



Sustainable
Agriculture
Network

Standard for Sustainable Cattle Production Systems

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Sustainable Agriculture Network (SAN):

Conservación y Desarrollo, Ecuador · Fundación Interamericana de Investigación Tropical, Guatemala ·
Fundación Natura, Colombia · ICADE, Honduras · IMAFLORA, Brazil · Nature Conservation Foundation, India ·
Pronatura Sur, Mexico · Rainforest Alliance · SalvaNatura, El Salvador

Sustainable Agriculture Network - Standard for Sustainable Cattle Production Systems

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Introduction

The Sustainable Agriculture Network and Rainforest Alliance

The Sustainable Agriculture Network (SAN) is a coalition of independent non-profit conservation organizations that promote the social and environmental sustainability of agricultural activities by developing standards. Standard and policy development and review is coordinated by the SAN secretariat based in San José, Costa Rica. A Certification Body certifies farms or group administrators that comply with SAN's standards and policies. Certified farms or group administrators can apply for use of the *Rainforest Alliance Certified*[™] trademark for products grown on certified farms.



Since 1992, more than 600 certificates for more than 60,000 farms - including small family farms of cooperatives, as well as plantations - in 27 countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Côte d'Ivoire, Dominican Republic, Ecuador, El Salvador, Ethiopia, Guatemala, Honduras, India, Indonesia, Jamaica, Kenya, Malawi, Mexico, Nicaragua, Panama, Peru, Philippines, Tanzania, USA, Vietnam and Zambia) have met the SAN standards on more than 500,000 ha for more than 20 crops: coffee, cocoa, banana, tea, pineapple, flowers and foliage and citrus. Other crops include aloe vera, apple, avocado, cherry, grapes, heart of palm, kiwi, macadamia, mango, pear, rubber and vanilla.

SAN representatives and their operating countries are: Conservación y Desarrollo (C&D), Ecuador; Fundación Interamericana de Investigación Tropical (FIIT); Guatemala; Fundación Natura, Colombia; ICADE, Honduras; IMAFLORA, Brazil; Nature Conservation Foundation, India; Pronatura Chiapas, Mexico; SalvaNatura, El Salvador and Rainforest Alliance.

The Sustainable Agriculture Network's Mission

The Sustainable Agriculture Network (SAN) promotes efficient agriculture, biodiversity conservation and sustainable community development by creating social and environmental standards. SAN fosters best management practices across agricultural value chains by encouraging farmers to comply with SAN standards and by motivating traders and consumers to support sustainability.

SAN pursues its mission by:

- Integrating sustainable production of crops and livestock into local and regional strategies that favor biodiversity conservation and safeguard social and environmental well-being.
- Raising awareness among farmers, traders, consumers and business leaders about the interdependencies among healthy ecosystems, sustainable agriculture and social responsibility.
- Impressing upon business leaders and consumers the importance of choosing products grown on environmentally sustainable and socially responsible farms.
- Stimulating dialog among environmental, social and economic groups, North and South, about the benefits of sustainable agriculture.

Background

The Sustainable Agriculture Network (SAN) Secretariat has been developing since 2007 in collaboration with CATIE (*Centro Agronómico Tropical de Investigación y Enseñanza*) and technical support from experts of Grupo GAMMA (*Livestock and Environmental Management Program*) the initiatives that led to this version of the *Standard for Sustainable Cattle Production Systems*.

CATIE's *Grupo GAMMA* has been working on sustainable cattle production in Latin America through a holistic development approach since 1995 integrating production, environmental and social issues with the goal of reducing environmental degradation, increasing productivity, generating environmental services and evaluating different incentives for the adoption of best practices and silvopastoral systems (SSP) on farms.

From August 2009 to March 2010 a public consultation process was conducted according to the "*ISEAL Alliance Code of Good Practice for Setting Social and Environmental Standards*" (<http://www.isealalliance.org/>) with two 60-day rounds of on-line consultation, local workshops and trial audits.

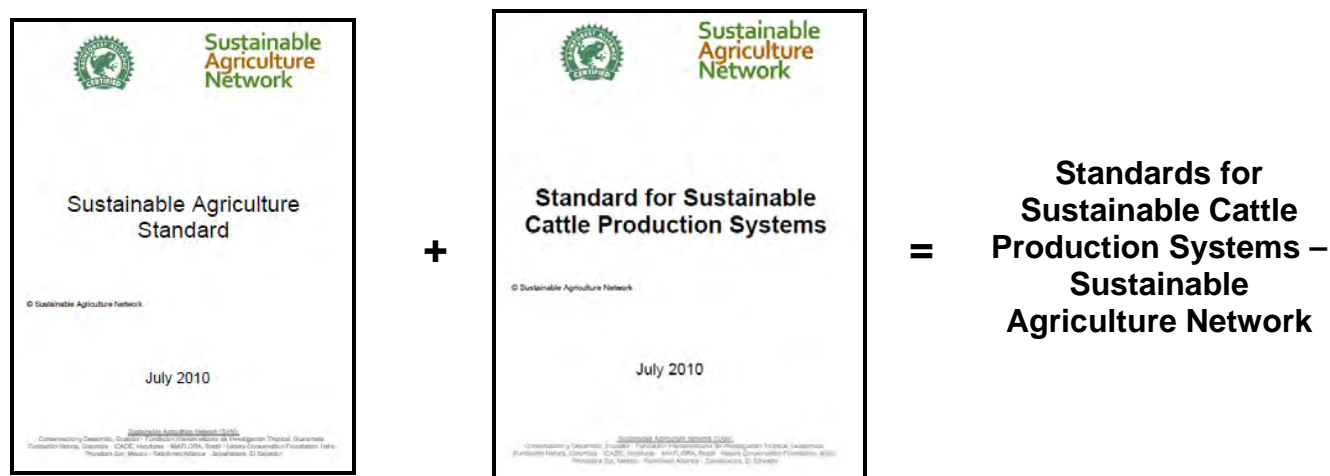
More than 130 organizations of 34 countries posted their comments for a total of 3,500 comments (Argentina, Australia, Botswana, Brazil, Chile, Colombia, Cook Islands, Costa Rica, El Salvador, France, Germany, Ghana, Guatemala, Honduras, India, Indonesia, Italy, Japan, Kenya, Mexico, Namibia, Netherlands, New Zealand, Nicaragua, Panama, Paraguay, Peru, Philippines, Sweden, Switzerland, Uganda, United Arab Emirates, United States and Uruguay). The majority of the participating stakeholders came from the environmental interest group (72%), followed by economic (20%) and social (8%) sectors. A distinct categorization showed the following participation statistics: producers (13%), NGOs (28%), academic & research (28%), industry and commerce (5%) and government (6%). Local consultation workshops were held in Brazil, Colombia, Costa Rica, Honduras and Nicaragua with the participation of producers and their organizations, representatives from universities and ministries, as well as environmental and animal welfare NGOs. Field tests were conducted in Australia, Brazil, Colombia, Costa Rica, Kenya and Nicaragua.

SAN's International Standards Committee of 12 voluntary expert advisers met during March and April 2010 to write the final draft of this standard and approved the current version in July 2010.

The development of this Standard for Sustainable Cattle Production Systems was supported by the USAID Environment and Labor Excellence for CAFTA-DR Program for conducting of workshops and field trials in Costa Rica and Nicaragua as well as an online consultation of the standard with international stakeholders and beneficiaries. Additionally, ZZurich Foundation covered related activities in South America, Africa and Asia. Initial funding for activities in 2007 was received by Citigroup Foundation.

Structure of the Standards for Sustainable Cattle Production Systems

The current document contains 36 additional criteria and five new principles. Seven of these criteria are critical criteria. Cattle farms seeking certification audits will be evaluated based on the 135 criteria (including 22 critical criteria) of both the *SAN - Sustainable Agriculture Standard* and *SAN - Standard for Sustainable Cattle Production Systems* (see Figure below).



Document structure of SAN Standards for Sustainable Cattle Production Systems

The *Sustainable Agriculture Standard* consists of ten principles, each of which is based on specific criteria that promote good environmental, labor and agronomic practices. The July 2010 version of the *SAN Sustainable Agriculture Standard* contains 99 criteria that are applicable for cattle farms also. 15 of these criteria are critical criteria. This version of the standard will be binding for audits by January 2011. All binding criteria are identified throughout the text by a two-level numbering system (**1.1, 1.2, etc.**) in **bold type**. The binding criteria proposed in this document follow the same numbering format.

In addition, the *Sustainable Agriculture Standard* will be interpreted for cattle farms through a specific guidance document. The *Standard for Sustainable Cattle Production Systems* will also be accompanied by a specific guidance document, which will provide more details for cattle farms about how to implement the SAN Standards for Sustainable Cattle Production Systems.

Scope

This document covers sustainable practices for cattle farming in Africa, Asia/Oceania and Latin America within all climatic regions where semi-confinement and free ranging of cattle is possible, including for example:

1. Tropical and subtropical moist broadleaf forests
2. Tropical and subtropical dry broadleaf forests
3. Tropical and subtropical coniferous forests
4. Tropical and subtropical grasslands, savannas and shrublands
5. Flooded grasslands and savannas
6. Mediterranean forests, woodlands and scrub

Standard for Sustainable Cattle Production Systems applies to the following species:

- Species of the family Bovidae, subfamily Bovinae, tribe Bovini - with emphasis on the species *Bos primigenius taurus*, *Bos p. indicus* and their cross breeds, as well as water buffalo (*Bubalus bubalis*).
- The certification will apply to beef, dairy or dual purpose cattle farms under free grazing and semi-confined production systems and covers the products beef, dairy products and leather.
- It does not apply to 100% confined or nomadic production systems.

SAN's *Farm Certification Policy* applies to cattle ranch audit processes also. The scope of the audits is the farm, which is defined as the production unit responsible for both animal breeding and supervision of transport providers. The processing operations outside the farm boundaries that process products coming from the certified farm are covered by the Chain of Custody system of the Rainforest Alliance.

SAN Scoring System

The following scoring system applies to cattle farms:

- General Compliance: In order to obtain and maintain certification, farms must comply with at least 50% of the applicable criteria of each of the 15 principles and at least 80% of the total applicable criteria of the *Sustainable Agriculture Standard* and the *Standard for Sustainable Cattle Production Systems*.
 - Critical Criteria: *Standard for Sustainable Cattle Production Systems – Sustainable Agriculture Network* contains seven critical criteria. The *Sustainable Agriculture Standard* additionally contains 15 critical criteria.
 - A farm must completely comply with a critical criterion in order for the farm to be certified or to maintain certification.
 - These are identified with the words “*Critical Criterion*” at the beginning of the text’s criterion.
 - Any farm not complying with a critical criterion will not be certified, or certification will be cancelled, even if all other certification requirements have been met.
- Not implementing any or some of the practices as defined by the criteria outlined in the *Sustainable Agriculture Standard* and *Standard for Sustainable Cattle Production Systems* will result in the assignment of a non-conformity determined on the basis of each individual criterion. There are two categories of non-conformities: 1) Major Non-Conformity, and 2) minor non-conformity. The level of compliance is as follows:
 1. Major Non-Conformity (MNC): indicates compliance with less than 50% of criterion requirements.
 2. minor non-conformity (mnc): indicates compliance with less than 100% of the of criterion requirements, but equal or more than 50%.

Sources

Ideas for this document have been adapted from the following sources:

CATIE. Environmental Livestock Management Program.

<http://web.catie.ac.cr/gamma/inicio.htm>

Food and Agriculture Organization of the United Nations. Animal Production and Health Division. <http://www.fao.org/ag/againfo/home/es/index.htm>

GLOBALG.A.P. The Global Partnership for Good Agricultural Practice.

<http://www.globalgap.org/>

The International Federation of Organic Agriculture Movements (IFOAM).

<http://www.ifoam.org/>

U.S. Food and Drug Administration. U.S. Department of Health and Human Services.

<http://www.fda.gov/>

World Organization for Animal Health (OIE). http://www.oie.int/esp/es_index.htm

Terms and Definitions

Refer also to Sustainable Agriculture Standard for additional terms and definitions.

- **Animal by-products:** Animal proteins including meat, blood and bone meal from mammals, as well as specified risk materials (SRM) that don't form part of animal feed. SRM are mammalian tissues that may contain the agent that causes Bovine Spongiform Encephalopathy (BSE), such as skull, brain, eyes, spinal cord, trigeminal ganglia, vertebral column, tonsils and distal ileum, small intestine; dorsal root ganglia of all cattle over 30 months of age; all material from nonambulatory disabled cattle; all material from cattle that are not inspected and passed for human consumption by regulatory authorities.
- **Animal welfare:** Everything related to animal comfort beyond the mere absence of disease, encompassing the complete state of physical well-being, It considers the state of the animal's body and mind and how well its nature fares in its environment, considering the animal's comfort, accommodation, treatment, care, nutrition, disease prevention, responsible care, management and humane euthanasia when necessary.
- **Aquatic ecosystem:** Lagoons, lakes, rivers, creeks, streams, swamps, estuaries, flooded savannahs, peat bogs and other natural water bodies.
- **Bio-infectious waste:** Biological waste, such as body fluids and tissues and any objects that may have been in contact with these, such as sharp objects like needles, blades and syringes.
- **Carbon footprint:** The overall amount of carbon dioxide (CO₂) and other greenhouse gas (GHG) emissions (e.g. methane, laughing gas, etc.) associated with a product or determined activity and indicated in CO₂ equivalent units.
- **Cattle:** Animals of the family Bovidae, genus *Bos*, especially those of the domesticated species *B. taurus* and *B. taurus indicus* (zebu) raised in many breeds for meat and dairy production. Cattle are raised in most of the subsistent crop production systems as farm power and in some countries for transport (e.g. India). In this SAN definition, domesticated buffalo breeds (*Bubalus bubalis*) are also included.
- **Cattle effluents:** Liquid waste (urine and manure) discharged from confinement structures.
- **Cattle farm:** Cattle raising area, system or operational unit with a defined land use and feeding plan. The unit subject to certification or audit.

- **Cloned animals:** Individuals born from the same cell; or with absolutely homogeneous cell lineage.
- **Colostrum:** Milk produced by the cow and sucked by the calf the first three days after birthing.
- **Competent professional:** An individual with demonstrated professional expertise, skills and experience in the specific area where advice is rendered.
- **Confinement:** Captivity of an animal in a limited or closed place within the framework of a productive system in which the animal spends more than 12 hours in a 24-hour-period confined in stables or areas where natural grazing cannot be performed.
- **Crossing:** Animal crossing through bodies of water is an activity led and accompanied by cowhands or trained staff to keep cattle from going off course and remaining in the water longer than necessary.
- **Death:** Irreversible loss of brain activity demonstrated by the loss of reflexes of the brain stem.
- **Emasculation:** Emasculation is the removal of the testicles (castration) of a male by surgical methods, Burdizzo clamp or elastrador.
- **Enteric Methane:** Methane produced as a result of the enteric fermentation carried out in the rumen of bovine and other ruminants.
- **Euthanasia:** Practice to finish with a life with no pain in order to avoid prolonged suffering.
- **Hot iron process:** Process to impede the growth of the bovine's horn's button (extreme that finishes in round tip) when beginning to develop. The hot iron dehorning is carried out in order to avoid that animals injure each other and to facilitate herd management.
- **Illness:** Functional or morphological alteration with clinical signs caused by biotic or abiotic agents that can be present in animals and vegetable and produces modifications in its morphology or physiology.
- **Irritating substance:** Substance that can cause physical discomfort and pain.
- **Live fence:** Line of closely spaced shrubs and tree species planted in such a way as to separate crop and pasture areas or to define property boundaries supporting barb or plain wire fencing. Live fences cannot consist of dead fence posts only.
- **Loading:** Action of loading animals onto a vehicle, ship or container from the facility they are in before loading.
- **Natural climax ecosystem:** Biological community of plants and animals which, through the process of ecological succession — the development of vegetation in an area over time — has reached a steady state (called mature or old-growth communities). This equilibrium occurs because the climax community is composed of species best adapted to average conditions in that area.
- **Pasture:** A type of grazing management unit enclosed and separated from other areas by fencing or other barriers and devoted to the production of forage for harvest primarily by grazing (Terminology for Grazing Lands and Grazing Animals. 1992. Journal of Production Agriculture 5:191-201).
- **Pest:** An organism which is detrimental to humans or human concerns causing economic damage to people's interests.

- **Physical Barriers:** Obstacles that impede or complicate the physical access to a place. Physical barriers can be live fences, dams, channels or any obstacle that impede access.
- **Predator:** Animal that hunts live animals for its diet or survival.
- **Program:** A planned course of action with a detailed and explicit set of directions for accomplishing a purpose.
- **Structures (Farm Structures):** Buildings on farms, such as corrals, stables, chutes, loaders, storages or any other built structure.
- **Tipping:** Cutting off of the pointed end of the horn.
- **Trained Personnel:** Individuals with acquired knowledge and skills to conduct specific tasks.
- **Transportation:** Procedure associated to the movement of animals for commercial purposes from one place to another by land (road and rail), sea or air.
- **Transgenic Organism:** A genetically modified organism (GMO) or genetically engineered organism (GEO), whose genetic material has been altered using genetic engineering techniques. These techniques are generally known as recombinant DNA technology. With this technology, DNA molecules from different sources are combined into one molecule to create a new set of genes. This DNA is then transferred into an organism, giving it modified or novel traits.
- **Travel:** Movement of a vehicle, ship or container to transfer animals from one place to another.
- **Unloading:** The procedure whereby animals are unloaded from a vehicle, ship or container.
- **Vulnerable area:** Area that is susceptible to the risk of infiltration, stoniness, or slope exceeding 40 %.
- **Water suitable for cattle consumption:** Drinkable water is of a pH of 6.5 to 8.5 and contains less than 4000 ppm (or mg/l) of Total Dissolved Solids, but less than 1,000 ppm of sulfate. Coliform counts must be below 50 per milliliter of water and chloride content of less than 1600 mg/l for dairy cattle and less than 4000 mg/l for beef cattle. Safe levels of potentially toxic nutrients and contaminants in water for livestock are for Aluminum 5.0 ppm, for Arsenic 0.2, Boron 5.0, Cadmium 0.05, Chromium 1.0, Cobalt 1.0, Copper 0.5, Fluorine 2.0, Lead 0.05, Mercury 0.01, Nickel 1.0, Nitrate-Nitrogen 100.0, Nitrite-Nitrogen 10.0, Selenium 0.05, Sulfate 1,000.0, Vanadium 0.1 and Zinc 25.0 respectively (based on: Greg Lardy and Charles Stoltenow, North Dakota State University 1999 / Greg Curran and Sarah Robson. 2007. Water for livestock: interpreting water quality tests. State of New South Wales through NSW Department of Primary Industries).
- **Wildlife:** Wildlife includes all non-domesticated plants, animals and other organisms. Wildlife can be found in all ecosystems. Deserts, rain forests, plains, and other areas including the most developed urban sites, all have distinct forms of wildlife.
- **Withdrawal period:** The amount of time during which an animal (or its products in the case of lactating cows) cannot be used for consumption. Animals cannot be sacrificed when they have been given medication. While the withdrawal period printed on the product label has not elapsed, the animal or its products must not be used for consumption.

STANDARD FOR SUSTAINABLE CATTLE PRODUCTION SYSTEMS

11. INTEGRATED CATTLE MANAGEMENT SYSTEM

Summary of the principle (not binding for audit purposes): Certified farms plan their land use respecting the conservation of ecosystems and vulnerable areas. Farms keep track of animals and have herd health and nutrition programs respecting SAN prohibited substances. The cattle feed is produced on farms and pests in farm's structures are controlled with Integrated Pest Management techniques.

- 11.1 **The farm must have a land use plan, which identifies and maps areas for:**
- a. **Cattle: pastures and other feedstock;**
 - b. **Ecosystem conservation and restoration;**
 - c. **Restricted and vulnerable areas;**
 - d. **Other land use.**
- 11.2 ***Critical Criterion.* The farm must demonstrate that:**
- a. **The cattle were born and raised on a SAN certified farm; or**
 - b. **It purchases cattle born and raised on non-certified farms that do not violate the following SAN criteria:**
 - i. **Destruction of a high value ecosystem after November 1, 2005 (critical criterion 2.2);**
 - ii. **Child labor (critical criterion 5.8);**
 - iii. **Forced labor (critical criterion 5.10);**
 - iv. **Discrimination (critical criterion 5.2);**
 - v. **Mistreatment of animals (critical criterion 13.3);**
 - c. **Cattle purchased from these non-certified farms must stay a minimum of six months on the certified farm.**
- 11.3 ***Critical Criterion.* The farm must implement an individual identification record system of its cattle from birth or arrival, until sale or death.**
- 11.4 ***Critical Criterion.* The presence of transgenic or cloned animals on certified farms is prohibited.**
- 11.5 **The farm must implement a feeding plan to ensure animal nutrition conforming with cattle's wellbeing, physiological and production requirements.**
- 11.6 **The farm must supply water suitable for cattle consumption in sufficient quantity and continuity. The water supply system must include:**
- a. **Measures to protect the water sources from damage and pollution;**
 - b. **Maintenance activities.**

- 11.7 *Critical Criterion.*** The following products must not be supplied to cattle:
- a. Products or by-products prohibited by national livestock feeding laws or regulations.
 - b. Any animal by-product originating from mammals or birds or animal excrement.
- 11.8** The farm must implement a cattle herd health program endorsed by veterinarians or authorized veterinary service providers or professionals, including vaccinations required by animal health regulatory authorities.
- 11.9 *Critical Criterion.*** All medications must be administered strictly according to label instructions, including withdrawal periods and expiration dates. Dosage variations are permitted only when approved by veterinarians or authorized veterinary service providers or professionals.
- 11.10 *Critical Criterion.*** The farm must only use cattle medications approved by and registered with the respective animal health regulatory authorities. Use of the following substances is prohibited:
- a. Substances for pasture management included in SAN's Prohibited Pesticide List;
 - b. Organochlorinated substances;
 - c. Anabolics to promote weight gain;
 - d. Hormones to stimulate higher production;
 - e. Antibiotics as preventive medication, except for surgery;
 - f. Clenbuterol, Diethylstilbestrol (DES), Dimetridazole, Glicopeptids, Ipronidazole;
 - g. Chloramphenicol, Fluoroquinolones, Furazolidone.
- 11.11** The farm must manage a reproduction program including records of reproduction periods and activities. The farm must avoid inbreeding within their reproduction herds.
- 11.12** The farm must implement an integrated pest control management program for its buildings and infrastructure.

12. SUSTAINABLE RANGE AND PASTURE MANAGEMENT

Summary of the principle (not binding for audit purposes): In tropical regions, sustainable pasture management is a key element to ensure maximum yield in cattle ranching operations. Pastures are selected and managed by the farm based on agro-ecological parameters, characteristics such as resistance to pests, nutritional value and production rates to ensure optimum growth, availability and avoid pasture degradation.

- 12.1 The farm must implement and document a range and pasture management plan.
- 12.2 Farms must produce most of their feed and fodder on farm, except when impossible due to atypical adverse conditions.
- 12.3 The farm must select forage species for sustainable cattle production that avoid those that negatively affect other ecosystems and include consideration of:
 - a. Agro-ecological conditions;
 - b. Production rates;
 - c. Nutritional value;
 - d. Resistance to pests or adverse climatic conditions.
- 12.4 The farm must prevent pasture degradation including consideration of:
 - a. Quantity and quality of vegetative cover;
 - b. Reducing soil erosion, particularly on crossing areas and steep slopes.
- 12.5 Grazing on slopes steeper than 30 degrees is permitted only where there are no signs of soil erosion generated by cattle. Otherwise, grazing pressure must be reduced.

13. ANIMAL WELFARE

Summary of the principle (not binding for audit purposes): The farm practices responsible animal husbandry through an animal welfare program including safe transportation. The farm and its handling facilities do not mistreat the cattle. Animals are provided with shelter, food and water in sufficient quantity and quality to ensure good health and productivity. Farms have adequate physical facilities for the responsible management of cattle.

- 13.1 The farm must document its animal welfare program including provision of space, prevention of disease, avoidance of hunger and thirst, and minimization of fear, stress and pain.
- 13.2 Cattle handling facilities must minimize animal stress and the risk of accidents, including:
 - a. Sufficient and clean space;
 - b. Isolation of injured or sick animals;
 - c. Natural ventilation;
 - d. Protection from sun and rain.
- 13.3 ***Critical Criterion.*** The farm must not mistreat animals, including:
 - a. Use of sharp objects;
 - b. Misuse of irritating substances, including potash for branding;
 - c. Moving animals in a pain inflicting way.

- 13.4 Animal identification techniques must minimize animal suffering and must be done by trained personnel.**
- 13.5 The farm must perform swift and accurate euthanasia on incurable animals.**
- 13.6 The farm must guarantee that newborns get fed with colostrum. Calves must consume milk until their development allows for their digestion of fodder or other food sources. Weaning practices must be unstressful.**
- 13.7 Castration must be done at the earliest age possible to minimize pain and only using surgical methods or emasculation. Animals castrated after two months of age must be treated with pain relief medication.**
- 13.8 Calves under five months of age may be dehorned by chemical or hot iron processes. If older, only tipping of horns is permitted.**
- 13.9 When artificial insemination is practiced and identification of cows in heat is required, detection methods must not negatively affect animal wellbeing.**
- 13.10 There must be an inspection by competent personnel before an animal is deemed fit to travel. Except for emergencies and medical treatment, animals with the following conditions must not be transported:**
 - a. Sick or severely injured animals, including those with open surgical wounds;**
 - b. Females separated from their offspring less than 48 hours after birth;**
 - c. Cows in the last month of pregnancy.**
- 13.11 The animal loading and unloading structures must ensure animal safety.**
- 13.12 Farm transport vehicles and procedures and those contracted externally must ensure animal safety and wellbeing.**

14. REDUCING THE CARBON FOOTPRINT

Summary of the principle (not binding for audit purposes): Certified cattle ranching operations seek to reduce greenhouse gas emissions through improved diet, optimized productivity, manure and urine processing, and agroforestry systems.

- 14.1 The digestibility of feed and fodder must be improved and feeding practices must be changed to reduce methane emissions from cattle's enteric fermentation.**

- 14.2 Cattle effluents produced in farm installations must be controlled, contained and treated to reduce methane emissions.**
- 14.3 Where a natural climax ecosystem has a tree cover of less than 20%, the farm must have land set aside for conservation or recovery of natural ecosystems that equals no less than 20% of its cattle production area. In all other ecosystems, the farm may meet this requirement by providing a 20% tree canopy cover on all its pastures.**

15. ADDITIONAL ENVIRONMENTAL REQUIREMENTS FOR CATTLE FARMS

Summary of the principle (not binding for audit purposes): Certified cattle farms minimize the access of cattle to ecosystems and establish a balance between the presence of wildlife and cattle. Farms dispose hazardous waste without negative impacts on human health and the environment.

- 15.1 Cattle's negative impact on aquatic ecosystems must be effectively reduced by ensuring that cattle receive adequate water and feed within pastures and that there are physical barriers between cattle and aquatic ecosystems. Routes where cattle cross aquatic ecosystems must be selected and managed in ways that minimize damage.**
- 15.2 The risk of predators attacking the cattle must be minimized through the proper placement of cattle and collaboration with local environmental authorities or specialist groups.**
- 15.3 Medications must be stored safely to minimize risks to human health and the environment and in compliance with original label instructions.**
- 15.4 The farm must lawfully treat and discharge its bio-infectious waste through labeling, physical separation in identified sites and restricted access. It may choose to deliver it to an authorized recollection system. The farm must treat dead animals by prompt burial or incineration to eliminate the risk of contamination.**