Coffee Implementation Guide

for smallholders in Africa

Rainforest Alliance

Based on the Sustainable Agriculture Standard of the Sustainable Agriculture Network (SAN)

RAINFOREST ALLIANCE CERTIFIED

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Author:
Reiko Enomoto, Training Manager, Sustainable Agriculture Division, Rainforest Alliance

Technical contribution:
Winnie Mwaniki, Consulting East Africa Regional Manager, Rainforest Alliance
Marc Monsarrat, Senior Manager (East Africa & South Asia), Rainforest Alliance
Salesio Mbogo, Consulting Kenya National Coordinator, Rainforest Alliance
Jean Marie Irakabaho, Consulting Rwanda National Coordinator, Rainforest Alliance
Dawson Njeru Njiru, Training Manager, Kenya Coffee Research Foundation (CRF)
Simon Martin Mvuyekure, Head of Coffee Program, Rwanda Agriculture Board (RAB)
Jean Marie Sabato, Certification Project Coordinator, Coopac Ltd.
Emmanuel Rwakagara Nzungize, President, Coopac Ltd.
Gilbert Gatali, Managing Director, KZ Noir Karengera Coffee Ltd.
Célestin M. Gatarayiha, Head of Coffee Division, National Agricultural Export Development Board (NAEB)
Pierre Claver Gahakwa, Director of Certification, National Agricultural Export Development Board (NAEB)
Mario Serracin, Rogers Family Company

Photography:
Reiko Enomoto, Rainforest Alliance
Washington Ndwiga, Partner Africa Kenya

** I would like to express my special thanks to the farmers who generously help me set up various demonstrations at their farms for me to take the photos for this Guide.*

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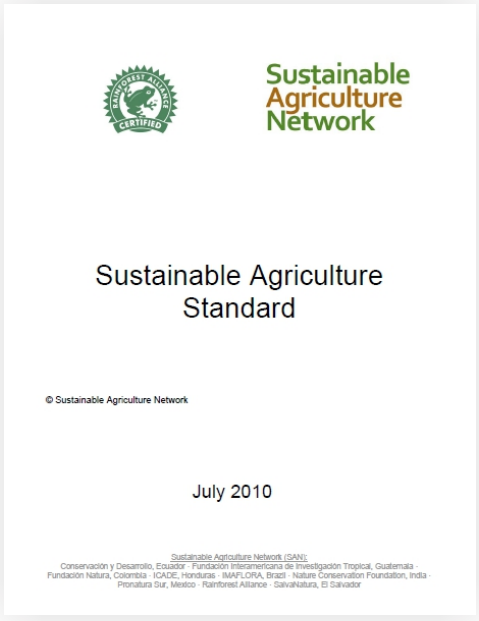
Introduction
towards sustainable agriculture

Coffee is one of the most important export crops in Africa, and is a source of income for countless smallholder farmers. However, if unsustainable practices are allowed to continue, they will contaminate the environment, exhaust the water or soil and damage the health of the farmers. Coffee production cannot be sustained in the long run in such a manner.

In order to ensure that the coffee production continues long into the future, all stakeholders must work together to promote sustainable farming practices and to eliminate unsustainable practices at the smallholder level. It is important to ensure that each producer takes the responsibility to produce coffee in a sustainable way.



How can you, as a smallholder, produce coffee in a sustainable way? This *"Coffee Implementation Guide"* shows simple and practical implementation techniques of sustainable agriculture in smallholder coffee farms in African countries.

The content of this guide is based on the ***"Sustainable Agriculture Standard"*** published in July 2010 by the Sustainable Agriculture Network. This standard covers all the important areas of sustainability. This is the basic document that defines what producers need to comply with, if they opt for the Rainforest Alliance certification.

Conditions for certification

In order to achieve Rainforest Alliance Certification, following are the minimum conditions.

1. Comply with **80%** of all the criteria. *(There are 99 criteria in total.)*
2. Comply with **50%** of each principle. *(There are 10 principles.)*
3. Comply with **all** the critical criteria. *(There are 15 critical criteria.)*

In the case of smallholders, many criteria are not applicable. In this guide, we focus on the criteria that are applicable and important for smallholder farms. Therefore, in the case of big plantations, coffee washing stations or group administrators, please look at the original standard to understand the requirements.

Content of this guide

This guide consists of the following 8 chapters, each of which corresponds to a principle of the standard.

Chapter 1

Integrated Crop Management

Use of pesticide is not the only way to control pests and diseases. When coffee trees are well-taken care of and are strong and healthy, they cannot be easily attacked by pests and diseases. When they are still affected by a pest or a disease, there are ways to control them without using chemicals. In this section, you learn about how to prevent and manage pests and diseases in a sustainable way.

Application of compost

Good crop nutrition is the basis of strong healthy trees, which are able to resist pests and diseases. The best way to provide nutrients to your coffee is the application of compost. You should apply around 5kg of compost per year to a young tree, and up to 10kg of compost per year to a mature tree.

7-10kg of compost per tree

Fresh pulp could be obtained from a coffee washing station. You can compost it with other organic residues to use on your farm.

When you apply compost, apply it around the stem, but not at the stem base. Applying it directly at the stem does not allow the tree to absorb the nutrients efficiently. You need to apply compost below the tree canopy where feeder roots are located.

After applying compost, you need make sure that you cover it with soil or mulch. If it is exposed to the air or to the rain, nutrients would be lost by evaporation or could be washed away by rain. By covering the compost, you can ensure that the nutrients will be absorbed by the tree.

Soil analysis

In order to define the optimum quantity of fertilizer, it is recommended to conduct soil analysis or leaf analysis to find out what nutrients are lacking. Contact your agronomist or group administrator for help on collection and analysis of soil samples.

Once you receive the soil analysis result from the laboratory, you can find out which nutrients are either excessive or lacking in the soil, and follow recommendations in the report.

LABORATORY ANALYSIS AND RECOMMENDATIONS				
TEST	RESULTS	OPTIMUM RANGE	RATION	RECOMMENDATION
1. Soil Type	Clay based	N/A	N/A	N/A
2. Ph (Acid)	5.2	6.5 - 7.0	Low	Apply lime
3. Soluble Salts	10	10 - 20	Normal	N/A
4. Nitrates	12	10 - 20	Normal	Increase nitrogen 2 lbs.
5. Ammonium	4	5 - 10	Normal	N/A
6. Calcium	35	150 - 200	Low	Apply Calcium 50/1000
7. Phosphates	7	2 - 5	Normal	N/A
8. Potassium	4	5 - 25	Low	Increase potassium
9. Magnesium	10	10 - 20	Normal	N/A
10. Iron	7	.5 - .5	Low	Apply Iron times a season
11. Manganese 12. Sulfates	.25 .35	.5 -.5 1 - 100	Low Normal	Increase Trace Elements N/A
13. Chlorides	.52	0 - 30	Excessive	Salt De-Tox 25 lbs/M
14. Organic Matter Content	.2.5	7 - 10%+	Low	Apply soil booster 2-3 times a season. 10 lbs/M +Sea Kelp Humic acid at 8 oz/M
A. Coring Depth B. Thatch Layer	1/4" .1.7"	7" - 10" + N/A	N/A N/A	Apply soil conditioners 2-3 times a season 6-8 oz/M OR 25 LBS/M

An example of a soil analysis result. The nutrients indicated in red squares are the ones that are either lacking or excessive in the soil.

Application of chemical fertilizer

***Note:** If you are an organic farmer, this section does not apply.*

If you apply chemical fertilizer, measure the quantity carefully to ensure that you are applying exactly the intended dose. You can use a simple tool, such as a cooking oil container or margarine container to measure the recommended quantity.

Application of fertilizer below the tree canopy

Covering the fertilizer with mulch

Pruning

Pruning is essential to keep your crop healthy and productive. When the dead branches are still on the trees, they host pests and diseases, which would spread to the healthy branches. Old branches that do not yield any fruit only waste nutrients from the tree and make it weaker. Dead and unproductive branches need to be removed.

The suckers and secondary branches also waste nutrients from the tree and make the canopy too dense, which creates a favorable environment for pests and diseases. Pruning of these shoots and secondary branches helps to improve aeration within the canopy, and improve sunlight penetration, which is important for flowering.

Removing a dead branch

Removing secondary branches

Removing suckers on the main stem

Removing suckers from the main stem

Removal of infested cherries

Coffee berry borer infested cherries

When you find coffee berry borer infested cherries, you should remove them and bury them in a deep hole. If you leave them on trees, the coffee berry borer would continue to spread and affect your coffee.

Burying the infested cherries

Removal of left-over cherries

After harvesting, it is extremely important that you remove all the left over cherries that are still on the trees. If you leave them on the trees, these cherries will host various pests and diseases, and these pests and diseases will stay on your farm and attack the cherries the next year.

Tree with left-over cherries

Removing left-over cherries

Drying of left-over cherries

Application of Pyrethrum

***Note:** If you are an organic farmer exporting to the United States, this section may not apply. Please contact your certification body to verify the updated status of Pyrethrum.*

African Chrysanthemum

Pyrethrum is a name of the extract of a flower called African Chrysanthemum, and its active ingredient is pyrethrin. It is a natural insecticide that can be viable alternative to insecticides that contain Chlorpyrifos. Chlorpyrifos is an organophosphate, which damages the nerve system of your body. Its use should be avoided as much as possible.

Natural insecticide made of Pyrethrum

Read the label instruction on the bottle carefully to understand how to dilute the product with water.

When a cap is completely full, it corresponds to 22.5ml.

Applying Pyrethrum

Antestia bug lays its egges beneath the leaves. Therefore, when you spray against Antestia bug, you need to spray from below the leaves.

Antestia bug

Antestia bug's eggs beneath the leaves

Spraying from below the leaves

Insect trap

***Note:** If you are an organic farmer, this section may not apply. Please contact your certification body to verify the updated status of pheromones*

Insect trap with pheromone

Insect traps with pheromone are an effective way to monitor or to control Coffee Berry Borer. If you use insect traps to control Coffee Berry Borer, you need to set one trap for each 100 coffee trees.

Insect trap made with plastic bottles

If insect traps are not easily accessible, you can make insect traps using plastic bottles. Coffee Berry Borers are attracted to red colors, so it is more effective to paint the traps in red.

Combining all these methods of Integrated Pest Management, you can keep your coffee trees strong and healthy and control pests and diseases, without necessarily resorting to the use of chemicals.

Safe handling of chemicals

Note: *If you are an organic farmer, the whole chapter does not apply.*

It is recommended that you do not spray chemicals on your coffee and that you use alternative methods to control pests and diseases. However, if you ever spray chemicals, or handle chemical fertilizers, you need to protect yourself to ensure that these chemicals do not damage your health.

Personal protective equipment (PPE)

If you were to spray chemicals, you need to wear full protective equipment, consisting of a hat/cap, goggles, chemical filter mask, long sleeves, long pants, gloves and boots. Chemical should not touch or enter any part of your body.

It is important that you wear a chemical filter mask, and not a simple dust mask. A dust mask does not protect you against toxic chemicals.

Dust mask

Dust mask

Chemical filter mask

Note:

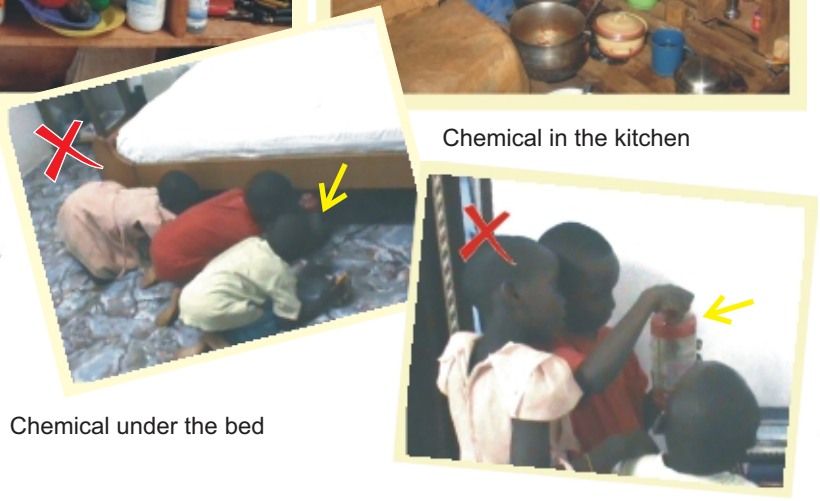
Wearing required protective equipment is a critical criterion.

If you apply chemical fertilizers, you need to wear gloves. Do not touch chemical fertilizers directly with your hands.

Safe storage of chemicals

Chemical in the kitchen

If you keep a bottle of chemical in the house, such as in the living room, kitchen and bedroom, your children may find it and think it is a soft drink. It is too late to regret, when a sad accident happens.



Chemical under the bed

Chemicals need to be kept outside the house in a safe place out of the reach of children. The chemical storage needs to be locked and marked with a warming sign.

The storage should be protected from the rain. The shelves should be made of waterproof material or covered with plastic, so that they do not absorb chemicals.

Live hedge

If you are spraying chemicals on coffee, you need to establish live hedges around your coffee farm, so that the drift of chemicals from the farm would not affect the people in the houses next to your farm or the people walking on the roads next to your farm.

Live hedge between the house and the farm

Chapter 3

Ecosystem conservation

If your farm is located next to an ecosystem, such as forest, wetland, lake or river, you need to do your best to conserve it. You need to ensure that you and nobody else destroys it. Your coffee farm itself can become an ecosystem when you create an agroforestry system by planting shade trees. In this chapter, you will learn how to conserve the ecosystems within or around your farm.

No cutting of trees

If there is any ecosystem, such as forest, wetland, lake or river, within or around your farm, such an area needs to protected as a conservation area. In an conservation area, cutting of trees or cultivating crops is not allowed.

Note:
Protecting ecosystems is a critical criterion.

Energy saving stove

You may need firewood for cooking, but you can reduce the use of firewood by using an improved cooking stove. An open fire consumes a lot of firewood, and the person who is cooking suffers from the effects of smoke.

An energy saving stove contains the heat from the firewood and cooks very efficiently. The person cooking does not suffer from the effects of smoke.

If we harvest wood for firewood or other purpose, we should plant the same number of trees or more, in the same season.

Shade trees

You may think that shade trees compete with coffee trees for the nutrients and lower the productivity. On the contrary, well-managed shade trees have various long-term benefits, and will help maintain the productivity of your coffee in a long run.

Farm without any shade tree

If you cut down all the shade trees on your farm, or do not plant any shade tree at all, your productivity may be high for the first few years, but it is unlikely to be maintained in the long run. When the coffee trees and the soil are exposed to the strong sunshine, they will become exhausted, and the productivity will start to go down.

In order to maintain the productivity without shade, you need to put a lot of synthetic fertilizers. High application of synthetic fertilizers will make the soil acidic and therefore not suitable for coffee production.

For the shade trees to benefit coffee trees, we need to manage them well. If shade trees are left to overgrow without being pruned, too much shade would negatively affect coffee. It is important to prune shade trees regularly to maintain an adequate amount of shade. Your field officer can advise you on the adequate level of shade for your farm.

Farm with sufficient shade trees

Well-managed shade trees can provide the following benefits.

- They protect coffee trees from the strong sunshine.
- They keep moisture and humidity in the soil.
- The roots hold the soil and prevent soil erosion.
- The fallen leaves and pruned brunches provide soil cover and add organic matter to the soil.
- They maintain a microclimate on the farm, and protect coffee trees from dry weather and extreme temperatures.
- Some trees, such as Calliandra, are leguminous, and fix nitrogen in the soil.
- Some trees provide fruits and timber as an extra income.
- Due to the protection of the coffee trees and the soil, you can achieve a good and stable productivity in a long run.

Shade trees should be planted at 6m X 6m spacing. They should not be planted more dense than recommended. Your field officer can advise you on the adequate level of shade density for your farm. If you do not have enough shade trees on our farm, start planting trees every season until you achieve the recommended density.

Recommended trees for shade

- Leuceana
- Markhamia
- Calliandra
- Alnus
- Inga
- Ficus
- Polycias fulva
- Cordina Africana
- Maesopsis

These trees on the list are either indigenous trees or naturalized trees in Africa. They can co-exist well with coffee trees under the agroforestry system.

Do not plant exotic trees such as Eucalyptus as a shade in your coffee farm. Eucalyptus creates an environment that is not favorable for coffee and other crops.

Markhamia

Calliandra

Inga

Alnus

Leuceana

Ficus

Polycias fluva

It is good to plant some fruit trees such as macadamia, orange, papaya as shade trees, as they also help to diversify the source of income. However, be careful not to plant too many fruit trees, as they could create too much competition with coffee.

Maesopsis

Cordia Africana

Orange

Papaya

Macadamia

Chapter 4

Water conservation

Water is fundamental for life. If your source of water becomes contaminated, it can seriously affect people's health and the health of livestock. Fish and other animals in water would disappear. If your source of water dries out, it will be impossible to sustain people's lives and that of livestock. In this chapter, you will learn how to conserve water.

Washing of equipment

After spraying chemicals or bio-pesticide like Pyrethrum, you must not wash your equipment in a lake, river or stream. Chemicals and bio-pesticides all contaminate water and affect the lives of the fish and animals in water. If you wash your equipment in water bodies, you will affect the health of people and animals, and the fish will be lost.

Water used to wash spraying equipment needs to be poured into a soak pit that is filled with charcoal. Charcoal has an effect to purify contaminated water.

Domestic waste water

If you wash your clothes and plates directly in a lake, river or stream, the soap and detergent will contaminate the water source. You need to create a simple soak pit with stones so that you can avoid pouring dirty water directly into water bodies.

Eucalyptus near streams

Eucalyptus is not an indigenous tree from Africa, and is originally adapted to harsh dry climate. Therefore, when it is planted near a stream, it vigorously absorbs water to the extent that it can dry up a stream.

You need to be careful about planting Eucalyptus, and it must not be planted near streams. If you leave Eucalyptus trees planted near a stream, you may lose the stream in the future.

In order to protect the streams, remove the Eucalyptus that are planted next to the streams. This way, you can ensure that you will continue to have water in the streams in the future.

Eucalyptus planted near the stream

Stream dried up

Removing Eucalyptus planted near the stream

No crop near water sources

If you grow coffee or vegetables near a lake, river or stream, the soil near the water source will get eroded and will contaminate the water source. If you spray the coffee or vegetables, the chemical drift will enter into the water and will contaminate it.

You should not plant any crop near a water source. If you already have any crop already planted near a water source, do not spray those crops. From the next year, do not plant anything there again.

Collection of rainwater

Rain is an important source of water. By collecting rainwater that falls on the roof, you can keep a stock of water at home. This saves the time to fetch water, and gives you an important stock of water during the dry season.

No waste into water sources

Do not throw any waste into water sources. You need to do your best to keep your water sources clean.

Note:
Keeping water clean and free from waste is a critical criterion.

Chapter 5

Soil conservation

Soil is the basis for agriculture. Especially the top soil is very rich in nutrients and microorganisms, and is very important for your crop. However, when it is exposed to the air and the water, the nutrients will be lost, and the top soil will easily be washed away. In this chapter, you will learn how to protect the soil from soil erosion.

Vegetative cover

When the soil is exposed, it will continue to be eroded by the water and the wind, and the terraces may collapse or may even result in a landslide.

Weeding with a hoe and digging up the soil also exposes top soil to the air and can result in soil erosion.

Keep vegetative cover over the soil to prevent soil erosion. It is recommended to use a machete for weeding. Using of a hoe should be limited only to breaking of a hard pan at most once a year.

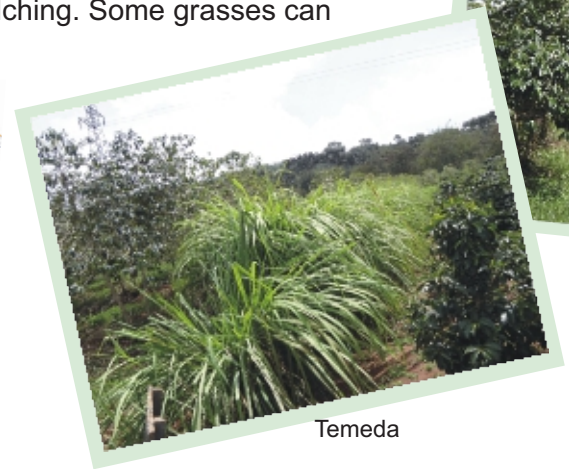
Planting of grasses

Where there is a slope, plant grasses to hold the soil. If you make terraces, planting grasses at the edge of the terraces is especially important.

In addition to soil erosion control, grasses can be harvested and used for mulching. Some grasses can also be fed to livestock.

Grasses for soil erosion control

- Elephant grass
- Napier grass
- Themeda triandra
- Tripsacum
- Calliandra



Themeda

Calliandra

(Note: Calliandra is not a grass, but if you prune it and keep it small, it can be used for soil erosion control. The pruned leaves are good animal feed.)

Mulching

Mulching is very important for soil erosion control. Mulching materials get decomposed and add nutrients to the soil. Mulch also prevents weeds from growing. Mulch maintains moisture in the soil. You can mulch the soil with pruned branches, harvested grasses, maize and banana stems and leaves. Good mulch should be 5cm thick.

Chapter 6

Waste management

There are both organic and inorganic waste on your farms. When waste is badly managed or burned, it can damage your health and contaminate the environment. On the other hand, if waste is well managed, they can become a useful resource for your farm.

In this chapter, you will learn how manage organic waste and inorganic waste.

Burning of waste is prohibited.

Plastic waste management

Plastics do not get decomposed and become soil again, so you should not throw them on the ground.

They need to be collected in a sack, and kept until collected by your group administrator.

Plastics thrown away on the ground

Collecting plastics in a sack

Organic waste management

Kitchen waste, cow dung, and crop residue from maize, banana and vegetables are all useful ingredients to make organic fertilizer at home. When they are well composted and applied on the farm, they can significantly increase the production of your coffee.

How to make compost

First, let us prepare a compost pit. A compost pit needs to be under shade. If the compost is exposed to the sun and the rain, the nutrients will be lost by evaporation or by water. Therefore, we need to make a simple roof over a compost pit.

Compost pit under shade

Put dry materials, such as maize husk, pruned branches and dry leaves.

Maize husks

Pruned branches

Put green materials, such as crop residue, Tithonia and sweet potato or pumpkin leaves. Chop them into small pieces so that they decompose easily.
It is highly recommended to include Tithonia and sweet potato or pumpkin leaves in your compost, because they are rich in micronutrients, called Zinc and Boron. Zinc and Boron help trees to prevent flower abortion and berry abortion even when the trees are stressed. Therefore, these nutrients are very important to increase your productivity.

Crop residue

Tithonia

Pumpkin or sweet potato

Chopping the ingredients to small pieces

Put coffee pulp, kitchen waste and ash from the kitchen. They are very rich in micronutrients, such as Potassium, Calcium, Sodium and Magnesium.

Coffee pulp

Kitchen waste

Ash from the kitchen

Put cow dung, top soil or compost. These materials are all very rich in microorganisms which help the decomposition.

Repeat the process to create many layers of these materials.

You should turn the compost every two weeks to facilitate the decomposition process. When the decomposition is taking place, the temperature of the materials should be high. You can keep a stick in the materials to be able to check the temperature.

The compost becomes ready in two to three months. When it is ready, it should be odorless, black and dry. Good compost enriches your soil and helps your coffee trees produce better.

Chapter 7

Good working conditions

If you employ workers during harvesting season or for other work, you need to treat them fairly. Our farms need to be a pleasant place for the people in the community who come to work in our farms.

Provision of potable water

Workers on your farms should have access to clean drinking water, whenever they come to work at your farm. You should prepare drinking water for them and make it available at the farm.

Children in school

Children need to go to school during the week, so however busy you are with the harvest, you should not take them out of the school to help you on the farm.

Children cannot be employed on a farm as a hired labor. Children can only help on the farm outside the school hours, and they should not help for long hours to the extent that it affects their schooling. Children must not do any dangerous or heavy work on a farm.

Note:

It is a critical criterion that we do not hire children under 15 years old.

Chapter 8

Farm management

Planning

All the things you have learned in this Guide need to be implemented on your farm. In order to ensure the implementation of the activities, you first need to plan them. In an action plan, you need to write down the activities, timelines for the execution and the responsible persons.

What to record in an action plan

- Activity
- Timeline
- Responsible person

As you plan your activities, a simple farm map is a very useful tool. You can indicate on the map where you need to conduct soil erosion control, where you need to plant trees or grasses, where you need to establish live hedges and the location of the water sources to be protected.

Recordkeeping

After conducting an activity, you need to keep records. By keeping records, you and the others can follow up with the plan and confirm that the planned activities are completed. The following activities should be recorded at the minimum.

- Chemical spraying *(if any)*
- Compost/ chemical fertilizer application
- Tree/ grass planting
- Harvesting
- Training of workers *(if you have workers to be trained)*
- Hiring of workers *(if any)*

What to record for chemical and fertilizer applications

- Plot
- Date
- Name of product
- Quantity
- Dosage
- Operator name
- Equipment used

What to record for training of workers

- Date
- Topic of training
- Trainer
- Names of the participants
- Signature/fingerprint of the participants

What to record about hired workers

- Date
- Name
- Type of work
- Working hours
- Salary

Chapter 9

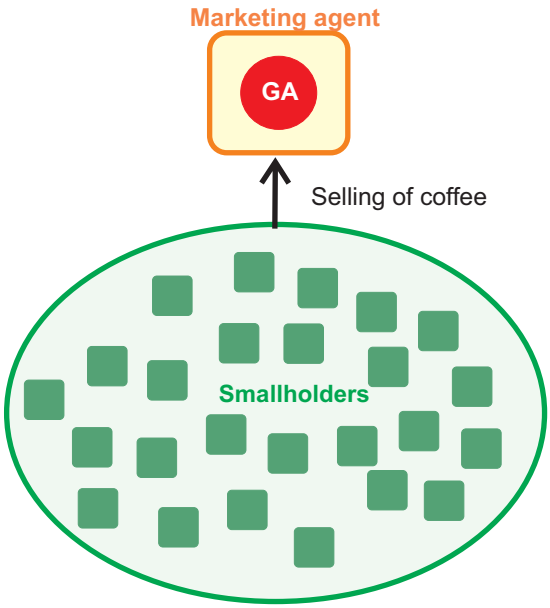
Group management

Different models for group certification

There are different ways for smallholders to get organized for certification. Each model has its advantages and disadvantages. It is important for a group to carefully choose a model which suits them the best.

1. Trader support model

A common model for smallholder certification is whereby a marketing agent acts as a Group Administrator (GA).



Advantages of this model

Producers do not need to have technical or financial capacity to establish and to manage the group's Internal Management System (IMS). The marketing agent provides training, organizes internal inspections and may also cover the cost of the audit.

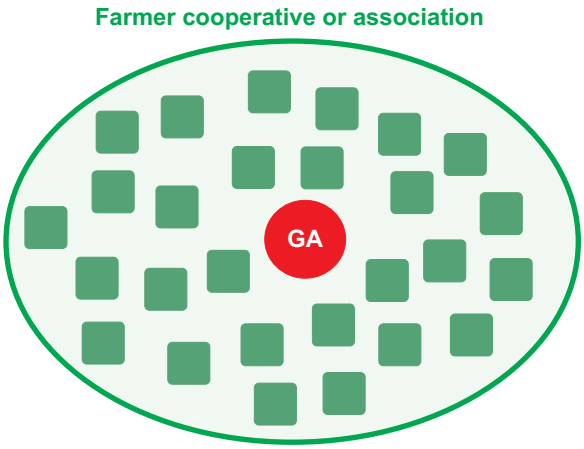
Things to watch out

If the certificate is issued under the marketing agent's name, the producers are bound to sell their certified products to the marketing agent which supported them.

If the group is registered as a farmer association or a cooperative, it is important for the group to negotiate with the marketing agent whether the certificate could be issued under the group's name.

2. Independent group model

A group is organized as a farmer cooperative or association, and it has its own Group Administrator internally.



Advantages of this model

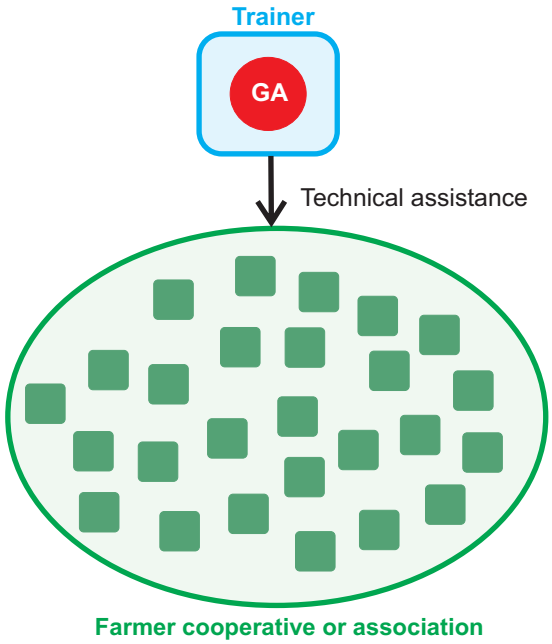
The certificate is issued under the group's name, so the group has a flexibility to choose a marketing agent to sell the certified coffee.

Things to watch out

Producer group needs to have internal technical capacity to establish and to manage the group's Internal Management System (IMS). It also needs to have financial capacity to sustain the system and to cover the cost of the audit.

3. Trainer support model

The group is organized as a farmer cooperative or association, but it does not have sufficient technical capacity to manage its IMS. So it contracts an external trainer, who could be an independent consultant or an employee of a NGO/company. The trainer provides the service of establishing and managing the IMS of the group.



Advantages of this model

The group does not need to have internal technical capacity to establish and to manage the IMS.

The group has its own certificate, so it can choose to which marketing agent to sell the certified coffee.

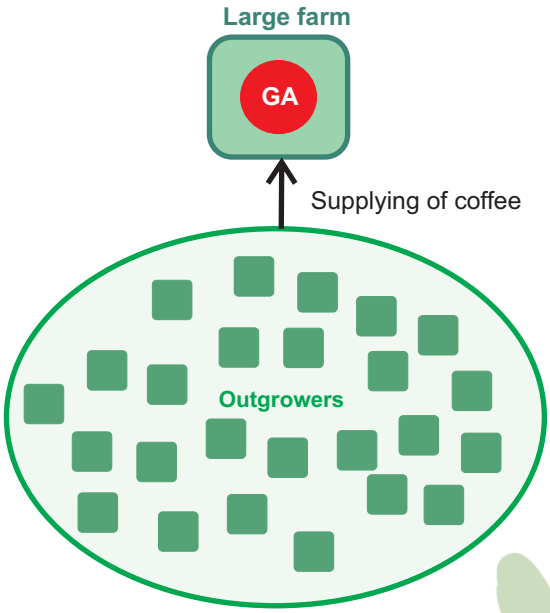
Things to watch out

The group needs to have a financial capacity to pay for the services of the external trainer.

Since the IMS is managed by someone external to the group, there is always a risk of discontinuity of the service. When there are many trainers in the area who can provide such service, this risk is lower.

4. Outgrower model

When there is a large farm which is buying coffee from outgrowers, the large farm can support the outgrowers to obtain a group certification.



Advantages of this model

Producers do not need to have technical or financial capacity to establish and to manage the group's Internal Management System (IMS). The large farm provides training, organizes internal inspections and may also cover the cost of the audit.

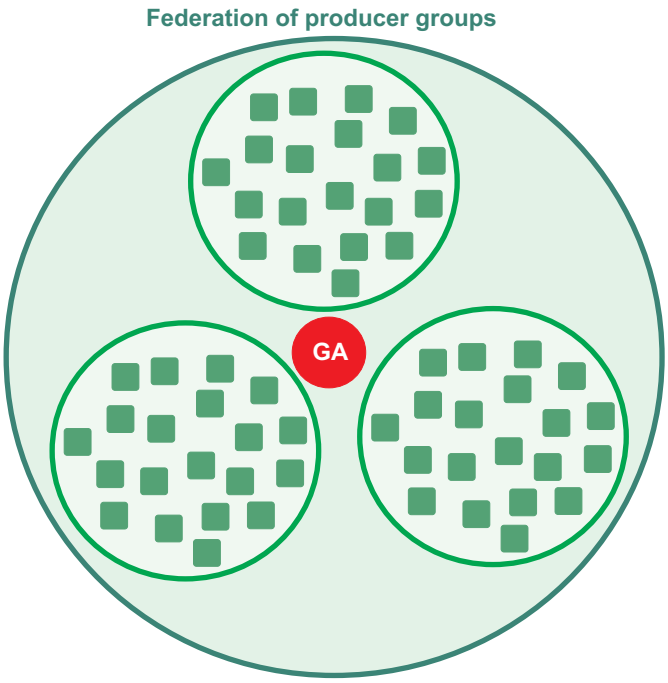
Things to watch out

The outgrowers together with the large farm form a group, and the certificate will be issued for the group. Therefore, the certified coffee can be sold only through the group, which is led by the large farm.

If the outgrowers decide to sell the coffee independently, the coffee will be sold as non-certified.

5. Federation model

Farmer cooperatives or associations can come together and apply for certification as one group.



Advantages of this model

While each cooperative does not have enough financial or technical capacity to implement the IMS, the federation may have enough capacity.

By forming a larger group, you can reduce the cost of audit per farm.

Things to watch out

The certificate will be issued for the federation, so each group cannot independently choose its marketing agent for certified coffee. They always need to sell certified coffee through the federation.

If a group decides to sell the coffee independently, the coffee will be sold as non-certified.

Internal inspections

After the training and implementation phase, the Group Administrator needs to organize internal inspections for all the members. Lead farmers will visit each farm every year to conduct an internal inspection to verify their compliance against the standard.

For recording the results of internal inspections, an internal inspection checklist is used.

Internal Inspection Checklist

	Year 1	Year 2	Year 3
Answer options: Put ✓ for "Yes", ✖ for "No" or NA for "Not-Applicable".			
1. Social and Environmental Management System			
1.1 Farmer has participated in meetings and activities related to the Rainforest Alliance program			
1.3 Farmer has agreed to Rainforest Alliance certification program			
1.4 Farmer understands factory structure & roles (Board, BC committee, Management & Staff)			
1.5 Farmer keeps farm records (production records, pay slip, input records etc.)			
1.7 Farmer has corrected non-conformities agreed in previous internal inspection			
1.9 Farmer has a training plan for the workers			
1.10 Farmer avoids receiving tea from non-certified farms			
1.11 Farmer uses renewable energy and uses it efficiently e.g. biogas, woodlot, energy-saving stove etc.			
2. Ecosystem conservation			
2.1 Farmer constantly puts effort to protect forests and water bodies			
2.2 Farmer has always respected the conservation of national parks and protected forests			
2.4 Farmer has planted and/or conserved indigenous fruit and fuelwood trees			
2.5 Forests next to farms are protected from agrochemicals by no-spray zones or by vegetative barriers			
2.6 Areas next to water bodies (6 meters or more) are protected with vegetative cover, such as Napier grass			
2.7 There is a planted/live hedge around homestead and between different farming plots			
2.9 Farmer maintains/restores natural & other vegetation along rivers & public roads			
3. Wildlife protection			
3.3 Hunting, capturing, extracting or trafficking of wild animals is prohibited on this farm			
4. Water conservation			
4.1 Farmer makes efforts to harvest and conserve water in the homestead			
4.5 Farmer manages domestic waste water in a way that does not contaminate any water body			
4.7 Farmer manages solid waste in a way that does not contaminate any water body			
5. Fair treatment and good working conditions for workers			
5.2 Famer gives fair chance to all without discrimination			
5.5 Hired labor rates meet national legal minimum wage			
5.6 For hired labor, farmer follows working hours regulations as per the national law			
5.8 Farmer only contracts workers above the age 18			
5.9 Children work under supervision & only do jobs that don't compromise their health/education			
5.10 Workers have a freedom to stay or leave without conditions imposed by the farm			

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Example of an internal inspection checklist

The following are important points for Lead Farmers to keep in mind, when they conduct internal inspections.

Preparation before an internal inspection:

- Before an internal inspection, read the checklist carefully to ensure that you understand all the criteria.
- As you read the criteria, identify the criteria that should be verified with visual observation, and identify those which need interviewing the farmer.
- Prior to an internal inspection, try to formulate the questions you would ask a farmer. Do not simply read out the criteria during an internal inspection. For example, you should not ask a question like *"Is your waste properly separated, and composted, reused or recycled where possible?"* Instead, you should ask questions like *"What do you do with your kitchen waste?"*, *"What do you do with your plastic waste?" etc.*

During an internal inspection:

- Go around the farm first and observe well, before starting to ask questions on the checklist.
- It is not necessary to start with the first question on the checklist and go down one by one. You can start with any question on the checklist, as you observe the farm.
- Some questions can be answered by visual observation. You do not need to ask the farmer everything on the checklist.
- Do not act like a policeman. An internal inspection is an opportunity for training the farmer. An internal inspector is also a trainer, and his/her job is to identify points of improvements on the farm and to suggest farmers how to improve.
- Do not just criticize the farmer for what he is NOT doing well. Congratulate the farmer for what he IS already doing well, and encourage him to continue.

For the non-comformitied identified during an internal inspection, the farm and the trainer need to come up with corrective actions and their implementation plan, ensuring that the non-comformities will be resolved before the audit.

Continuous Improvement Plan : *Year 1*

Criterion	Finding	Corrective action	Responsible person	Timing of action	Follow up