



Principles & Practices for Sustainable Green Coffee Production

SAI Platform Coffee Working Group





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Coffee farmers aim to ensure that the safety and quality of the green coffee which they produce will satisfy the highest expectations of the food industry and consumers. In addition, on-farm practices should ensure that green coffee is produced under sustainable economic, social and environmental conditions.

To that aim, **this document provides a set of principles and practices for sustainable green coffee production for the mainstream market in all regions of the world. It is meant to be revised regularly on the basis of practical experience. Furthermore, it is meant to be completed with specific guidelines and practical tools based on local innovations and adapted to local prevailing conditions (according to the region and its climates, ecological variables, farming systems, cultures etc) as well as respecting national laws and regulations.**

The **Basic framework** looks as follows:

1. **Item.** An item refers to an *object of management*.
2. **Principles** *identify the objective(s) of what should be accomplished* with regard to an item.
3. **Recommended Practices** provide a *set of identified non-exclusive tools and measures* that can be implemented to achieve the objective(s) of a principle.

It is important to note that good management of a farming system constitutes the grassroots of the system's economic, environmental and social sustainability. Therefore, it first pays attention to planning and managing well the overall farm system itself. This document's scope of management action is limited to what farmers or groups of farmers themselves can achieve.

Farmers shall have taken into consideration applying the principles and practices to the whole farm system within a philosophy of continuous improvement, starting with the crop in scope. The following headings and bullets summarise the sections and objectives when applied to a whole farm system. The individual sections in the document contain greater detail of practices.

Sustainable Farming Systems (chapter 1)

- Are varieties suited to the local climate, soil, pests & diseases being grown?
- Nutrients – how is crop nutrition calculated? How are nutrients stored considering environmental/safety risks?
- Pest management – Are all key pests known? Is IPM applied? Are pesticides stored safely & securely?

Economic sustainability (chapter 2)

- Is yield increase possible? Is food safety and food quality understood? Is the farm system diverse enough? Is there access to market information? Is group use of equipment. Or group purchasing an option?

Social Sustainability (chapter 3)

- Social & Human capital – including farm workers – Are workers treated fairly? Is training a priority?
- Local community /economy - Is there a positive impact in the local community from the farm system?

Environmental sustainability (chapter 4)

- Soil fertility/soil loss – how is soil fertility maintained, is soil erosion an issue?
- Water – Is total water use for irrigation known? How is irrigation amount calculated? Is the water source for irrigation sustainable? Are the impacts of fertilisers and pesticides considered?
- Biodiversity – Are there natural habitats on farm? Are rare species of plant/animal threatened by growing the crop?
- Energy – Are the major energy inputs known? How can their impact on climate change be reduced?
- Waste – Are the principles reduce, reuse, recycle, dispose understood? Are pesticides/fertilisers disposed of safely?

1. Sustainable Farming System

Item	Principles	Recommended Practices
1.1 Site selection and management	SF1. When planning and managing the farm activities, be aware of the site history (previous land use).	<ul style="list-style-type: none"> When planning a new coffee plantation area, the production site should be checked against any pollution risk¹ and protected against those through adequate measures when necessary.
1.1 Site selection and management	SF2. When planning and managing the farm activities, properly take into account the site specificities (such as topography, neighboring activities, ecological and social conditions).	<ul style="list-style-type: none"> Grow coffee in areas where you have permission to do it. Be aware of your parcel/farm's characteristics (including topography, soil type) and based on these, chose the best location for coffee production. Look to know the surroundings of your farm (e.g. presence of a stream 25 meters away that one should protect as much as possible). Do not expand coffee plantations in protected areas nor in any part of intact natural forests. Do not use open fire in ecological areas like buffer zones and natural forests.
1.2 Sustainability management system	SF3. Maintain a functioning sustainability system on the farm, geared towards continuous improvement.	<ul style="list-style-type: none"> If applicable, clearly define responsibilities within the farm's management system. Make sure that people working on the farm are aware of the relevance of their co-operation and responsibility in the economic, social and environmental sustainability of the farm.
1.2 Sustainability management system	SF4. Record reliable information on farm inputs and techniques used on the farm.	<ul style="list-style-type: none"> Maintain financial accounts. Maintain records on the application of agrochemical inputs providing details of date, product and amount used. Records belong to the producers and shall be disclosed only with their approval.
1.2 Sustainability management system	SF5. Take the opportunity of accessing valuable information and support services to continuously improve the farm overall sustainability.	<p>Individual farmers or farmers organised in groups, if this is easier, should:</p> <ul style="list-style-type: none"> Participate in processes for further adopting production techniques. Look to get regular access to improved green coffee techniques. Strive for clear rules and regulations - on land tenure etc - and clearly define the roles and duties of sector participants enforced by the government.
1.3 Planting material	SF6. Consider the farm's structure & local situation when choosing planting material.	<ul style="list-style-type: none"> Be aware of the origin of the material that is planted – and give preference to one that has been tested, certified and released by an accredited institution. Robusta: cuttings grown from elite clones should be preferred over plantlets grown from clonal seeds. Raising of plants from not-certified seeds should be avoided.

¹ Pollution risk could include industrial activities (e.g. domestic incineration plant releasing dioxins, surface processing plants releasing solvents or heavy metal) or an environment susceptible to air bone pollution (e.g. near a road with heavy traffic emissions of lead and hydrocarbons), soil pollution (former industrial site or site where dumping of toxic substances has taken place) or the proliferation of pests (e.g. open municipal rubbish tip).

		<ul style="list-style-type: none"> ▪ Arabica: Planting material should be selected according to its potentials in yields and organoleptic profile. It should be grown from seeds obtained from known sources where certified seeds should be preferred. ▪ Give preference to varieties that are adapted to local conditions and natural habitats, planted in homogenous parcels. ▪ In case genetically modified coffee trees would become available, public acceptance of green coffee produced from them would be prerequisites before any introduction. They could be cultivated if they present demonstrated advantages for consumers, the environment and farmers and are sustainable along the lines of this document. Genetically modified coffee trees should be used only in accordance with (inter)national laws and regulations,. Green coffee originated from these potentially genetically modified trees should be segregated and sold with proper label and information to the buyer. A strict control of genetic origin of coffee planting material should be used.
1.4 Integrated crop management	SF7. Use rotation practices for annual crops (others than coffee) as an important tool of integrated crop management and as a diversified source of income for the farm.	<ul style="list-style-type: none"> ▪ Rotation of crops other than coffee on the farm shall be considered. ▪ Whether rotation is or is not possible farmers shall record on a regular basis suitable indicators of soil health these could be for example: stable or increasing yield, stable or reducing fertiliser/pesticide inputs, stable or increasing organic matter levels, stable soil nutrient levels. ▪ The planning of the crop shall take into account the previous crops protection against pests and diseases. ▪ Farmers should use diverse crop rotations and seek to employ these whenever possible to maintain soil condition, minimise risk of nitrate leaching and reduce pest and disease development to maximise plant health as well as to spread the farm income streams.
1.4 Integrated crop management	SF8. Use specific cultivation techniques to maintain or improve the physical and biological characteristics of the soil as well as to reduce mineralization and leaching of nutriments.	<ul style="list-style-type: none"> ▪ If soil conditions allow, chopping and incorporation of crop residues as well as organic manure or compost shall be used to help improve soil fertility by increasing organic matter content, improving nutrient and water retention and reducing erosion.
1.4 Integrated crop management	SF9. Balance fertilization in order to provide the appropriate allowance of nutrients to the crops, taking into account release from other sources such as organic manures etc.	<ul style="list-style-type: none"> ▪ Use agricultural inputs in a precise manner, based on the careful evaluation of all relevant factors, including if possible soil analysis. <p>If possible, a cropping/nutrient management plan should be developed, considering the following:</p> <ul style="list-style-type: none"> ▪ The nutritional requirements of the crop to deliver the quality and yield for customer requirement. ▪ Soil types mapped for the farm so as to be used to plan nutrient requirements for rotations. ▪ Soil chemical, biological composition analysis – to ensure nutrient availability is understood as effected by pH, organic matter or clay/sand content. ▪ Application rates of either mineral or organic fertilisers applied in accordance with national and

		<p>local legislation (e.g. nitrate sensitive areas) and meeting the needs of the crop as well as maintaining soil fertility.</p> <ul style="list-style-type: none"> ▪ A simple nutrient input/output balance using best available information, considering nutrient inputs, crop returned to the soil and crop off-take with the harvested part of the crop. ▪ Planting of catch crops to capture nitrates.
1.4 Integrated crop management	SF10. Avoid using sludge. If sludge is used though, manage it very carefully on the basis of proper risk assessment.	<ul style="list-style-type: none"> ▪ Untreated sewage sludge shall not be applied to land used to grow crops. ▪ Any use of treated sewage sludge on land destined for agricultural use shall be very carefully managed in accordance with national and local legislation. ▪ Farmers shall check whether their customers allow the use of treated sewage sludge.
1.4 Integrated crop management	SF11. Protect crops against pest, diseases and weeds with as little as possible reliance on pesticides. In particular, strive to use Integrated Pest Management (IPM) systems.	<ul style="list-style-type: none"> ▪ Realise crop protection through an Integrated Pest Management (IPM) approach that puts the emphasis on mechanical and biological means of control. ▪ Create favourable conditions for natural enemies of frequent pests and diseases of coffee plants. ▪ If the use of agrochemicals is necessary, use them in a manner that is the least toxic possible. ▪ Don't use and store on the farm any agricultural inputs that are banned for agricultural use in the country of operation or by international agreement.
1.4 Integrated crop management	SF12. Chose, handle and store agricultural inputs with great precaution as per label instructions.	<ul style="list-style-type: none"> ▪ Store any toxic agricultural input separately on the farm. ▪ Take effective measures to protect health and safety of people on the farm who handle or are exposed to agrochemicals.

2. Economic Sustainability

Item	Principles	Recommended Practices
2.1 Safety, quality and transparency	EC1. Ensure the safety, quality and transparency of the products throughout the production methods and storage facilities.	<ul style="list-style-type: none"> ▪ Harvest cherries at the peak of maturity; cherries picked from the ground shall not be mixed with properly harvested ripe cherries. Make sure that cherries are processed as soon as possible after harvesting, at least at the same day. ▪ Dry coffee cherries timely and properly. When drying coffee in the sun it shall be put on concrete patios, drying tables, tarpaulins or mats. Alternatively it shall be dried artificially by use of proper equipment. ▪ Avoid re-wetting of dried coffee cherries by rain, dew or other kind of humidity. ▪ Store coffee separately from chemical products or other substances posing potential threat to human health or contamination risks. Avoid contact of coffee with smoke. ▪ Make use of well-maintained facilities for green coffee processing and keep them clean.

		<ul style="list-style-type: none"> ▪ Store coffee in a clean and ventilated environment. ▪ When using bags make sure that these are dry, clean and sound. Clean old bags thoroughly before using them for storing green coffee. ▪ Use containers for green coffee transport/export that are in adequate conditions. ▪ Make sure that staff involved in harvesting and post harvest treatment of green coffee, if applicable, is properly trained in aspects relevant to food safety and coffee quality at their level of action. ▪ Avoid uneven or high moisture contents of green coffee when drying. ▪ Keep green coffee of different quality separate on the farm as well as during subsequent stages of coffee processing, storing and transport. ▪ Remove defects and foreign matters as much as possible from green coffee.
2.2 Financial stability	EC2. Seek to achieve long-term stability of the farm income for proper investments and workforce payment.	<ul style="list-style-type: none"> ▪ Individual farmers or farmers organised in groups, if this is easier, should: ▪ Look to get access to short and long-term credit provided by reliable sources in adequate conditions. ▪ In view of price volatility look to make use of instruments and tools allowing an improved management of price risk (e.g. group marketing, warehousing). ▪ Try to build up financial reserves in order to avoid being obliged to sell production for urgent need of cash. ▪ Apply sound financial management to assure liquidity during production, harvesting, treatment and trade of coffee. This relates in particular to larger farms and cooperatives. ▪ If possible, optimise timing of coffee deliveries and select efficient trading channels in order to be able to sell when conditions are favourable.
2.3 Market	EC3. Seek to get organised and to select efficient trading channels in order to optimize benefits.	<ul style="list-style-type: none"> ▪ Get organised in farmers' groups such as associations or cooperatives, if indicated, in order to accumulate volumes, get better access to support services and improve the position in bargaining prices. ▪ Try to develop long-term trading relationships with buyers.
2.4 Diversification	EC4. Seek to diversify the farm into other farming activities or/and possible non-farming activities if appropriate, in order to increase farm income and to reduce risk linked to market price fluctuations.	<ul style="list-style-type: none"> ▪ Look to diversify the sources of income by growing alternative commodities on the farm, either for on-farm consumption or to be sold externally, as well as through the development of non-farming activities.

3. Social Sustainability

It is recognized that the majority of the farms are family run and family labour helping on the farm is often an essential component for the sustainability of the farm. In these circumstances, some of the principles might not fully apply. In any case, farms should comply with their national labour legislation, and if none exists, refer to the ILO conventions.

Item	Principles	Recommended Practices
3.1 Working conditions	SOC1. Provide a cordial and pleasant working environment, free of any type of discrimination ² and free of disciplinary practices ³ .	<ul style="list-style-type: none"> ▪ Discrimination on the basis of ethnic groups, national origin, religion, disability, gender, sexual orientation, worker organisations or political affiliation with regard to contracts, compensation, training, promotion, dismissal or retirement of its personnel should be strictly prevented. ▪ Same rights and obligations should be conceded to women and men. ▪ Employees and workers should not be asked to leave deposits or identity cards behind. ▪ Employees and workers should have the right to freely practice their religion or fulfil their needs relating to race, national origin, religion, disability, gender, sexual orientation, membership in worker organisations or political affiliation. ▪ Behaviour, including gestures, language, and physical contact that is of a sexually abusive, coercive and threatening nature must be prevented. ▪ Decent working conditions and dignity should be provided to all workers regardless of their employment status.
3.1 Working conditions	SOC2. Farm workers and their families (if applicable) have access to suitable sanitary, housing and transportation infrastructures and services.	<ul style="list-style-type: none"> ▪ Workers should be encouraged to know their status and, consequently, their respective rights and obligations under law. ▪ Temporary workers should be managed in a way that is as close as possible with those applied to permanent employees. ▪ Working contracts or other appropriate working relationships should be established, in accordance with national law.
3.1 Working conditions	SOC3. Provide recognised employment relationship to workers based on	<ul style="list-style-type: none"> ▪ Daily working hours for registered employees should not exceed the maximum number of hours set by national regulations.

² as per ILO Convention 111 on Discrimination and ILO Convention 100 on Equal Remuneration

³ as per the Universal Declaration of Human Rights

	national law and practice.	<ul style="list-style-type: none"> ▪ Registered employees should be conceded for every six working days at least one day of rest, covered by their salary. ▪ Overtime work shall be demanded only in exceptional circumstances over a short-term period due to the business cycle, notably during the harvest season. Overtime should be compensated adequately. ▪ Registered employees who have worked at the farm for more than one year should have a period of paid leave.
3.1 Working conditions	SOC4. Ensure that workers' working hours comply with national and local laws. Overtime performed during peak season is acceptable but duly compensated.	<ul style="list-style-type: none"> ▪ Wages and benefits of permanent employees should meet or exceed the minimum required under local and national laws. ▪ Workers, especially temporary ones, should be provided with clear information about the payment that they receive for their work. ▪ All employees and workers should receive remuneration in accordance with their tasks and abilities while having equal work opportunities. ▪ Employees and workers should be able to receive wages in legal tender/ currency. Compensation with merchandise, vouchers, tokens or any other symbolic means may be agreed upon with the employee or worker without creating any form of dependency. ▪ Deductions should not be made from wages for disciplinary purposes.
3.1 Working conditions	SOC5. Ensure that wages and benefits received by workers comply as a minimum with local and national legislation.	<ul style="list-style-type: none"> ▪ Actions should be promoted on the farm, which help prevent accidents and injuries of farm employees and workers during their duties. This equally refers to accidents and injuries of farm employees and workers as well as their families when living on the farm. ▪ Access should be guaranteed to hygienic bathrooms and potable water for all employees and workers. ▪ Activities should be promoted for the prevention of diseases, like vaccination, orientation in aspects of personal hygiene.
3.1 Working conditions	SOC6. Ensure that working conditions comply with applicable laws as well as international Conventions and Recommendations related to occupational health and safety ⁴ .	<ul style="list-style-type: none"> ▪ Forced labour of any type must neither be used nor supported.

⁴ as per the ILO Encyclopaedia on Health and Safety

3.1 Working conditions	SOC7. Do not use any form of forced labour ⁵ .	<ul style="list-style-type: none"> ▪ Employees and (family) workers should have the right to form and join associations of their own choice without previous authorisation. ▪ Employees and workers should be entitled to collective bargaining. ▪ Labour organisations should be allowed to conduct their activities if employees and workers wish so. ▪ Workers' representatives should not be discriminated against.
3.1 Working conditions	SOC8. Allow workers to form and join unions of their choice and to bargain collectively ⁶ .	<ul style="list-style-type: none"> ▪ Child labour shall neither be used nor supported. ▪ For cultural and socio-economic reasons, children under the minimum working age referred by national laws are allowed to help their parents with dairy production. It shall be ensured that they are not forced to work, do not work long hours and are not exposed to hazardous or heavy work. ▪ The individual situation of the children involved should be considered in relation to all actions implemented in order to eliminate child labour. All measures taken shall be designed to actually improve the living conditions of the individual child. ▪ Young workers under the age of 18 should not be exposed to situations in the workplace that are hazardous, unsafe or unhealthy, even more so than any other workers.
3.1 Working conditions	SOC9. Do not use child labour ⁷ .	<ul style="list-style-type: none"> ▪ Children below the work minimum age referred by national laws, living permanently or temporarily on the farm, should participate in educational programmes comparable with the formal school system. ▪ Education programmes for workers' children who are at school age should be promoted.
3.1 Working conditions	SOC10. Seek to assure children access to adequate education as well as to support the education of farm employees and workers.	<ul style="list-style-type: none"> ▪ Make sure all people are sufficiently trained to carry out their tasks and their responsibility shall be well determined. ▪ Choose competent sources for advice and interventions. ▪ Knowledge and awareness of charters for good dairy practice and guidelines should be promoted.
3.2 Training	SOC11. Support the training of farm employees and workers on all aspects of sustainable agricultural practices.	<ul style="list-style-type: none"> ▪ Individual farmers or farmers organised in groups, if this is easier, should: ▪ If applicable, provide permanent employees with basic training on the following items: environmental protection; human health and hygiene; correct handling and use of substances or materials that are hazardous or harmful for human health; etc. ▪ Promote the orientation of seasonal workers on issues concerning health, hygiene and protection of the environment.

⁵ as per ILO Convention 29 on forced labour and ILO Convention 105 on the abolition of forced

⁶ as per ILO Convention 87 on Freedom of Association and Protection of the Right to Organize and ILO Convention 98 on the Right to Organize and Collective Bargaining

⁷ as per ILO Convention 138 and its accompanying Recommendation 146 on Child Labour as well as ILO Convention 182 and its accompanying Convention 190 on the worst forms of child labour

3.3 Local economy	SOC12. Contribute to provide economic benefits to local communities.	<ul style="list-style-type: none"> ▪ The farmer as a part of the local community is encouraged to contribute as far as possible to the local economy and rural development.
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4. Environmental Sustainability

Item	Principles	Recommended Practices
4.1 Soil	ENV1. Maintain good soil fertility and prevent damage to the environment, soil erosion and pollution.	<ul style="list-style-type: none"> ▪ Return non-harmful organic material from the farm to the field, if not used for any specific activity, either directly or after processing (compost etc). ▪ Try to have a vegetative cover all year long (e.g. inter-cropping, nitrogen binding leguminous, mulching etc). ▪ Look to establish farming systems of mixed crop species. ▪ Prevent erosion as well as the deterioration of the soil by biological and mechanical control (e.g. use of terraces, erosion barriers, rain basins etc). ▪ If possible and economically viable, fertilisation should be done – according to leaf and soil analysis as well as yield expectations.
4.2 Water	ENV2. Properly manage and optimise water use.	<ul style="list-style-type: none"> ▪ Where applicable, minimise the volume of water used to irrigate plantations through proper techniques. ▪ If applicable, reduce the volume of water used in wet processing of coffee via the application of efficient technologies and recycling of water.
4.2 Water	ENV3. Properly manage the use of inputs and release of wastewater in surrounding water sources.	<ul style="list-style-type: none"> ▪ Prevent the pollution of waterways on or near the farm and minimise it, where unavoidable. ▪ Avoid the discharge of untreated farm activity effluents into natural superficial waters. ▪ Properly manage other existing or potential sources of pollution, such as sewage, to prevent the pollution of superficial and underground water. ▪ Plant, maintain or restore buffer zones adjacent to waterways, preferably with native species.
4.3 Biodiversity	ENV4. Maintain or enhance biological diversity on the farm.	<ul style="list-style-type: none"> ▪ Protect threatened or endangered species and habitats, e.g. through adequate measures that prevent hunting and collection of threatened flora and fauna. ▪ Protect areas of high ecological value located on and around the farm, such as streams, wetlands and forests, via the minimisation of human intervention and the implementation of measures for the conservation. Such areas need connecting in order to create biological corridors that enable the migration and the exchange of species. ▪ Promote the restoration of vegetation in degraded/abandoned areas that have been prone to loss of fertility or soil erosion, preferably by using native species. ▪ Contribute to the creation of a diverse landscape that serves as wildlife habitat and as a migration

		<p>corridor for birds, other animals and insects. Strictly preserve primary forests.</p> <ul style="list-style-type: none"> ▪ Make use of shade trees of different, preferably native species that are compatible with coffee production. Alternatively establish or maintain significant forest areas as ecological compensation zones.
4.4 Air	ENV5. Preserve or improve the air quality.	<ul style="list-style-type: none"> ▪ Odours emanating from the green coffee production should be minimized.
4.5 Climate change	ENV6. Minimize adverse impacts on the global environment and climate change.	<ul style="list-style-type: none"> ▪ On the basis of established mechanisms and available inputs, estimate and monitor greenhouse gas emissions (like methane, nitrous oxide, carbon dioxide) of the dairy herd and of manure storage as well as from other on-farm practices and off-farm inputs. ▪ Mitigate and minimise these greenhouse gas emissions.
4.6 Energy	ENV7. Properly chose and use energy resources.	<ul style="list-style-type: none"> ▪ Strive to reduce the use of non-renewable sources of energy and increase the use of renewable sources of energy. ▪ Use firewood only if it is unavoidable and comes from well-managed sources like shade trees, specific (fast growing) trees planted for this purpose or reforested areas, or from pruning residues only. Don't use firewood from natural forests.
4.7 Waste	ENV8. Use crop by-products as much as possible on the farm.	<ul style="list-style-type: none"> ▪ The farm shall continuously reduce, reuse and recycle the quantity of waste and by-products of the harvest and processing that it generates. ▪ In particular, organic crop debris may be composted on the farm and reused for soil conditioning where there is no risk of disease carry-over.
4.7 Waste	ENV9. Properly handle, and if possible recycle waste generated by the farm.	<ul style="list-style-type: none"> ▪ Continuously reduce, reuse and recycle the quantity of waste and by-products of the harvest and processing (e.g. coffee pulp, parchment skin) that are produced on the farm. ▪ Assure availability and functioning of septic tanks or other alternatives and appropriate means for the treatment of human excrements. ▪ Don't burn inorganic waste that is not recyclable, including chemical and toxic substances. Where applicable, hand them over to collection centres where they will be disposed off appropriately.