

CBI Uganda Climate-Smart Coffee Project

Farmer Training Module – Mulching

Regions: Buganda (Robusta) • Western (Arabica)

Delivered by: extension agents, lead/peer farmers, or SME trainers/agronomists

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CBI



Transforming Trade Together

Table of Contents

A. Module Snapshot.....	3
B. Introduction / Overview.....	4
C. Facilitator session plan: the 5-part arc (2 hours).....	5
Part 1: Reflect (10 min).....	5
Part 2: Discussion on benefits, myths & gender (20 min).....	5
Part 3: Missed-income comparison (20 min).....	6
Part 4: Demonstrate + practise (18 min).....	6
Part 5: Commit + agree to monitoring (15 min).....	7
Bonus session: Questions and Answers (20 min).....	7
Annexes.....	8
1. Technical must-knows (MAAIF-aligned).....	9
2. Commitment & follow-up.....	10
3. Reinforcement kit.....	11
4. Trainer preparation notes.....	12
4.1 Barrier and enabler responses (COM-B framework).....	12
Adaptation and gender notes.....	13
5. Facilitator self-check + M&E.....	14
Facilitator self-check (after each session).....	14
Adoption indicators (for SME M&E).....	14

A. Module Snapshot

Item	Detail
Practice	Mulching is a climate-smart coffee management practice that involves covering the soil surface around coffee plants with a layer of organic materials, such as dried grasses, crop residues, or banana leaves. It protects the soil from dry spells, prevents topsoil erosion during heavy rains, suppresses weed growth and adds nutrients back into the soil
Core message	• Leaving your coffee soil bare results in significant missed income when your crops are scorched by the sun or washed away by the rains. • By applying a thick layer of dry mulch, you shield your soil from extreme weather, protect your harvest, and stop weeds from draining your profits. • Do not leave money on the table, mulching secures the steady yield you need to protect your family's future earnings.
Session length	2 hours on a farm
Facilitator	Coffee Agronomist, Extension agent, lead/peer farmer, or SME trainer
Materials	1. A rake (the only tool needed). 2. Dry mulch pre-gathered (banana leaves, coffee husks, maize stover, and dry grass). 3. Mulching Illustrated Poster. 4. The Uganda Sustainable Coffee Toolkit Chart 3 - Feed the Tree Well, Chart 11b - the Business Case, and Chart 16b - Protect and Conserve your Soils. 5. Flip chart or paper with markers or pens
Key visual	Stand between a mulched tree and a bare tree or use the mulching poster.
Commitment	Utilize community structures, i.e., lead farmers, group leaders, internal inspectors, extension farmers, and cooperative agents to get commitments from the farmers.

B. Introduction / Overview

When we invest in climate-smart coffee, everyone wins.

- For farmers, it stops missed income by locking in soil moisture and nutrients and boosting productivity.
- For SMEs and exporters, it secures a loyal, climate-resilient supply chain with predictable volumes and high-quality beans.
- For international buyers, it guarantees a reliable stream of fully traceable, EU-compliant coffee that meets consumer demand.

True sustainability means connecting the farmer's profitability directly to the security of the global market.

The training module focuses on mulching—one of the most income-relevant and climate-smart practices a farmer can adopt.

The two primary benefits that directly drive farmer income are

- moisture retention (covered soil holds water through dry spells, keeping trees productive)
- weed suppression (less weeding time and cost). Together, these produce heavier, denser cherries—meaning more money at the weighing scale and higher farmer income.
- Soil erosion protection: mulch creates a protective ground layer that reduces the impact of heavy rains, minimizing soil degradation and preserving long-term soil fertility.

This training content is aligned with the Uganda Sustainable Coffee Toolkit and Charts and the MAAIF Robusta and Arabica Technical Handbooks.

Note for facilitators — primary vs. secondary benefits

- Lead with moisture retention and weed suppression → heavier cherries → farmer income.
- These are the primary benefits and the ones that drive cherry quality and farmer income.
- Open every session with these.
- Then bring in: soil erosion protection as a secondary but documented benefit.
- Mulch reduces the impact of heavy rains, minimising land degradation

This training module has been designed with a "missed income" framework. The missed income concept was co-created with coffee farmers in., where farmers revealed that their primary motivations are concrete household goals like school fees and financial independence. While farmers traditionally viewed mulching only as weed control, reframing it around how much money they quietly lose each season—through the loss of topsoil and moisture in their soils, resulting in poor quality or low cherry weight—triggered a powerful shift from apathy to urgency. Grounded in behavioural economics and Social and Behaviour Change (SBC) principles, this approach leverages loss aversion: the reality that people are twice as motivated to avoid a loss as they are to achieve a gain. By framing unmulched farms as "income walking off the land," the training makes the invisible, cumulative cost of inaction feel immediate, personal, and emotionally proximate, capturing farmer attention far better than standard agronomic best practices.

Farmer Spotlight — [Name], [Village, Subcounty, District]

What this farmer did: [Brief description of mulching practice implemented]

Result: [Harvest comparison, income change, or soil health evidence]

SME homework: Identify one local champion per subcounty or cooperative. OR Prepare a one-page spotlight story to share during training. This is optional but significantly boosts credibility.

C. Facilitator session plan: the 5-part arc (2 hours)

Part 1: Reflect (10 min)

Stand the group between a mulched tree and a bare tree (or hold the illustrated poster).

Let farmers answer first; do not correct yet.

Ask

- Look at these two gardens. What do you notice?
- After heavy rain, which garden keeps its soil? Which one's soil ends up down the slope?
- Which garden do you think has heavier cherries at harvest? Why?
- Who do you think earned more last season and why?
- In your village, whose garden looks like the covered one? What do people say about that farmer?

Peer-farmer version (If the session is facilitated by a lead farmer)

- Open with your own story
- What changed in your harvest weight and weeding time once you started covering your soil?

Part 2: Discussion on benefits, myths & gender (20 min)

Ask:

- What stops you from mulching?
- What have you heard about it?

Then answer each myth a farmer raises—by name. (See Appendix for full responses.)

Then state the poster's benefits plainly:

- Mulching ensures moisture retention.
- Mulching brings about weed suppression.
- Mulching protects against soil erosion: mulch creates a protective ground layer that reduces the impact of heavy rains, minimizing soil degradation and preserving long-term soil fertility.

Gender triggers

Ask the group questions first, then reinforce:

- o For the men here:
 - o What would it mean to have strong plants that resist disease, flower heavily, and produce consistently season after season?
- o For the women here:
 - o When berries are small, what happens to the weight on the scale and the family's income?
 - o What would more and bigger berries mean for you?
- o For youth
 - o What would more and bigger berries mean for you?
 - o What would more income mean to you?

Reinforce after the group responds

- o Men: disease/pest resistance, strong plants, good aroma, consistent premium production, and more flowers.
- o Women: More and bigger berries mean protected income: "Small berries mean a small bean weight at the scale.
- o Youth: More and bigger berries mean increased and protected income.

Part 3: Missed-income comparison (20 min)

Hold up the illustrated story poster and walk through the two farmers' experiences.

Run the interactive income calculation with a lead farmer from the group.

Simple math

1 acre of coffee = 450 trees

For each ecological zone, we anticipate 2 seasons.

6. Season 1 = 2 Kgs per tree of FAQ

7. Season 2 = 5 kgs per tree of FAQ

If a farmer has 2 acres

Their average income is (Number of trees x average kgs per tree x Price per kg) x 2 acres

- $(450 \times 3.5 \times 12000) \times 2 = \text{UGX } 37,800,000$

Ask the farmers

- Who has 2 acres?
- How much are they making at the end of every season?
- How much money are they leaving on the table? Each year
- How much have they left on the table for a 10 year period?

Then the poster's link question and the goal question.

- If you covered your soil this season, what is the one thing that extra income would go toward?"

Part 4: Demonstrate + practise (18 min)

Before demonstrating:

Ask:

- What materials do you have available on your farm or nearby for mulching?

Let farmers name local materials first, then confirm or supplement the list.

Reference technical must-knows (Appendix 1) at this point: show the depth rule and the stem-clearance rule before the hands-on steps.

The agent demonstrates on a real tree, narrating each step.

- Gather and dry the material (banana trash, coffee husks, maize stover, and dry grass); dry in the sun first. A rake is the only tool you need.
- Clear the 1-foot ring around the stem (shown with the forearm).
- Lay the mulch 3–6 inches deep; show depth with your hand. Push your hand in to prove depth.
- Spread outward to the canopy edge (ring for young trees; between rows for mature).
- Never against the stem, never burn rubbish.
- Replenish after every rainy season; apply or top up before the rains start (and also note that dry-season mulch is lighter and easier to carry).

Farmers practice in pairs: each pair mulches one bare tree.

The agent checks 3 points and corrects on the tree:

- Stem ring clear (one arm's length)?
- Layer hand-deep (not thin or patchy)?
- Spread to the leaf edge with dry material?

Common mistakes to watch for:

- mulch against the stem,
- layer too thin,
- Do not use wet/green material.
- one application with no top-up.

Note: Peer/farmer-to-farmer version: demonstrate on the champion's own garden, referencing last season's harvest weight difference to link back to the missed income framing.

Part 5: Commit + agree to monitoring (15 min)

This is a distinct step, not part of the demonstration. Every farmer leaves with a specific commitment.

- Each farmer states (or writes) how many trees they will mulch, using which material, and by what date, before the rains.
- Agree as a group:
 - Who will ask, "Who has mulched?" at the next gathering?
- The facilitator records commitments and sets the follow-up date.

Bonus session: Questions and Answers (20 min)

In this session, the farmers can engage with the facilitators with their questions about any other CSC practices.

End of the session: If you don't mulch your coffee, it reduces your yields and reduces your money

Annexes

1. Technical must-knows (MAAIF-aligned)

Remember the line: “Dry it → hand-deep → one arm clear of the stem → out to the leaf edge → before the rains, top up after.”

Must-know	Rule of thumb	Visual / demo cue
Materials	Banana trash, coffee husks, maize stover, sorghum straw, dry grass, crop residues. Dry in the sun first, never apply green or wet.	Hold up a dry handful vs. a green handful. <u>Ask:</u> Which one of these materials does the farmer have nearby.
Stem clearance	Keep mulch ≥ 1 foot (30 cm) from the coffee stem. Pests and diseases climb the tree if mulch touches the bark.	Show one forearm's length or one foot from the stem. The Uganda Sustainable Coffee Toolkit Chart 3 (Feed the Tree Well) illustrates this visually.
Layer depth	3–6 inches (hand-deep). Too thin = no benefit. Too thick is wasteful.	Push the hand into the mulch to prove depth.
Spread	Ring-mulch (young trees, first ~3 years). Full carpet or inter-row (mature trees).	Show the ring versus the carpet at the demo tree.
Timing	Apply or top up before the rains start. The end of the rainy season is also a good time to gather and prepare mulch; it is lighter and easier to carry when dry.	Tie to the local rain calendar. * SME to confirm exact months per district.
Top-up	Replenish after every rainy season. Mulch breaks down and thins out.	Check a previously mulched tree to show how it thins over time.
Tool	A rake is the only tool you need.	Show the rake before the demo.
What NOT to do	Never push mulch against the stem. Never burn rubbish near or on the mulch.	Show a mulch-against-stem error, then correct it.

2. Commitment & follow-up

Commitment is a distinct step in the session (Part 5). During this engagement, utilize community structures, i.e., lead farmers, group leaders, internal inspectors, extension farmers, and cooperative agents to get commitments from the farmers.

Follow-up visit checklist

- Is mulch in place on pledged trees?
- Is the stem ring clear (one arm)?
- Is the layer hand-deep (not thin)?
- Was dry material used?
- Has the farmer topped up after the first rains?
- Any myths or barriers encountered?
- Next follow-up date agreed?

3. Reinforcement kit

Mulching illustrative story poster or video

Mulched garden ✓	Bare garden ✗
Soil stays in place after heavy rain	Topsoil washes down the slope
Soil moisture retained through dry spells	Soil dries out quickly
Heavier, denser cherries at harvest	Small, light cherries—less weight on the scale
Reduces weeding time and cost	High weeding time and cost every season
Yield improves season on season	Yield shrinks quietly over time
A neat garden that signals a serious farmer	A bare garden that loses money silently

Poster integration tip: Use together with the Trenching and Mulching illustrated posters to show how the three practices complement each other. Use alongside the Uganda Sustainable Coffee Toolkit Charts.

Note: Confirm seasonal variations in the relevant district, as timing differs in the different agroecological coffee-growing zones across Uganda.

4. Trainer preparation notes

This section is trainer preparation material—not plenary content.

Study Annex 4 before your session so you can answer objections confidently as they arise in Parts 1–2. This content is best covered in a Trainer of Trainers (ToT) session, not read aloud to farmers.

4.1 Barrier and enabler responses (COM-B framework)

The COM-B framework organises barriers into three domains:

- **Motivation:** farmers' beliefs about whether mulching is worth doing (fears about snakes, fire, wasted time, soil acidity).
- **Capability:** Their knowledge and skill (do they know the correct depth, spacing, and materials?).
- **Opportunity:** availability of materials, labour, and tools.

Barrier (what farmers say)	COM-B domain	Facilitator response
"Mulch brings snakes and pests."	Motivation	Keep the 1-foot stem ring clear. Snakes avoid open, clear areas. Show the stem-clear rule on the demo tree.
"Dry mulch is a fire risk."	Motivation	Never burn rubbish near the mulch. Keep a firebreak. In practice, mulch that is properly laid and not piled against dry vegetation does not pose extra risk.
"Mulch makes the soil acid."	Motivation	Some rotting mulch may be slightly acidic, but only on the surface. This does not change the soil's natural chemistry. Mulching with organic materials applies a rich compost and feeds the soil with essential nutrients, reduces moisture loss and protects the shallow roots of the coffee from heat stress, allowing for better yields and heavier coffee cherries.
"I have no time to mulch."	Capability / Opportunity	Show the time calculation: less weeding time saved by mulching outweighs the time spent applying it. A rake and 30 seconds minutes per tree is all it takes. Group application (neighbours helping each other) can cut individual time.
"I have no materials nearby."	Opportunity	Ask the group — what is available? Banana trash, crop residues, dry grass. Most farms have at least one source. Start with the trees closest to the available material.
"It is too much work."	Capability / Opportunity	Start with the most critical trees (those on a slope, or the oldest productive trees). Even partial mulching is better than none. Group work (VSLA members mulching together) makes it faster.
"My soil is already fine."	Motivation	Point to the cherry weight difference. Even farmers with "good" soil see heavier cherries and better yields with mulch. Ask, "Would you like heavier cherries next harvest?"

Note: Consider a dedicated Trainer of Trainers (ToT) session to build agents' confidence in handling barriers and objections. Agents who have practiced responses out loud perform significantly better in the field than those who have only read a table.

Adaptation and gender notes

Gender triggers: Reinforce after the participatory questions in Part 2, don't deliver as statements.

Group	Triggers to use
Men	Time saved on weeding. Soil health and long-term farm value. Heavier cherries at the weighing scale. A neat, well-covered garden that signals a serious, ambitious farmer.
Women	Weeds steal time—mulching gives that time back. Heavier cherries = more income for the family. Topsoil that stays on the farm = consistent productivity. “More and heavier cherries mean more money — your coffee was fed.”
Youth	Paid group-work opportunities. WhatsApp/ TikTok demo clips (short, visual, shareable). Framing mulching as modern, science-backed farming — not just traditional practice.

5. Facilitator self-check + M&E

Facilitator self-check (after each session)

Question	✓ / ✗
Did I open from a real garden / the farmers' own words, not a lecture?	
Did farmers talk more than I did in Moves 1-2?	
Did I answer every myth a farmer raised — by name?	
Did I run the interactive income calculation with a lead farmer?	
Did I make the missed income concrete (shillings + a goal like school fees)?	
Did I ask farmers what mulch materials they have before listing options?	
Did every farmer practise on a tree with hands-on correction?	
Did I use gender-specific trigger questions (not just statements)?	
Did each farmer make a specific commitment (trees, material, date)?	
Did I record commitments and agree on the monitoring person / VSLA check-in?	
Did I set the follow-up date?	

3 or fewer ticks → review the session plan before the next training.

Adoption indicators (for SME M&E)

Indicator	Lead or Lag? *
Number of farmers attending the session	Lead
Number of farmers making a specific commitment	Lead
% of farmers who have mulched pledged trees at 4-8 week follow-up	Lag
Quality of mulch at follow-up (stem clear, hand-deep, dry material)	Lag
% of farmers who topped up after rains	Lag
Cherry weight comparison (mulched vs. bare trees, same farmer)	Lag

*Lead versus Lag indicators

- Lead indicators: reach and intention are immediate (lead indicators).
- Lag indicators: Practice uptake, quality, and top-up show real behaviour change, weight lag indicators more heavily when assessing module effectiveness in the pilot.