues, contracting and subcontracting risks, and other facilitators/barriers to doing business. Environmental factors such as changing climatic conditions, water stress, water withdrawals by all users of a watershed, pressure on natural ecosystems, illegal logging, soil health and degradation, invasive flora and fauna, pest resistance, and lack of adaptation of cane varieties to changing environmental conditions could also be considered.

If it is determined that the context is politically fragile or conflict-affected, the analysis should articulate how the workforce will be protected from violence and what actions the operator will take to avoid conflicts.

The operator should:

- Determine the context and review what might influence the sustainability management in order to achieve compliance with the indicators of the standards.
- Consider issues that might be relevant and have a potential impact on the compliance with the Standard and, due to external and internal issues, changes should be monitored and reviewed regularly.
- Consider as part of the external issues: the context in which the organisation is developing its activity (economic activity, economic and financial situation, sector, supply chain requirements, international commerce activities); the social and environmental requirements (legislation, conventions, voluntary agreements subscribed to by the organisation); and its location, among others; and how it can influence compliance with the Standard.
- Consider as part of the internal issues: all the key issues raised by workers and other interested parties that may impact the operator's internal activities; its structure and operational processes (sites, work shifts, demographics, competences available); the organisational culture expressed in its mission, vision, objectives, values, diversity and other factors; and its management (management systems, consultation and participation policies and practices, general planning, distribution of resources, etc.); and how it can influence compliance with the standard.

Prior to establishing new sugarcane-related operations, the operator shall conduct a Risk Assessment on the impact that the new sugarcane-related operations would have on compliance against indicators of the Bonsucro Production Standard. This is to evaluate the social and environmental risks raised by the new operations, particularly when such changes are likely to impact on the size and composition of the workforce (for example, mechanisation or field expansion), on the way in which land is used, and/or on the water quantity and quality in the watershed.

The operator should:

- Identify and involve the potentially affected stakeholders (local communities, other growers) in the form of a consultation.
- Identify the natural resources on which its operation relies and the impacts of its activities on them.
- Describe the consultation process followed (FPIC should be used for the process, and consensus should be sought when decisions are being made or conclusions agreed).
- Identify the positive and negative impacts on the identified stakeholders.
- Keep records of the consultation process and actions decided.
- Propose actions (preventive and corrective) to mitigate the identified impacts, and to manage or enhance the natural resources.

- Set measurable objectives.
- Document all this in the Risk Assessment report.

The report should include stakeholder consultation and pay attention to potential impacts that may occur, especially on vulnerable communities. Records of workshops, focus groups and/or participatory interventions with communities should be kept. The operator should always have records of possible alternatives or appropriate mitigation measures agreed with stakeholders, accompanied by independent third-party experts. Where indigenous and traditional communities are identified, Free, Prior and Informed Consent (FPIC) will be required before any operations are established or expanded.

The operator should carry out the identified impact mitigation strategies and should always keep records of their monitoring, evaluation and adaptation if necessary.

Prior to any greenfield expansion or new agriculture projects, the operator shall conduct the *Bonsucro HCV Risk Assessment for Expansion* for the planned areas and implement the HCV Risk Assessment procedures.

N.B. The *Bonsucro HCV Risk Assessment for Expansion* is a detailed methodology for evaluating the expansion of cultivation and can be found in *Bonsucro Guidance for Operators – Expansion of Cultivation* and *Bonsucro Guidance for Experts – Expansion of Cultivation*, available on the Bonsucro website.

The results of the analysis should be made available to clients, personnel, suppliers and other stakeholders.

The summary should contain the main key outcomes and a matrix of the Monitoring and Management Plan, along with the contact details of a dedicated member of staff in case that stakeholders with a duly demonstrated interest would like to contact for additional information, as well as:

- Who was engaged (how many people and the demographics of interviewees)?
- Who did the assessment (expertise and competence)?
- What was the objective/scope of the assessment?
- What significant risks are present to the environment (air, water, soil, biota) and to people (workers, contractors, communities, vulnerable subgroups)?
- What contextual issues pose challenges to operations (conflict, resource shortage e.g. drought, labour unrest, political instability, infrastructure issues e.g. bad roads)?
- How were determinations made regarding the presence or absence of indigenous and other protected groups?

The operator should develop a plan with measurable objectives and actions (preventive and corrective) to mitigate the identified impacts, and to manage or enhance the natural resources.

The operator should at least:

- Establish and implement operational controls as necessary to eliminate, reduce and control risks for all operational areas and activities in the workplace by workers, contractors or other external people, and include physical devices such as access controls, instructions, alarms, signage, etc.
- Review operational controls on a periodic basis to evaluate ongoing suitability and effectiveness, and any necessary changes should be implemented.
- Evaluate new changes in the operations before their implementation in relation to hazards and risks associated, and consider all requirements for preventive measures, such as training needs.
- The operator should also consider including a mechanism to continuously identify impacts to human rights of workers, the environment and communities in its Risk and Impact Assessment.

1.2.3 THE OPERATOR CONDUCTS AND DOCUMENTS AN IMPROVEMENT OPPORTUNITY ASSESSMENT OUTSIDE THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to its sugarcane area outside the unit of certification.

Objective: The operator continuously identifies opportunities for sustainable production in the area outside of the unit of certification.

The sugarcane supply base outside the unit of certification to be assessed shall be as a minimum 20% of the total supply base outside the unit of certification (either calculated based on the number of suppliers or total supplying area). The intention is to have 100% coverage of the non-certified supply base in a period of five years.

The tables below present examples of the stepwise approach the operator may use to assess the supply area.

Example 1:

Year 1 (First audit against BPS 5.2)	Year 2 (Second audit against BPS 5.2)	Year 3 (Third audit against BPS 5.2)	Year 4 (Fourth audit against BPS 5.2)	Year 5 (Fifth audit against BPS 5.2)
20% of the total supply base outside the unit of certification to be assessed Example: Number of supplies outside unit of certification: 500	0% change in suppliers Example: Number of supplies outside unit of certification: 500	0% change in suppliers Example: Number of supplies outside unit of certification: 500	0% change in suppliers Example: Number of supplies outside unit of certification: 500	0% change in suppliers Example: Number of supplies outside unit of certification: 500
20% Example: 20% of 500 = 100 suppliers to be assessed	Number of suppliers to be assessed this year: 20% of 500 = 100 Total number of suppliers assessed by year 2: <ul style="list-style-type: none">Year 1 = 100Year 2 = 100 TOTAL = 200 = 40% of the total supplies outside the unit of certification	Number of suppliers to be assessed this year: 20% of 500 = 100 Total number of suppliers assessed by year 2: <ul style="list-style-type: none">Year 1 = 100Year 2 = 100Year 3 = 100 TOTAL = 300 = 60% of the total supplies outside the unit of certification	Number of suppliers to be assessed this year: 20% of 500 = 100 Total number of suppliers assessed by year 2: <ul style="list-style-type: none">Year 1 = 100Year 2 = 100Year 3 = 100Year 4 = 100 TOTAL = 400 = 80% of the total supplies outside the unit of certification	Number of suppliers to be assessed this year: 20% of 500 = 100 Total number of suppliers assessed by year 2: <ul style="list-style-type: none">Year 1 = 100Year 2 = 100Year 3 = 100Year 4 = 100Year 5 = 100 TOTAL = 500 = 100% of the total supplies outside the unit of certification

Please note that, in the example 1, the suppliers that have already been assessed in year 1 do not need to be assessed again in year 2, and so on.

The number of suppliers or area of supply base may change over time, which means that not always 100% can be achieved during the 5-year period.

The example below shows compliance with the indicator when the supply base changes over time. In this case, the annual assessment should cover 20% of the total supply base outside the unit of certification in that year of reference (calculated based on either the number of suppliers or total supplying area).

Example 2:

Year 1 (First audit against BPS 5.2)	Year 2 (Second audit against BPS 5.2)	Year 3 (Third audit against BPS 5.2)	Year 4 (Fourth audit against BPS 5.2)	Year 5 (Fifth audit against BPS 5.2)
20% of the total supply base outside the unit of certification to be assessed Example: Number of supplies outside unit of certification: 500	5% change in suppliers Example: Number of supplies outside unit of certification in this year: 525	2% change in suppliers Example: Number of supplies outside unit of certification in this year: 536	10% change in suppliers Example: Number of supplies outside unit of certification in this year: 590	10% change in suppliers Example: Number of supplies outside unit of certification in this year: 649
20% Example: 20% of 500 = 100 suppliers	Number of suppliers to be assessed this year: 20% of 525 = 105 suppliers Total number of suppliers assessed by year 2: <ul style="list-style-type: none"> Year 1 = 100 Year 2 = 105 TOTAL = 205 = 39% of the total supplies outside the unit of certification 	Number of suppliers to be assessed this year: 20% of 536 = 108 suppliers Total number of suppliers assessed by year 3: <ul style="list-style-type: none"> Year 1 = 100 Year 2 = 105 Year 3 = 108 TOTAL = 313 = 58.4% of the total supplies outside the unit of certification 	Number of suppliers to be assessed this year: 20% of 590 = 118 suppliers Total number of suppliers assessed by year 4: <ul style="list-style-type: none"> Year 1 = 100 Year 2 = 105 Year 3 = 108 Year 4 = 118 TOTAL = 431 = 73% of the total supplies outside the unit of certification 	Number of suppliers to be assessed this year: 20% of 649 = 130 suppliers Total number of suppliers assessed by year 4: <ul style="list-style-type: none"> Year 1 = 100 Year 2 = 105 Year 3 = 108 Year 4 = 118 Year 5 = 130 TOTAL = 561 = 86.4% of the total supplies outside the unit of certification

Please note that in the example above, assessing 20% of the suppliers outside the unit of certification per year do not cover 100% of the supply base outside the unit of certification in five years, resulting in 86.4% of the supply base assessed. This is in compliance with indicator 1.2.3, meaning that the operator will not receive a non-conformity in this case.

When a Bonsucro certified farm and/or group of farms supply sugarcane to a mill and are not included in its scope of certification, i.e., the supplier farm(s) have their own Bonsucro certificate, they can be excluded from this assessment.

The identification of actual or potential opportunities for improvement should be based on the assessment of the social and environmental conditions in the operations and farms outside the unit of certification, covering the topics below:

- risk of child labour
- risk of forced labour
- risk to water quantity and quality in the watershed
- conversion of natural ecosystems.

The assessment summary should contain the main key outcomes and a matrix of the Monitoring and Management Plan, and should include:

- Who was engaged (the number of people and demographics of interviewees)?
- Who did the assessment (expertise and competence)?
- What was the objective/scope of the assessment?
- What significant risks are present to the environment (water quantity and quality in the watershed, conversion of natural ecosystems) and to people (risk of child/forced labour)?
- What opportunities were identified from the assessment?

1.2.4 THE OPERATOR DEVELOPS AND IMPLEMENTS A CONTINUOUS IMPROVEMENT PLAN TO SUPPORT SUGARCANE SUPPLIERS IN ADDRESSING THE MOST SALIENT OPPORTUNITIES IDENTIFIED OUTSIDE THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the area outside the unit of certification.

Objective: This indicator aims to narrow sustainability performance gaps outside the unit of certification.

The operator should develop and document a Continuous Improvement Plan, based on the Improvement Opportunity Assessment (c.f. indicator 1.2.3), which defines and prioritises actions to assist sugarcane suppliers outside the unit of certification in addressing the opportunities for improvement. The operator should also work with the sugarcane suppliers not included in the unit of certification to assist them in narrowing environmental and social performance gaps between the certification area and supplier area. The plan should also be aligned with the stakeholder mapping (indicator 1.2.1).

The operator should develop a plan with measurable objectives and actions, taking into account available internal and external resources. The plan aims to turn opportunities for improvement into measurable achievements and gradually promote compliance (based on findings in indicator 1.2.3) outside the unit of certification. The plan should identify the “who, what, when, how, allocated resources, measurable objectives and means of verification”.

If conversion of natural ecosystems has been identified as a risk for the whole supply base (in indicator 1.2.3), then it should be addressed as a matter of priority.

The plan shall be progressive and appropriate to the organisation’s context and aligned with the results of indicator 1.2.3.

The operator shall review the plan annually.

CRITERION 1.3 – THE IMPLEMENTATION OF THE SUSTAINABILITY MANAGEMENT PLAN IS SYSTEMATICAL AND RISK-BASED

1.3.1 THE OPERATOR HAS A SYSTEM IN PLACE TO ENSURE COMPLIANCE WITH ALL APPLICABLE LOCAL, NATIONAL AND RATIFIED INTERNATIONAL LAWS AND REGULATIONS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator understands the legal framework in which it operates and that it acts in compliance with applicable legislations.

The operator should have personnel in charge of managing and documenting a system or matrix that identifies, updates, tracks and verifies compliance with applicable local, national and ratified international laws and regulations for its operations, including mill and agricultural activities. The personnel in charge should be aware of the importance of ensuring, promoting and facilitating compliance. This can be through:

- implementing compliance policies
- educating employees on those policies
- identifying issues that may turn into potential violations and ensuring there are procedures in place to address the issues.

The operator should have a compliance programme in place that demonstrates the following:

- integration of topics about health and safety, environmental and social responsibilities, employment law, financial accounting, tax law and other relevant areas
- screening and evaluation of employees, vendors and other agents
- communication, education and training on compliance issues
- monitoring, auditing and internal reporting systems
- processes to carry out investigations and remedial measures.

Applicable laws include, but are not limited to, the following areas:

- waste, pollution and environmental protection
- nature conservation and natural ecosystems
- water quality, extraction and disposal
- energy and greenhouse gas (GHG) emissions
- labour conditions, including occupational health and safety, and living conditions of employees who live within the unit of operation
- maternity/paternity leave
- operational licences
- social benefits/obligations
- human rights and traditional community rights
- land and water title and use rights
- soil protection
- agrochemical management
- agricultural practices
- transportation.

The operator should also monitor compliance with ILO Core Conventions and any other ILO Conventions ratified by the country of operation.

Note that in some cases the Standard might conflict with national laws; in such cases, the stricter requirement shall prevail. Where the domestic context renders it impossible to meet this responsibility fully, the operator shall respect the principles of the Bonsucro Production Standard to the greatest extent possible in the circumstances, and shall demonstrate its efforts in this regard, without contravening laws, regulations or court decisions.

The operator should carry out periodic due diligence for contracted third parties, recruitment agencies, service providers and contractors to ensure their compliance with the Standard, processes, policies, law and rights.

All legal document systems should include a continuous improvement mechanism that details the need to stay abreast of changes to any regulation or law. The operator can rely on specialised external legal advisors to access such information.

In terms of land rights, the operator should demonstrate its right to use the land within the unit of certification. In the case of land leasing, the operator should ensure it has the relevant documentation allowing the leasing of the land, such as legal documents (e.g. lease papers) granted or signed off by the relevant government authorities of the country, if relevant.

Regarding water-use rights and the use of natural resources, the operator should be able to show the relevant permits allowing the extraction of surface or ground water. In this case, the operator should keep records of the volumes of water extracted and ensure they comply with the terms of the licence, if applicable.

1.3.2 THE OPERATOR RESPECTS THE CONTRACT TERMS FOR CANE PAYMENTS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that farmers receive the correct payment of their cane and do not suffer from payment delays.

For the agriculture scope, this indicator is applicable only for certification of a group of farms when payment to farmers is made by the group management. This indicator is not applicable for individual farms.

The operator should ensure farmers understand and agree with the terms of their contract, especially the calculation method used to determine the price of cane delivered (even if negotiated and agreed by professional bodies). The contract should be in line with local legislation where relevant or cross-party agreement. If nationwide agreements are revised on a yearly basis, the operator should ensure that contracts with suppliers follow the same update schedule.

The operator should make payments for cane deliveries on time and according to the agreed contract, and not halt them in such a way that arrears accumulate.

The operator should provide farmers with a summary of deliveries and payments made. The operator should make the methodology and the detailed calculation available to farmers if requested.

CRITERION 1.4 – SYSTEMS FOR MONITORING AND EVALUATION, AND ADDRESSING GRIEVANCES ARE IMPLEMENTED

1.4.1 THE OPERATOR ENSURES THAT INTERNAL MONITORING PROCESSES ARE CONDUCTED, CORRECTIVE ACTIONS ARE IMPLEMENTED AND A MANAGEMENT REVIEW IS CONDUCTED

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator continuously identifies opportunities for improvement of its operations. This indicator reflects the “Check” and “Act” stages of a PDCA cycle.

According to Six Sigma (2016),⁸ the Continuous Improvement Plan should include mechanisms to measure the implementation of actions across social, environmental, quality and productivity issues. A systematic implementation review mechanism should be in place, in line with the defined timeframe.

The operator should demonstrate that it has developed a mechanism to regularly measure the implementation of the Continuous Improvement Plan, specifically by collecting environmental, social, quality and productivity monitoring data, according to the timeframes given in the plan. The operator should maintain records of implementation and demonstrate that activities have been implemented. Measuring and monitoring sustainability performance and sustainability management requires that the operator has a systematic approach to check:

- the effectiveness of operational controls
- the performance of the sustainability management and other processes, such as provision of resources, competencies and stakeholder engagement (particularly workers’ consultation and participation), among others.

The operator should also evaluate the need to introduce new controls.

The operator should plan the “what, where and when” in terms of measurements, the measurement methods to be used, and the competences needed to perform the measurements. The operator should analyse the results of measurement to identify areas requiring improvement.

The procedure for the annual internal audit process should be documented.

Any non-conformities found as part of the internal audit should result in direct corrective actions being taken and should be documented, including dates and descriptions of actions taken.

The outcomes of the internal audits and all actions taken to correct non-conformities should be subject to management review at least annually. Where management plans and systems have shown inadequacy, revisions/adjustments should be made if needed.

The internal audit should be carried out by the operator in all of the unit of certification, considering the following factors:

- The audit is undertaken by qualified personnel: the company may opt for using a third-party auditor for this purpose, at least until its own staff have achieved the necessary qualifications (for auditor qualification requirements, see Bonsucro Certification Protocol as a recommendation for internal staff who will be conducting the internal audit process).
- Ensure that all the documented evidence for each criterion is in place (if applicable).
- The operator has trained all its personnel on the Standard and it has specifically trained personnel for areas that require technical expertise.
- The outcomes of the audit are reported to relevant stakeholders; the non-conformities are subject to management review and records of progress to correct them are documented.
- Derived from the non-conformities, there is a plan to address them, including the timeframe for resolution, the person or area in charge, and the main actions to be taken.
- Verification will take place according to the timeframe to ensure all non-conformities have been closed out.
- There is also a Continuous Improvement Plan for all the gaps identified and this entails taking future actions to prevent them from occurring again. The plan should include timing and responsibilities for implementation.

⁸ Six Sigma (2016). Six Sigma And Continuous Improvement. Academic Press, 44–48.

1.4.2 THE OPERATOR ENSURES THAT THERE IS A MECHANISM TO RAISE GRIEVANCES

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that stakeholders feel free to raise complaints and that their grievance will be objectively addressed.

The operator should have a grievance mechanism in place that describes how it operates, clearly explaining: the process of a claim, concern and problem resolution; the rights of claimants; a policy of compliance with human rights, social and environmental aspects; and other relevant details that make the tool operable.

The mechanism should be tailored to meet the needs of each organisation, according to the sector, country, culture and workforce composition.

The grievance mechanism, which is part of a broader approach towards stakeholder engagement, provides community members with a way to consistently engage with the company, and to enhance relationships, reduce social risk, and enable more responsive and responsible management. To demonstrate the effectiveness of the grievance mechanism, it is important to consider the following elements:

1. Capability to receive the grievance on time
2. Acknowledgement of the situation
3. Definition of the responsibility for evaluation and investigation (complaint owner)
4. Evaluation of the investigation of the situation reported
5. Definition of the procedure for recourses or appellations
6. Development of resolutions in collaboration with the complainant
7. Implementation of resolutions
8. Monitoring and closure.

In practice, the grievance mechanism should meet the following:

- It ensures the anonymity of complainants where requested by them, protecting them from risk of reprisal or intimidation. It also safeguards against non-disclosure rules set by the company.
- Procedures are in place to ensure that the system is effectively communicated to and understood by the affected parties, including by illiterate parties or workers who speak a different native language.
- The operator keeps parties to a grievance informed of its progress, timeframe and outcomes.
- The system allows for complainants to choose individuals or groups to support them and/or act as observers.

The operator should implement continuous improvements measures to adapt the grievance mechanism and make it more efficient, based on past learning and experience.

The operator should have personnel in charge of ensuring that any claim or conflict is addressed appropriately. The personnel should also receive training on the compliance policies, the FPIC process and all relevant topics related to their scope of work.

The operator should have a policy mechanism in place linked to the compliance policy to respect human rights, to ensure there will be no reprisals or intimidation related to any situation, claim and/or problem raised.

A responsible person or team should be identified to manage the grievance mechanism, maintain records and ensure monitoring outcomes. The personnel in charge should have a plan to follow up claims. This should be updated regularly with:

- the status of progress
- documents
- timeframe (e.g. it should clearly define the waiting time for a response; a standard time is between 15 and 30 days)
- outcomes of the resolution.

Alongside the factors mentioned above, a communication mechanism and Engagement Plan should be integrated to liaise between the operator and the communities or external third parties. This should be available in the appropriate language(s), respecting the customs of local groups, and should be inclusive of the needs of indigenous or vulnerable groups.

In conjunction with the mapping of stakeholders mentioned in indicator 1.2.1, stakeholders who are needed to communicate and engage with as part of the grievance mechanism should be identified.

Documents providing evidence of progress can be initial agreements or commitments between the operator and the stakeholder, those provided by the stakeholder, or any other that gives more detail to help understand the root cause of the problem.

The operator should keep records of all relevant documents that provide evidence or back-up of the claim or conflict. Documents should be filed for a determined period to record the historical background of the situation.

The grievance mechanism should not replace any judicial or non-judicial forms of remedy; it should rather be considered as a tool for immediate problem solving both for the operator and communities.

In cases where the operator and claimant decide to escalate the situation by using a judicial mechanism to resolve the problem, the operator should ensure the claimant understands the implications of a judicial approach via a written communication method. Additionally, prior to starting any judicial process, both parties should be aware of any relevant and applicable local and national laws, the timeframe of response, and the level of involvement expected in the process.

In cases where the operator, as a result of the Risk and Impact Assessment, has identified risks related to land acquisition, land usage and/or use of common natural resources that might affect customary rights, or land rights and/or other relevant impacts that signify a risk to the relationship between the company and the local communities, the operator should include and escalate the risks during the implementation of the FPIC assessment, providing evidence of having consulted key stakeholders, and indigenous and/or vulnerable groups in order to achieve consensus or an agreement between parties (see indicator 2.5.1). The claims, concerns and problems resulting from the FPIC consultations should be addressed, following the grievance mechanism guidelines.

The operator should monitor the effectiveness and credibility of the grievance mechanism, and could invite external observers to provide feedback on processes, practices and outcomes to ensure continuous improvement. The operator should identify strategies to expand access and buy-in to the complaint mechanism, as well as develop interventions to address potential root causes of existing complaints in a systematic manner.

Vulnerable groups (migrant workers, young workers, ethnic minorities, etc.) may find it particularly hard to raise complaints. It might be possible to identify specific ways in which they can raise concerns without increasing their vulnerability, including through representatives speaking on their behalf. Wherever possible, it will be beneficial for the operator to seek ways to gain the views of these groups directly.

PRINCIPLE 2 – RESPECT LABOUR RIGHTS & OCCUPATIONAL HEALTH AND SAFETY STANDARDS

CRITERION 2.1 – TO PROVIDE A HEALTHY AND SAFE WORKING ENVIRONMENT IN WORKPLACE OPERATIONS

2.1.1. THE OPERATOR ENSURES THAT THE MAIN HEALTH AND SAFETY (H&S) HAZARDS AND RISKS TO ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION ARE IDENTIFIED, DOCUMENTED, ASSESSED AND COMMUNICATED TO ALL WORKERS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the health and safety of workers are safeguarded.

This indicator applies to all workers on the premises of the mill and farms included in the unit of certification.

For implementation of this indicator, the operator shall:

- Identify the hazards and analyse or evaluate the risks associated in terms of health and safety. This is applicable to all types of work on the operator's premises.
 - * A risk is defined as the probability that a worker will be harmed or experience adverse health effects if exposed to a hazard.
 - * Risk = probability of exposure x gravity when exposed.
 - * The factors influencing the risk are: the level of exposure to the hazard, how the workers are exposed (breathing vapour, skin contact) and the severity of the effects under the conditions of exposure.
- Design and implement measures to ensure that risks are eliminated, prevented or adequately mitigated. The plan should be documented, implemented, maintained and reviewed when necessary but at least every year. In order to impact upon identified risks, the operator should consider the following measures in priority order:
 1. Elimination of the risk
 2. Control of the risk at the source to prevent the occurrence of risk
 3. Minimisation of the risk by designing a safe working environment and implementing training
 4. If the risk cannot be eliminated, implementation of preventive measures (provision and use of personal protective equipment (PPE), access to first aid, etc.).

The operator should take specific measures for young workers, pregnant and nursing women, and aged workers, where appropriate. The operator should ensure equal treatment for workers facing similar risks.

The scope of assessment should include all activities carried out:

- in the farms and fields, including but not limited to risks associated with:
 - * handling and storage of agrochemicals and fertilisers
 - * intense sustained effort
 - * handling of dangerous equipment
- during transportation of cane, including but not limited to risks associated with:
 - * length of journey
- in the mill, including but not limited to risks associated with:
 - * handling of chemicals
 - * intense sustained effort
 - * handling of heavy machinery.

The scope of assessment should also include, if applicable:

- accommodation (safety of room/dormitory, including number of people per square metre)
- sanitary facilities, including shower and toilets (e.g. electricity equipment)
- living area (electrical equipment, safety of kitchen area and/or food storage area)
- transportation of workers when provided by the farm or the mill.

Occupational screening should cover risks associated with job start-up (e.g. risks associated with inadequate acclimatisation), job duration (e.g. fatigue, chemical exposure, ergonomics, injury risks to workers during

transportation to/from job sites, risks associated with hand planting of seeds and harvesting of sugarcane, and risks from driving heavy equipment and laying irrigation material) and job insecurity (e.g. hiring for one task and then being reassigned to others without proper screening, training or modified rest regimes).⁹ The operator should also evaluate risks due to long working hours.

Environmental health screening should cover all relevant climatic conditions affecting worker welfare, including heat, humidity, and air and water quality, as well as risks such as altitude sickness, malaria prevalence, emerging infections (e.g. SARS-CoV-2), and insect and snake bites. Where laws and regulations are sufficiently protective, the operator should adhere to them and make the assessment and monitoring reports and relevant data available (for example, see Brazil’s Risk Management Plan regulation, using the Portuguese acronym PGR). Where regulations do not result in auditable environmental analyses, the operator should conduct assessments in line with global best practice.

Where regulations do not result in detailed assessment reports, the operator should assess occupational risks in line with the recommendations under ILO Convention 184.¹⁰

In evaluating heat-stress risk, the operator should employ either the National Institute for Occupational Safety and Health (NIOSH)¹¹ methodology for rest times associated with wet-bulb globe temperature (WBGT) heat indices or adhere to the rest schedule provided below. Elements to be considered include:

- A worker performing heavy work at a temperature of 40°C should work for no more than 20 minutes with 40 minutes of rest.
- A worker performing moderate work at a temperature of 42 °C should use extreme caution. The risk of heat injury is high in this situation and the worker should work for no more than 15 minutes with 45 minutes of rest.

The NIOSH rest schedule¹² is as follows:

	6:00am	7:00am	8:00am	9:00am	10:00am	11:00am	12:00am	1:00pm	2:00pm
Burned cane cutters work day: 6 hours	START	10 Min	15 Min	20 Min	20 Min	15 Min	End		
Seed cutters Work day: 8 hours		10 Min	15 Min	20 Min	20 Min	15 Min	3 Min	10 Min	End
Other jobs Work day: 8 hours		5 Min	10 Min	10 Min	10 Min	10 Min	3 Min		End

Note that while seed cutters are listed as having an 8-hour day, they should stop the most physically demanding part of their labour (the cutting) after 6 hours. The other 2 hours can be utilised for lighter work (bundling seed packages, placing them in bags, etc.).

Medical screening, including pre-employment medical screening, should not be used to discriminate against and/or exclude individuals experiencing ill health from employment, but rather to assure that the individual meets the inherent requirements of the position, and to identify chronic illnesses that might threaten their long-term health status under the relevant working conditions. Workers with identified chronic illnesses should be counselled and referred for medical intervention; work-related illnesses and injuries should be detected and monitored, and hazard control measures should be updated and monitored for effectiveness. Workers’ health statuses should be preserved to allow them to remain economically active (to provide for themselves and their families) to the greatest extent possible and to be reassigned to alternative positions as needed.

Medical screening should include filling out a questionnaire about the occupational and medical history of the worker, which should be conducted once the worker has been hired. A physician should review the questionnaire and conduct a physical examination. Each participant should also be offered a hearing test (audiogram), breathing test (pulmonary function test), tuberculosis screening, and blood and urine tests, according to the worker’s job duties. All medical records should be reviewed by a physician with expertise in occupational medicine and kept for at least 5 years.

Employers should notify the worker about the results following the medical screening examination. The results may not be used by the employer in any way that might be discriminatory to the worker or without their prior consent (personal data protection). If there are any urgent findings on any of the tests, this will be communicated to the worker immediately and recommendations for follow-up will be provided.

Pre-employment medical examination (also referred to as a pre-placement examination) strives to place and maintain employees in an occupational environment adapted to their physiological and psychological capacities. The goal of the pre-employment examination is to determine whether an individual is fit to perform their job without risk to themselves or others. It is expected that the examiner is required to have detailed knowledge of both working and health conditions.

⁹ The term “occupational health screening” is commonly used in the UK. In the US, NIOSH/CDC refer to “Health Risk Appraisals at the Worksite” to include occupational risk screening.

¹⁰ https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C184

¹¹ <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf>

¹² <https://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/2017-127.pdf>

The health and safety hazards and risks must be communicated to all workers in a language and vocabulary that workers can understand. Apart from health and safety training (see indicator 2.1.5), good practices for communication of health and safety hazards are:

- The use of posters, colour codes, signs or labels to warn employees of potential hazards.
- Establish or update standard operating procedures and communicate them so that health and safety risks are minimised by workers following the appropriate procedures.
- Ensure that copies of Safety Data Sheets (SDSs) are readily available and train employees who handle chemicals how to interpret the information.

2.1.2 THE OPERATOR MANAGES H&S HAZARDS AND RISKS TO ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION THROUGH IMPLEMENTED AND ENFORCED PLANS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the health and safety of workers are safeguarded.

The operator should implement a Health and Safety Management Plan that covers:

- the health and safety of the organisation and planning in the mill and farms within the unit of certification
- the planning process for accident and ill-health prevention
- the line management responsibilities
- the practices, procedures and resources for developing, implementing, reviewing and maintaining the Occupational Health and Safety Plan.

The operator should plan how to take action to address hazards, legal and other requirements, potential emergency situations, and other risks deriving from its operations using its health and safety management system processes, and, additionally, determine the effectiveness of the actions taken. In doing this, the operator may take into account:

- the hazard identification
- the assessment of risks related health and safety (see indicator above)
- the Risk Assessment, including both the overall process and specific assessments, related to risks deriving from certain tasks, such as the use of hazardous substances, or risks related to other factors, such as ergonomic or psychosocial risks, or risks to specific groups of workers, like temporary workers or pregnant women.

Plans are likely to include explicit protocols for preventing occupational illness and injuries, inclusive of PPE replacement schedules and reviews of PPE functionality (e.g. do gloves accidentally increase the risk that a cane cutter's hand will slip during harvesting, resulting in injury to their leg while preventing injury to the hand?), nutrition plans and transportation safety plans. Plans for preventing environmentally linked illnesses are likely to include explicit protocols for, e.g. malaria control and workers' rest schedules.

An effective management structure and arrangements should be put in place for delivering the plan. Health and safety objectives and targets should be set for all managers and employees to eliminate hazards and reduce risks.

The critical issues that should be covered by the Health and Safety Management Plan will depend on the assessment of risks made by the mill and farms. The plan could include the following elements:

- design, provision and maintenance of a safe workplace for all employees
- design, provision and maintenance of safe means of access to and egress from each part of the workplace
- design, provision and maintenance of any article, plant, equipment or machinery for use at work in a safe manner; the provision of systems of work that are planned, organised, performed, maintained or revised so as to be safe, particularly for safety-critical process operations or services, including transportation safety control strategies
- performance of ongoing hazard identification and risk assessments, and compliance with the general principles of prevention as set out in the national legislation or in line with global best practices
- provision and maintenance of welfare facilities and PPE
- preparation of emergency plans and the provision of first-aid training
- reporting of accidents and dangerous occurrences to the relevant authority and their investigation
- provision and dissemination of health and safety information, instruction, training and supervision as required
- operation of health and safety consultation, employee participation and safety representation programmes
- review and keep the Health and Safety Management Plan (or policy if there is one in place) up to date in order to prevent adverse effects on the health and safety of employees from changing processes, procedures and conditions in the workplace
- appointment of people responsible for keeping health and safety control systems in place and making them aware of their responsibilities
- establishment of monitoring arrangements, including health and safety inspections and audits, which should be used by the employer to ensure ongoing compliance with legal duties, responsibilities and controls
- development of in-house health and safety competence
- employment of external health and safety experts as required
- use of standards, Codes of Practice, guidelines or industry practices
- co-operation required from employees and disciplinary procedures for non-compliance with health and safety policies
- for effective implementation, mills and farms should develop the capabilities and support mechanisms necessary to implement the Health and Safety Management Plan, objectives and targets; all staff should be motivated and empowered to work safely and to protect their long-term health, not simply to avoid accidents
- give preference to agrochemical application methods with the lowest health and safety risk
- the operator should read, understand and follow product label directions for safe mixing, application and disposal; use trained personnel for critical operations (e.g. mixing, transfers, filling tanks and application)

- insist that correct PPE (e.g. gloves, overalls, eye protection) for each exposure route listed in the SDS be worn at all times when handling and applying pesticides
- mandate that any mixing and filling of pesticide tanks occur in a designated filling area; this should be set away from watercourses and drains
- if on concrete, water should be collected in a separate sump and disposed of as a hazardous waste
- ensure that spills are cleaned up immediately using appropriate spill kits; spills should not be washed away into watercourses or drains.

Wherever possible, risks should be eliminated through the selection and design of facilities, equipment and processes. If risks cannot be eliminated, they should be minimised by the use of physical controls, safe systems of work and the correct PPE.

The mill and farms should measure, monitor and evaluate the performance of the Health and Safety Management Plan. Performance should be measured to reveal when and where improvement is needed.

Active self-monitoring reveals how effectively the Health and Safety Management Plan is functioning. Self-monitoring looks at premises, plant and substances, as well as people, procedures and systems, including individual behaviour and performance. If controls fail, monitoring should find out why they failed, by investigating the accidents, ill health or incidents that could have caused harm or loss.

Employees should understand the Health and Safety Management Plan and those in charge of the implementation should be trained. There should be a responsible person in charge of implementing and enforcing the plan, specifically:

- Transportation safety control strategies (safe vehicles, worker seating and safe storage of farm equipment) should be done in alignment with ILO Safety and Health in Agriculture publication Section 15.3.¹³
- Fatigue risks should be managed in recognition of the multifaceted health risks incumbent with fatigue.¹⁴ Basic screens for fatigue risk are available.¹⁵

Medical and occupational risks should be managed in alignment with ILO 184.¹⁶

¹³ https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/normativeinstrument/wcms_160706.pdf

¹⁴ <https://www.cdc.gov/niosh/topics/workschedules/2019abstracts/AgForestryFish2.html>

¹⁵ <https://nasdonline.org/872/d000705/sleep-deprivation-causes-and-consequences.html>

¹⁶ https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C184

2.1.3 THE OPERATOR ENSURES THAT ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION HAVE ACCESS TO SAFE WATER AND ADEQUATE SANITATION FACILITIES

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the right to water and sanitation facilities is upheld.

Sanitation in the worksite refers to access to water for hand-washing and skin-cooling, as well as access to toilet facilities.

The operator should provide cool (cooler than ambient air), safe drinking water and sanitation to all workers in close proximity to their workstations, taking into consideration the mode of transport available to them.

Drinking water

Water quality (in both fields and mills, with accommodation addressed separately) should be tested regularly and meet applicable country legislation, or in its absence, the World Health Organization's (WHO's) standards for chemical and microbial/pathogenic standards. Routine surveillance includes ongoing monitoring of reportable diseases, outbreak detection, long-term trend analysis, geographic (mineralisation of water) and demographic (human pollution) analysis, and feedback to water authorities.¹⁷

Sufficient, safe, acceptable and physically accessible drinking water should be provided to all employees at the workplace. Furthermore:

- Water should be free of charge for use by employees at the workplace.
- Location, cleaning, recharging and disinfection of drinking water stations: all drinking water fountains, water coolers or other storage vessels/sources should be positioned in appropriate clean areas and cleaned, recharged and disinfected on a regular basis to ensure that all risks of contamination and infection are minimised. Drinking water should be taken from the storage vessel/source in such a way that hands, cups or other objects cannot contaminate the water. Drinking water stations should be regularly disinfected and at an increased frequency if heavily used.
- Drinking water testing: drinking water and drinking water facilities should be examined on a regular basis by appropriately trained and qualified staff to ensure that only water that is safe to drink is consumed by the users. Drinking water samples should be taken regularly, as required, or immediately upon changes in environmental conditions, an outbreak of waterborne disease or an increase in incidence of waterborne diseases.

The recommended water consumption can be supplemented with an electrolyte solution drink.

The operator should ensure that the sources of drinking water are protected from chemicals/microbiological spillage.

Those responsible for staff training should be well versed in local water quality standards, as well as WHO's Guidelines for Drinking-water Quality,¹⁸ with experience and skills in observation, sampling and water quality analysis.

¹⁷ WHO (2011). Guidelines for Drinking-water Quality (Fourth Edition). Available in: <https://www.who.int/publications/i/item/9789241549950>

¹⁸ WHO (2011). Guidelines for Drinking-water Quality (Fourth Edition). Available in: <https://www.who.int/publications/i/item/9789241549950>

The drinking water provided should comply with the microbiological, physical and chemical parameters, and other characteristics established in applicable country legislation; in their absence, the following critical parameters defined by the WHO are a guideline:

Parameter	Value
Faecal coliforms	Zero
Chlorine residue or residue from other treatment disinfectants	0.2 to 0.5 mg/L
Nitrates	10 mg/L as nitrates
pH	6.5 to 8.5
Sodium	20 mg/L
Sulphates	250 mg/L
Turbidity	Less than or equal to 5 NTU (nephelometric turbidity unit)
Total dissolved solids (TDS)	300mg/L, unless a national law sets a different legal limit

A person should be appointed as responsible for the water, sanitation and hygiene (WASH) safeguards.

The operator should determine the current state of access to WASH (provisions within the mills and farms).

The operator should determine the current level of WASH provisions at specific premises, such as the sugarcane plantation where there may be gaps of compliance providing insight into the areas that should be addressed immediately. In order to prioritise the gaps, it might be useful to use the following dimensions:

- severity of risks associated with inaction
- ease of addressing improvement needs.

After the gaps have been prioritised, the mills and farms should develop an action plan that addresses the gaps and compliance with local and national laws and regulations related to WASH practices.

Mills and farms are encouraged to go beyond simple compliance by developing internal practices that could be considered leading solutions.

Annual internal auditing at a frequency determined by a previously conducted Risk Assessment is recommended to ensure the achievement and effectiveness of actions taken within the plan.

Sanitation

Toilet/urinal provisions: An appropriate number of properly constructed toilets and urinals should be provided at a rate of two toilets and two urinal facilities per 45 male workers and three toilets per 50 females. These should include adequate enclosures to provide gender separation, lockable doors to ensure personal safety and privacy, adequate lighting to provide a nominal illumination level of 200 lumens per square metre (lux), protection from weather, and exclusion of insects and vermin in mills and living quarters.

Toilets and urinals should be designed and constructed to ensure the safe removal of urine and excrement, with collection and disposal in ways that do not create a danger to health or the environment.

Toilets should be designed to take into account the requirements of local customs, religious and social traditions, and specific gender needs. This requires, among others, appropriate provisions for washing and wiping, pedestal and squat toilets, and, if necessary, a mix of provisions. Facilities should be equipped with potable or non-potable water at a standard acceptable for cleansing hands.

All washrooms should contain hand-washing basins with soap and potable or non-potable water at a standard acceptable for cleansing hands. If non-potable water is used for washing, it must be clearly communicated at the point of use in a format that can be understood by workers. The quality of water for hand-washing and skin-cooling shall follow local legislation. In the absence of legislation, the water should as a minimum contain <1000 E.Coli CFU¹⁹ and it should be communicated that the water must not be ingested.

Showers and bathing facilities: Where the nature of the work necessitates showering before leaving the workplace (e.g. work involving contamination hazards, or dusty, dirty, hot or strenuous workplaces), all showers and bathing facilities should be equipped appropriately. One shower should be provided for every 10 employees of each gender, or a numerical fraction thereof, who are required to shower during the same shift. Body soap or other appropriate cleansing agents should be provided conveniently to the showers.

Regular training and awareness-building processes should be implemented for all employees. Special emphasis should be given to employees or other staff involved in food preparation and those exposed to specific health risks, such as cleansers and mobile workers.

Appropriate PPE should be provided to all those involved in the cleaning and maintenance of toilet washrooms and associated facilities. These individuals should wear PPE, such as gloves and non-slip rubber-soled shoes, at all times when cleaning urinals, toilet bowls, showers, hand basins, mirrors and other associated facilities.

The operator should put in place a water management system to reduce the risk of waterborne diseases, taking actions like reviewing procedures for sickness absence and what to do in the event of an outbreak of a communicable disease in the workplace, including a follow-up with the water supplier to check how water quality in the water system is monitored.

¹⁹ Verbyla M.E. et al. (2019) Safely Managed Hygiene: A Risk-Based Assessment of Handwashing Water Quality. *Environmental Science & Technology*, 53, 2852-2861. <https://pubs.acs.org/doi/pdf/10.1021/acs.est.8b06156>

2.1.4 THE OPERATOR ENSURES THAT ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION HAVE ACCESS TO APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) FREE OF CHARGE

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the health and safety of workers are safeguarded.

PPE usage and training based on activity type are identified in the Risk Assessment (indicator 2.1.1). The operator should ensure that:

- Clear responsibility has been defined for providing PPE with the ultimate obligation that required, approved and appropriate PPE is provided for free to workers. Furthermore:
 - If workers bring their own PPE, the operator should allow this only if the PPE has been found to be adequate.
 - Companies should replace damaged or worn-out PPE when needed, also free of charge to workers. Workers are expected to signal this in sufficient time and companies should regularly check the state of workers' PPE.
- PPE is appropriate by providing effective protection against the hazard in question and by being adequate given the working environment (e.g. if work is performed in hot conditions), and in terms of comfort of the workers and size of the equipment (e.g. ear plugs, goggles, security shoes, gloves, masks, leg protection, etc.).
- PPE is available (for example, by verifying the storage of PPE) and in good condition.
- PPE is properly looked after and stored when not in use, e.g. in a clean, dry cupboard. If it is reusable, it must be cleaned and kept in good condition.
- PPE is effectively used by workers (for example, the operator should carry out visual inspections).
- Assign a responsible person in charge of the maintenance and supply of PPE.
- Replacement PPE is available and the correct replacement parts are used that match the original, e.g. respirator filters.
- Instruction labels in respect of PPE for agrochemicals are followed.
- Records of the purchase of PPE by the operator are kept.
- Records of training on the use of PPE by workers and on specific hazard handling (e.g. chemical spraying) are kept.
- Records of monitoring the use of PPE are kept.

The operator should consider the following before selecting and assigning PPE:

- Who is exposed and to what?
- How long are they exposed for?
- How much are they exposed to?

The operator should choose products that are suitable to the residual risk and that are the required standard.

The operator should choose equipment that suits the user – consider the size, fit and weight of the PPE. If the user helps to choose it, they will be more likely to use it.

If more than one item of PPE is worn at the same time, make sure they can be used together, e.g., wearing safety glasses may disturb the seal of a respirator, causing air leaks.

The operator should instruct and train employees how to use the PPE, e.g., train people to remove gloves without contaminating their skin. Tell them why the PPE is needed, when to use it and what its limitations are. Include managers and supervisors in the training – they may not need to use the equipment personally, but they do need to ensure their staff are using it correctly.

2.1.5 THE OPERATOR ENSURES THAT ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION RECEIVE H&S TRAINING

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the health and safety of workers are safeguarded.

An Occupational Health and Safety Training Plan should be implemented progressively, including accident and work-related illness protocols. The operator should keep records (including training material, names of trainers, duration of training and attendee list) related to the training of:

- new employees at the start of their employment
- every employee at least every 3 years.

The operator should maintain records that list:

- the dates that courses were presented
- the names of the individual course attendees
- the names of those workers successfully completing each course
- the number of training certificates issued to each successful worker.

The operator should ensure that all new employees receive basic health and safety instruction as part of their induction prior to formal training before commencing their tasks. The operator should ensure that:

- Trainers are competent.
- Instructors should be deemed competent on the basis of:
 - previous documented experience in their area of instruction
 - successful completion of a “train-the-trainer” programme specific to the topics they will teach
 - evaluation of instructional competence by the Training Director
 - maintaining professional competency by participating in continuing education or professional development programmes, or by successfully completing an annual refresher course and having an annual review.
- Training is tailored to the level of the audience (including language), the tasks performed, and the potential hazards of the workplace and activities performed. For example, workers dealing with agrochemicals should be trained on the proper use of the agrochemical (follow instruction labels and internal instructions), its safe application, the use of PPE, procedures for storage and disposal, and record-keeping.
- Training includes emergency response.

The training programmes for employees should address:

- the employer’s health and safety programme’s elements that impact employees
- the hazard communication programme
- the medical surveillance programme
- the hazards and controls for such hazards that employees need to know for their job duties and functions.

Hands-on training should be provided whenever possible.

The effectiveness of the training provided should be evaluated periodically using internal audits to check incident/accident reports and that PPE is used as per training. Should the training be deemed ineffective, the training programme should be revised, considering additional training sessions or a different training approach.

2.1.6 THE OPERATOR ENSURES THAT FIRST AID AND AN EMERGENCY RESPONSE ARE AVAILABLE TO ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the health and safety of workers are safeguarded.

The operator should follow national legislation in terms of first aid for emergency response (if it exists).

The operator should design a first-aid provision and emergency response specific for the worksite. The procedures should be in writing.

Procedures should be developed through engagement with trade union/worker organisations, direct workers and indirect workers, and should be communicated in writing to all employees, including those who may not read or speak the local language.

The operator should ensure that workers are trained in the emergency response procedures and comply with them, including what workers should do if a co-worker is injured or ill.

Routine operations and non-routine conditions should be considered when identifying potential emergency situations, as well as operation start-up or shut-down, and construction or other activities. Emergencies reflecting gaps in the Risk Assessment should be accompanied by action plans.

The operator should regularly test its emergency procedures and occasionally carry out drills. The emergency procedures should cover the main risks – for example, fire, explosion, natural disasters, environmental spillage, and, if appropriate, civil or political unrest.

The operator should ensure that first-aid supplies and the number of trained personnel are:

- adequate to local health and safety requirements
- adequate for the size of the facility and the location of operations
- accessible to all workers.

The operator should make provision for an emergency response that includes:

- the means to take an ill or injured person to a health professional quickly and safely
- transport to the first-aid and medical facilities
- the availability of a first-aid trained person on every shift and at an adequate location
- a first-aid kit that is accessible and kept up to date – the contents of first-aid supplies should refer to national legislation; in the absence of such legislation, the kit should at least include blood stoppers, antiseptic wound cleanser, bandages, a CPR mouthpiece, tweezers, scissors, adhesive tape, eye wash, latex gloves, hand sanitiser and snake-bite serum.

2.1.7 THE OPERATOR ENSURES THAT THE NUMBER OF LOST-TIME ACCIDENTS IS LOWER THAN THE METRIC THRESHOLD, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator has access to a metric indicator to track the performance of its Health and Safety Plan.

Lost-time accident frequency is the number of cases of occupational injury during a one-year period x 1,000,000 divided by the total number of hours worked by workers during the reference period. Ideally, the denominator should be the actual number of hours worked by workers. If this is not possible, it may be calculated by multiplying the number of workers by the number of normal working hours, taking into account entitlements to periods of paid absence from work, such as vacations, sick leave and public holidays.

The operator should note the number of fatal injuries and any actions taken following each of them. The operator should also record the number of near-misses. Occupational injuries should be recorded using lost-time accident (LTA) metrics.

To reduce the lost-time accident frequency, the operator should focus on implementing controls that address identified hazards and minimise employee risk, such as:

- providing workers with appropriate PPE (and engaging them about the adequacy of existing PPE)
- conducting safety meetings to engage in two-way dialogue with workers about risks and concerns
- requiring employees to complete comprehensive safety training and monitoring them to ensure the knowledge is being applied
- gamifying safety by offering rewards and recognition to the workers who engage in safe work practices
- conducting annual audits and inspections to identify any new or persisting hazards
- securing buy-in from top-level management to help foster a culture of safety and transparency within the company.

Incidents, non-fatal injuries and fatal occupational injuries should be registered and analysed to identify their root cause and ensure the implementation of corrective actions, documented annually at a minimum. Incidents and non-fatal injuries should be reported in ways that differentiate job types and employee/contractor relationships with the operator. Fatalities should be reported in raw numbers. All should be accompanied by actions taken to reduce the future risk of similar outcomes.

CRITERION 2.2 – TO PROVIDE ALL WORKERS (INCLUDING MIGRANT, SEASONAL AND OTHER CONTRACT LABOUR) WITH BENEFITS AND SALARY SUFFICIENT TO ACHIEVE AN ADEQUATE STANDARD OF LIVING

2.2.1 THE OPERATOR ENSURES THAT ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION HAVE A CONTRACT

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers understand and comply with their rights and obligations.

The operator should provide a contract to employees prior to work commencing. According to the ILO Employment Contracts Act passed on 17 December 2008 (RT I 2009, 5, 35) and entered into force on 1 July 2009, a written employment contract should contain at least the following data:

1. the name, personal identification code or registry code, place of residence or seat of the employer and the employee
2. the date of entry into the employment contract and commencement of work by the employee
3. a description of duties
4. the official job title if this brings about legal consequences
5. the agreed pay that is payable for the work (wages), including wages payable based on the economic performance and transactions, the manner of calculation, the procedure for payment, and the date of falling due (pay day), as well as taxes and payments payable and withheld by the employer
6. other benefits if agreed upon
7. the time when the employee performs the agreed duties (working time)
8. the place of performance of work
9. the duration of holidays
10. a reference to or the terms of advance notification of cancellation of the employment contract (notice period)
11. the rules of work organisation approved by the employer
12. a reference to a collective agreement if one is applicable to the employee
13. clear terms for repatriation of migrant workers.

If necessary, the operator should explain the clauses in the contract to workers in an appropriate manner (especially if workers are illiterate or they speak another language) to ensure they understand the clauses, rights and obligations included in their contract.

The number of contracts provided should be cross-referenced with the number of employees on the registry.

Documented evidence of legal compliance for regular working hours, deductions, overtime hours and payment, sickness, holiday entitlement, parental/maternity/paternity leave provisions, reasons for dismissal, and other legal labour requirements should be available.

There is no contract substitution.

2.2.2 THE OPERATOR ENSURES THAT THE NUMBER OF WORKING HOURS AT THE FARM AND MILL COMPLIES WITH NATIONAL LEGISLATION FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers are protected against working excessive hours.

For each worker, the operator should ensure that the total number of hours worked does not exceed the level set by the national legislation or regulation. In arranging overtime, due consideration should be given to pregnant women, nursing mothers and people with disabilities.²⁰

“Normal” hours means the time during which the person employed is at the disposal of the employer; it does not include rest periods during which the person employed is not at the disposal of the employer. “Overtime” means the time worked above the normal hours, as defined by national legislation. Overtime can be defined as: “All hours worked in excess of the normal hours unless they are taken into account in fixing remuneration in accordance with custom” (Recommendation No. 116, Paragraph 16).²¹

The operator should ensure that overtime is voluntary and the employee should understand how many hours the overtime will include and payment rates. This applies to permanent, temporary and piece-rate employees.

The 60 hours overtime threshold mentioned in the standard is informed by the ILO guidance of 48 “normal” hours plus 12 hours of allowed overtime. In countries where the maximum working hours limit is higher than 60 hours, the operator should conduct and document a Risk Assessment to ensure that excessive working hours do not compromise health and safety, minimise the accumulation of fatigue by monitoring accident rates, and act accordingly if accident rates caused by excessive hours exceed the normal average.

The ILO Coe of Practice on health and safety in agriculture contains a section on hours of work, which provides the following guidance:

Working hours

The pace of agricultural work has increased with the use of task rates and piecework. Long hours of work, particularly intense manual labour, contribute to workers’ fatigue and lead to accidents on the job.

Daily and weekly working hours should be arranged so as to provide adequate periods of rest which, as prescribed by national laws and regulations, or approved by labour inspectorates or collective agreements, where applicable, should include:

1. short breaks during working hours, especially when the work is strenuous, dangerous or monotonous, to enable workers to recover their vigilance and physical fitness
2. sufficient breaks for meals
3. daily or nightly rest of not less than eight hours within a 24-hour period
4. weekly rest of at least a full calendar day.

Extended workdays (over eight hours) should be contemplated only if:

1. the nature of the work and the workload allow work to be carried out without increased risk to health and safety
2. the shift system is designed to minimise the accumulation of fatigue.

The operator should keep a record of and control the number of hours worked by all workers. In the case of excessive hours, the operator should perform a fatigue risk analysis in relation to the impacts that excessive hours have on the health and safety of workers. For this, the operator should record and report the number of accidents that occur before and after the 8th hour of their workers’ shifts. The operator should compare the accident rates occurring before and after normal hours of work, and if accidents occur more frequently during excessive hours, the operator should implement a Mitigation Plan. The plan might include provision to reduce excessive hours or additional preventive measures (additional breaks, restricting workload, etc.) to frame the work required to workers beyond the normal hours. Workers should be included in the discussion and determination of actions required for such a plan.

The operator might design a plan to gradually reduce the number of excessive hours worked. The plan should be based on a working hours analysis performed during last 24 months to identify the root causes of excessive working hours. Corrective actions should be implemented to reduce working hours towards 60 hours per week. Social dialogue should be used to develop and implement the plan.

²⁰ https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R116

²¹ https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_161734.pdf

2.2.3 THE OPERATOR ENSURES THAT OVERTIME IS PAID AT A PREMIUM RATE FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers are fully compensated for excessive hours.

“Overtime” refers to all hours worked in excess of the normal hours, unless they are taken into account in fixing remuneration in accordance with custom (Reduction of Hours and Work Recommendation, 1962 (No. 116)).

Overtime work should be voluntary and exceptional. The total number of overtime hours should not exceed the level set by national legislation. This applies to permanent, temporary and piece-rate employees.

Overtime payment

According to ILO Conventions No. 1 and No. 30, the rate of pay for overtime shall be not less than 1.25 times the regular rate. Often, overtime premiums rise progressively with the number of extra hours worked.²²

The operator should pay any overtime hours at a premium rate that should be more than or equal to an additional 25% of the normal hourly rate. Alternatively, the operator can compensate overtime work by other means (e.g. time banking) with the condition that it complies with local legislation. For time banking, compensation may be 1:1 within the reference period, and the premium of an additional 25% of the normal hourly rate should be paid at the end of the reference period.

Overtime procedures should be adapted from national legislation.

²² ILO (2004). Information Sheet No. WT-2: Conditions of Work and Employment Programme. May.

2.2.4 THE OPERATOR ENSURES THAT ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION RECEIVE AT LEAST THE LEGAL MINIMUM WAGE INCLUDING BENEFITS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator provides workers with a wage that covers their most basic needs.

Minimum wages have been defined as “the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract”.²³

The term “wage” is generally understood to be the payment an employer makes to its employees – including to employees with regular, casual, short-term, intermittent or seasonal jobs, as well as to apprentices and trainees. It is often synonymous with terms such as “earnings” or “remuneration”.

Applicable labour laws, union and/or other collective agreements, and documentation of payment and conditions should be available to the workers in national languages and explained to them in a language they understand.

Training that is mandated by management should take place during normal working hours and be fully compensated.

Total wages or earnings should include different components, such as:

- basic pay
- annual bonuses
- tips
- in-kind benefits
- productivity and performance pay
- allowances and premiums for non-standard working hours or dangerous work.

According to the ILO Convention C95 and Article 24 to 35 of ILO Convention C110, operators should :

- Pay to the workers all mandated benefits and allowances.
- Not include essential services for employees to perform their work as benefits (e.g. protective equipment, tools or special medical exams), nor deduct their cost from the wages paid to the workers.
- Provide a payslip that provides adequate information as to how the wage was calculated, and identifies the amount and reason for any deductions of payment.
- Ensure that workers understand the composition of their wage, including calculation of overtime and possible deductions.
- Pay wages on time (at least every month) and not halt them in such a way that arrears accumulate and has an effect of binding the workers to employment.
- Not make any unfair or non-agreed deductions.
- If the operator makes payments “in kind” in the form of goods, services or clothing, this must be authorised by national law, regulations or collective agreement, and must not create a dependency on the employer.
- Not pay wages fully “in kind”, and the operator should not pay wages in the form of promissory notes, vouchers or coupons.
- Ensure that there are no payroll deductions for disciplinary measures or employment broker’s fees.
- If housing is provided and rent deducted from wages, the deduction should not be above the market rate.
- If food is provided and deduction is allowed by law, prices used for the food deduction should not be above prices of food available in the market.

In cases of in kind payments, according to the ILO Protection of Wages Convention, 1949 (No. 95), that allows “for the partial payment of wages in the form of allowances in kind in industries or occupations in which payment in the form of such allowances is customary or desirable because of the nature of the industry or occupation concerned” (Article 4.1), the operator should ensure that:

- (a) “such allowances are appropriate for the personal use and benefit of the worker and his family” and
- (b) “the value attributed to such allowances is fair and reasonable”.

Social security contributions: payments in kind are one component of total earnings and for this reason should, in principle, count as part of the value on which social security contributions are based.

Furthermore, according to the article 3 of C95:

²³ ILO (2014). General Survey concerning the Minimum Wage Fixing Convention, 1970 (No. 131), and the Minimum Wage Fixing Recommendation, 1970 (No. 135). Committee of Experts on the Application of Conventions and Recommendations.

- The operator should pay wages payable in money only in legal tender, and prohibit payment in the form of promissory notes, vouchers, coupons, or any other form alleged to represent legal tender
- The competent authority may permit or prescribe the payment of wages by bank cheque, postal cheque or money order in cases in which payment in this manner is customary or is necessary because of special circumstances, or where a collective agreement or arbitration award so provides, or, where not so provided, it is with the consent of the worker concerned.
- On the base of ILO C100, the operator should ensure equal treatment and equal remuneration to all workers, including migrant workers, contracted labour and piece-rate workers, irrespective of gender and ethnic/social origin.

2.2.5 THE OPERATOR ENSURES THAT PIECE-RATE WORKERS ARE GUARANTEED AT LEAST THE MINIMUM WAGE INCLUDING BENEFITS, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator provides workers with a wage that covers their most basic needs.

Piece-rate payment occurs when workers are paid by the unit performed instead of being paid on the basis of time spent on the job.

Piece-rate systems should be transparent, reward employees according to the difficulty and quality of their work, and ensure that motivated workers can earn substantially more than the minimum wage.

The operator should ensure that workers paid at piece rate would receive the required minimum wage if only working the number of normal legal hours of work. The operator should provide workers with pay slips for each payment of wages.

The pay slip should provide adequate information as to how the wage was calculated, and should identify the amount and reason for any deductions of payment.

On the basis of ILO C100, the operator should ensure equal treatment and equal remuneration to all workers, including migrant workers, contracted labour and piece-rate workers, irrespective of gender and ethnic/social origin.

If the mill operates in area where minimum wage payment is an issue, the operator should have in place a corporate social responsibility programme that acts towards ensuring compliance of the mill and farm with this indicator.

2.2.6 THE OPERATOR BENCHMARKS PREVAILING WAGES FOR DIRECT WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to help the operator understand the gaps between paid wages and wages that are sufficient to afford a decent standard of living for the worker and their family.

A living wage is the remuneration received for a standard workweek by a worker in a particular place that is sufficient to afford a decent standard of living for the worker and their family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing and other essential needs including provision for unexpected events.²⁴

The guidance on how to comply with this indicator is under development.

²⁴ <https://www.globallivingwage.org/about/what-is-a-living-wage/>

CRITERION 2.3 – TO RESPECT WORKERS’ RIGHT TO FAVOURABLE WORKING CONDITIONS

2.3.1 THE OPERATOR ENSURES THAT WORKERS DO NOT SUFFER FROM DISCRIMINATION, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers are treated equally in all matters.

The operator should have a publicly available, implemented and communicated non-discrimination and equal opportunity policy. In ILO C111, the term “discrimination” includes:

- any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation
- such other distinction, exclusion or preference, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation as may be determined after consultation with representative employers’ and workers’ organisations, where such exist, and with other appropriate bodies
- discrimination may take the form of dismissal, transfer, relocation, demotion, denial of remuneration, social benefits and/or vocational training, among others.

Special care should be taken on the treatment of vulnerable groups subject to discrimination, such as female workers, migrant workers, contracted workers, under-represented ethnic or social groups, union representatives, union members, and non-unionised workers. The operator should:

- have a non-discrimination policy that is communicated to workers, including foreign and migrant workers, and implemented
- ensure equal pay for work of equal value, i.e. there is evidence of equal pay for the same work scope; the Equal Remuneration Convention, 1951 (No. 100), states the principle of equal remuneration for men and women workers for work of equal value; and according to ILO, equal pay for equal work limits the application of the equal pay principle to work undertaken by two individuals in the same area of activity and in the same enterprise²⁵
- respect religious holidays
- treat complaints equally and not use complaints raised as a means of discrimination
- not use the medical conditions of workers in a discriminatory way
- guarantee that any segregation of workers is due to accepted cultural norms and that equal opportunities still apply across all groups
- encourage the formation of workers’ groups aimed at representing and collecting views of under-represented groups (such as a women’s committee)
- ensure that migrant workers are not required to pay anything that a local worker is not required to pay, unless mandated by law
- demonstrate that the recruitment process (advertisement, selection, hiring), remuneration, access to training and promotion are non-discriminatory and based on skills, capabilities, qualities and medical fitness necessary for the jobs available.

The operator should also have in place a grievance mechanism that acts towards ensuring compliance of the mill and farm with this indicator.

The operator should know: what percentage of its workforce (direct and indirect) is female, minority or disadvantaged; what percentage of wages go to females, minorities or disadvantaged groups; and what actions it should take if these two percentages are not aligned.

²⁵ https://www.ilo.org/global/topics/wages/minimum-wages/rates/WCMS_433906/lang--en/index.htm#:~:text=When%20setting%20different%20minimum%20wages,for%20work%20of%20equal%20value

2.3.2 THE OPERATOR ENSURES THAT WORKERS DO NOT SUFFER FROM ABUSE, HARASSMENT AND/OR VIOLENCE, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers are safe in their workplace.

Operator should adopt, implement and communicate, in consultation with workers and their representatives, a workplace policy on abuse, violence and harassment. This policy should:

- (a) state that violence or harassment will not be tolerated
- (b) establish violence and harassment prevention programmes with, if appropriate, measurable objectives
- (c) specify the rights and responsibilities of the workers and the employer
- (d) contain information on complaint and investigation procedures
- (e) provide that all internal and external communications related to incidents of violence or harassment will be duly considered and acted upon as appropriate
- (f) specify the right to privacy of individuals and confidentiality, while balancing the right of workers to be made aware of all hazards
- (g) include measures to protect complainants, victims, witnesses and whistleblowers against victimisation or retaliation.

Workers and management should be trained to recognise abuse, violence and harassment, and to report cases without fear of reprisal. The following are prohibited:

- violence, threats and intimidation
- restrictions on toilet breaks
- unwanted physical contact.

To effectively prevent and control violence and harassment at work, psychosocial risks (including violence and harassment) should be integrated into a sound Health and Safety Management System.

The ILO Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) advocate that appropriate arrangements should be made for the establishment of such a system, which should contain the elements of a workplace policy (planning, implementation and evaluation).

With the participation of workers and their representatives, the operator should identify hazards and assess the risks of violence and harassment, take measures to prevent and control them, and take action for improvement.

The operator should provide to workers and other relevant persons information and training, in accessible formats as appropriate, on the identified hazards and risks of abuse, violence and harassment, and the associated prevention and protection measures, including the rights and responsibilities of workers and other relevant persons in relation to the policy.

The operator should support the facilitation of a Gender (Equality) Commission to promote suitable policies to be developed, and to encourage, support and improve the promotion of women at all company levels and in all structures, with a view to implementing the principle of equality between men and women. This can also serve as a complaint mechanism unit.

The operator should undertake awareness-raising campaigns.

A grievance mechanism for employees should be in place to raise a grievance about abuse, violence or harassment.

The operator should maintain good record-keeping on reported cases of violence or harassment, as well as other records (e.g. exit interviews and records of absenteeism).

2.3.3 THE OPERATOR ENSURES THAT WORKERS DO NOT SUFFER FROM FORCED LABOUR, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that workers have their human rights respected.

ILO Convention C29 defines forced labour (also referred to as modern slavery) as: all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself/herself voluntarily. No forced labour shall occur, neither for men nor women irrespective of their employment status (permanent, temporary or contractual) and irrespective of their age. Forced labour may take different forms: prison labour, coercion, slavery, bonded labour and human trafficking. The menace of penalty can also take different form: threats, violence, retention of identification documents, physical confinement (such as imprisonment), denunciation to authorities, non-payment of wages, or loss of rights or privilege.

In accordance with ILO Convention C29 and C105, the aim of this indicator is to ensure that:

- there is no forced, bonded or involuntary labour
- there is no reliance on human trafficking
- there is no menace of penalty (for example, deposits of money or identification documents on commencement of employment)
- employees are free to leave at any time with reasonable notice
- employees are free to leave at the end of their shift.

The operator should carry out a review of existing practices, to be complemented by interviews with workers. The operator should:

- understand and comply with the law of the country/region in respect of this issue
- ensure that:
 - the employment is entirely voluntary
 - the employees are free to leave
 - the workers are “free to move”
 - there is no retention of identification documents
 - there is no lodging of deposits by the worker upon recruitment
 - prison labour is not used
 - the purpose of any security guards posted is for normal security reasons, not to monitor and control the workforce.

The operator should refer to the ILO Handbook for Employers and Business,²⁶ which defines the various assessment methods to identify forced or compulsory labour as follows:

- a review of relevant company and employee documentation
- an inspection of the workplace and related facilities (e.g. dormitories)
- on- and off-site interviews with workers and their representatives
- interviews with different management representatives

- In Article 11 of the UN International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families, adopted in 1990, it explicitly prohibits both slavery and forced labour, specifically:

1. No migrant worker or member of their family shall be held in slavery or servitude.
2. No migrant worker or member of their family shall be required to perform forced or compulsory labour.
3. Paragraph 2 of the present article shall not be held to preclude, in States where imprisonment with hard labour may be imposed as a punishment for a crime, the performance of hard labour in pursuance of a sentence to such punishment by a competent court.
4. For the purpose of the present article, the term “forced or compulsory labour” shall not include:
 - (a) Any work or service not referred to in paragraph 3 of the present article normally required of a person who is under detention in consequence of a lawful order of a court or of a person during conditional release from such detention
 - (b) Any service exacted in cases of emergency or calamity threatening the life or well-being of the community
 - (c) Any work or service that forms part of normal civil obligations so far as it is imposed also on citizens of the State concerned.

²⁶ A Handbook for Employers and Business, Combating Forced Labour: http://www.ilo.org/sapfi/Informationresources/ILOPublications/lang--en/docName--WCMS_101171/index.htm

The following are prohibited:

- recruitment fees paid by workers
- retention of workers' original identification papers
- wage deductions for protective equipment, meals, beverages or other essential work-related items
- use of prison labour
- restrictions on workers entering or leaving operation premises (aside from legitimate restrictions)
- financial penalties or delayed wage payments to workers (including for non-completion of the season)
- contract substitution (changing/worsening of contract terms)
- involuntary overtime and overtime that exceeds legal limits
- lack of freedom of workers to resign
- penalty for termination of employment
- withholding or unlawful deduction of wages
- debt bondage.

2.3.4 THE OPERATOR ENSURES THAT THERE IS NO CHILD LABOUR, FOR ALL PERSONS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION, REGARDLESS OF WHETHER THEY ARE EMPLOYED BY THE OPERATOR

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that no child is employed on the premises.

No children below the legal minimum age can work in the field.

The table below shows general minimum age requirements for various categories of work included in ILO C138 (minimum age) and ILO C182 (worst forms of child labour):

General minimum age requirements	Non-hazardous work	Light work in family and small-scale holding	Hazardous work
Most countries	15 ²⁷	13	18
Developing countries that have ratified ILO C138, Para 4 art.2	14	12	18

The operator should ensure that the age limit for each category of work as summarised in the table above is respected: see www.ilo.org for countries that have ratified ILO C138 with potential special allowances.

This is applicable to all children including contracted workers, migrant labour and family farms.

In every case, the operator should:

- define the applicable references as per the law of the country/region or, in absence of it, the adequate ILO convention
- have identified any potential risks as part of the Risk Assessment identifying impacts (potential and actual) on the human rights of workers, the environment and communities (indicator 1.2.2)
- the operator should follow the stricter regulation or convention ratified by the country
- define, disclose and enforce the age limit per job category.

The operator should:

- implement a system for checking and recording workers' ages as part of the recruitment process
- ensure that persons responsible for hiring are aware of how to detect fraudulent documents; documentary evidence for compliance may include one or more of the following:
 - copies of a birth certificate, religious or other local record, passport or ID – note that the producer should never retain workers' identity papers
 - keeping a record of hours of work
 - ensuring that contracts are signed by a parent or guardian where workers are under age
 - conducting a health and safety assessment to identify non-hazardous work positions for young workers.

National laws or regulations may permit the employment or work of persons from 13 to 15 years of age on light work that is:

- not likely to be harmful to their health or development, and
- not such as to prejudice their attendance at school, their participation in vocational orientation or training programmes approved by the competent authority, or their capacity to benefit from the instruction received.

²⁷ Not less than the minimum age of completion of compulsory education. If national law stipulates a higher age, the higher age will apply.

In terms of remediation:

- Child labour remediation refers to the corrective measures that are taken when child labour is found, to ensure the safety and well-being of the child/children concerned and to prevent similar situations from reoccurring. Remediation can include removal of the child from the worksite, placing the child in a safe environment, repatriation, medical checks to assess the physical and mental health of the child, financial support to enable the child to return to school, etc.
- The operator should have effective remediation procedures in place in the case of any child labour found to be in its employment.
- Each occurrence of child labour should be treated on a case-by-case basis, and the remediation plan should be tailored to the child's specific needs and aspirations to ensure that the best interests of the child are paramount at all times.
- Child-focused organisations and local authorities should be consulted to ensure that the plans are appropriate for any child allegedly or confirmed to be involved in child labour.
- The operator should assign a responsible person or department to make sure this personalised plan is developed and carried out.
- The operator, with the support of local child protection services and organisations or a child rights expert, should work to understand each child's needs and develop an appropriate and effective remediation plan. This includes the choice of schooling, provision of financial support, including referral to existing social welfare schemes, and ongoing monitoring.
- The operator should monitor any remediation plan's progress on a quarterly basis during the first year of implementation and then every 6 months until the child is of legal working age.
- The operator should include an analysis of the root causes of child labour (if possible, together with other stakeholders) to avoid this risk in future.

2.3.5 WHERE THE OPERATOR OR ITS SUBCONTRACTORS PROVIDE ACCOMMODATION TO WORKERS, THE OPERATOR ENSURES THAT IT MEETS MINIMUM SAFETY STANDARDS, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure a safe environment for workers and their families, where accommodation is provided.

The housing provided and controlled by the operator shall, at a minimum, meet the local regulatory standards or the requirements in Annex 4 of the Bonsucro Production Standard v5.2, whichever is more stringent. The operator must keep and update a register of workers and family members who live in the provided housing. This register must capture the following information:

- names of employee and family members
- ages of employees and family members
- start and end dates that the employee (and their family, as applicable) lived in the accommodation, or just the start date if the employee still lives in the provided accommodation.

2.3.6 THE OPERATOR MINIMISES WORKING HOURS LOST DUE TO ABSENTEEISM, FOR WORKERS DIRECTLY CONTRACTED BY THE OPERATOR

Scope: This indicator applies to the mill.

Objective: This indicator aims to measure and improve workers' satisfaction with their working conditions.

Absenteeism is any failure to report for, or remain at, work as scheduled, regardless of the reason. This is usually unplanned (for example, when someone falls ill) but can also be planned (for example, during a strike or wilful absence).

Absenteeism compromises the quality of services because fewer workers are left on duty, potentially resulting in work overload or interrupted service delivery.

Absenteeism in the workplace is most commonly measured using an absenteeism rate. This is the number of absent days divided by the number of available workdays in a given period. This absenteeism rate is a key HR indicator. For example, excessive absenteeism can indicate problems within the workforce or organisational culture.

The operator should keep track of the working hours lost through absence, also referred to as "no-show". It includes all unplanned cases of unjustified absence (according to company policies), which could be but are not limited to:

- strikes
- non-justified sickness absence.

It does not include planned absence, such as holiday, legal time off such as maternity leave, or training.

Even if the operator replaces an absent employee, the mill operator still counts this absence. Depending on the operator's policies, no-shows due to meteorological conditions (e.g. rain) could be included in this indicator.

The operator should record the number of hours worked during the reference period. Ideally, the denominator should be the number of hours actually worked by workers in the reference group. If this is not possible, it may be calculated by multiplying the number of workers by the number of normal hours of work, taking into account entitlement to periods of paid absence from work, such as vacations, sick leave and public holidays.

This indicator is not affected by any downtime in the mills; it only refers to personnel's working hours.

CRITERION 2.4 – TO SAFEGUARD RESPECT FOR LABOUR RIGHTS THROUGH FUNCTIONING SOCIAL DIALOGUE MECHANISMS

2.4.1 THE OPERATOR ENSURES THAT THE RIGHTS OF ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION TO FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING ARE RESPECTED, FREE FROM INTERFERENCE

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to protect workers' human rights.

The unions and conveners of other forms of worker engagement represent the expressed interest of workers, as validated through direct interviews with workers.

The operator should have an open approach to freedom of association, including a policy for supporting the implementation of an active trade union or an effective workers' committee. The operator should also:

- ensure that workers are free to form a union
- ensure that workers are free to join, or not, as they wish, especially if the operator has selected certain trade unions
- enable workers who choose not to join a union to provide their feedback to management in as many ways as possible, e.g. a workers' committee, suggestion box, worker survey, focus groups or confidential hotline.
- ensure that if workers decide to join a union, there is no discrimination against them
- ensure that if workers decide not to join a union, there is no discrimination against them
- ensure that workers are free to leave a union
- ensure that workers are informed at the start of their employment of how to join a union
- not restrict the scope of activity of trade unions
- respect the right of collective bargaining
- consider typical issues on the bargaining agenda that include wages, working time, training, occupational health and safety, and equal treatment; the objective of these negotiations is to arrive at a collective agreement that regulates terms and conditions of employment
- implement an effective mechanism to make the workers' views known to management in places where the right to freedom of association and collective bargaining is restricted under law; for example, the operator can support the existence of workers' councils, suggestion boxes, worker surveys, focus groups or confidential hotlines
- ensure that workers' representatives are voluntary and fairly selected, minutes of meetings are made available in an appropriate language, and there is evidence of management action being taken following the raising of issues
- ensure that trade unions or workers' committees' officials are freely and democratically elected without undue influence (including financial) by the employer or employer's organisation, that they represent the whole workforce, and that they are allowed the required time to perform their functions without financial penalty or being discriminated against
- encourage foreign workers, migrant workers and particularly women migrants to join unions; if national union laws do not permit this, ensure that parallel means are offered to the affected workers
- where the right to freedom of association and collective bargaining is restricted under law, the employer facilitates, and does not hinder, the development of parallel means for independent and free association and bargaining; this may include the facilitation of free choice by workers to elect their own workplace representatives
- parallel means might be organisational structures defined by workers with proper representation of the workforce that is engaged in social dialogue with the operator on defined and relevant issues – these structures are such as works' councils (established bodies elected or appointed by all employees) and/or workers' delegates. The agreements and outcomes of social dialogue are communicated. Another form of parallel means might be board-level employee representation, which is a form of hearing workers' voices that also tends to strengthen their bargaining power and potentially enhance co-operative attitudes by allowing workers to engage in the strategic choices of mills and farms.

2.4.2 THE OPERATOR PROMOTES CONSULTATION AND INFORMATION EXCHANGE BETWEEN AND AMONGST EMPLOYERS AND WORKERS' ORGANISATIONS THROUGH SOCIAL DIALOGUE, FOR ALL WORKERS ON THE PREMISES INCLUDED IN THE UNIT OF CERTIFICATION.

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to find solutions based on mutual interests between workers and management.

Definition of "social dialogue": ILO defines social dialogue as the different types of negotiation, consultation or simply exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy.²⁸ Here, social dialogue is considered as bipartite relations between workers and management (or trade unions and employers' organisations). Social dialogue processes can be informal and/or institutionalised, and can be inter-professional, sectoral or a combination of both.

Social dialogue should be done by the creation, facilitation or improvement of formal and informal access to the participation of employers and workers and/or their representatives in health and safety committees, wages committees, grievance committees, gender committees or other kinds of social dialogue spaces.

The main goal of social dialogue is consensus-building and democratic involvement by involving workers in the search for correct solutions based on mutual interests between workers and management. It resolves economic and social issues, encourages good governance, advances social and industrial peace and stability, and boosts economic progress.

The principle of social dialogue has been at the core of ILO activity since its foundation and has been outlined as a strategic objective in the 2008 ILO Declaration on Social Justice for a Fair Globalization under the "Social Dialogue" pillar.²⁹

The operator should apply social dialogue to at least all the indicators of Principle 1 and Principle 2. Examples for concrete implementation include:

1.4.1 (Monitoring mechanisms are in place): by creating a feedback function with the workers.

Additionally, social dialogue should be included in indicators under ecosystems and water stewardship, training to workers on hazardous materials, environmental and social management plans, grievance mechanisms, vocational training for workers, and continuous improvement of workers welfare.

The operator should strengthen employers' and workers' organisations and develop their capacity to engage effectively in social dialogues. This can be done by:

- providing awareness raising and training to workers to improve their understanding of their legal rights and the means to exercise them
- strengthening workers' organisations, by developing the expertise of trade union leaders on national policy issues through support and advice on a number of thematic areas (collective bargaining, freedom of association, migration and gender equality)
- training management on sound governance practices and how to effectively communicate and constructively engage with stakeholders.

The operator should create an enabling environment for social dialogue, such as by facilitating access to knowledge, knowledge sharing and dissemination, adapting to the local context and culture, and promoting involvement and participation of workers and their chosen representatives.

²⁸ International Labour Organization (ILO) (1981). Collective Bargaining Convention, C154. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---dialogue/documents/publication/wcms_172186.pdf

²⁹ As stated in the Preface of the ILO Declaration on Social Justice for a Fair Globalization, "The International Labour Organization unanimously adopted the ILO Declaration on Social Justice for a Fair Globalization on 10 June 2008. This is the third major statement of principles and policies adopted by the International Labour Conference since the ILO's Constitution of 1919. It builds on the Philadelphia Declaration of 1944 and the Declaration on Fundamental Principles and Rights at Work of 1998. The 2008 Declaration expresses the contemporary vision of the ILO's mandate in the era of globalization." Available at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/genericdocument/wcms_371208.pdf

CRITERION 2.5 – USE OF LAND AND WATER RESOURCES DOES NOT DIMINISH THE LEGAL, CUSTOMARY OR USER RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

2.5.1 THE OPERATOR IDENTIFIES LEGAL AND/OR CUSTOMARY RIGHTS IN RELATION TO LAND AND WATER USERS, AND ANY TRANSFER OF THOSE RIGHTS TO THE OPERATOR IS DONE SO ON THE BASIS OF ENGAGEMENT AND CONSULTATION.

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims at protecting the land and water rights of local communities.

The operator should identify the local communities and their use of lands and water to identify relevant customary and statutory land users and their rights. This can be achieved by stakeholder consultation, historical data or legal ownership or lease data (land use). This would help the operator to prevent the occurrence of conflict on land or water use.

The operator should demonstrate its statutory or customary land and water rights. The operator should:

- Demonstrate land rights by keeping land titles (or their equivalent to legally accepted in the country).
- Demonstrate water rights by maintaining official water abstraction permits that include the maximum authorised flow for each water body used.
- Have a system in place to track suppliers' compliance with declared land tenure and water rights documents and to encourage compliance.
- Have a clear procedure for land and water rights claims and share with stakeholders the procedures, response times and communication channels.
- When land rights have been relinquished to the benefit of the operator, the operator demonstrates the decision was taken using Free Prior Informed Consent (FPIC – see also indicator 1.2.1) and has been negotiated.

Evidence of ownership and/or use rights to the land and water includes land title, legal evidence of ownership or lease of land which should be the official land title in the country or equivalent (e.g. notary, government agency, tax invoices or other), lease contract. The evidence should primarily be written evidence but where customary rights are involved, it is recognised that rights can be evidenced in other forms by a local statutory or customary body.

Evidence of right to the use of water includes possession and compliance with relevant water permits, including compliance with any cap on quantity of extracted water.

ILO Convention No. 169 addresses issues related to indigenous and tribal peoples: the rights of ownership and possession over the lands they traditionally occupy, or have had access to (Article 14); land alienation (Article 17); unauthorized intrusions (Article 18); agrarian programs (Article 19).

ILO Convention No. 117 (Article 4) requires the enforcement of the ownership and use of land resources with due regard to customary rights.

In some countries, right to land use, management and ownership are governed by customary law (set of usually unwritten rules recognised or not under national law). Customary land tenure systems vary significantly across communities (e.g. collective ownership, traditional land distribution by tribal chieftain).

Free, Prior and Informed Consent (FPIC) is a “collective human right of Indigenous Peoples and Local Communities (IP/LC) to give or withhold their consent prior to the commencement of any activity that may affect their rights, land, resources, territories, livelihoods, and food security.”³⁰ More specifically and to clarify each part of the term:

- Free: consent is given by the affected IP/LC voluntarily without coercion, duress or intimidation
- Prior: the consent is given before the specified activity is authorised or commenced
- Informed: the consent is given after the IP/LC have received the relevant, timely and culturally appropriate information necessary to make a fully informed decision
- Consent: the IP/LC take a collective decision to grant or withhold approval of the specified activity.

Overall, FPIC is a:

- Process: a series of information exchanges, consultation, internal deliberation and negotiation steps
- Outcome: a record that specifies what was, or was not, agreed to.

FPIC is required prior to any activity that may affect or impinge on IP/LC rights, lands, resources, territories, livelihoods or food security; specifically, the operator should follow the FPIC process in the following cases:

- prior to any developments or operations on hitherto undeveloped or uncultivated land; FPIC is required prior to initiation or expansion of activities that may impinge on IP/LC rights, lands, resources, territories, livelihoods or food security, including:
 - acquisition of interests in land or natural resources
 - new production, processing or harvesting operations

³⁰ https://accountability-framework.org/wp-content/uploads/2020/03/OG_FPIC-Mar2020.pdf

- significant expansion of any of the above
- issuance or adoption of any project approvals or legislative or administrative measures enabling any of the above, such as allocating or designating land or natural resources for such purposes, or granting permits, licenses or approvals
- ongoing land conflict: where there is land conflict between the operator and IP/LC (as identified in the stakeholder mapping conducted as part of indicator 1.2.1), the operator should halt any efforts to acquire or gain control of land, resources or territories related to the conflicts until they are addressed through an FPIC process.

The operator should be able to demonstrate it has legitimate rights to use the land where the unit of certification is located.

The operator should be able to provide evidence that FPIC is being granted by all IP/LC affected by the establishment of plantations within the unit of certification and their continuous operation.

FPIC and the associated grievance mechanism in place should be implemented according to the norms of conduct and the communication mechanisms available, and should be available in the language(s) spoken by the communities.

When conducting an FPIC process, the operator should consider the following steps (the number of steps and their order are not fixed and must be tailored to each case):

- A participatory analysis of the risks and effects of operations on communities' rights in the area of influence of the mill and/or unit of certification.
- Identification of rights holders, decision-makers and representatives, including vulnerable, minority and gender groups.
- Conducting a participatory mapping of land and resource rights in and surrounding the unit of certification, including all legal and customary rights, as well as any existing and historical conflicts or disputes over these rights.
- Consultations and negotiations with affected communities, where they are informed of activities and risks and are able to make fully informed decisions. This must include the participation of all parties such as vulnerable, minority and gender groups. These meetings must also be held at times and locations agreed on by the communities.
- Formalising decisions, terms and agreements resulting from the consultations and negotiations.
- Developing and implementing an action plan of agreed activities on which consent has been given (e.g. providing jobs for community members).
- Participatory monitoring and verification of the implementation of agreements.
- Setting up and implementing a grievance mechanism to identify and address any concerns and issues raised.

The operator should keep records showing that:

- The FPIC process was conducted prior to any acquisition and/or development of the land where the unit of certification is located.
- All affected communities were engaged in an FPIC process through representatives chosen by the communities. This includes all vulnerable, minority and gender groups.
- Communities were informed and aware of their right to withhold consent at any point, and the FPIC process respected their norms, customs and values, including their decision-making processes.
- Communities were fully informed, in forms and languages that are understandable to them, about all relevant information pertaining to development of the unit of certification.
- The communities' fundamental human rights were respected and safeguarded, and at no point communities felt coerced or manipulated.

The final agreement documents between the company and affected communities should be signed by all parties and specify what was agreed, and/or was not agreed, to as well as elaborate on the terms and conditions under which consent has been given. This includes the nature of agreed activities, conditions placed on its implementation, monitoring and evaluation plans, mechanisms for receiving and addressing any grievance or issues, sanctions for violations of agreements, and provisions for independent verification, among others.

For further information, see: Accountability Framework (2019). *Operational Guidance on Free, Prior and Informed Consent*. Available at: https://accountability-framework.org/wp-content/uploads/2020/03/OG_FPIC-Mar2020.pdf

2.5.2 THE OPERATOR DEMONSTRATES THAT IT IS TAKING STEPS TO ADDRESS LEGITIMATE LAND AND WATER CLAIMS IN ACCORDANCE WITH APPLICABLE LEGAL PROCESSES

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to protect land and water rights.

There are various means by which legal, extra-legal, community-based and other socially appropriate protocols may demonstrate that the settlement of a dispute has been reached. A recognised judicial or non-judicial grievance mechanism can be a national or international court of law, an international grievance mechanism such as the Organisation for Economic Co-operation and Development (OECD) National Contact Point, or a mechanism through investors or multi-stakeholder initiatives (MSIs), including the grievance mechanisms of international lenders (e.g. IFC CAO). A non-judicial process can only be used with the consent of all parties involved and where it involves IP/LC, it should be aligned with national legislation and the guidance of indicator 2.5.1.

ILO Convention No. 169 addresses issues related to indigenous and tribal peoples (the rights of ownership and possession over the lands they traditionally occupy, or have had access to (Article 14); land alienation (Article 17); unauthorized intrusions (Article 18); agrarian programs (Article 19)).

ILO Convention No. 117 (Article 4) requires the enforcement of the ownership and use of land resources with due regard to customary rights.

Where judicial rulings benefit the operator to the detriment of traditional communities, the operator should establish engagement processes with displaced populations, implement a Livelihood Impact Management Plan, track livelihood outcomes, and mitigate and/or reverse all adverse impacts of displacement.

The operator should ensure that any legal process taken does not violate any human right and/or living conditions of the claimants. The operator should also make use of a printed communication mechanism that presents the rights of the claimant and the defendant, and guarantees both parties understand their rights and the process.

Before seeking a judicial process, the operator should ensure there is verbal communication to understand the other party's position, the situation and main steps to be taken in the process; the operator could also use non-judicial measures to reach an agreement.

The operator should identify any conflicts related to land, water usage and production that impact the communities, area of influence or other relevant stakeholders. This could be followed by a Monitoring Plan and record-keeping of the grievance and claims mechanism.

In cases where there is a dispute related to water usage, the operator could achieve a solution or agreement for the situation before a judicial mechanism is opened.

In cases where displacement is needed, the operator should make sure a Livelihood Assessment is undertaken prior to any final conflict resolution and relocation. This assessment should be implemented by a specialist, and it should consider the socio-economic situation, education, living conditions, main economic activities and other relevant information that may provide the operator with relevant information to address the compensation and remediation mechanism for the affected community.

The operator should review Agreement 169 of ILO, which deals with issues of indigenous people and tribal groups.³¹ Also, see indicator 2.5.1 on FPIC and Principle 4 for land and water assessments, to help prevent conflicts arising in the first place.

³¹ International Labour Organization (ILO) (1989). Indigenous and Tribal Peoples Convention, C169. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

PRINCIPLE 3 – MANAGE INPUT, PRODUCTION AND PROCESSING EFFICIENCIES TO ENHANCE SUSTAINABILITY

CRITERION 3.1 – TO MONITOR PRODUCTION AND PROCESS EFFICIENCY; TO MEASURE THE IMPACTS OF PRODUCTION AND PROCESSING SO THAT IMPROVEMENTS ARE MADE OVER TIME

3.1.1 THE OPERATOR ENSURES THAT YIELDS OF PRODUCTION ARE ABOVE THE THRESHOLD SET BY THE CLIMATIC ZONE MAP

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator maximises yield, taking into account the climatic conditions where cane is grown.

The indicator provides growers with a target yield adapted to the climate under which cane is grown. The indicator was developed by observing the ratios of sugarcane production to water consumption achieved by the 50% best performers within each climatic zone for rain-fed and irrigated cane separately.

The operator may use the interactive map on Bonsucro website (<https://www.bonsucro.com/bonsucro-standard-climatic-zone-map/>) to identify the climatic zone in which they operate, i.e. where the farms are located.

When the farm's location is under two or more different climatic zones, the operator shall consider the most representative one (based on the largest area). For example, the operator includes areas on the unit of certification as below:

- 500 hectares located in climate zone #11
- 600 hectares located in climate zone #14

Therefore, the climate zone that the operator needs to report in the Bonsucro Calculator is #14.

The yields to achieve for each of climate zones are shown in the table on the right.

Climate zone	Rain-fed sugarcane yield (tonnes/ha)	Irrigated sugarcane yield (tonnes/ha)
1	8	117
2	11	62
3	4	55
4	39	87
5	33	62
6	37	62
7	60	87
8	66	88
9	38	62
10	80	79
11	71	88
12	57	72
13	63	79
14	61	79
15	49	73

When the operator does not comply with the minimum productivity required by this indicator due to climatic issues during the reported period, such as flood or drought, it is possible to report in the calculator the rolling average of productivity of maximum over the past five years.

Please note that “irrigated” means systems that rely on external waters to grow. This includes all strategies of irrigation (supplementary or full) and all kinds of water except direct rain.

To calculate the rolling average, the steps below should be followed:

Rolling average = sum of data over time / time period

- 1) Define the **period of time** for the rolling average. Please note that this can be the **maximum over the past five years**.
- 2) Collect the productivity data (tonnes of cane/hectare, or tc/ha) for the period of time defined.
- 3) Add up the productivity data for all years during the period of time considered.
- 4) Divide the total productivity by your period of time.

An example of the calculation of the rolling average following these steps is shown below:

- 1) The reported period for the audit was from 1 January 2022 to 31 December 2022 and the result in the Bonsucro Calculator was *not compliant*. In this case, the rolling average can be calculated for a maximum over the past five years, which can be one of the alternatives below:
 - a. 2-year period: from 1 January 2021 to 31 December 2022
 - b. 3-year period: from 1 January 2020 to 31 December 2022
 - c. 4-year period: from 1 January 2019 to 31 December 2022
 - d. 5-year period: from 1 January 2018 to 31 December 2022
- 2) If a 5-year period is to be reported, data on the productivity of the area included in the unit of certification for the period must be collected – for example:
 - a. From 1 January 2022 to 31 December 2022: 35 tc/ha
 - b. From 1 January 2021 to 31 December 2021: 56 tc/ha
 - c. From 1 January 2020 to 31 December 2020: 60 tc/ha
 - d. From 1 January 2019 to 31 December 2019: 47 tc/ha
 - e. From 1 January 2018 to 31 December 2018: 45 tc/ha
- 3) **Total** = $(35 + 56 + 60 + 47 + 45) = 243$ tc/ha
- 4) Rolling average = $243 / 5$ years = 48.5 tc/ha, where “5 years” represents the period of time considered.

3.1.2 THE OPERATOR MAXIMISES SUGAR CONTENT IN CANE

Scope: This indicator applies to the mill and agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator improves the quality of cane delivered to the mill.

The operator should collect the data used for calculation, as required by the Bonsucro Calculator.

The theoretical recoverable sugar (TRS) content of cane is a measure of how much sugar that is present in the cane can be extracted. It is a measure of the quality of the cane, not of the efficiency of recovery of the sugar at the mill. The fibre content of cane and the purity of the raw juice have an effect on the recoverability of sugar and are included in this parameter. This indicator applies only where no ethanol is produced from crystallisable sugar or if it is only produced from final molasses. The TRS is calculated as:³²

$$TRS = W_{s,C} \times OR^*$$

where $W_{s,C}$ is the sucrose content of cane in g/100 g

OR^* is the theoretical overall recovery, used if sugar only, or sugar and ethanol from final molasses only, is being produced and normalised for juice purity and cane-fibre content. It is calculated as:

$$OR^* = E^* * BHR^* = 0.98 * \left[100 - \frac{20 * W_{F,C}}{100 - W_{F,C}} \right] * \left[1.5 - \frac{50}{P_j} \right]$$

where E^* is the standard extraction

BHR^* is the standard boiling house recovery

$W_{F,C}$ is the fibre content of the cane in g/100 g

P_j is the purity of the raw juice.

Values for fibre content, raw juice purity and sucrose content should be those for the reporting period. When the operator does not comply with this indicator due to climatic issues during the reported period, such as flood or drought, it is possible to report in the calculator the rolling average results for fibre content, raw juice purity and sucrose content of maximum over the past five years.

Please see indicator 3.1.1 for an example of how to calculate the rolling average.

³² Rein, Peter in Good Management Practices Manual for the Sugarcane Industry, 2011.

3.1.3 THE OPERATOR MAXIMISES THE TOTAL SUGARS AS INVERT (TSAI)

Scope: This indicator applies to the mill and agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator improves the quality of cane delivered to the mill, in the particular instance that fermentation of sugars is part of the processing.

This indicator applies only when ethanol is produced, on its own or in conjunction with sugar production.

The operator should collect the data used for calculation as required by the Bonsucro Calculator.

In cases where ethanol is produced, the content of TSAI in cane – and not just recoverable sucrose – is important. This is a measure of the quality of the cane, not of the industrial efficiency of converting sugars into ethanol at the mill. TSAI is the sum of reducing sugars and sucrose, where the sucrose is converted to equivalent reducing sugars by dividing by 0.95.

To determine the fermentable total sugars, a standard utilisation of 90.5% of the TSAI to be converted to ethanol is assumed.

The value for total sugars content expressed as reducing and for reducing the sugar/sucrose ratio should be the one for the reporting period. When the operator does not comply with this indicator due to climatic issues during the reported period, such as flood or drought, it is possible to report in the calculator the rolling average results required by this indicator of maximum over the past five years.

Please see indicator 3.1.1 for an example of how to calculate the rolling average.

3.1.4 THE OPERATOR CRUSHES CANE EFFICIENTLY

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operational time is optimised.

This indicator, also as known as “mill overall time efficiency”, represents the time that a mill is processing cane, as a percentage of the total time from the start to the end of the season, i.e. it is calculated as:

% of total length of crushing season processing cane = (time spent processing cane / length of crushing season) * 100

The length of a crushing season is calculated from the time the first cane is processed by the mill at the start of a season to the point at which the last cane is processed. Each mill should keep data that shows the times when the mill was, and was not (for whatever reason), processing cane.

The time spent processing cane is the time when the mill was crushing cane uninterruptedly. To obtain this figure, any pauses in processing should be counted as time lost and discounted from the total time available. Lost time includes, but is not limited to, maintenance activities (corrective or preventive) and power supply failure, with only one exception being due to rainfall.

In the case of a mill having two extraction lines, the length of stoppage of one should represent a *pro rata* number of hours related to the capacity of that line. It is calculated using the formula:

$$\text{time lost line 1} = \frac{(\text{capacity line 1} \times \text{stoppage line 1})}{(\text{capacity line 1} + \text{capacity line 2} + \dots + \text{capacity line n})}$$

For example, for a mill with two lines crushing at 400 tc/hr and 200 tc/hr, if the smaller line stops for 10 hours and the other keeps running, the time lost will not be 10 hours but $200/600 \times 10$ hours = 3.33 hours. The total stoppage is calculated by adding all *pro rata* stoppage.

3.1.5 THE OPERATOR MAXIMISES SUGAR RECOVERY

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure the operator maximises its operations to extract most of the sugar contained in the cane. It is not an indicator of the quality of the cane.

The Factory Performance Index (FPI, expressed as %) is a measure of mill performance independent of cane quality and represents the ratio of actual sugar recovered to the theoretical recoverable sugar in cane. A value of 100% is expected at an average-to-good mill.

This indicator applies only if sugar is produced and/or ethanol is produced from final molasses only.

The FPI is calculated as follows:

$$FPI = 100 \times \frac{OR}{OR^*}$$

where OR is the overall recovery
 OR^* is the theoretical overall recovery.

The calculation takes into account the fibre content and the raw juice (mixed juice (from mills) or draft juice (from diffusers)) purity of the cane, both of which are cane-quality factors that affect recovery of sugar.

The theoretical overall recovery (OR^*) – used if sugar only, or sugar and ethanol from final molasses only, is being produced and normalised for juice purity and cane-fibre content – is calculated as:

$$OR^* = E^* * BHR^* = 0.98 * \left[100 - \frac{20 * W_{F,C}}{100 - W_{F,C}} \right] * \left[1.5 - \frac{50}{P_j} \right]$$

where E^* is the standard extraction
 BHR^* is the standard boiling house recovery
 $W_{F,C}$ is the fibre content of the cane in g/100g
 P_j is the purity of the raw juice.³³

In addition, refining all white sugar in a white end refinery is expected to increase the undetermined loss by 0.4% of the sugar in raw juice. Then, the factor of 0.98 used in the equation above becomes 0.976.

³³ Meyer, J. et al. (2011). *Good Management Practices for the Cane Sugar Industry.*, p. 439.

3.1.6 THE OPERATOR MAXIMISES THE INDUSTRIAL EFFICIENCY

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure the operator maximises its fermentation processes.

This indicator applies if ethanol only, or sugar and ethanol produced from anything other than final molasses, are produced in the same mill.

The industrial efficiency (expressed as %) is calculated as follows:

$$IE = \frac{TSAl (sugar, ethanol, yeast, molasses)}{TSAl (cane, imported molasses)} * 100$$

where *IE* is the industrial efficiency

TSAl is the reducing sugars and sucrose converted to reducing sugars. Note that *TSAl* in yeast acquired is omitted from the denominator. Values of 681.63 L of ethanol per tonne of sucrose and 2 kg *TSAl*/kg yeast are assumed.

Inputs needed to comply with the calculation are:

- sugar production
- ethanol production
- average ethanol content of alcohol product
- ethanol produced from final molasses only
- mass of molasses sold
- mass of yeast sold
- *TSAl* content of molasses sold
- equivalent *TSAl* output
- sugarcane processed
- total sugars content of cane expressed as reducing sugars (*TSAl*)
- molasses imported
- *TSAl* content of imported molasses
- equivalent *TSAl* input.

CRITERION 3.2 – TO MONITOR GLOBAL WARMING EMISSIONS WITH A VIEW TO MINIMISING CLIMATE CHANGE IMPACTS

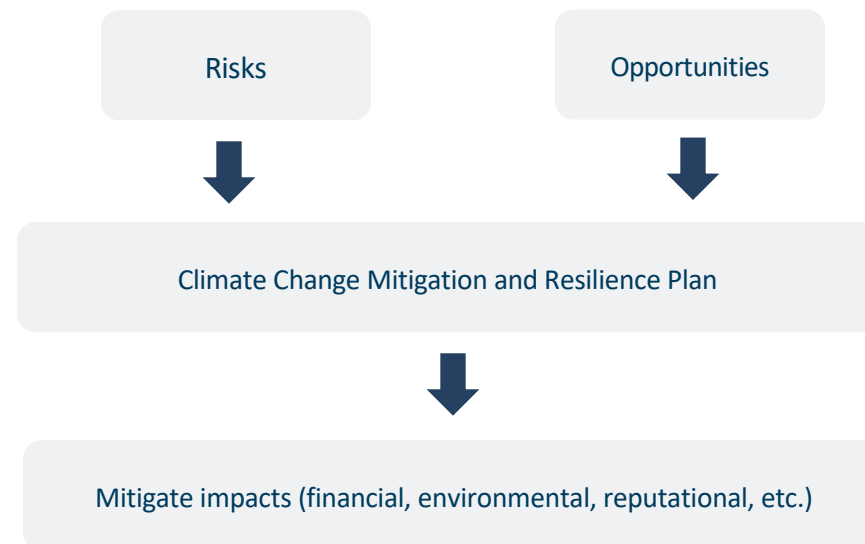
3.2.1 THE OPERATOR CONDUCTS A CLIMATE RISK ASSESSEMENT, AND ENSURES THAT A CLIMATE CHANGE MITIGATION AND RESILIENCE PLAN IS IN PLACE AND IMPLEMENTED

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator is ready to adapt to and limit the consequences of climate change.

The risks related to climate change, its remediation and opportunities are mostly related to practices generating GHGs (soil tillage and deforestation) that affect land use, water use, waste management, carbon sequestration and conservation of biodiversity. Climate change might seriously affect the productivity of the field, and the production planning and logistics of delivery of the products derived from sugarcane, for which the operator must always guide efforts to adapt and mitigate.

The operator should particularly take specific efforts to reduce GHG emissions and the intensity of water use, and understand the possible climate risks that it might face. Through the Risk Assessment, the operator can identify the impact its operations cause on climate change, as well as the impacts that climate change might have on its operations, and evaluate their consequences. This will allow the operator to be prepared by taking appropriate preventive or adaptation measures and roll them out throughout its operations and beyond. The following diagram describes such an exercise:



Examples of risks:

- Policy: operations affected by changes in foreign policies (for example, with regard to deforestation, GHG declaration).
- Legal: expenses incurred for services resulting from fines.
- Technological: research and development of new “green” alternatives and launch on the market, development costs of new practices.
- Reputational: changes in market preferences, stakeholder interest and shareholder interest.
- Economic: increases in energy costs, increases in commodity costs, carbon taxes, increases in insurance premiums, divergence towards more climate-adapted crops.
- Physical: floods, changes in weather patterns, cyclones, droughts, loss of coastal areas.

Examples of opportunities:

- Policy: renewable energy policies and support.
- Technological: development of renewable sugarcane-based alternatives to fossil fuel-based products.
- Reputation: communication around implementation of green solutions, prevention of climate-related risks.
- Economic: capture market for decarbonised commodities, sales of “green” energy, attract talent and investment related to decarbonisation of economy, green finances.
- Physical: climate smart technology, crop and land management. The operator may use the output of the following indicators to set a reduction target:
 - a) yield of production (3.1.1)
 - b) GHG emissions per tonne of cane (3.2.2), GHG emissions per tonne of sugar (3.2.3) and GHG emissions per MJ of ethanol (3.2.4).

The operator should identify the potential effects of climate change on its operations. The operator should produce a documented plan that includes a description of how each operation and activity at mill or farm level might be impacted by climate change. The plan should include the mitigation or adaptation measures the operator or its cane suppliers can take, the various steps to implement them and the expected results. The operator should regularly monitor progress against the plan and act accordingly if the aims of the plan are not met in the expected timeframe. The operator should record the reason(s) for any diversion.

Setting baseline and reduction targets

To set the baseline corporate carbon footprint, the operator may choose to refer to the results of the first calculator data completed (indicator 3.2.2, 3.2.3, 3.2.4 under Bonsucro Production Standard v4.2) and reference the formulas from the calculator as its official way to calculate the footprint (unless the Bonsucro EU RED Standard is applicable). Also, other carbon accounting schemes are acceptable to set the baseline.

To set absolute GHG reduction targets, the operator can refer to the [Science Based Target initiative \(SBTi\)](#).

The SBTi is a leading initiative that provides a technical framework and guidance for companies to reduce their GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth. Targets are considered “**science-based**” if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C. A science-based target is a paradigm shift for most companies. The goal is not about how much of a GHG emissions reduction you think you can achieve, but how much you need to achieve to prevent the worst effects of climate change.

SBTi was launched in 2015 by the Carbon Disclosure Project (CDP), UN Global Compact, World Resources Institute (WRI) and World Wildlife Fund (WWF) and is generally considered a robust standard for establishing corporate climate targets. As of May 2023, there were over 5,000 companies taking action with the initiative.

The SBTi has launched its [Forest, Land and Agriculture \(FLAG\) guidance to enable companies operating in land-intensive sectors, like food, agriculture and forestry, to set science-based targets](#). This fills an important gap, since deforestation and other land-related impacts account for nearly a quarter of global GHG emissions and represent a significant part of many businesses’ climate footprint. Land-based sectors can also make a big contribution to tackling climate change by removing carbon dioxide from the atmosphere – for example, by increasing the amount of carbon stored in the soil.

Within [FLAG guidance](#), the SBTi has developed mitigation pathways for various commodities, including beef, corn, soy, palm oil and timber, with the aim of reducing overall emissions in land-based sectors by 35% between 2020 and 2030. At the moment, though, it has no plans to develop specific guidance for the sugarcane sector. So, Bonsucro stepped in here.

Once the baseline of a company’s corporate carbon footprint has been established with the Bonsucro Calculator or other carbon accounting scheme, Bonsucro science-based *Sugarcane Target-setting Tool* (to be published in October 2023) and its *Guide* (also to be published in October 2023) can be used to establish a target for the agriculture scope.

The Sugarcane Target-setting Tool allows an organisation to establish a reputable climate change goal in line with science for the emissions related to **sugarcane farming operations only**. Alternatively, the tool is available with default values for users who have not completed a GHG inventory using the Bonsucro Calculator or other carbon accounting scheme.

For the definition of a certified company’s Mitigation Plan, Bonsucro highly recommends that a supply-side company (sugarcane mills and farms) uses the Bonsucro Sugarcane Target-setting Tool to establish reduction targets for its sugarcane farming operations.

The **sugarcane milling operations** are not part of SBTi’s FLAG suite and therefore are not included in the Bonsucro Sugarcane Target-setting Tool. In the case where a company wants to set GHG reduction targets for the milling phase, its FLAG portion (sector- or commodity-specific) will pertain to the production phase of the raw materials only until the farm gate. Further emissions at the milling site will be categorised as non-FLAG. Relevant information on this topic is included in the *Sugarcane Pathway Guide* (to be published in October 2023) under the section “Important Notes on Biofuel”.

The operator is encouraged to work in partnership with local bodies and global initiatives, and include Indigenous People, Local Communities and workers in the development of the plan, drawing on their expertise and know-how (especially indigenous people for the preservation of natural ecosystems).

3.2.2 THE OPERATOR ENSURES THAT GHG EMISSIONS PER TONNE OF CANE ARE BELOW THE METRIC THRESHOLD

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator measures and acts towards mitigating its GHG emissions.

Implementation consists of collecting the input data required for the calculation, as listed in the *Carbon Accounting in Sugarcane: Bonsucro Calculator's User Guide* as well as the Bonsucro Calculator. Also, this document explains how to use the tool provided by Bonsucro Calculator to calculate emissions from direct land-use change.

There are three indicators for this criterion: one to estimate the GHG emission for the sugarcane production, one for the sugar production, and one if ethanol is also produced instead of some or all of the sugar. If a mill produces sugar and ethanol, both indicators apply.

3.2.3 THE OPERATOR ENSURES THAT GHG EMISSIONS PER TONNE OF SUGAR ARE BELOW THE METRIC THRESHOLD

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator measures and acts towards mitigating its GHG emissions.

The same guidance applies here as for indicator 3.2.2.

3.2.4 THE OPERATOR ENSURES THAT GHG EMISSIONS PER MJ OF ETHANOL ARE BELOW THE METRIC THRESHOLD

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator measures and acts towards mitigating its GHG emissions.

The same guidance applies here as for indicator 3.2.2.

3.2.5 THE OPERATOR MAXIMISES THE ENERGY RETURN ON ENERGY INVESTED

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator is efficient in its production of biofuels.

The objective of the indicator is to increase the mill system's energy efficiency related to ethanol production. For Bonsucro, the system's efficiency refers to the amount of energy of any type that is used in machinery, equipment and different appliances to function in relation to the amount of energy contained (also known as "heat capacity") in the ethanol produced by the mill.

This indicator applies when:

- ethanol is produced or
- ethanol and electricity are produced.

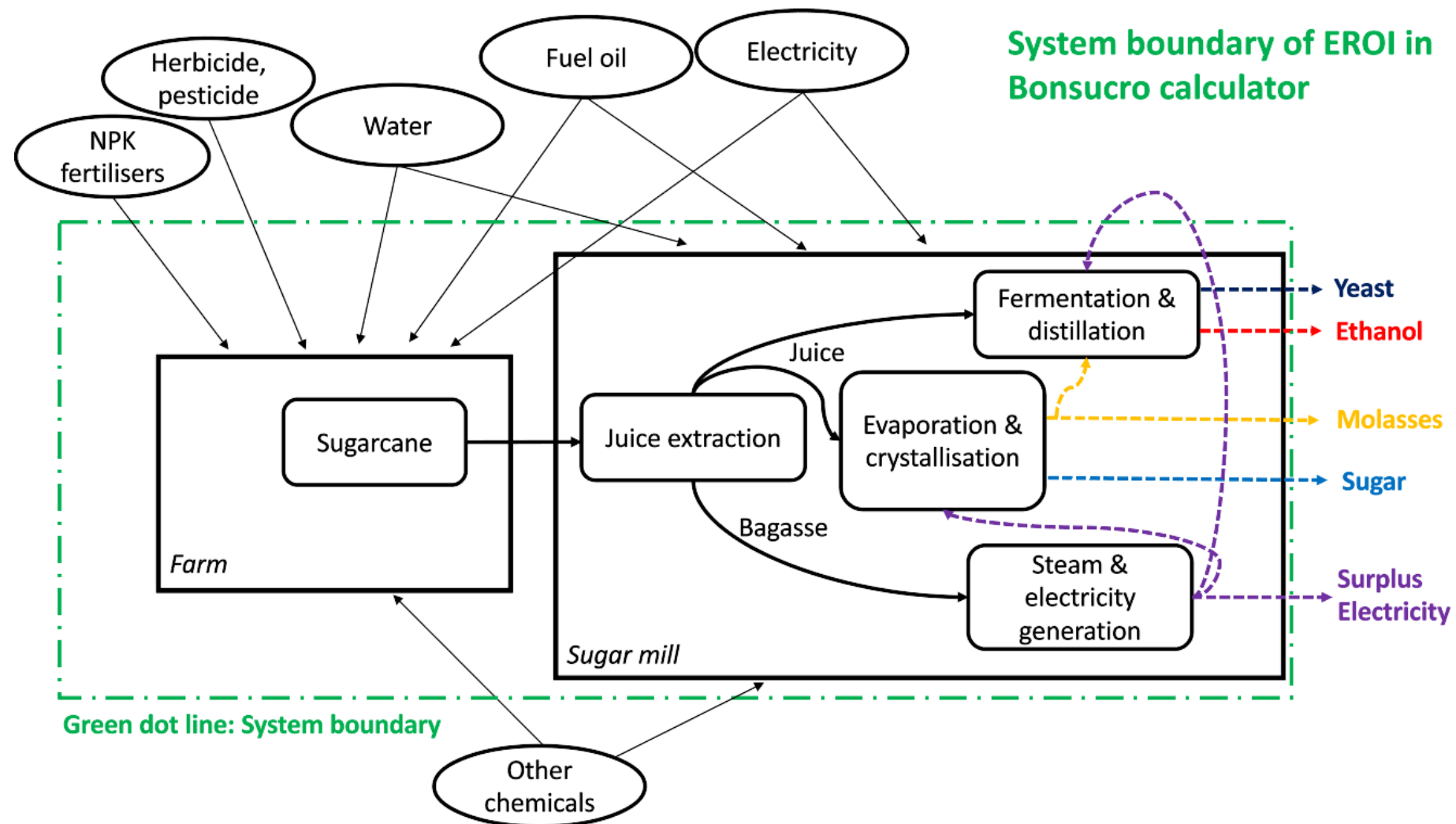
This indicator calculates the ratio between the energy delivered by ethanol and the energy invested in the production of the ethanol, also known "energy return on investment" (EROI). The EROI is calculated as follows:

$EROI = \text{energy output} / \text{energy input}$

The Bonsucro Calculator performs the calculations to obtain the ratio, which considers:

- for energy output, the energy content of ethanol and electricity products marketed
- for energy input, the energy content of all inputs to produce ethanol and electricity.

The following diagram shows the system boundary of EROI in the Bonsucro Calculator:



Example:

- An operator is dedicated to producing and marketing sugar and ethanol. During 12 months, the operator performs the energy calculation for these products, resulting in 30,000 MJ of which 20,000 MJ (66%) comes from the energy content of sugar and 10,000 MJ (34%) from the energy content of ethanol.
- The operator used an energy content for the operation of the mill of 8,000 MJ in 12 months, of which 34% was used to produce ethanol.
- The calculation for the present indicator, in this case, would be $(30,000 \times 34\%) / (8,000 \times 34\%) = 3.75$. According to the Bonsucro Standard, the indicator would have a non-compliance.

PRINCIPLE 4 – ACTIVELY MANAGE BIODIVERSITY AND ECOSYSTEM SERVICES

CRITERION 4.1 – TO PROTECT AND REHABILITATE BIODIVERSITY AND ECOSYSTEM SERVICES, AS WELL AS MAINTAIN AND ENHANCE HCVS

Overarching guidance:

The intent of Criterion 4.1 is for cane production within Bonsucro-certified supply chains to maintain and enhance biodiversity, natural ecosystems and high conservation values (HCVs). The first two indicators in Criterion 4.1 concern maintaining and enhancing biodiversity, HCVs and the natural ecosystems that these depend upon around the mill and in **ongoing** cane production. The last two indicators concern **preventing the unacceptable conversion** of HCVs and natural ecosystems for agricultural production and the processing of cane.

A natural ecosystem is one that substantially resembles – in terms of species composition, structure and ecological function – what is, or would be, found in a given area in the absence of major human impacts. This includes human-managed ecosystems where much of the natural species' composition, structure and ecological function are present.³⁴

HCVs form a set of values of critical importance for humans and nature. HCVs fall into six categories, spanning environmental values of species, ecosystems and landscapes (HCV categories 1–3), through to ecosystem services, and key resources for local livelihoods and culture (HCV categories 4–6) – see definitions³⁵ below:

HCV 1, Species diversity: concentrations of biological diversity, including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

HCV 2, Landscape-level ecosystems, ecosystem mosaics and IFL: large landscape-level ecosystems, ecosystem mosaics and intact forest landscapes (IFL) that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3, Ecosystems and habitats: rare, threatened or endangered ecosystems, habitats or refugia.

HCV 4, Ecosystem services: basic ecosystem services in critical situations, including protection of water catchments, and control of erosion of vulnerable soils and slopes.

HCV 5, Community needs: sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.

HCV 6, Cultural values: sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

How do natural ecosystems and HCVs fit together?

HCVs often depend on natural ecosystems, so typically they overlap a lot. However, protecting natural ecosystems does not guarantee the protection of HCVs, and vice versa.

HCVs beyond natural ecosystems:

- An example of environmental HCVs that can extend beyond natural ecosystems are wide-roaming species important for conservation, such as wild cats and elephants, that often move and forage in many different kinds of vegetation, including crop fields and plantations. Protecting these HCVs, if present, will involve measures beyond maintaining natural habitats, e.g. strategies to resolve human–wildlife conflicts, or enforcement of

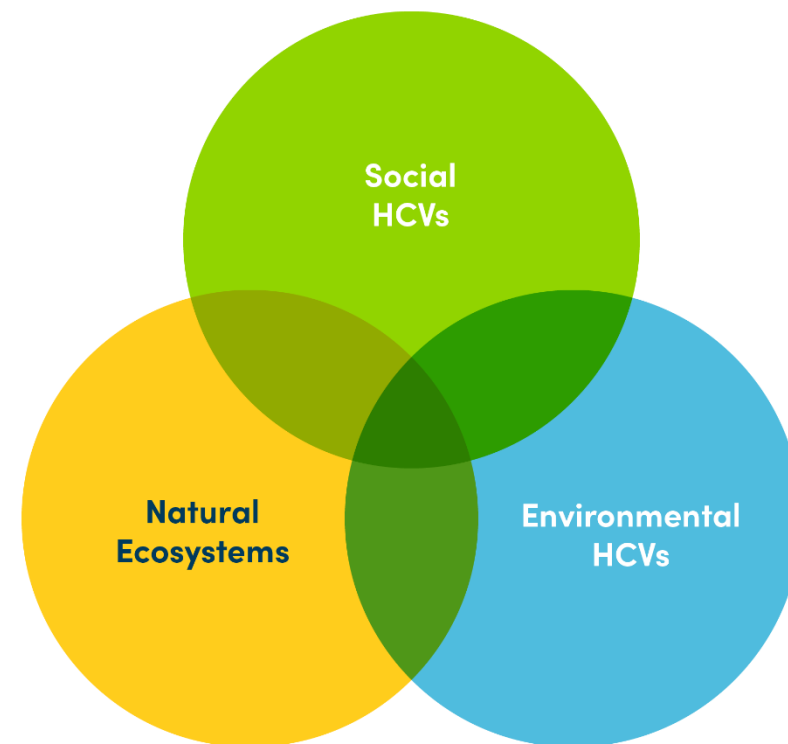
³⁴ <https://accountability-framework.org/wp-content/uploads/2020/03/Definitions-Mar2020.pdf>

³⁵ <https://www.hcvnetwork.org/library/hcv-definitions>

- hunting legislation.
- The social HCVs are tightly linked to local people, and some community needs, e.g. shifting agriculture and water access points, occur outside of natural ecosystems.

Natural ecosystems without HCVs: This is particularly the case in production landscapes that have experienced wide-scale development and land-use change over an extended period of time.

To maintain and enhance natural ecosystems and HCVs within cane production areas, it involves a mix of measures depending on the local context and pressures. Bonsucro integrates both, recognising their overlaps and complementarity in securing nature and the dependencies of local communities on natural resources. The diagram below shows how natural ecosystems and the environmental and social HCVs can overlap.



Indicators 4.1.1 and 4.1.2 to maintain and enhance biodiversity, HCVs and the natural ecosystems upon around the mill and in ongoing cane production.

4.1.1 THE OPERATOR ENSURES THAT THE BIODIVERSITY AND NATURAL ECOSYSTEMS ARE MAPPED

Scope: This indicator applies to the mill and to the agricultural area included in the unit of certification.

Objective: This indicator aims to ensure that the operator identifies the biodiversity resources on or around its operations.

The mill operator should have map(s) containing at least the following information for the area surrounding the mill and agricultural area in the unit of certification:

- a. location of the mill and agricultural area
- b. natural land cover (riparian areas, forest patches, rivers, streams, wetlands, lakes)
- c. areas of elevated risks to HCVs
- d. any other environmental and biodiversity risk, threats and impacts.

See supplementary *Bonsucro Guidance for Operators – Supply Base Mapping* for more details.

4.1.2 THE OPERATOR DEVELOPS AND IMPLEMENTS A BIODIVERSITY MANAGEMENT PLAN (BMP)

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator protects the biodiversity resources on and around its operations.

The mill uses the biodiversity mapping information (indicator 4.1.1) to identify specific biodiversity features (e.g. habitats and species), HCV risks and threats to the biodiversity features and potential measures that growers can use to mitigate these threats. This information should be used by growers as a basis to develop and implement a Biodiversity Management Plan (BMP) that contains at least:

- a. threats identified for each type of biodiversity feature or HCV
- b. main mitigation and/or restoration measures for the identified threats, risks and impacts
- c. goals and objectives for management, mitigation and/or restoration
- d. plan of specific activities to be carried out for each objective or target
- e. indicators to measure the achievement of the objectives and targets
- f. specific allocation of resources and persons responsible for the achievement of the objectives and goals.

See supplementary *Bonsucro Guidance for Operators – Developing a Biodiversity Management Plan* for more details.

The operator should implement the activities described in the BMP. Some activities may include but are not limited to:

- a. limiting the use of agrochemicals and not to use banned agrochemicals
- b. protecting critical ecosystems
- c. ensuring habitat connectivity
- d. restoring aquatic ecosystems and riparian buffer zones
- e. restoring farmed areas of marginal productivity to natural ecosystems
- f. incorporating native trees/flora as border plantings and barriers around housing and infrastructure
- g. incorporating live fences, shade trees and permanent agroforestry systems
- h. signposting the areas of ecosystem importance with messages prohibiting hunting of animals, deforestation, forest degradation, burning, etc.

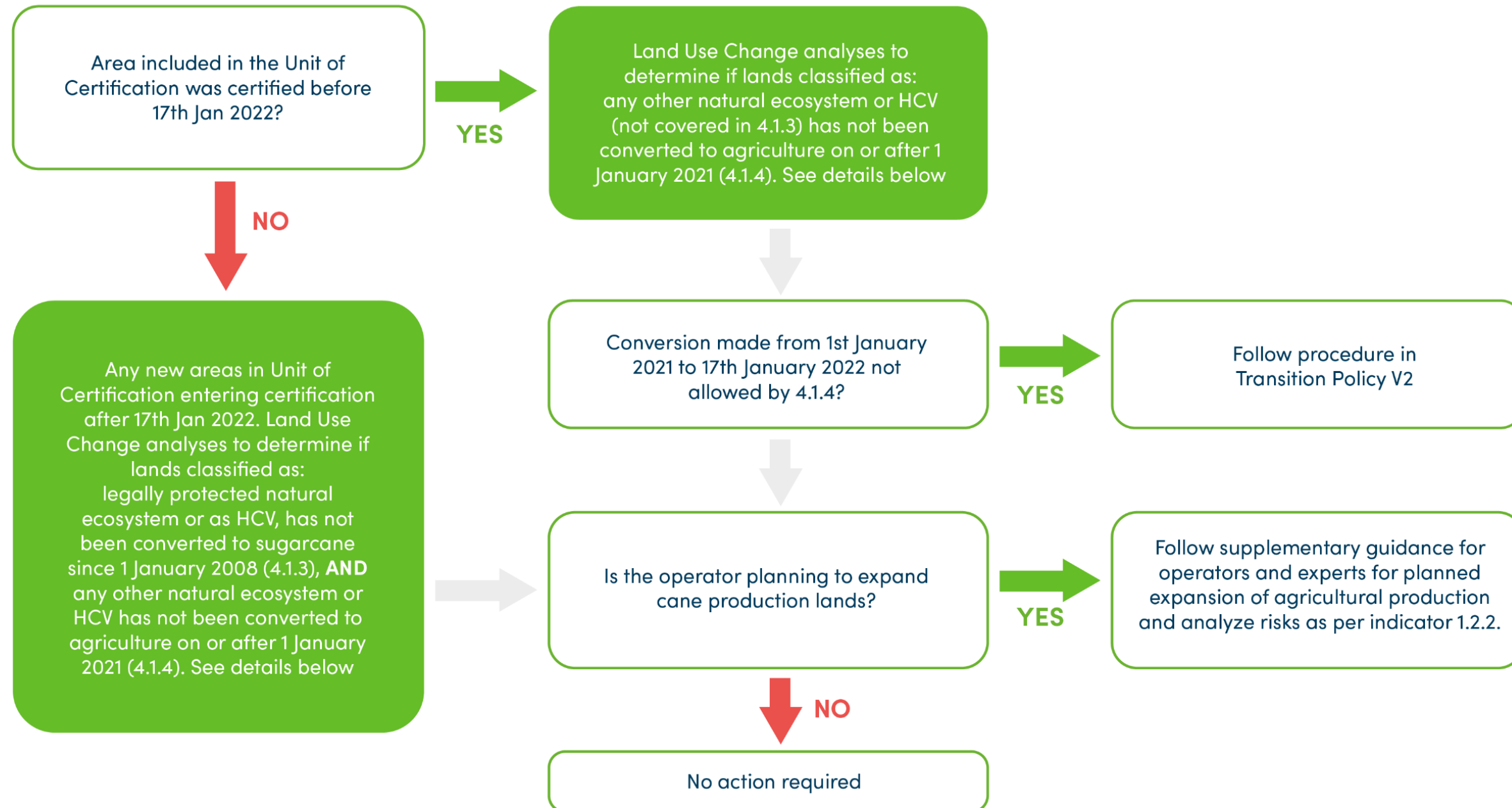
The operator should train its workers and stakeholders in the care of important species and ecosystems in the area around sugarcane plantations and industrial operations.

The operator should keep records of the implementation of the plan to enhance or maintain biodiversity and ecosystem services, as well as areas and species identified as HCVs, to enable effective monitoring of the efficiency of the measures.

If the monitoring reveals ineffectiveness of the measures, the BMP should be revised, and additional or alternative measures described and implemented.

Indicators 4.1.3 and 4.1.4 aim to prevent the unacceptable conversion of natural ecosystems and HCVs for production.

For implementing those indicators, use the decision tree below to determine what procedure, analyses or supplementary guidance to follow.



4.1.3 THE OPERATOR ENSURES THAT AREAS OF LEGALLY PROTECTED NATURAL ECOSYSTEMS (NATIONALLY OR INTERNATIONALLY) OR AREAS CLASSIFIED AS HCV HAVE NOT BEEN CONVERTED TO SUGARCANE ON OR AFTER 1 JANUARY 2008

Scope: This indicator applies to the mill and agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the most critical ecosystems are protected.

Guidance for implementation:

The historic land-use change analysis, i.e. a multi-temporal analysis of land-cover change, should have a starting date of 1 January 2008. A multi-temporal analysis in Geographic Information Systems (GIS) language is the analysis of satellite imagery from different dates in order to identify the changes in land use. It can serve as evidence that there has been no damage to nationally or internationally protected natural ecosystems or HCV areas due to the growing of sugarcane.

The analysis should be carried out by professionals with expertise in GIS and remote sensing.

The operator should keep the report of the historical analysis of land-use change and the satellite images of the different dates used for this purpose, until the implementation of the last unit of certification (last developed sugarcane crop under certification).

To demonstrate compliance with this indicator, the operator should provide:

- a map showing areas not acceptable for development, based on national interpretation of HCV categories 1–6 or research identifying HCVs and on local legislation, taking into account national and internationally protected areas and similar, and
- a map or equivalent documentary evidence (for example, satellite imagery, research surveys or stakeholder consultation) showing new areas developed for sugarcane after 1 January 2008.

The operator should make available any documentary evidence (purchase records, photographs, maps) indicating land use or land cover before 1 January 2008, in addition to maps showing the multi-temporal analysis.

4.1.4 THE OPERATOR ENSURES THAT AREAS OF NATURAL ECOSYSTEMS (EITHER LEGALLY PROTECTED OR NOT) OR AREAS CLASSIFIED AS HCV HAVE NOT BEEN CONVERTED TO AGRICULTURE ON OR AFTER 1 JANUARY 2021

Scope: This indicator applies to the mill and agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that all natural ecosystems and HCVs are protected.

Guidance for implementation:

The historic land-use change analysis, i.e. a multi-temporal analysis of land-cover change, should have a starting date of 1 January 2021. A multi-temporal analysis in GIS language is the analysis of satellite imagery from different dates in order to identify the changes in land use. It can serve as evidence that there has been no damage to natural ecosystems or HCVs due to agriculture.

The analysis should be carried out by professionals with expertise in GIS and remote sensing. Where credible national or regional land-cover and conversion resources are available, these should be used.³⁶ Global tools for land-cover change are also available, but they tend to be less accurate, e.g. Global Forest Watch³⁷ and Global Land Cover Change.³⁸

The operator should keep the report of the historical analysis of land-use change and the satellite images of the different dates used for this purpose, until the implementation of the last unit of certification.

To demonstrate compliance with this indicator, the operator should provide:

- a map showing areas not acceptable for development, based on the location of natural ecosystems and HCVs, and
- a map or equivalent documentary evidence (for example, satellite imagery, research surveys or stakeholder consultation) showing new areas developed for agriculture after 1 January 2021.

The operator should make available any documentary evidence (purchase records, photographs, maps) indicating land use or land cover before 1 January 2021, in addition to maps showing the multi-temporal analysis.

³⁶ An example is PRODES-INPE [Interactive map](#) on native vegetation and conversion, covering the Cerrado region of Brazil.

³⁷ <https://www.globalforestwatch.org/map/>

³⁸ <https://land.resourcewatch.org/>

CRITERION 4.2 – A SOIL MANAGEMENT PLAN IS IN PLACE TO AVOID EROSION, AND MAINTAIN AND IMPROVE SOIL HEALTH

4.2.1 THE OPERATOR ENSURES THAT SOILS AND/OR SOIL MANAGEMENT UNITS OF THE FARM ARE MAPPED

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator identifies different soils and their distribution across the farm, to serve as a foundation for identifying and implementing an appropriate Soil Management Plan (SMP).

The soil management unit (SMU) approach is simpler and more cost-effective than traditional soil classification approaches. It allows for grouping of soil types into units by using characteristics that behave in a similar agronomic manner and thus will receive similar treatment or management.

To define a locally appropriate set of SMUs, soil experts would usually use a framework to combine two or three of the following characteristics:

- parent material
- soil system
- topographical sequence
- colour
- texture
- available water
- aspect.

Soil analysis may be used to identify soil type and define the SMUs. In the absence of soil analysis, publicly available data can also be used, such as FAO/UNESCO Soil Map of the World, available through the FAO website <https://www.fao.org/soils-portal/data-hub/soil-maps-and-databases/faunesco-soil-map-of-the-world/en/>, or national databases provided by local governments that are science-based.

The soil map should contain:

- defined SMUs, including mapped boundaries and area
- dominant soil types and/or parent materials related to each SMU
- notes for any local legal limitations for soils to be used for agricultural production.

For each SMU, the following information should be defined, measured and collected:

- clay (and optionally, sand and silt) percentage in topsoil (up to 20–30 cm) and subsoil (at least up to 60 cm), whenever applicable
- total soil depth and effective rooting depth
- available water parameters (measured or estimated from clay, whenever applicable)
- identification of soil constraints and crop-limiting conditions, such as compaction and poor drainage, sodic and saline areas, acidity, and any others of relevance to sugarcane production or soil health.

4.2.2 THE OPERATOR DEVELOPS AND IMPLEMENTS A SOIL MANAGEMENT PLAN (SMP)

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes the use of practices to maintain soil health or improve declines therein, with regular monitoring of key parameters to permit detection of changes in soil health.

The Soil Management Plan (SMP) should include practices that aim to enhance soil health, such as:

- identification, prevention and monitoring of soil and crop growth limiting conditions (i.e. crusting, compaction, acidification, salinisation, poor drainage, weeds)
- measures to reduce soil erosion, and increase soil organic carbon by using e.g. cover crops, green manures, etc. during replant fallow cycles or by leaving mulch cover after harvest
- adopting practices that minimise topsoil disturbance (minimum tillage or reduced tillage, controlled traffic, etc.)
- ensuring properly designed contours and waterways and permanent cover of non-tilled areas (verges, waterways, contour banks, etc.)
- adopting sound crop nutrition guidelines and soil fertility management
- undertaking activities that promote the conservation of soil organic matter (SOM), which may include residue and mulch retention, application of organic mill waste by-products (filter cake, bagasse) and other readily available organic ameliorants (manures), and green manure fallowing, while adopting practices that reduces the SOM loss (conservation tillage, prevention of erosion).

Soil acidity (where applicable)

- Soils with non-optimal acidity status as determined by soil testing should be corrected through the use of liming materials that aim to reduce acidity levels to regionally established and accepted norms. Quality liming materials should be considered in order to avoid undesirable cations which may affect crop growth. Records should be maintained.
- Here corrective actions have been applied based on the initial soil sampling and recommendations, there is no need to resample and analyse the soil immediately after corrections have been applied. However, follow-up resampling and analysis is encouraged to evaluate the success of the corrective action and allow further corrections, if required.

Salinity/sodicity (where applicable)

- Soils with non-optimal salinity/sodicity status as determined by soil testing must be corrected following the recommendations of an expert in this field. Measures should be in place to ensure that soils are well drained before establishment of a new plantation.
- Records should be maintained of practices adopted.
- Regular analysis of irrigation water is required to monitor salinity/sodicity contributed by irrigation practices. E.g. analysis of irrigation water should be conducted considering e.g. raining and dry seasons and an intermediate testing moment to correct for the differences in terms of salinity/sodicity status. The rainwater in areas within 30 km of the coast should be analysed for its sodium concentration. The same recommendation as indicated before on testing in different seasons shall be followed.

Soil erosion/compaction

Soil erosion and/or compaction should be prevented by measures such as:

- when there are specific regulations or national guidelines, compliance with relevant regulations aimed at limiting soil erosion should be followed
- cane blocks shall be designed using contour planting, terraces or strip planting depending on the soil characteristics and conditions of the field
- For soil compaction, the use of minimum or conservation tillage is recommended
- the use of cover crops or green manures should be implemented in order to avoid soil erosion, as well as use of mulch/residue blankets
- practices to retain organic matter should be implemented. These includes the use of cover crops, green manures and mulch (residue blankets)The use of windbreaks is important in all those areas that require protection to avoid wind erosion
- the use of buffer strips is recommended to reduce water flow and capture nutrients, and avoid runoff
- installation of drainage and waterflow control measures should be done in order to avoid water-logging or excess runoff
- avoiding the use of machinery on wet soil, as well as machinery with heavy weight that increases the soil compaction
- use of machinery with extended reach, wide spacing between tracks or low-pressure tyres is desirable
- whenever possible the crop design should consider the use of permanent vehicle routes (controlled traffic).

4.2.3 THE OPERATOR CONDUCTS REGULAR SOIL OR LEAF ANALYSIS

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator implements a soil monitoring programme to plan optimal crop nutrition and to detect changes in soil health.

Records of all soil and leaf samples should be retained.

Soil acidity

In addition to topsoil fertility sampling, subsoil sampling should be carried out at least once per crop cycle, immediately after the last harvest before a replant. Samples should be collected from the surface to at least 80 cm in increments of 20 cm or 30 cm. The symptoms of deficiency/excess, and interactions of nutrients with soil and nutrient management shall be evaluated.

Where corrective actions have been applied based on the initial soil sampling and recommendations, there is no need to resample and analyse the soil immediately after corrections have been applied. However, follow-up resampling and analysis is encouraged to evaluate the success of the corrective action and permit further corrections, if required.

Salinity/sodicity

Salinity/sodicity refer to the accumulation of salts in the soil profile. Sodicity refers specifically to the amount of Na⁺ present in irrigation water.

Electrical conductivity is an important indicator of salinity and exchangeable sodium percentage is an indicator of sodicity. Samples should be collected from the surface to a depth of at least 80 cm at increments of 20 cm or 30 cm, or as determined locally by appropriately qualified soil specialists.

Where corrective actions have been applied based on the initial soil sampling and recommendations, there is no need to resample and analyse the soil immediately after corrections have been applied. However, follow-up resampling and analysis is encouraged to evaluate the success of the corrective action and allow further corrections, if required.

Regular analysis of irrigation water is required to monitor salinity/sodicity contributed by irrigation practices.

Crop nutrition

The operator might develop a “fit-for-purpose” sampling plan, which is included in the SMP, that accurately represents all fields, taking into account parameters such as soil uniformity and field sizes.

It is important to consider the difference among sugarcane varieties in terms of efficiency in the absorption and use of nutrients.

At a minimum, soil testing determines the levels of:

- plant available macro nutrients (nitrogen, phosphorus, potassium, calcium, magnesium, sulphur)
- organic carbon content (soil readily oxidisable carbon or total organic carbon)
- soil acidity (pH, water, exchangeable acidity and/or aluminium).

Soil sampling

Sampling of the top 0–20 cm of soil should be undertaken at every replant cycle to calculate fertilisation and liming, with samples being taken in a way to ensure analysis accurately represents field conditions. Sampling layer (20–40 cm) may be used for calculating the gypsum needed.

When collecting samples, the following may be considered:

- determine the area that is to be sampled. Ensuring a cane block not bigger than 3 ha and making sure that soil type is relatively uniform
- if soil types are diverse, then multiple samples should be collected separately
- sample using a zig-zag or grid pattern
- consideration must be given for split sampling fields bigger than 10ha. Analysis should include comprehensive nutrient status as well as measure of acidity and Salinity/sodicity.

As a minimum, the frequency of soil sampling should ensure all fields are sampled every five years. More regular sampling is encouraged on sandier soils (<20% clay), and in areas with high rainfall and/or extreme rainfall

events.

The same sampling methodology/protocol must be followed from one sampling event to the next, to ensure consistency in sample representativeness. Regional guidelines should be followed in this regard. Ideally, the same reputable laboratory should be used for consistency in methods and results.

The parameters to be analysed should include, but is not limited to macronutrients, organic carbon, pH and acidity of the soil and texture.

Leaf sampling

Leaf analysis is the preferred means of determining micronutrient requirements.

The following recommendations may be considered:

- the leaf sampling should be done when the crop is actively growing. The sampling is related to the geographical area and the age of the crop. It is important to follow the local recommendations for the variety used. E.g. for some regions it would mean between 3-5 months, for others between 4-9 months
- sampling should be done at least four to six weeks after the last fertiliser application
- rainfall and irrigation shall be considered to ensure that the crop has not gone through moisture stress, because this can influence the results of the leaf test
- select leaves from stalks on average height, and collect approximately 30-40 leaves at random from across the entire cane block.

The same sampling methodology/protocol must be followed from one sampling event to the next to ensure consistency in sample representativeness. Regional guidelines should be followed in this regard. Ideally the same reputable laboratory should be used for consistency in methods and results.

4.2.4 THE OPERATOR APPLIES AS MUCH FERTILISER AS RECOMMENDED BY SOIL OR LEAF ANALYSIS

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes the optimal use of fertiliser to improve nutrient use efficiency in the crop and minimises environmental degradation.

The operator should ensure crop nutrient requirements are used to develop a crop nutrition programme based on local industry-recognised best practices (or where none are available, from suitably adapted guidelines from another region), including the application of chemical and organic fertiliser. The programme must be adapted for local (site-specific) conditions to achieve optimal production in terms of both yield and quality while minimising environmental risk.

Recommendations should be based on leaf or soil analysis to determine the crop nutrient supply and availability of nutrients in the soil.

The amount of nitrogen, potassium and phosphorus applied through fertilisers within a season should be determined by the actual and target crop nutrient supply, taking into account all sources of nutrients already available to the crop. This should include nutrients:

- present in the soil
- that are being co-applied in that season (e.g. mill wastes, manures)
- derived from previous fertiliser applications (including manures, mill mud and mill ash, composts, vinasse, cement-modified soil (CMS))
- derived from harvest residues
- provided by other crops, such as legumes, green manures and cover crops.

Fertiliser should be of an appropriate type applied at the correct rate, time and placement for optimal crop use, as guided by local recommendations.

Values to be input into the Bonsucro Calculator for amount of recommended fertiliser and amount of fertiliser applied should be for the reporting period of 12 months. The fertiliser recommended and applied for each element – nitrogen, potassium and phosphorous – should include organic and inorganic. As each type of soil may have different fertiliser requirements, the data to be reported in the calculator should consider the different soil types.

The calculation should be performed as follows:

Total nitrogen (N) recommended = (area soil type 1 x recommendation in N for soil type 1) + (area soil type 2 x recommendation in N for soil type 2) + (area soil type n x recommendation in N for soil type n).

The area should be expressed in hectares and the recommendation should be the ratio expressed in kg of nitrogen per area (hectares).

The same logic should be applied to each nutrient for recommendation and application.

Example:

A total of 500 hectares has been included in the unit of certification. Based on the soil mapping carried out following indicator 4.2.1, this area is divided into three different soil types:

- soil type A = 250 ha
- soil type B = 150 ha
- soil type C = 100 ha

According to indicator 4.2.3, soil analysis was carried out and the following recommendation for nitrogen was put forward:

- soil type A: 70 kg of N/ha
- soil type B: 60 kg of N/ha
- soil type C: 85 kg of N/ha

Therefore, the total nitrogen recommended = $(250 \times 70) + (150 \times 60) + (100 \times 85) = 35,000$ kg

4.2.5 THE OPERATOR PREVENTS SUGARCANE TOPS AND LEAVES FROM BEING BURNED AFTER HARVEST

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes the retention of biomass and harvest residues and improves soil cover.

This indicator aims to prevent the mulch/trash blanket from being burned after harvest. If the cane needs to be burned before harvesting, it is allowed by this indicator; however, it is recommended that the operator applies cool burns (also referred to as “cool-burning”). Cool burns take place early in the morning when the wind is low and the dew is usually present on cane leaves, reducing particulate matter emissions. Cool burns also reduce the risk to those lighting the fires and of the fire escaping to other fields.

After harvesting of cane, tops and residual biomass must be retained, either by spreading across fields, or by raking and windrowing between the inter-rows.

When the burning occurred as a criminal action or accidentally, or was applied as prophylactic burning (controlled burning applied as a control measure to avoid pests or diseases proliferating, for example), this should not be considered in this indicator, providing that the operator justifies the reasons why.

CRITERION 4.3 – A WATER STEWARDSHIP PLAN IS IN PLACE

4.3.1 THE OPERATOR IDENTIFIES THE MAIN WATER RESOURCES AND CATCHMENT AREAS

Scope: This indicator applies to the mill and to the agriculture area in the unit of certification.

Objective: This indicator aims to ensure that the operator identifies all water resources for its operations, to serve as a foundation for identifying and implementing an appropriate Water Stewardship Plan (WSP).

The operator should identify on a map the main water resources that supply its operations and the area included in the unit of certification. The map should identify the water bodies according to the basin, sub-basin and micro-basin where the activities are located. It is not necessary to have a map for each farm; a general map can identify all areas included in the unit of certification. The level of water availability for each water body should also be indicated. The level of availability will determine the potential areas prone to, or experiencing, water stress.

Additionally, the map should identify:

- the surrounding communities that make use of the water resources, as well as other productive activities (mining, livestock, other crops)
- the bodies responsible for water management, if relevant
- specific restrictions that might apply to water resources being overground or underground, including temporal restrictions (e.g. areas where water extraction might not be allowed during the dry season)
- the possible trajectory taken by run-offs and what impact these might have on water resources.

4.3.2 THE OPERATOR DEVELOPS AND IMPLEMENTS A WATER STEWARDSHIP PLAN (WSP)

Scope: This indicator applies to the mill and to the agriculture area in the unit of certification

Objective: This indicator aims to ensure that the operator sustainably manages all water resources across the unit of certification.

The operator should develop a WSP according to the level of availability or water stress identified. The plan should have at least:

- achievable actions and objectives
- monitoring activities
- agreed responsibilities
- timeframes and allocated resources
- continuous improvement and organisational learning principles
- a review at least every three years or sooner, as per company procedures.

The plan may identify other local initiatives for sustainable water care and management. Depending on the level of complexity, this can be aggregated by user category, such as local authorities supplying water, other crops, mining, etc.

The plan can be developed in partnership with authoritative bodies and in collaboration with other water users as long as it covers the activities included in the unit of certification. The plan should be based on actual metric data collected from the watershed (e.g. water usage informed by meter flows, water quality informed by water analyses).

The operator should consider the definition of “basin/catchment” as provided by the Alliance for Water Stewardship³⁹:

“CATCHMENT: The geographical zone in which water is captured, flows through and eventually discharges at one or more points. The concept includes both surface water catchment and groundwater catchment. A surface water catchment is defined by the area of land from which all precipitation received flows through a sequence of streams and rivers towards a single river mouth, as a tributary to a larger river, or to the sea. A groundwater catchment is defined by geological structure of an aquifer and groundwater flow paths. It is replenished by water that infiltrates from the surface. It has vertical thickness (from a few metres to 100s of metres) as well as area. Depending on local conditions, surface and groundwater catchments may be physically separate or interconnected. ‘Catchment of origin’ refers to a catchment, distinct from the site’s catchment(s), where a product or service is manufactured or sourced. It may be anywhere from an adjacent catchment to the other side of the world. Alternative terms are watershed, basin and river basin.”

The operator should plan how to take action to address water-related risks deriving from its operation or potentially impacting its operation (e.g. intake water pollution, water scarcity or risk to water supply, release of polluted water, absence of riparian areas used to filter run-offs), and additionally determine the effectiveness of the actions taken. In doing this, the operator should take into account:

- the hazard identification (the reason for water scarcity or water pollution)
- the assessment of risks (environmental, social or on productivity) or impact
- the grading of risks and impacts (high, medium, low)
- the plans and measures implemented to mitigate the identified risks, eliminate the negative impacts and enhance the positive impacts.

An effective management structure and arrangements should be put in place for delivering the plan, including objectives and monitoring systems. Targets should be set for all managers and employees for eliminating hazards, reducing risks and enhancing impacts. Targets should be SMART: specific, measurable, achievable, realistic and time-based.

The plan should cater for immediate action in case of an urgent problem (e.g. the overflow of a water treatment station) and long-term actions (e.g. replenishing the natural water catchment). The plan should encourage collaboration with external actors who impact the water resources.

Employees should understand the plan and those in charge of its implementation should be trained. There should be a responsible person in charge of implementing and enforcing the plan.

³⁹ https://a4ws.org/?gclid=EAlaIqObChMI1bWPrNTs7glVbMyzCh2IbwvQEAAAYASAAEgLGQPD_BwE

4.3.3 THE OPERATOR PROMOTES SUSTAINABLE WATER USE BY ENGAGING IN COLLABORATIVE ACTIONS

Scope: This indicator applies to the mill and to the agriculture area in the unit of certification

Objective: This indicator aims to ensure that the operator collaborates with all water users to accelerate the sustainable management of water resources.

The operator should demonstrate active participation in local community initiatives and processes, with NGOs, regional and national public entities, etc., aimed at sustainable water management and care. If there is no local or other stakeholder initiative being developed in the area, the operator is expected to generate the initiatives in the area to promote sustainable water use.

The operator should keep records of the measurement of water stress and take collaborative actions to reduce it.

The operator should plan and implement internal sustainable water-use plans or programmes involving crop and mill workers.

The operator should record any evidence of the implementation of the internal plans or programmes, such as attendance lists, photographs or videos of training sessions, and development of information and training material.

4.3.4 THE OPERATOR MAXIMISES WATER EFFICIENCY PER MASS OF PRODUCT

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator sustainably manages all water resources across the unit of certification.

Values to be input into the Bonsucro Calculator to calculate this indicator should be for the reporting period of 12 months.

The net water consumed at the mill = (volume of water used) – (volume of water returned to the environment)

where:

- volume of water used = all water captured from rivers and wells, as well as water from other sources such as those provided by local council. This figure might exclude recycled water.
- volume of water returned to the environment = all effluent water that is returned to the environment, regardless of where it has been discharged. It includes water discharged in rivers as well as treated effluent used in irrigation. Please note that all water returned to the environment needs to have appropriate treatment first.

The operator should have the necessary water permits and use on-site devices that measure the flow in cubic metres per hour.

The operator should keep and maintain records of the quantities of water captured for use in the mill, as well as a record of water returned to the environment.

When mill effluent is returned to crops for irrigation, the operator should record it as water returned to the environment. Please note that 1 mm of water applied on 1 hectare is equal to 10 m³ of water.

If water meters are not easily accessible in the area of production, the auditor should assess if the methodology used by the producer to estimate the volume of water is adequate and therefore if there is confidence in the total amount of water consumed and returned to the environment.

4.3.5 THE OPERATOR MAXIMISES IRRIGATION PRODUCTIVITY

Scope: This indicator applies to the agriculture area in the unit of certification.

Objective: This indicator aims to ensure that the operator sustainably manages all water resources across the unit of certification.

Irrigation water productivity (WP) is a measure of how effectively irrigation water is used to produce the crop yield. For sugarcane, it is defined as the cane yield harvested, divided by the irrigation applied over the growing season. WP is strongly influenced by the amount of rainfall received by the crop. As effective (i.e. contributing to crop growth) rainfall increases, less irrigation is required to produce the same cane yield. It is therefore necessary to take into account rainfall when determining the benchmark for sustainable irrigation WP.

This indicator requires that actual WP (WPa) is greater than the benchmark WP (WPo).

Data to be input into the Bonsucro Calculator for calculating the WPo and WPa should be for the reporting period of 12 months. The operator should keep records for the entire growing cycle of the daily rainfall on its crops, expressed in mm, and records of all water inputs to the crops, including abstracted water, recycled water, and diluted and non-diluted vinasse and effluent.

Note: 1 mm of rain = 10 m³/ha

The WPo and WPa for the farm can be calculated (in units of kg/ha/mm) as:

$$WP_o = 66 + (0.05 \times \text{rain})$$

$$WP_a = \frac{(CY \times 1000)}{Irr}$$

where *rain* = total rainfall over the growing cycle, in mm

Irr = net irrigation applied over the typical growing season, in mm (including extracted water, recycled water, and diluted and non-diluted vinasse and effluents)

CY = the cane yield at harvest, in t/ha (cane harvested / area harvested)

These two values can then be compared, as follows:

- WPa >= WPo is acceptable
- WPa < WPo is not acceptable

The calculation assumes net irrigation (interception, drainage and soil evaporation losses are included, but conveyancing losses are excluded in the irrigation amount).

If water meters are not easily accessible in the area of production, the producer should have a documented methodology to estimate whether the volume of water is adequate and therefore establish whether there is confidence in the total amount of water consumed.

N.B. The formula to calculate the WPo was determined through a study carried out by the South African Sugarcane Research Institute, Mount Edgecombe, South Africa, in 2021, with data collected for 1998 to 2019 for 12-month cane crops started in June each year for three sites in South Africa. The MyCanesim[®] Lite model was used to simulate cane yields and establish the benchmark equation for WP.

4.3.6 THE OPERATOR MINIMISES DETRIMENTAL EFFECTS OF WASTE DISCHARGE

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator prevents pollution of water streams.

This indicator applies in the case of effluent discharge into receiving streams.

The operator should carry out analyses of effluent water from the mill. The water samples for dissolved oxygen should be taken from the receiving stream. For chemical oxygen demand (COD) and biochemical oxygen demand (BOD), water samples should be taken at the exact point of discharge.

The operator should ensure that the dissolved oxygen results at the effluent point comply with the parameters defined by Bonsucro: i.e. >2.5 ppm. For COD and BOD at the effluent discharge point, the results should comply with the parameters defined by Bonsucro: i.e. ≤ 1 kg COD / t product or ≤ 0.25 kg BOD / t product.

It should be noted that the volume and constituents of effluent flows from a mill vary considerably during the week and throughout the season.

Dissolved oxygen samples should represent average conditions in the stream being monitored. A sample should be collected from the middle of the stream, between 15 cm and 40 cm below the water surface. If the sample has to be collected from the shore, it should be collected at a site that is representative of the conditions in the stream, also a few centimetres below the surface. Sampling should take place downstream of the discharging point where flows mix. Dissolved oxygen analysis should be performed using iodometric (Winkler reference method), luminescence-based (optical sensor), amperometric (probe) or spectrophotometric methods of analysis, in line with local legislation if applicable. The protocol of measurement will depend on the methodology used.

The values for COD or BOD obtained from a measure of the effluent flow (t or m³) and average effluent COD or BOD content of effluents should be used. This requires the mill to measure all effluent flows from the site.

It should be noted that effluent flows from a mill vary considerably during the week if a weekly shutdown is practiced, and the total quantity, not average flow rate, should be used. Care should be taken to ensure that weekly peaks and variations in both flow and analysis are correctly taken into account when arriving at the values of the indicator.

Some countries and industries base effluent specifications on COD, whereas others base them on BOD₅. Either COD or BOD may be used.

The operator should implement corrective measures where the dissolved oxygen, COD or BOD test results do not comply with the limits required by Bonsucro. The operator should keep records of analyses of the effluent, as well as evidence of corrective measures if necessary. The frequency of analysis shall follow local legislation/regulations. In the absence of legislation/regulations, the sampling and analyses should be carried out at least once during the harvest season.

CRITERION 4.4 – PEST, DISEASE AND WEED MANAGEMENT PLANS ARE IN PLACE AND IMPLEMENTED

4.4.1 THE OPERATOR IDENTIFIES AND MONITORS CURRENT, HISTORICAL AND POTENTIAL WEEDS, PESTS AND DISEASES

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator identifies the threats to the productive areas.

The operator should create and implement a Weed, Pest and Disease Monitoring Plan, in which the damage threshold of each pest and disease is defined for when control is necessary. The Weed, Pest and Disease Monitoring Plan should cover all crop areas under certification.

The operator should keep:

- records of historical, current and potential weeds, pests and diseases according to different factors, such as rainfall, wind and relative humidity, among others
- records of the implementation of field monitoring methodologies by types of weeds, pests or diseases, types of sampling, dates, persons responsible, results of sampling, and crops where it is implemented
- field records of plant symptomatology caused by weeds, pests or diseases
- historical records of pest and disease monitoring, as well as weeds and symptoms presented in each crop.

In the case of new developments, thorough sampling should be carried out to identify potential weeds, pests and diseases, in order to prevent new outbreaks affecting new and established developments.

4.4.2 THE OPERATOR IMPLEMENTS AN INTEGRATED PEST MANAGEMENT PLAN (IPM PLAN)

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes integrated pest management practices.

The overall aim should be to minimise the economic impact and reduce the build-up of weeds, pests and diseases, along with minimising any off-site impacts. Different weeds, pests and diseases have different ecologies, distributions, potential impacts and controls. In addition, farming systems vary due to different environmental and societal limitations. Thus, there is not a single set of strategies applicable to all situations.

Agroecological strategies for pest and disease management vary according to each type of weed, pest or disease, so the operator should implement good practices, which might include at least:

- manual removal
- selective tillage
- selective application of herbicides, insecticides and fungicides
- trash retention and cover crops
- the use of biological control agents
- use of “clean” seed sources at planting
- use of cane varieties that close the canopy quickly, shading out weeds, and also those that are resistant/tolerant to pests and diseases
- management of surrounding flowering plants to increase the amount of natural enemies of pests and diseases, and/or discourage those that provide protein sources for rodents
- field hygiene practices to prevent the spread of weeds, pests and diseases
- insecticide and fungicide use should be based on action thresholds or risk-based approaches appropriate to the target species; application should be in a manner that minimises any drift to undesirable areas.

Herbicide use should be based on action thresholds or risk-based approaches (e.g. for pre-emergent herbicides) appropriate to the target species. Application should be in a manner that minimises any off-site movement.

The operator should plan how to take action to address risks derived from pests/diseases and, additionally, how to determine the effectiveness of the actions taken.

In doing this, the operator should take into account:

- carry out a pest or disease identification or diagnosis
- regularly monitor pest threshold levels and disease infestation
- evaluate the risks that the particular pest/disease pose in regard to the farm productivity and the risks for human health and environment with the selected control measures applied. Particularly, when chemical control measures are used
- assess and grade the risks and impacts associated as (high, medium low)
- make a clear IPM plan with the measures identified to mitigate the risks and eliminate the negative impacts. This should be done after careful consideration of the Bonsucro’s List of prohibited pesticides.

The IPM plan should be monitored and adapted based on the results of the internal analysis. An effective management structure and arrangements should be put in place for delivering the plan, including objectives and monitoring systems. Targets should be set for all managers and employees for eliminating hazards and reducing risks. Targets should be SMART: specific, measurable, achievable, realistic and time-based.

The plan should cater for immediate action in cases where there is an urgent problem (e.g. pest infestation) and for long-term actions.

Employees should understand the plan and those in charge of the implementation should be trained. There should be a responsible person in charge of implementing and enforcing the plan.

The operator should keep records of the implementation of the management plan and of the preventive and corrective measures applied.

4.4.3 THE OPERATOR MAXIMISES THE EFFICIENCY OF AGROCHEMICALS APPLIED

Scope: This indicator applies to the agriculture area included in the unit of certification,

Objective: This indicator aims to ensure that the operator applies agrochemicals efficiently to minimise air, soil and water contamination, as well as to minimise negative effects on human health.

The operator should have an IPM plan which includes:

- preventive methods used to reduce the incidence of pest and diseases including the information of varieties used
- mechanical methods/controls
- biological methods including the use of biological agents when available
- the use of chemical controls when necessary. In this case, and when chemical controls are used, the thorough analysis of the agrochemical shall be done in order to select the one with less toxicity for humans and environment
- measures in place to mitigate those risks associated with the particular agrochemical, including but not limited to:
 - a) training of the agrochemical applicators and people who may be affected by the exposure to pesticides
 - b) avoiding blanket applications
 - c) ensuring good calibration of equipment
 - d) following all technical recommendations stated in the label including, but not limited to, the respect of the re-entry times, and pre-harvest intervals.

The operator should keep records of the agrochemicals applied.

The minimum information to be recorded is:

- date of application
- active ingredient
- quantity of product applied
- area of application
- person responsible for the application (applicator's name)
- type of pest (e.g. insect pests, fungi, bacteria, weeds, nematodes).

The operator should only apply products that are registered in the country for their specific use and at the dose recommended on the label or based on agronomic recommendation.

Data to be input into the Bonsucro Calculator for this indicator, should be for the reporting period of 12 months and should consider only the amount of active ingredients of all agrochemicals applied. (this includes all insecticides, acaricides, herbicides, fungicides, nematocides, molluscicides, rodenticides, ripeners and plant-growth regulators. Inert ingredients such as coadjuvants and other inert materials should be excluded from the calculation.

It is important to keep records of the agrochemical application per plot. The template should allow the recording of how much of each active ingredient is used. At the end of the period, the total amount (in kilograms or tons) of agrochemical applied in the area is summed, and the application per hectare is calculated and reported in the Bonsucro Calculator.

The operator should:

- verify if there is a national law to be complied with that governs agrochemical use. Usually, this law will also indicate who is in charge to regulate the import, manufacture, registration, packaging, labelling, distribution, and retail sale of agrochemicals, to ensure that when they are used as directed, they are safe and effective
- follow the instruction labels on agrochemicals
- ensure that the agrochemicals do not drift to non-targeted application area
- ensure that the agrochemicals are applied using the PPE recommended in the label or in their absence recommended by an agrochemical professional
- communicate with neighbours about the agrochemical application and leave clear signs when areas are applied to avoid pesticide exposure leads to unanticipated effects on nearby communities. Effective communication can prevent risks of exposure to pesticides as well as avoid misunderstanding and unnecessary conflict and provide reassurance
- keep records of :
 - method of application of the pesticide(s) equipment calibration and information on relevant weather conditions
 - the date, time and location of the application and the name and quantity of the agrochemical applied

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- the name of the agrochemical applicator
 - the proximity or distance of other people living near the area where the agrochemical was applied
 - the total surface area of the land treated with the agrochemical.

4.4.4 THE OPERATOR ONLY APPLIES LEGAL AND SAFE AGROCHEMICALS

Scope: This indicator applies to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator protects its workers and the environment against the most hazardous agrochemicals.

The operator should not apply the prohibited agrochemicals listed below:

- pesticide formulations that meet the criteria of classes Ia (extremely hazardous) or Ib (highly hazardous) of the WHO Recommended Classification of Pesticides by Hazard⁴⁰
- pesticide active ingredients and their formulations that meet the criteria of carcinogenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS)⁴¹
- pesticide active ingredients and their formulations that meet the criteria of mutagenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS)⁴²
- pesticide active ingredients and their formulations that meet the criteria of reproductive toxicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS)⁴³
- pesticide active ingredients listed by the Stockholm Convention⁴⁴ in Annexes A and B, and those meeting all the criteria in paragraph 1 of Annex D
- pesticide active ingredients and formulations listed by the Rotterdam Convention in Annex III⁴⁵
- pesticides listed under the Montreal Protocol.⁴⁶

All the active ingredients banned by the lists mentioned above can be found in [this link](#).

Note that in the absence of non-banned alternatives legally registered for use, the operator should research and document if alternative chemical or non-chemical controls could be used. If the research confirms that no non-banned chemical or non-chemical alternatives are available, the use of a banned agrochemical is tolerated. In these cases, the Risk Management Plan should be updated to include and control the risks arising from applying a potentially dangerous chemical. The operator should develop a plan to phase out or eliminate the use of the banned agrochemicals.

⁴⁰ https://apps.who.int/iris/bitstream/handle/10665/205561/9789241510417_eng.pdf;jsessionid=A903785CB56E7D2B3731DEC20EBA57FD?sequence=1

⁴¹ <https://unece.org/ghs-rev8-2019>

⁴² <http://www.fao.org/pesticide-registration-toolkit/special-topics/highly-hazardous-pesticides-hhp/identification-of-hhps/hhp-criteria-2-3-4/en/>

⁴³ <http://www.fao.org/pesticide-registration-toolkit/special-topics/highly-hazardous-pesticides-hhp/identification-of-hhps/hhp-criteria-2-3-4/en/>

⁴⁴ <http://chm.pops.int/TheConvention/ThePOPs/ListingofPOPs/tabid/2509/Default.aspx>

⁴⁵ <http://www.pic.int/TheConvention/Chemicals/AnnexIIIChemicals>

⁴⁶ <https://www.environment.gov.au/protection/ozone/montreal-protocol>

CRITERION 4.5 – TO ENSURE THAT HAZARDOUS CHEMICALS AND MATERIALS DO NOT NEGATIVELY IMPACT BIODIVERSITY AND ECOSYSTEM SERVICES

4.5.1 THE OPERATOR SAFELY MANAGES STORAGE FACILITIES AND SAFELY DISPOSES OF CHEMICALS, FUELS, LUBRICANTS, OTHER HAZARDOUS MATERIALS AND THEIR CONTAINERS

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator protects workers and the environment against spillage of hazardous materials.

The operator should ensure safe storage and handling conditions for agrochemicals and other chemicals, fuels, lubricants, hazardous materials and their containers, as well as their safe disposal (e.g. for the regular oil changes in vehicles/machinery).

Storage sites should have at least the following characteristics:

- closed, locked areas with restricted access to authorised and trained personnel for the handling of these substances
- floors, walls and shelves made of non-absorbent, non-flammable material, allowing for easy cleaning and tidiness
- chemical inputs (agrochemicals and fertilisers) must be kept separate from lubricants, fuels and other hazardous materials
- agrochemicals must be separated by biocidal action (fungicide, herbicide, insecticide, rodenticide, etc.) and by presentation (powders, liquids, pastes, etc.)
- the space must be conditioned to retain possible spills (a spill containment wall must be provided) and with an appropriate kit to recover the spilled material
- the site must have appropriate signage according to the type of material being stored.

The operator should have an adequate bio-bed for the final disposal of spilled agrochemicals to avoid serious damage to aquifers and groundwater. The operator should limit access to authorised and adequately trained personnel.

4.5.2 THE OPERATOR TRAINS WORKERS ON THE HANDLING AND CORRECT USE OF FARM CHEMICALS, FUEL AND HAZARDOUS MATERIAL

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator protects workers and the environment against spillage of hazardous materials.

The operator should ensure it provides proper training for the handling and manipulation of agrochemicals, fuel and hazardous materials, and should maintain training attendance lists and regularly update its records. This training should minimise the risk of spills that could cause serious damage to health and the environment.

The training should be conducted by a competent professional on the safe management of products, including agrochemicals, other chemicals, fuel and other hazardous materials.

Training should be relevant and adapted to each task on-site in terms of the associated risks. It should cover the detailed information on the names, formulations, toxicity, health risks and other relevant Material Safety Data Sheet (MSDS) information related to farm chemicals, fuel, hazardous materials and all substances to be used. Furthermore, the correct handling of these substances, including specific techniques, should also be covered.

Personnel who apply agrochemicals and use fuels, lubricants and/or hazardous materials should have the appropriate PPE for each type of input, as well as a record of the delivery of PPE to workers and a record of the appropriate use of masks to avoid inhalation of toxic gases. Training should include instruction on the correct use of this PPE.

The operator should have photographic and documentary records of the constant and correct use of PPE by workers.

Training also should include information on measures for preventing/reducing possible harm to health and the environment that could be caused by the substances.

The operator's emergency, first-aid and medical attention procedures for cases involving poisoning or undue contact with these substances also should be covered by the training.

Records of training should be kept, including at least:

- The worker's name and position
- date of training
- duration of training
- name of training instructor
- topics/subjects covered in the training
- worker's signature or other evidence that they attended the training
- other relevant information.

Training should be tailored to the level of the audience.

PRINCIPLE 5 – CONTINUOUSLY IMPROVE OTHER KEY AREAS OF THE BUSINESS

CRITERION 5.1 – TO PROMOTE ECONOMIC AND SOCIAL SUSTAINABILITY

5.1.1 THE OPERATOR ENSURES THAT VALUE IS MAXIMISED PER TONNE OF CANE

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes economic sustainability of its operations.

Guidance for implementation:

Value added is not the same as profit. Value added by the operation is the value of sales less the cost of goods, raw materials (including energy) and services purchased. It does not include depreciation, subsidies, salaries, taxes or benefit repartition. It is easier to calculate than profit, because it is unaffected by different accounting approaches or standards. An organisation creating value distributes that value to employees, the government (tax), capital providers and shareholders, while retaining some for further investment. Values to be input into the Bonsucro Calculator to calculate this indicator should be for the reporting period of 12 months.

The operator should estimate the added value of its operations, including mill and agriculture operations, by reporting all costs and sales of its operation separately for the mill and agriculture area, according to the input data tab in the Bonsucro Calculator.

For the mill, the added value is calculated from the sales of sugar, ethanol, molasses, bagasse and power, minus the costs of goods, raw materials and services purchased, divided by the tonnes produced. The costs of goods, raw material and services purchased include but are not limited to:

- sugarcane purchased for processing
- molasses purchased to be used in ethanol production
- chemicals to be used in industrial process, as well as chemicals to be used for cleaning
- fuels, e.g. diesel for machinery and coal for boilers
- bagasse purchased to be burned in boilers
- maintenance
- consultants' and experts' services
- rentals
- electricity purchased.

The calculation should exclude all subsidies, salaries, taxes and benefit repartition.

In the case of growers, value added is calculated the following way: cane sales minus the cost of inputs, divided by the tonnes produced.

The costs of inputs include but are not limited to:

- fertilisers purchased
- agrochemicals purchased
- other chemicals purchased to be used on the farm
- water used in the farms for irrigation and other activities
- electricity purchased
- fuels, such as diesel and gasoline for machinery
- maintenance
- consultants' and experts' services
- lease of areas.

The calculation should exclude all subsidies, salaries, taxes and benefit repartition. For cane supplied to the mill from the operator's own areas, which means the cane is not sold, the operator should use the market prices.

Please note that when, under the agriculture scope in the calculator, there are no sales of sugarcane from farms included in the unit of certification to the mill, the market sugarcane prices should be used to report in the

calculator. This only applies to the operator's own areas (farms that belong to the mill, not external suppliers). If there is a sale transaction, the actual amounts should always be reported.

The currency exchange rate for US Dollars that is used should be the average over the reporting period. This information can be verified on the www.xe.com website.

CRITERION 5.2 – TO REDUCE EMISSIONS AND EFFLUENTS AND TO PROMOTE RECYCLING OF WASTE STREAMS WHERE PRACTICAL

5.2.1 THE OPERATOR COMPLIES WITH LEGISLATION APPLICABLE TO AIR EMISSIONS FROM STATIONARY SOURCES (BOILERS ONLY)

Scope: This indicator applies to the mill.

Objective: This indicator aims to ensure that the operator promotes clean air on and around its operations.

Acronyms:

- PM: particulate matter
- NOx: nitrogen oxides

Stationary source testing, also referred to as stack testing or source emissions testing, should be performed to help the operator understand the composition of its emissions and to ensure that control measures are performing appropriately.

PM and NOx should be monitored by sampling at each emission point according to the specific methodology stated in applicable legislation.

Where these parameters are not met, the operator should demonstrate an action plan for improving air quality (this can include collaborative efforts with government and other businesses, if appropriate).

Monitoring can be performed by the operator or through a publicly available data resource, like national or local authorities.

The operator should comply with applicable legislation. If local legislation requires parameters other than PM and NOx to be monitored at stationary source emissions from boilers, the operator should manage this according to the applicable legislation.

5.2.2 THE OPERATOR RECYCLES OR SAFELY DISPOSES OF NON-PRODUCTION WASTE

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes both the safe disposal of waste and the circular economy.

According to the Environmental Protection Agency (2020),⁴⁷ waste management systems are designed to protect the environment and improve conditions. Holistic waste management includes the following practices:

- disposal of waste in a responsible manner
- recycling of solid waste
- reuse of waste
- minimisation of use of resources
- prevention of negative impacts.

The operator should develop a documented programme for the recycling, reuse, safe and responsible disposal, temporary storage, or long-term storage (if other options are not available) of at least four of the following categories:

- fibre (including paper)
- metal (including steel)
- plastic (including agrochemical containers)
- rubber
- wood
- glass
- electronics.

According to the Environmental Protection Agency (2020),⁴⁸ key activities that can help with the implementation of the plan are as follows:

- Assess needs. By carefully identifying your needs, it is easier to avoid overbuying and to cut down on excessive materials.
- Minimise impact. Sourcing products locally means less resources are required. Additionally, lower-impact alternatives should be considered, as well as biodegradable or ecologically friendly products.
- Order in bulk. This ensures less packaging is required for any single product and fewer shipments are required.
- Repair products. This is one way to ensure products and material do not end up in landfill.
- Sell unwanted items. The second-hand market is a great way to ensure items do not go to waste.
- Repurpose raw materials.
- Education and awareness.

The operator should identify the actions for recycling, reuse and responsible disposal/storage for each category. The operator should implement the practices described in the programme and keep the associated records.

⁴⁷ Environmental Protection Agency (2020). Best Practices for Solid Waste Management: A Guide for Decision-Makers in Developing Countries. United States: United States Environmental Protection Agency.

⁴⁸ Environmental Protection Agency (2020). Best Practices for Solid Waste Management: A Guide for Decision-Makers in Developing Countries. United States: United States Environmental Protection Agency.

CRITERION 5.3 – TO TRAIN WORKERS AND OTHER WORKERS IN ALL AREAS OF THEIR WORK AND DEVELOP THEIR GENERAL SKILLS

5.3.1 THE OPERATOR PROVIDES VOCATIONAL AND/OR OCCUPATIONAL SKILLS TRAINING TO WORKERS DIRECTLY CONTRACTED BY THE OPERATOR

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes, attracts and retains talent.

This applies to workers directly contracted by the operator (i.e. those workers with a written contract with the operator) at the mill and/or the farm. The training includes all direct vocational and professional training, including that which is required by law, requalification, literacy training, and transferable skills going beyond those required within the unit of certification. Note that health and safety training should not be included as vocational training. The training can be in the classroom, the field or online.

An example of vocational training is the training of permanent and seasonal workers displaced by plans for mechanisation.

The operator should keep records (including the training material, name of trainers, duration of training and attendance list) related to the training.

The operator should ensure that:

- trainers are competent
- training is tailored to the level of the audience
- all workers are given the same opportunity to access training.

The operator should verify the overall efficiency of the training provided. This can be achieved by various means (questionnaire, exam or follow-up) to ensure the training reaches the expected goal. If feedback or subsequent observations show that training was not sufficient, the training programme should be revised and consideration given to alternative approaches, methodologies or trainers, or an increased frequency.

The operator should record the total number of hours of vocational training for each worker that occurred in the reporting period of 12 months, sum it and report this in the Bonsucro Calculator. The result displayed in the calculator should be, on average, a minimum of 16 hours per worker per year. Note that for part-time and temporary workers, the hours must be calculated *pro rata*.

CRITERION 5.4 – CONTINUOUS IMPROVEMENT OF WORKER WELFARE

5.4.1. THE OPERATOR PROMOTES GENDER INCLUSION IN MANAGEMENT AND SKILLED POSITIONS TO WORKERS DIRECTLY CONTRACTED BY THE OPERATOR INCLUDED IN THE UNIT OF CERTIFICATION

Scope: This indicator applies to the mill and to the agriculture area included in the unit of certification.

Objective: This indicator aims to ensure that the operator promotes gender inclusion.

According to UN Women (2011)⁴⁹ and its women’s empowerment principles, all businesses stand to benefit from greater equality for women. The UN principles emphasise the business case for corporate action to promote gender equality and women’s empowerment. This goal can be achieved through the implementation of seven principles:

1. Establish high-level corporate leadership for gender equality.
2. Treat all women and men fairly at work – in terms of respect, supporting human rights and non-discrimination.
3. Ensure the health, safety and well-being of all women and men workers.
4. Promote education, training and professional development for women.
5. Implement enterprise development, supply chain and marketing practices that empower women.
6. Promote equality through community initiatives and advocacy.
7. Measure and publicly report on progress to achieve gender equality.

Examples of skilled positions in the sugarcane sector include but are not limited to:

- agricultural machinery drivers
- agronomists
- laboratory operators
- line and senior management at mill and farm levels.

According to the ILO (2014)⁵⁰ impact report, a training programme for women’s empowerment can include but is not limited to: training to develop business skills, vocational training and life skills, legal rights, and civic education. The operator should develop a Training Plan to increase women’s empowerment. The operator should act to include women’s full participation in leadership and decision-making bodies.

According to the ILO (2014) guide on gender issues in employment and labour market policies, it is not only a human right to ensure equal access to employment and income opportunities for all the women and men who are available for work and have the skills and knowledge to be gainfully employed, but it is also good for economic growth, poverty reduction and social progress. To integrate a gender inclusion and equality framework in the business, the operator should develop a policy for gender equality during the recruitment process and should develop a plan for increasing women’s presence in the workforce to a minimum of 15%. The plan should cover all the skilled positions of the unit of certification, including the mill and agriculture. The operator may implement a dedicated women’s committee.

The operator should identify which positions at the mill and farm level match the definition of a skilled position in Annex 1 of the Production Standard, and report data accordingly in the calculator. Data in the calculator should include management positions.

Based on ILO C100, the operator should ensure equal treatment and equal remuneration to all workers in similar positions, regardless of gender and ethnic/social origin.