Technical Modules

Module 5: SUSTAINABLE CATTLE PRODUCTION

Sustainable Agriculture Standard

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Contributions of this module

Sustainable cattle production plays an important role both in global economics and the agricultural sector to contribute to climate change adaptation and mitigation, benefiting the people wellbeing and environmental conservation.

A sustainable cattle production system that complies with the 2017 Standard requirements allows to:

- Implement mechanisms that allow verification of a certified animal/product origin.
- Assure the health and welfare of animals raised in certified farms.
- Improve productivity in cattle farms.
- Reduce environmental impact and greenhouse gases emissions.

This module provides the following tools to optimize the work of the technical community:

- Diagrams explaining the objectives and key topics of Principle 5.
- Information about related *Rainforest Alliance Terms & Definitions* and their correct interpretation.
- Explanations about the interrelation of different criteria within the Standard, that allow to better comprehend all requirements related to sustainable cattle production.
- Information on the correct implementation and evaluation of the Rainforest Alliance Standard Principle 5 requirements, as well as other related criteria.
- Recommendations on how to audit specific topics.

The *Guide for the 2017 Standard* is a key tool for the implementation and evaluation of the Standard requirements.

Consult it in a regular basis [here](#).
Principle V
What is its purpose?

- Mitigation of negative environmental impacts
- Traceability of certified cattle
- Optimization of productivity
- Reduction of greenhouse gas emissions
- Provision of shelter, food and water; no animal abuse and safe transportation.
- Implementation of a health and nutrition program
- No administration of prohibited substances
- No cloned or transgenic animals
- No animal abuse and safe transportation.
- Individual animal identification system
- Pasture management plan
- Sustainable Cattle Production
- Provision of shelter, food and water; no animal abuse and safe transportation.
- No cloned or transgenic animals
TRACEABILITY IN CATTLE PRODUCTION
TRACEABILITY in sustainable cattle production

In sustainable production, traceability systems are fundamental tools for farm management and are used for many purposes, including the protection of animal welfare, public health and food safety.

According to the 2017 Standard criteria, the implementation of a traceability system aims to assure that animals come from farms that do not use forced labor, have legitimate rights to land use and have not destroyed forests and natural ecosystems.

The implementation of an individual identification system for the traceability of cattle is considered a critical criteria in the 2017 Standard, making its execution mandatory for all cattle farms applying for certification.

Added value for the producer

The implementation of a functional and transparent traceability system improves the competitiveness of cattle operations in international markets since it allows the producer to:

- **Support market claims**: such as those stating that meat or dairy products are “deforestation-free”, Genetically Modified Organisms free or that it has been raised under Animal Welfare practices.

- **Optimize programs for monitoring cattle health**: improving the quality and safety of meat and dairy products and reducing risks to public health and consumer protection.

- **Reduce response time in emergency situations**: such as outbreaks of disease and food contamination problems, reducing their economic, environmental and social impact.
Traceability in the 2017 Standard

The implementation of a traceability system enables cattle operations to demonstrate their compliance with several requirements of the 2017 Standard, among them:

• Demonstrate the animals’ origin (assuring that breeding farms do not use forced labor, have legitimate rights to land use and have not destroyed forests and natural ecosystems)
• no cloned or transgenic animals;
• no administration of banned substances;
• the ages when practices such as dehorning or castration are performed; and
• the execution of activities identified in the herd health plans or programs.

In order to evaluate compliance with the Criteria of the 2017 Standard, auditors request access to the records of each individual animal and all documentation related to these records.

Keep in mind that farms manage records digitally (databases or specialized software), in printed form (forms or files) or using a combination of the two. In the latter case, request access to both mechanisms and verify the consistency of their information.

Applicable law in some countries requires the implementation of a pre-determined traceability system, the inclusion of specific information in the records and/or the execution of specific protocols (such as specific forms for animal transportation). During the audit planning stage, auditors review the applicable law and establish the critical points that should be evaluated in the farm’s traceability system to ensure it complies with the requirements such regulations.

If the local authorities request the completion of specific forms or protocols, it is important to ask for a copy of such documents and to verify that the information provided in the documents does not contradict the information available in the farm’s databases.
Criteria and their compliance

**Individual animal identification system (CC-5.2)**

The farms have a functional system for identifying and keeping records on each individual animal.

The recordkeeping mechanism can vary on each farm and in some countries it is subject to legal regulation. It is important to verify all applicable law in for this matter and if any of these regulations apply for the kind of productive system that is to be evaluated.

**Origin of the animal and its residence on the farm (CC-5.1; A-5.24)**

Animals sold as certified cattle have spent at least the last six months of their lives on a certified farm, having spent the rest of their lives on farms that complied with the main critical criteria of the standards (See Criterion 5.1).

Each individual record provides the date of the animal’s birth. For animals not born on the farm, the records indicate which farm it came from and the date of its purchase.

**No cloned or transgenic animals (CC-5.3)**

The records show that the parental lines of each animal are clear and specify the origin of the individual animal.

On farms using artificial insemination or embryo transplantation techniques, it is important to request information on the origin of the semen and/or embryos as well as the laboratories involved in the process. If the collection of semen and the in-vitro fertilization is conducted on the farm, the auditor requests a visit to the facilities and access to the records.

**Herd management practices (CC-5.2; B-5.20)**

The individual records of cattle have the dates and management practices performed: dehorning, castration, slaughter of animals, among others. These dates enable verification of compliance with the conditions and time periods required by the standards for each of such management practices.
Criteria and their compliance

Administration of supplements, medications and other veterinary substances

(CC-5.6; C-5.7; C-5.9)

• The farm keeps records of all medications and substances applied to the animal. These records coincide with the inventories and storage area controls.

• The individual records of each animal show the dates and types of products applied, including the administration of deworming treatments, hormones to induce estrus, antibiotics and other medications.

• The administration of medications is carried on according to:
  • the health and herd management plans;
  • the applicable law; and
  • the records of diseases diagnosed and treated by professional veterinarians.

• None of the records mention the following substances (Criterion 5.6):
  a. Organochlorine substances;
  b. Anabolic substances to promote increased muscle mass;
  c. Hormones to stimulate higher production;
  d. Non-therapeutic antibiotics (preventive medication or production stimulation)
  e. Clenbuterol, Diethylstilbestrol (DES), Dimetridazole, Glycopeptides, Ipronidazole;
  f. Chloramphenicol, Fluoroquinolones, Furazolidone; and
  g. Diclofenac and Aceclofenac.

Added to this list are substances indicated in applicable law. The non-presence of substances on the above list must also be checked against the medication and veterinary products storage area.

If the local authorities require the application of a prohibited substance (those indicated in Criterion 5.6) for the treatment of a certain condition, its application will not be regarded as a non-conformity, as long as the farm provides the corresponding evidence and complies with the local regulations for applying such substance.
ANIMAL HEALTH AND WELFARE
in sustainable cattle production

An animal is in a good state of welfare when it is healthy, comfortable, well-fed, safe, can behave naturally and is not subject to unpleasant conditions such as pain, fear and stress.

Cattle production systems implementing best animal welfare practices also establish programs for disease prevention and veterinary treatment.

Under the 2017 Standard, the implementation of best practices for animal health and welfare aims to ensure that animals sold as certified come from farms providing essential and reasonable conditions for optimal development under a system that is properly managed and free of abuse and mistreatment.

According to the requirements of 2017 Standard, animal health and welfare practices include: the sufficient provision of shelter, food and water; the implementation of a health and nutrition program; no mistreatment or abuse, and safe animal transportation.

The mistreatment or abuse of animals within a certified operation is considered a non-conformity against a critical criterion under the 2017 Standard.
The implementation of production systems that assure animal welfare generates added value for cattle farms, from both an ethical and a technical-production perspective:

- **Performance**: There is scientific evidence indicating that animals under stress have lower food conversion ratios, which affects the performance of production systems.

- **Meat quality**: Mistreatment of animals, the application of certain substances and poor transportation practices translate into important losses for the producer since these activities produce blows, injuries, traumas and blood clots in animal muscle tissue, affecting the quality of the cuts of the meat.

- **Competitive advantage in the market**: for ethically-aware consumers and markets, animal welfare programs represent an advantage in the commercialization of meat and dairy products.
Animal health and welfare in the 2017 Standard

The implementation of best practices for animal health and welfare enable cattle operations to demonstrate compliance with several 2017 Standard requirements, among them:

- no mistreatment and no-abuse of animals (Critical);
- existence of a health plan for the herd;
- sufficient food and water for the cattle;
- responsible carry-on of practices such as castration and dehorning;
- use of proper facilities for cattle management; and
- staff training to perform assigned tasks.

To evaluate compliance with the Criteria of the 2017 Standard, the farm is visited to inspect the animals, the facilities and the different activities conducted there, and findings are to be compared against the records of the operation.

Some countries have specific laws on Animal Welfare (Animal Protection Laws). Auditors review these laws during the planning phase of the audit, so compliance with applicable law is also evaluated.

If the local authorities conduct regular inspections or have records of the cattle operations, it is a good practice to request copy of the reports/records and verify that the information such documents provide does not contradict that provided by the farm.

If there are local organizations dedicated to the defense of animal rights, they are consulted about information regarding the operation to be audited.
Criteria and their compliance

No mistreatment & No abuse (CC-5.4)
- The farms implement best practices for animal management and there is no evidence of mistreatment or abuse.
- The workers are trained on animal management techniques and are aware of the importance of ensuring animal health and welfare.
- The farm does not practice chemical or hot iron branding or penis deviation in bulls.

No use of prohibited substances (CC-5.6)
- Individual animal records do not show the application of any prohibited substances.
- No prohibited substances should be found in the medication storage facilities. If they are found, they should be clearly labeled that they are not to be used.
- The yields and weight gain records are within average values for the breed and age of the animals and environmental conditions.

No use of animal by-products as feed (CC-5.5)
- The farm does not store animal by-products such as meat and bone, fish or feather meal.
- If the farm produces animal by-products, it must show that is has an effective and appropriate system for their disposal.
- The labels on feed concentrate specify their ingredients and should indicate they contain no animal by-products.

Herd health plan (C-5.7)
- The farm has a documented health plan.
- The data in the individual records coincides with the projections of the herd health plan.
- The workers are aware of the existence of the herd health plan and how it is implemented.
- Some farms will have health schedules, farm logbooks, or forms for applying substances and conducting activities.

Best auditing practices
During the audit planning it is important to request information about the cattle breed and exploitation type that the operation is managing; and based on such information the auditor research about specific aspects such as:
- Averages of weight and weight gain: to be able to verify is animals are well feed and farm is not using prohibited substances to boast performance.
- Main health problems affecting animals according to race and type of exploitation (e.g. hoof problems in dairy cows): so the auditor can focus on the mechanisms used by the farm to manage this issues.
Criteria and their compliance

Monitoring of animal health and use of authorized medications (CC-5.6; C-5.7; C-5.8; C-5.9)

• The farm provides information on the professional responsible for monitoring animal health and the corresponding authorization of this professional.

• The farm provides evidence of veterinary recommendations, such as prescriptions, instructions, and others.

• The workers have received training from competent professionals on the use, application, storage and disposal of medications.

• The workers are aware of withdrawal periods and the farm implements mechanisms to ensure their compliance. For example: visual markers on the animals in the withdrawal period can be used or notes can be kept on the daily records.

Animal nutrition (CC-5.5; C-5.10; B-5.19)

• The farm has a pasture management plan. In cases with low pasture yield, the animal diet should be supplemented with other energy sources.

• Newborn calves should have access to colostrum, milk and/or other specific formulas for their development. In cases where they are fed colostrum or milk, the workers should confirm the techniques used to provide the it to calves. In cases where formula is used, the workers know how to prepare it and the correct amount for each animal.

• The Body Condition Scoring (BCS) technique can be used to evaluate cattle energy reserves at regular intervals.

• The cattle should have access to sufficient, good quality water to remain hydrated. Continual water sources around the facilities and pastures are checked to ensure acceptable color, odor, taste and temperature (see the Rainforest Alliance Parameters for water for cattle). The farm should implement mechanisms for monitoring the quality of the water provided for the cattle and conduct regular analysis.

Body Condition Scoring (BCS)

Body condition influences productivity, reproduction, health, and longevity of cattle. Thinness or fatness can be a clue to underlying nutritional deficiencies, health problems, or improper herd management.

Body Condition Scoring tools will vary depending on the cattle’s race, the type of productive system (dairy, beef or double purpose) and even the region in which an animal is raised (e.g. the tropics). Therefore it is important that the auditors are informed about the productive system and cattle race that is about to audit, to be able to research for the appropriate tools.

Some recommended sources of information are:


• USDA National Agricultural library: https://www.nal.usda.gov/

• Virginia State University Library: https://pubs.ext.vt.edu

Nevertheless, the use of local guides is encouraged, as they are usually found in the country’s local Agriculture Departments or Ministries.
Criteria and their compliance

Animal management (CC-5.4; C-5.12; C-5.13; C-14; C-5.15; C-5.16; C-5.17; B-5.23)

- The workers are trained in different animal management practices in order to minimize pain, stress and suffering.
- The workers are informed of the maximum age for performing practices such as castration and dehorning.
- The data in the individual records confirms the correct implementation of animal management practices; for example: the time from the animal's date of birth to its dehorning or castration coincides with the requirements of the 2017 Standard.
- The workers are aware of the conditions for using medication to relieve pain during and after castration procedures.
- The farm indicates which mechanisms are used for euthanasia and the related veterinary recommendations.
- The cows are regularly milked and the farm implements procedures for monitoring milking conditions. The workers know these procedures and perform them properly. For example: disinfecting the cow's udders and recording the amount of milk per milking period.
- The farm implements mechanisms for regular cleaning and disinfecting of the facilities and equipment.
- The transport of the animals is supervised by competent professionals. The facilities for loading and unloading do not require the animal to jump, thereby reducing the risk of fractures or blows. The vehicles for transporting the animals are appropriate and provide support for the animal (including: sidebars, cushioning material on the floor and slip-resistant ramps).
- The farm's facilities are designed to avoid stress and injuries to the cattle. The floors and ramps are slip-resistant, there are no bars with pointed tips and no broken platforms, among others.
PRODUCTIVITY in sustainable cattle production

Productivity is generally understood as the relationship between the production obtained through the production system and the resources used to obtain it.

Although there are many types of indicators for measuring productivity, cattle production systems generally use weight gain indicators (on beef cattle farms), levels of milk production per animal (on dairy farms), or a combination of these factors (on dual purpose farms).

Under the 2017 Standard, the implementation of best practices to improve productivity aims to reduce the negative impacts of the production systems through optimization of the use of inputs.

Added value for the producer

Productivity in a cattle operation is related to the continuing improvement of management systems for product quality (the cattle and their by-products) and it is this system for quality that prevents any impairment of the production system, improving quality standards.

Productivity, then, is a function of the quality standards. If these standards are improved, resources will be saved and product quality will improve; thus directly impacting the profitability of the cattle production system.
Productivity in the 2017 Standard

Some practices used for improving the productivity of production systems enable verification of compliance with the requirements of the 2017 Standard, including:

• implementation of a plan for herd health;
• feeding and adequate hydration of the cattle;
• implementation of a management plan for pastures and forage;
• monitoring of reproduction activities; and
• incorporation of wastes in the production cycle.

Through the implementation of best practices for herd management, farms also comply with the requirements regarding the implementation of a Productivity Plan, requested by Criterion C-1.7 (Principle 1).

For evaluating compliance with the Criteria of the Rainforest Alliance Standard and its requirements, it is necessary to visit the farms and compare findings with the available documentation.

Criteria and their compliance

Animal health and welfare (CC-5.4; C-5.7)

• Animal management practices are intended to improve conditions for animal development and promote optimal production.
• Through a preventive approach, herd health plans enable improvements in animal health and welfare. A sick animal will be less productive than a healthy one.
Criteria and their compliance

Cattle feed and hydration (CC-5.5; C-5.10; C-5.11; B-5.19; A-5.27)

- Newborn animals should have access to colostrum and milk or substitutes (formula). The use of formula is justified according to the farm’s production system and this could occur for several reasons, including: the safety of the calf, the safety of the dairy products (in dairy production or dual purpose systems), or ensuring that each animal consumes the proper amount of milk required for optimal development.

- The transition from milk to concentrated feed and/or pasture is carried out when the physiological development of the animal allows it to digest concentrated feed and make use of the nutrients it offers. The ideal age for this transition is defined by the animal’s breed and species within the production system.

- Water for cattle should always be available and its provision is adequate for the environmental conditions to which the cattle are exposed as well as their own characteristics. For example, for large breeds in meat production systems under very warm conditions, the water supply must be sufficient to avoid cattle dehydration or a decline in conversion rates due to heat shock.

Implementation of a pasture management plan (B-5.19)

- Pasture management plans are developed by competent professionals, according to the farm’s production system, and take into account factors such as the physiology of the animals and the production conditions: soil fertility, climatic conditions and resource availability.

- Farms select forage and pastures based on their digestibility, adaptation to the farm’s conditions and regeneration capacity.

- In established pasture lands and forage banks, the farm calculates the capacity of animal stock.

- Farms should demonstrate the existence of mechanisms to avoid pasture degradation. For example: in arid regions, the farm can make use of silage, forage banks, legume hedges or animal food supplements; in humid regions farms can implement shorter pasture rotation cycles to prevent excessive trampling in flooded pasture conditions.

- Farms should regularly analyze and measure the quality of pasture lands and forage. The results of this analysis are taken into account when making decisions about the farm.

- The mechanisms used for pasture land and forage management are based on the technical and economic capacities of each producer and production system.
Criteria and their compliance

Monitoring reproduction activities (B-5.20)

- The farm documents the reproduction activities for improved management of animal genetics: to prevent inbreeding, avoid the spread of disease and undesirable genes, and to promote the continuity of desirable genetic characteristics.

- The use of hormones for estrus induction is permitted in operations using techniques such as insemination and in-vitro fertilization.

- For activities such as artificial insemination and in-vitro fertilization, the farm has the guidance of professional veterinarians to ensure maximum use of the techniques and minimum mistreatment of the animals.

Incorporation of closed cycles (B-5.22)

- Closed cycles in the production system provide the opportunity to use wastes as inputs for different activities within the production system.

- In general, and under a productivity approach, it is preferable that manure and urine be used as inputs for fertilization or for energy production.

- If the farm uses manure to prepare fertilizers, actions must be taken to prevent contamination, the spread of disease vectors and foul odors.

- If the farm uses manure in anaerobic systems and produces energy from methane gas, it is important to take the necessary measures for storing and using the gas.
MITIGATION OF ENVIRONMENTAL IMPACT in sustainable cattle production

The cattle sector provides high value food products and performs important economic and social functions. Given its expansion, its implications in use of natural resources are far-reaching. Currently the cattle sector is the world’s largest consumer of agricultural lands through grazing and the use of forage crops.

In addition, it plays an important role in climate change (through methane gas emissions), soil management, water use and biodiversity conservation.

In sustainable cattle production, reduction of the negative impacts on the environment is a priority.

According to 2017 Standard, mitigation of the negative impacts of cattle production is accomplished through the conservation of biodiversity (Principle 2), the incorporation of best practices in natural resource management (Principle 3), the implementation of measures to improve productivity and manure management (Principle 5).

Added value for the producer

Production sustainability: through responsible management of the natural resources that are indispensable for cattle production. Measures such as the conservation of soils and pastures enable production systems to be more sustainable over time and thus contribute to farm productivity.

Market opportunities: current market demands require the provision of meat and dairy products that have been produced in an environmentally-friendly way.
MITIGATION OF ENVIRONMENTAL IMPACT
Mitigation of environmental impact in the 2017 Standard

The mitigation of environmental impact on production systems is a priority of the 2017 Standard and is related to compliance with several of its requirements, among them:

- conservation of High Conservation Value (HCV) areas, natural ecosystems, protected areas, and natural resources;
- implementation of a pasture management plan
- evaluation of service providers
- energy efficiency and emissions reductions.

To evaluate compliance with the requirements of the 2017 Standard with respect to the mitigation of negative impact on the environment, it is necessary to review the requirements contained in the criteria for Principles 1, 2, 3 and 5.

Criteria and their compliance

Evaluation of service providers

*Related to CC-1.5; CC-5.1 and B-5.23*

• Farms ensure that their service providers comply with the critical criteria of the 2017 Standard, within the scope of cattle production. This means that service providers must also address issues such as animal welfare, and traceability of cattle when they are responsible for the slaughter of animals on behalf of the farm.

• In this sense, the farm must also ensure that the cattle it buys come from farms that do not use forced labor, do not destroy forests and have no disputes on the use of indigenous community lands or protected areas. This can be verified through the individual records for each animal. In absence of such information, it is important to request information from workers, communities nearby and local authorities.

• Some practices that can be implemented at the farm level to promote progress on compliance with requirements of the standard are: regular inspection of service providers (in the case of transport, this can be accomplished when they arrive at the farm); the request for specific documentation from service providers; and the implementation of standards and requirements prior to contracting their services.
Criteria and their compliance

Impact on natural ecosystems

- Farms implement mechanisms to ensure the conservation of HCV, natural ecosystems and protected areas; these measures include the identification of these areas, their restoration, sustainable management and non-destruction.

- Compliance with Criterion 2.2 (No destruction of forests) enables cattle farms to use the trademark statement “deforestation-free”.

- Many of the substances mentioned in Criterion 5.6 have negative effects on flora and fauna, so it is necessary to ensure that none of them are used by the farm for herd management (Rainforest Alliance Lists of Prohibited and Risk Mitigation Use Pesticides are also taken into account).

- Criteria 5.6 indicates the importance of taking actions to reduce the impact of cattle on water ecosystems, ensuring that the animals have limited access to natural bodies of water to prevent their contamination. On those farms where it is not possible to avoid the passage of cows through these bodies of water, actions are implemented to help mitigate the impact, including establishing physical and vegetative barriers; designating and restoring crossing points; regular monitoring of the banks; and placement of platforms over the water ecosystems to facilitate cattle crossing.

- In general, it is preferable to use artificial drinking troughs rather than allow cattle direct access to natural sources of water. However, if there are no artificial troughs, this is not cause for assigning a non-conformity as long as the farm implements measures like those mentioned above.

Energy efficiency and emissions reductions

- Energy efficiency and emissions reductions in cattle operations focus on the management of manure and urine. In general terms, it is preferable to use anaerobic treatments that capture methane from manure and convert it into an input for energy generation.

- The reduction of emissions is also addressed through practices such as soil conservation, proper use of natural resources and sound management of animal nutrition.