

LEARNING FACILITATING MATERIALS

NATIONAL PROFICIENCY LEVEL 1

TRADE AREA: **CASHEW PRODUCTION**

UNIT 4

MANUAL MAINTENANCE OF A CASHEW PLANTATION





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UNIT INTRODUCTION

Welcome to Unit 4 of your learning journey in cashew production. This guide explains the main steps for maintenance of cashew plantations.

Do you already know why it is important to follow Good Agricultural Practices (GAP) when maintaining cashew plantations?

If you follow the steps for maintenance of cashew plantations at the appropriate time of the year, you will produce a lot of high-quality raw cashew nuts and cashew apples for more than 25 years. Do not miss a step! Apply your knowledge and skills perfectly to maintain your cashew plantation.



In this unit, you will learn about the main steps for maintenance of cashew plantations for raw cashew nut and cashew apple production. The learning material covers three sub-units:

- 1) Manual weed control
- 2) Manual pruning
- 3) Manual thinning

Each sub-unit contains theoretical and practical exercises. Each module includes written materials, visuals as well as self-assessments to test your knowledge and skills.

Follow the recommended Good Agricultural Practices for manual weed control, pruning and thinning to minimize the occurrence of bush fires, as well as pest and disease infestation in order to produce high-quality raw cashew nuts and cashew apples.

Even though, this learning material provides essential information on maintenance of your cashew plantation for National Proficiency Level 1, you should also look out for new information, innovations and technological advances during your practical work that expand your knowledge and skills.

Are you ready to start your cashew learning journey? Let's start!

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ICONS



LEARNING
OBJECTIVES



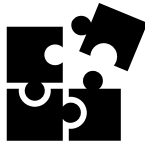
ATTENTION



PRACTICALS
HANDS ON



CROPPING
CALENDAR



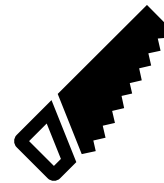
SELF ASSESSMENT



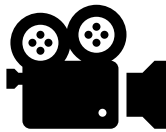
WELL DONE!



TAKE A BREAK!



DEMONSTRATE
USE OF
TOOLS



WATCH VIDEO

ABBREVIATIONS

Here are some commonly used abbreviations.

cm	Centimeter (<i>100 cm = 1 m</i>)
g	Gram (1000g = 1kg)
GAP	Good Agricultural Practices
kg	Kilogram (1kg = 1000g)
m	Meter (<i>1 m = 100 cm</i>)

1. DEMONSTRATE SKILLS IN MANUAL WEED CONTROL

a) Explain the benefits of manual weed control

Removal of weeds in and around the cashew plantation must be done in both - the dry and rainy season to:

- minimize the chance of fire
- minimize the competition for nutrients and water
- allow trees to well produce flowers and fruits (productivity)
- reduce attacks by insects and diseases that may interfere with the fruiting (quality)
- keep the farm clean and out of snakes
- allow easier access for collection of cashew fruits

You can spare expensive chemicals and machines by controlling the weed on your cashew plantation manually.



Source: GLZ/ComCashew – Manual weeding in cashew plantation



Weeding should be done before and after the harvest season, to facilitate the collection of the cashew nuts and allow maximum fruiting.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec



For more information on weeding, watch video on *Farm Management and Good Agricultural Practices* from Minute 4:01 to 4:15, and video on *Cashew Harvest and Post-Harvest Training* from Minute 0:57 to 3:07

b) Outline the procedure for manual weed control

Use the checklist to follow steps 1 to 3 in manual weeding. Rate your own performance critically and honestly after you have completed each activity.



Excellent



Okay



Try Again

Activities	Rate
1. Weed the farm under and around the cashew trees	
2. Cut the weeds with a cutlass and clear the ground well. Remove the weeds from the farm after weeding, so the weed seeds do not spread.	
3. Make sure to hoe the roots of the weeds to destroy them, so the weeds cannot grow back quickly.	

Everything you need to accomplish your goals is already in you.



Source: GIZ/ComCashew – Weeded cashew farm

c) **Use tools in manual weed control**

The following tools and equipment are required for weed control:

- Use **Cutlass** to cut long weeds



Source: <https://hosstools.com/product/farm-machete/>

- Use a **hoe** to remove weeds and to destroy their roots



Source: <https://seymourmidwest.com/42441>

- Use a **rake** to gather the weeds



Source: <https://www.krafttool.com/GG871>

- Use a **Hand Fork** to gather the weeds.



Source: <https://flexrake.com/products/cla324-hand-fork>

d) Perform manual weed control



Practical Exercise: Go to the farm and perform manual weed control considering what you have learned so far. Use the knowledge that you have gained already.



SELF ASSESSMENT

1. State two (2) reasons on the importance of manual weed control.

2. Describe the use of two (2) tools and equipment used for manual weed control.

3. Outline the procedure for manual weed control



*Congratulations! You have completed the first set of questions.
Take a break before you move on to the next chapter.*

2. DEMONSTRATE SKILLS FOR MANUAL PRUNING

a) Explain pruning in cashew production

Pruning means cutting off branches that are:

- dried and dead
- interwoven or cross over to other trees
- infested or diseased
- hanging on the ground

Pruning is also done to the apical branches to encourage more shoots to form, which leads to more nuts.



Source: GIZ/ComCashew – Manual pruning in cashew plantation



Pruning should be done after the harvest season, and before the rains start to allow maximum shoot development.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec



For more information on pruning, watch video on *Farm Management and Good Agricultural Practices* from Minute 0:21 to 1:15

b) State the importance of pruning in cashew production

Pruning is important because it:

- stimulates regrowth
- increases new shoots development
- prevents pests and diseases to spread
- allows sunlight on all branches
- boosts production of cashew nuts.
- facilitate farm operation such as spraying, picking of nuts and weeding

Unpruned cashew tree = No well-developed canopy = Low yields



Source: GIZ/ComCashew – Unpruned cashew tree

Pruned cashew tree = Well-developed canopy = High yields



Source: GIZ/ComCashew – Pruned cashew tree

Start pruning cashew trees after 2 years of tree growth. After 5 years cashew trees should be pruned every 1 - 2 years. Pruning encourages proper growth and formation of the canopy as well as receipt of adequate sunlight on all branches.

c) **State the function of equipment for pruning**

The following tools are essential for manual pruning:

- Use a **Cutlass** to cut away tips and small branches.



Source: <https://hosstools.com/product/farm-machete/>

- **Chain Saws** are used for cutting big branches.



Caution! Only use a chain saw after you were trained on the use and maintenance of chain saws. Find a chain saw operator to help you with pruning.



Source: <https://www.murdochs.com/products/power-equipment/saws/heavy-duty-chainsaws/>



Use **Protective Glasses** or **Face Shield**, **Safety Helmet**, **Hearing Protection**, **Chain Saw Chaps** and **Gloves** when operating a chain saw.

- Use a **Manual Tree Saw** for cutting branches, if you do not have a chain saw or are not trained in using a chain saw.



Source: <https://www.obi.at/handsaegen-feilen/lux-baumsaege-holz-350-mm-classic/p/3028891>

d) Outline the procedure for pruning

Use the checklist to follow steps 1 to 6 in manual pruning. Rate your own performance critically and honestly after you have completed each activity.



Excellent



Okay



Try Again

Activities	Rate
1. Prune all diseased, infested, dead or unproductive branch.	
2. Prune top branches to allow sunlight to reach lower branches.	
3. Prune lower branches to facilitate farm operations such as spraying, picking, weeding.	
4. Prune any branch that reaches over to another tree.	
5. Remove the tip of branches that fruited the previous season to encourage more shoots.	
6. Remove lower branches and leaves of young seedlings to allow fast growth.	

Push yourself to grow and learn more. You are the only one who can do it.

e) Prune a cashew tree manually



Practical Exercise: Go to the farm and prune your cashew trees to make them grow faster and to shape the canopy for better yields. Follow the Good Agricultural Practices in manual pruning of cashew trees.



Source: GIZ/ComCashew – Pruning in cashew plantation



SELF ASSESSMENT

1. State the best time to conduct pruning.

2. State three (3) reasons on the importance of pruning.

3. State three (3) types of branches you need to prune.



Well done! You are doing great on your path to success.

3. DEMONSTRATE SKILLS IN MANUAL THINNING

a) Explain thinning-out

Thinning is cutting-out the unproductive and low-yielding trees on the plantation. Thinning is also cutting-out the trees that are too densely planted.



Remember, you always need a 10-meter distance between your trees, so they can bear a lot of fruits and give you high yields.



Source: GIZ/ComCashew – Thinning in cashew plantation



Thinning takes place after the harvest season, from June to September. Complete thinning at the latest at the end of September, before the new flowering of the tree starts.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec



For more information on thinning, watch video on *Pruning and Thinning* from Minute 1:16 to 7:27 and video on *Farm Management and Good Agricultural Practices* from Minute 1:28 to 3:07

b) State the importance of thinning-out in cashew production

It is important to conduct thinning (cutting unproductive and densely planted trees) in a cashew plantation to:

- ventilate your plantation and allow productive trees to be at a safe 10-meter distance to ensure that each tree can produce high yields.
- reduce the competition for nutrients in the soil with productive trees
- increase the yields of productive trees

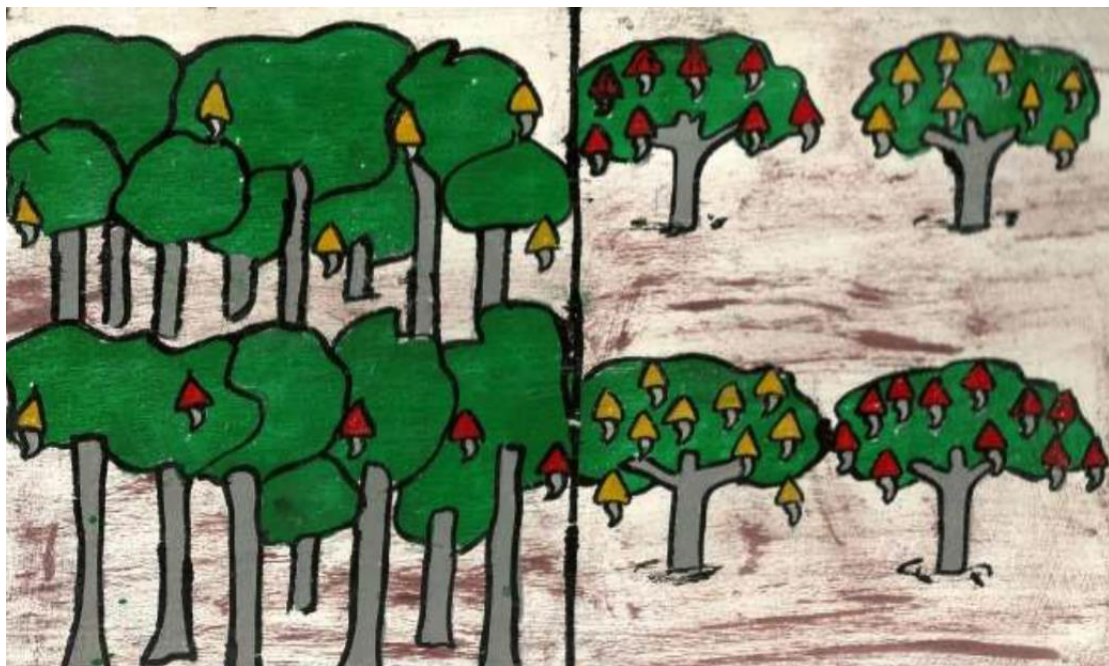
Thinning is important when tree branches touch or entangle. This means that the trees are planted too closely and that the canopy cannot develop properly. The canopy needs space, so the fruits can develop on all sides of the canopy.



Where the tree branches touch, fruits cannot grow.

Densely planted = low yielding trees

10-meter spacing = high yielding trees



Source: GIZ/ComCashew – Thinning in cashew plantation for high yields

c) Outline the procedure for thinning-out

Use the checklist to follow steps 1 to 7 in manual thinning. Rate your own performance critically and honestly after you have completed each activity.



Excellent



Okay



Try Again

Activities	Rate
1. Identify unproductive cashew trees during cashew harvest season	
2. Mark unproductive cashew trees with a red cross on the bark during cashew harvest season	
3. Cut all cashew trees that are unproductive, do not bear fruits, are planted less than 10m distance, or are infested with pest and disease	
4. For thinning, do three (3) initial cuts to control the direction in which the tree is falling. 1) diagonal cut, 2) horizontal cut, 3) back cut	
5. Afterwards, cut tree completely down using a manual hand saw or a chain saw	
6. Cut the thinned-out tree stem and branches into smaller pieces	
7. Collect and remove the wood from the farm, use stems and branches cut during thinning as firewood	

Great things never come from comfort zones.

d) **State the function of tools used for thinning-out**

The following tools are essential for manual thinning:

- Use a **Cutlass** to cut branches.



Source: <https://hosstools.com/product/farm-machete/>

- **Chain Saws** are used to cut the stem and big branches.



Caution! Only use a chain saw after you were trained on the use and maintenance of chain saws. Find a chain saw operator to help you with thinning.



Source: <https://www.murdochs.com/products/power-equipment/saws/heavy-duty-chainsaws/>



Use **Protective Glasses or Face Shield, Safety Helmet, Hearing Protection, Chain Saw Chaps and Gloves** when operating a chain saw.

- Use a **manual tree saw** to cut the stem and big branches, if you do not have a chainsaw or are not trained in using a chain saw.



Source: <https://www.obi.at/handsaegen-feilen/lux-baumsaege-holz-350-mm-classic/p/3028891>

e) Identify unproductive trees for thinning-out

Walk around your plantation during harvest season to identify:

- trees that are less productive
 - less than 5 kg of nuts per tree per year
 - less than 7g per nut
- trees that do not bear fruits at all
- trees that are planted at less than a 10-meter distance from other trees
- trees that are infested with pests or diseases

Mark the trees with a big red cross on the bark, so you can cut them out after harvest season.



Source: GIZ/ComCashew – Identifying unproductive trees in cashew plantation

f) Perform thinning-out in cashew production



Practical Exercise: Go to the farm for your apprenticeship and demonstrate how to thin-out to maximise yields and profits.



SELF ASSESSMENT

1. State three (3) reasons for the need of thinning-out.

2. Name the tools used for thinning-out.

3. State how unproductive trees are identified.



Congratulation! You completed this unit! You are doing great!

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