

IMPROVE YOUR COCOA PRODUCTION

A GUIDE FOR FARMERS

By



The Sustainable Tree Crops Program



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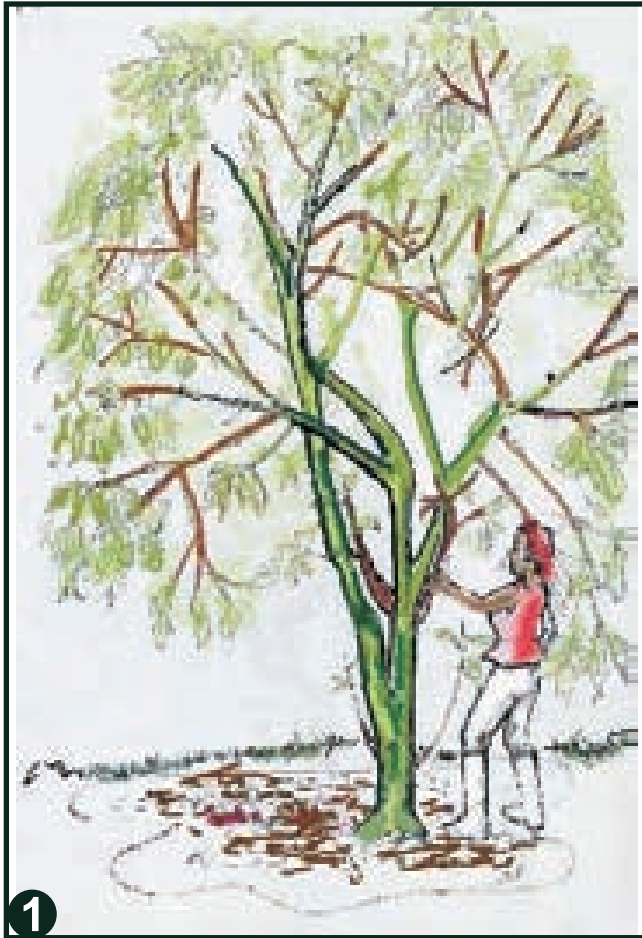
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**Sustainable Tree Crops Program**

Regional Office
P. O. Box 135, Accra, Ghana
International mailing: c/o Lambourn Ltd.
Carolyn House, 26 Dingwall Road
Croydon, Cr9 3EE, U.K
<http://www.trecrops.org>
<http://www.iita.org>
Email: stcp-wca@cgiar.org

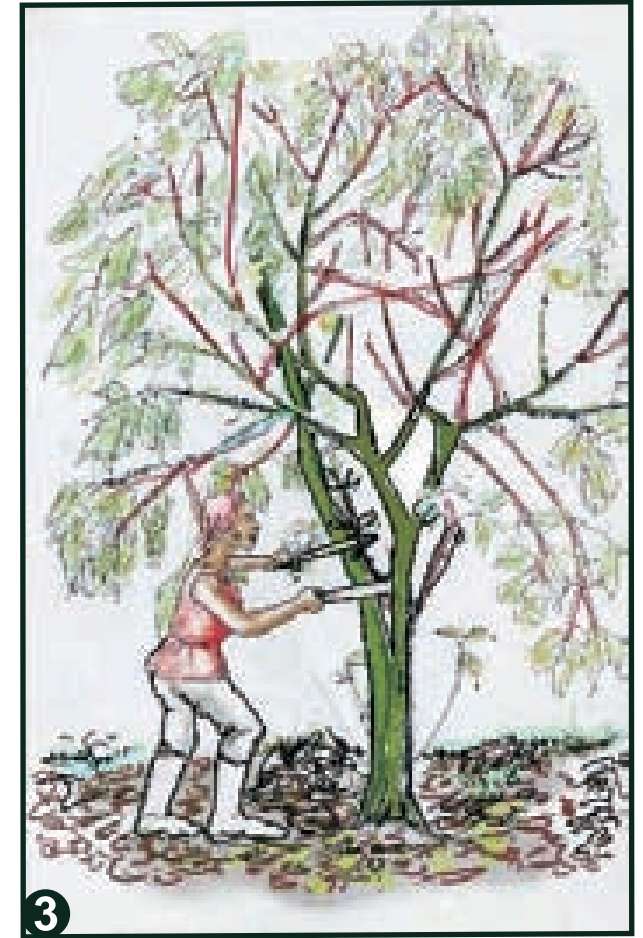
PRUNING COCOA TREES



Prune mature trees at the beginning of the rainy season



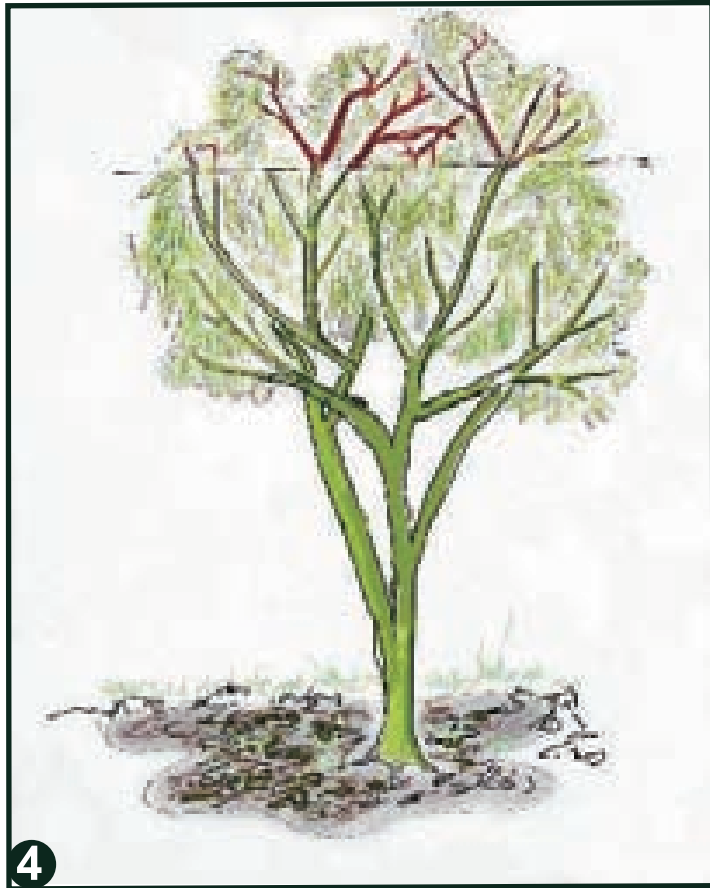
Cut low hanging branches first, then chupons and branches within 60 cm of the jorquette



Cut diseased or dead branches and branches that grow back into the center of the canopy



PRUNING COCOA TREES



Pruning reduces the number of unnecessary branches



Reduce the height of the tree to 4 m



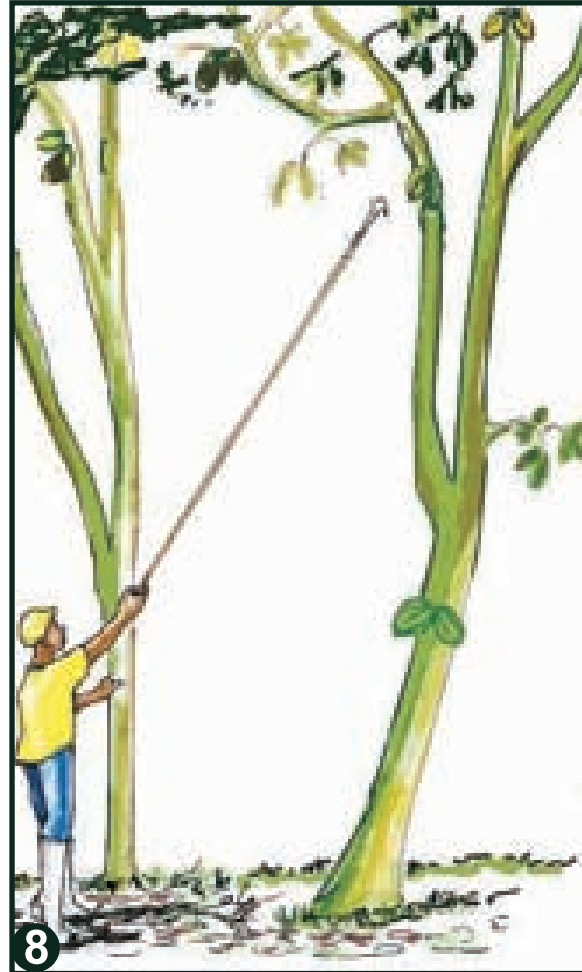
A good shape allows the tree to capture the most sunlight with the fewest branches



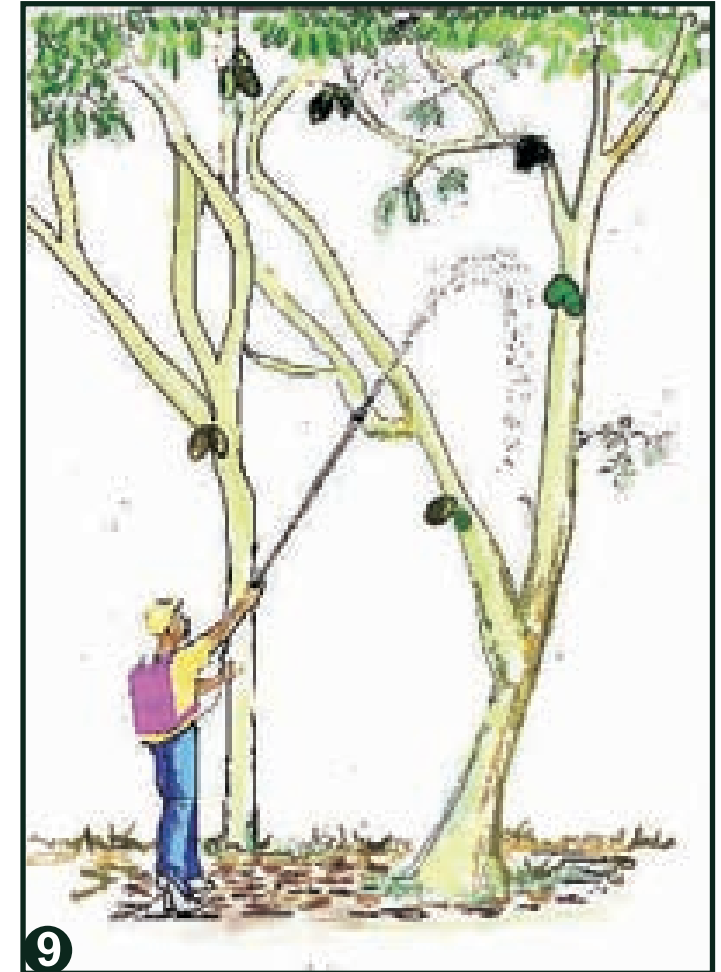
PRUNING COCOA TREES



Pruning allows more light and wind to pass through the branches which reduces pests and diseases



It is difficult to harvest an unpruned cocoa tree



It is difficult to spray an unpruned cocoa tree



PRUNING COCOA TREES



You get low yields when you do not prune your cocoa trees



It is easy to harvest a pruned cocoa tree



PRUNING COCOA TREES



It is easy to spray a pruned cocoa tree



You get a good harvest when you prune your cocoa trees



CUTTING CHUPONS



Chupons are new branches that grow on the tree stem or the larger branches

Chupons take food, water and energy from the tree, which reduces yields



CUTTING CHUPONS



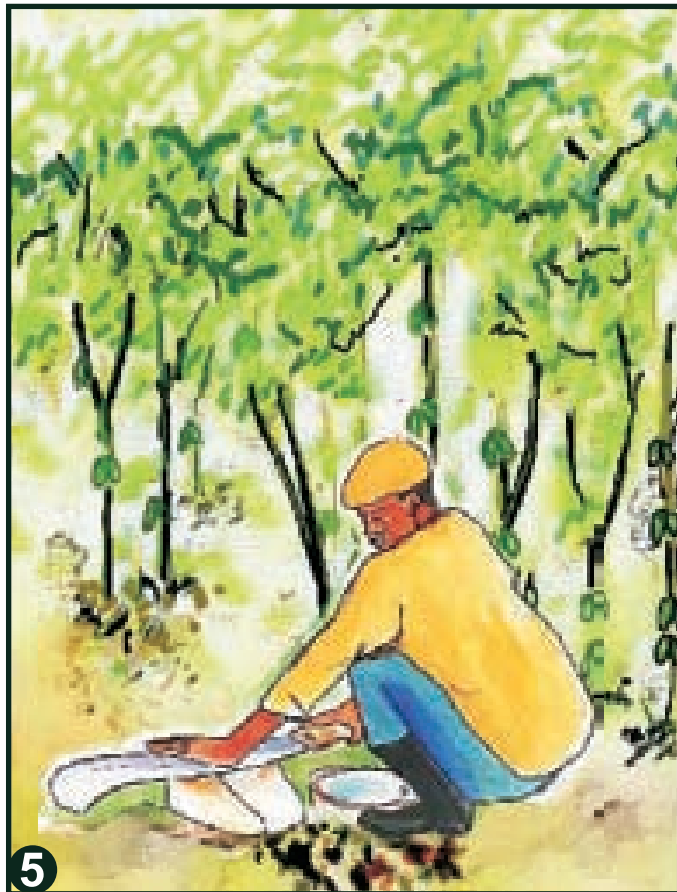
Chupons grow fast, and will over time develop in new trunks or large branches



Remove chupons regularly and at any time of the year



CUTTING CHUPONS



Make decisions about cutting chupons from each tree



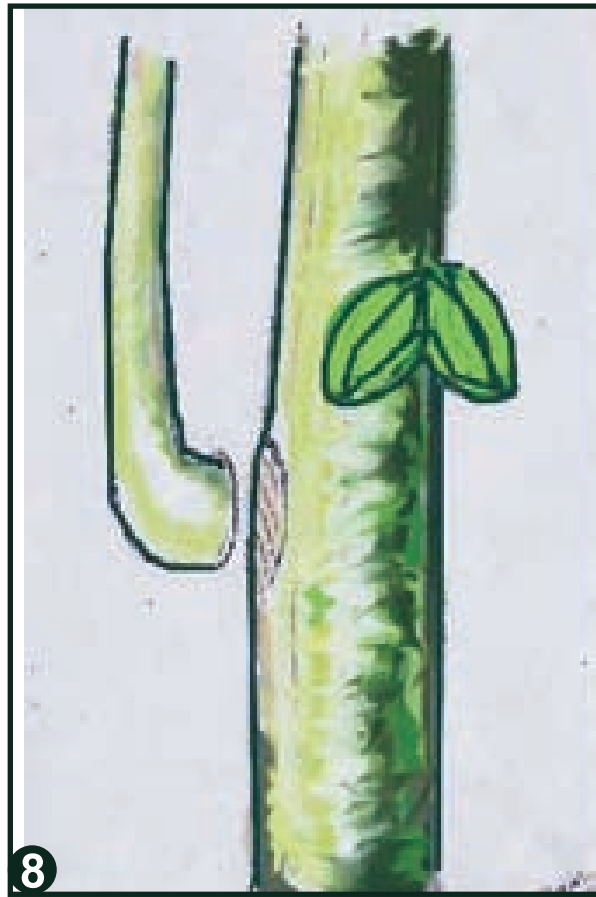
Move from one end of your farm to the other when cutting chupons



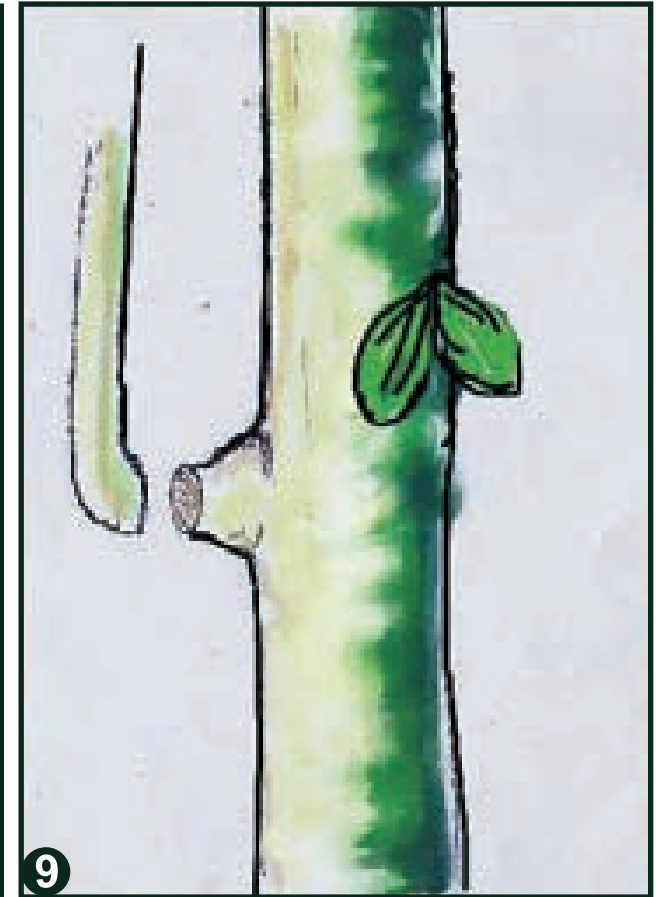
CUTTING CHUPONS



Using a sharp machete, make a “clean” cut at an angle



Cut chupons off close to their base



A badly cut chupon will leave behind a stump that could grow into several stems



CUTTING CHUPONS



When the original stem is not healthy or damaged, allow a new chupon growing low on the stem and below the area of stem damage to grow bigger and develop into a new trunk

Leaving chupons to grow on your cocoa trees will lead to a poor harvest



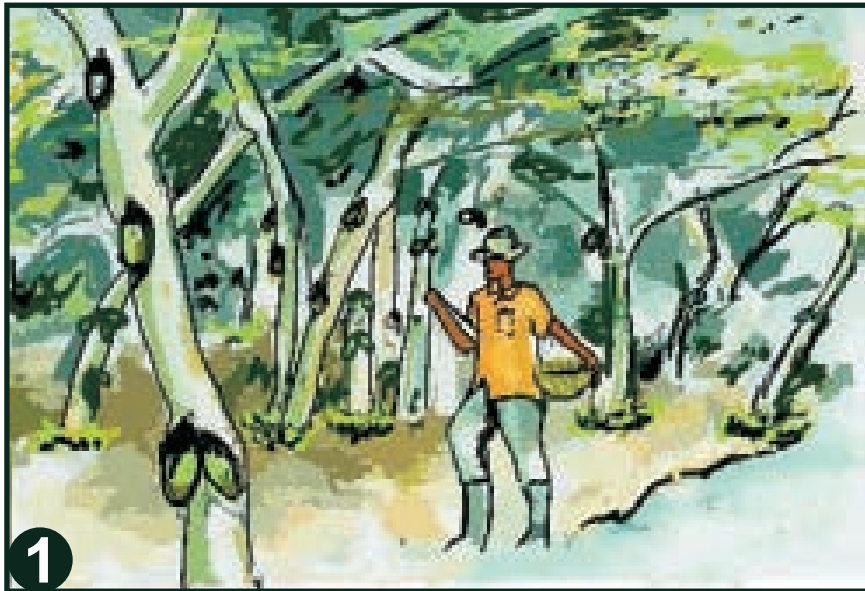
CUTTING CHUPONS



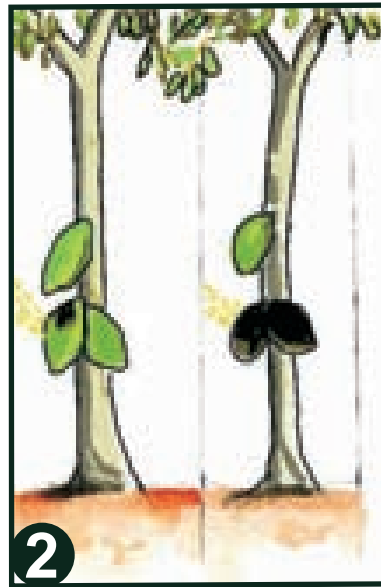
Cutting chupons will lead to a good harvest



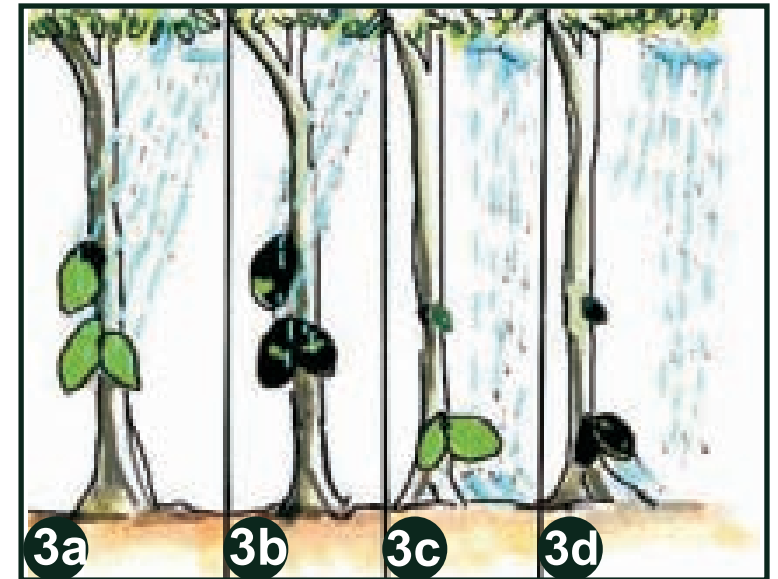
BLACK POD DISEASE



Black pod develops quickly in moist, rainy conditions in farms with heavy shade



Black pod spreads when "disease seeds" from infected pods come in contact with other pods



Black pod disease spreads easily through rainwater



BLACK POD DISEASE



Black pod disease reduces yields



From the start of the rainy season, remove all diseased pods from your farm regularly to prevent the spread of black pod disease



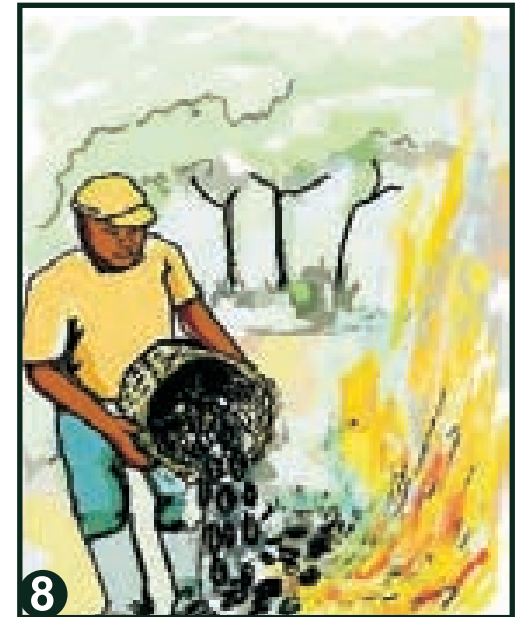
BLACK POD DISEASE



Make sure to remove pods with only few signs of disease



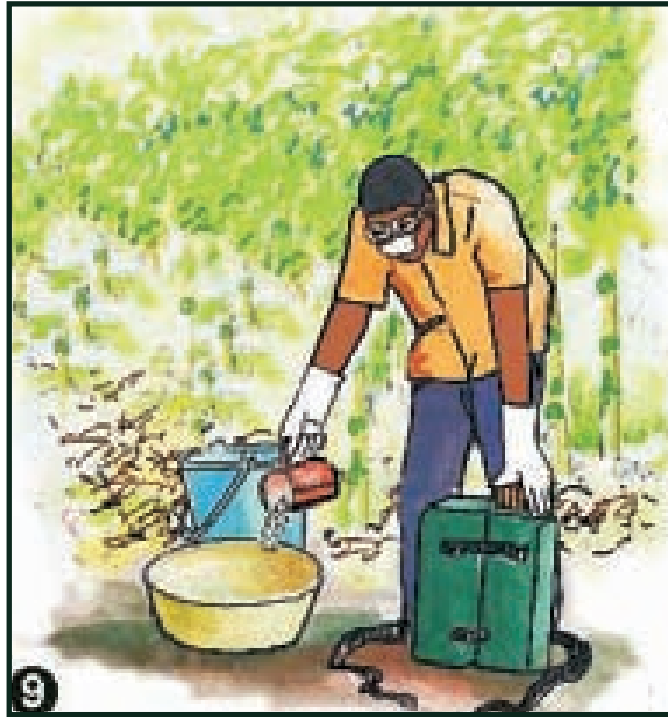
Remove all rotten, dried pods



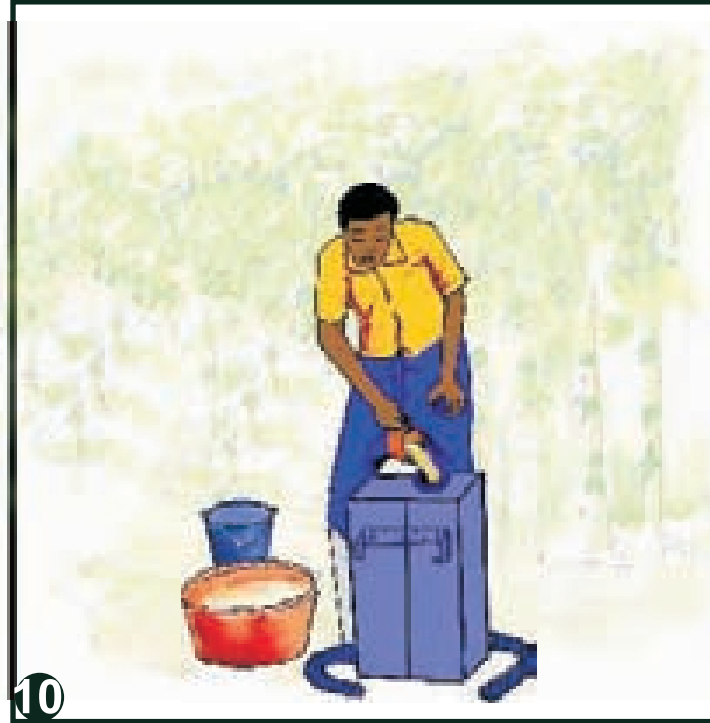
Collect the diseased pods and burn them away from the farm. Do not bury diseased pods



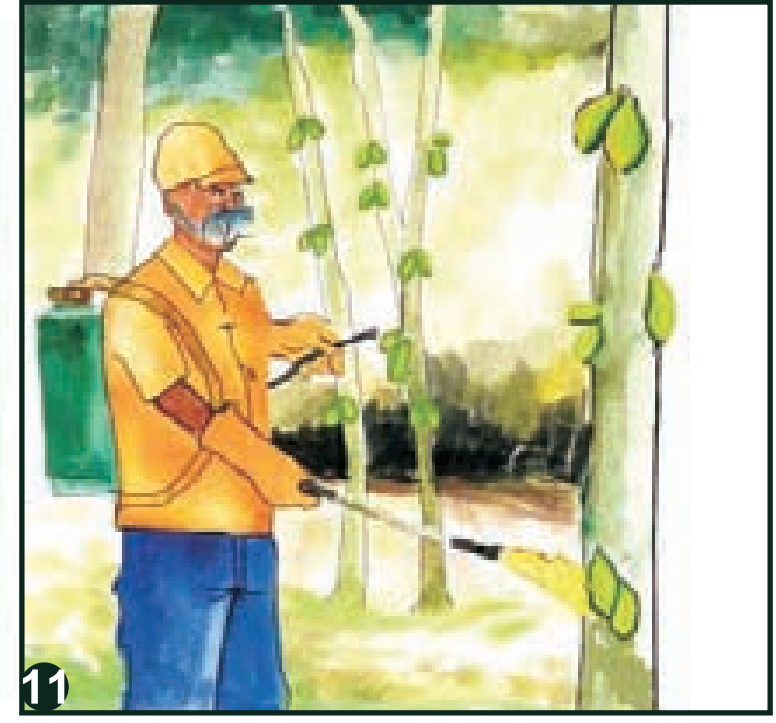
BLACK POD DISEASE



9 Use fungicides against black pod disease. Use only recommended fungicides. Mix the right amount of water with the fungicide



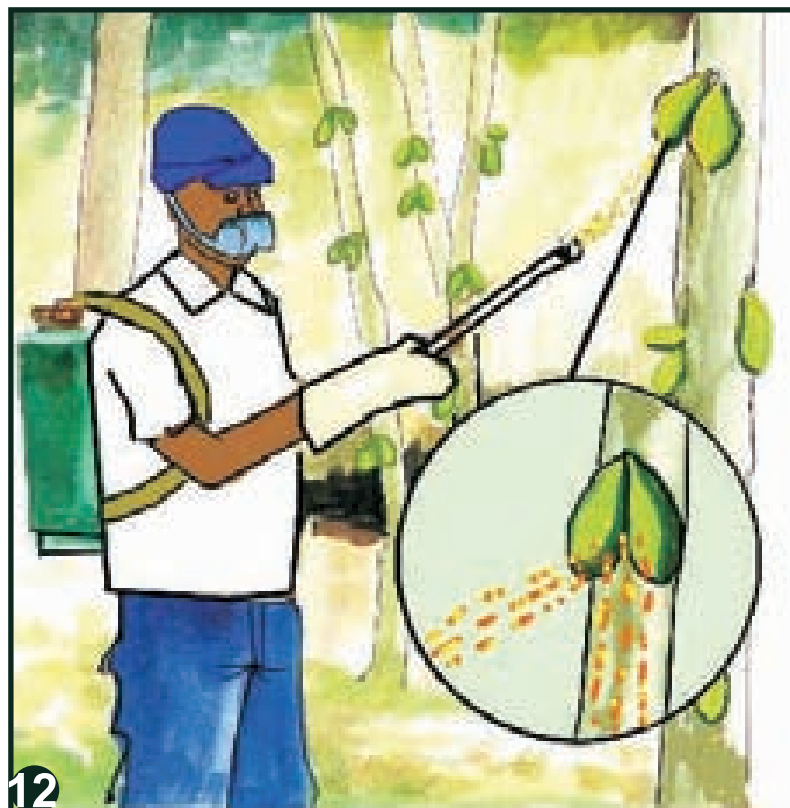
10 Use a knapsack sprayer to apply fungicides



11 Spray until the pods are wet but not to the point where the fungicide drips from the pods or leaves



BLACK POD DISEASE



Spraying to the point where the fungicide drips from the pods or leaves is unnecessary and costly



Controlling black pod on your farm will lead to good yields



KEEPING YOUR COCOA FARM CLEAN

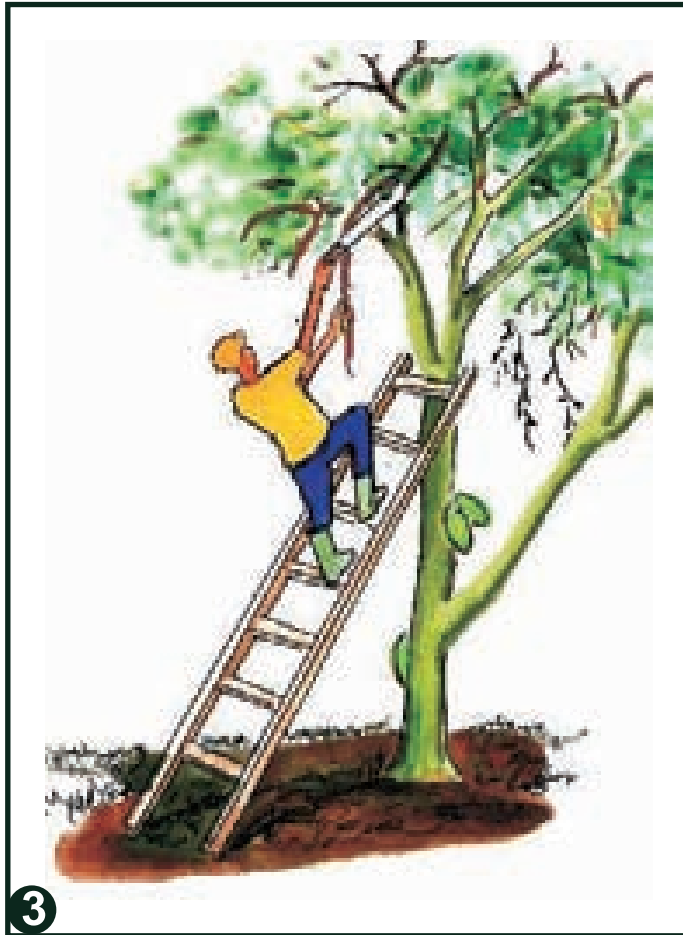


1 Weeds compete with cocoa trees for nutrients and water from the soil, increase humidity in the farm and encourage development of diseases and pests

2 Keep your farm clean by weeding regularly



KEEPING YOUR COCOA FARM CLEAN



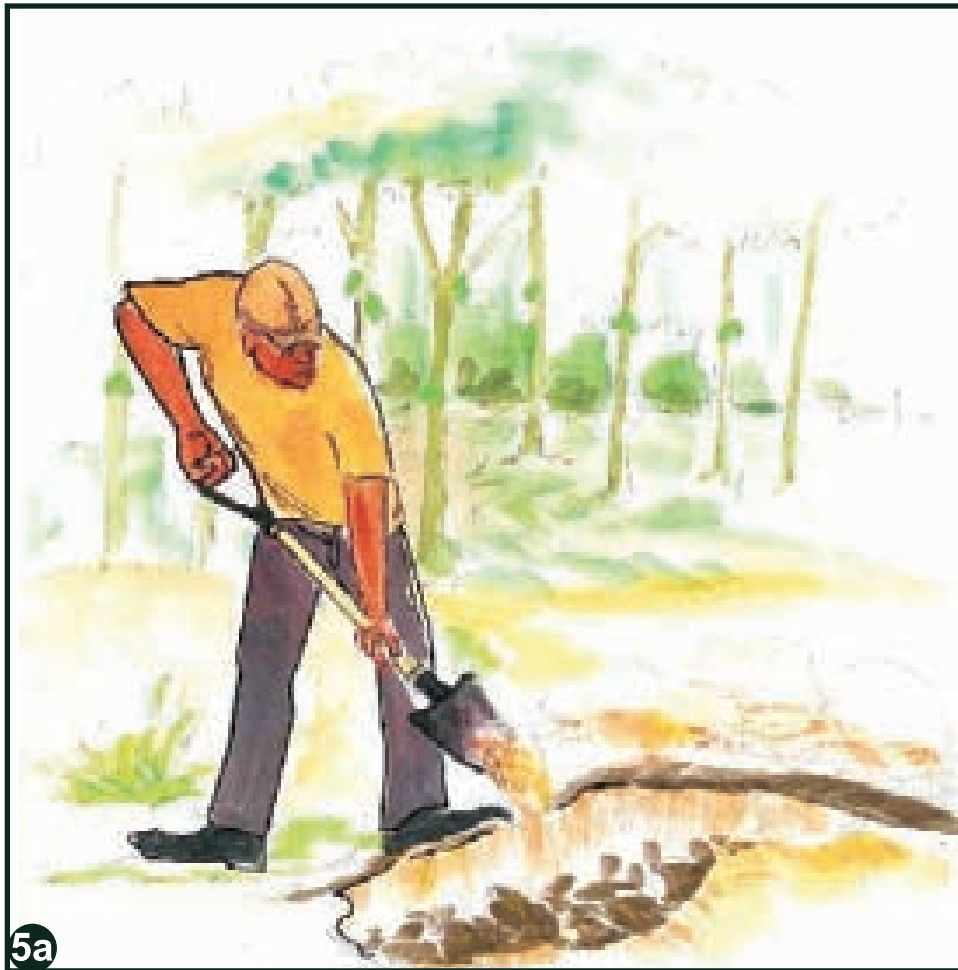
Remove undesirable dry branches from your cocoa trees



Keep your farm clean by removing all diseased, rotten and dried pods



KEEPING YOUR COCOA FARM CLEAN



Burn or bury piles of cocoa husks in a pit outside of the farm



KEEPING YOUR COCOA FARM CLEAN



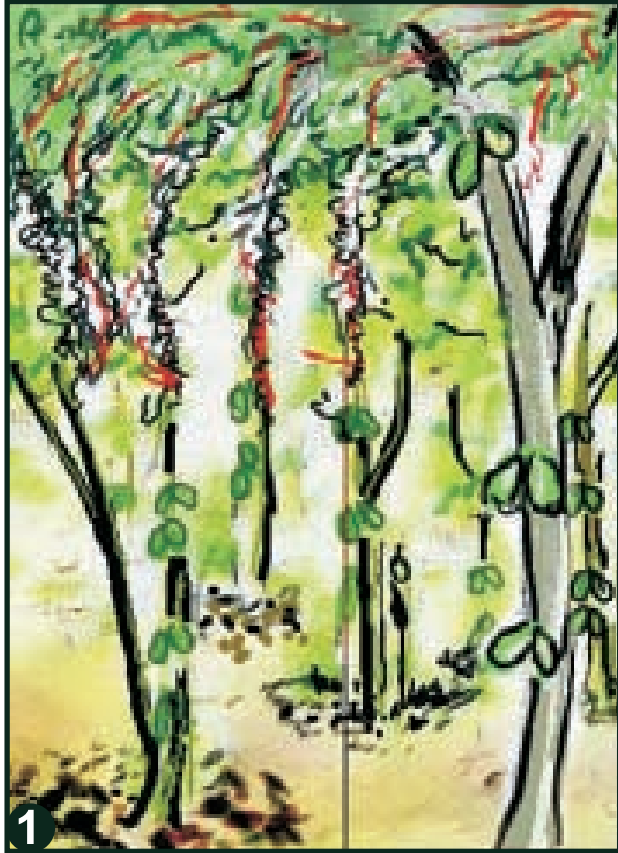
Remove moss when you are pruning and weeding your farm at the beginning of the wet season



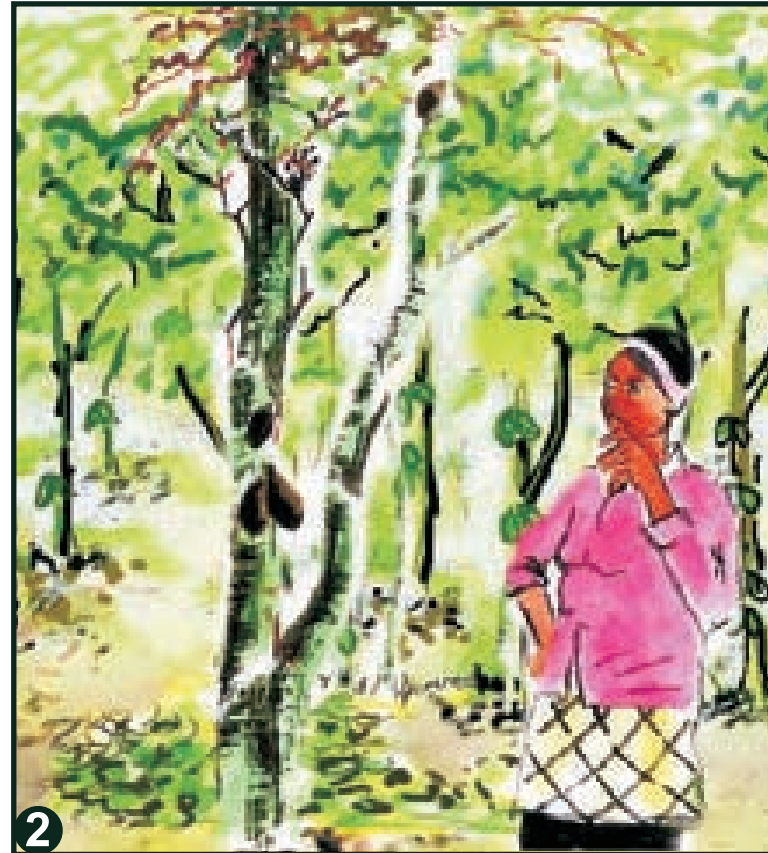
Keeping your farm clean leads to a good harvest



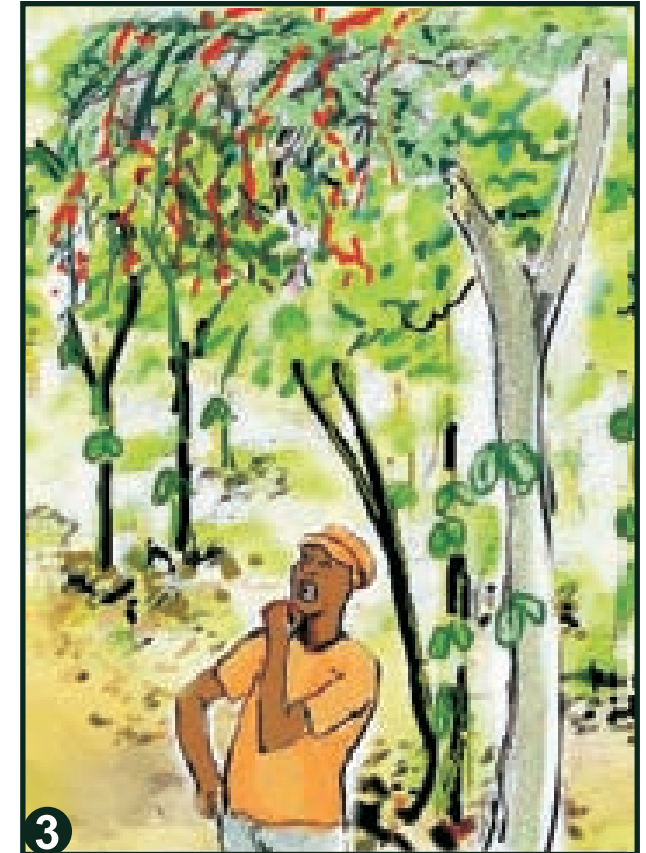
REMOVING MISTLETOE



Mistletoes are plants that grow on cocoa trees and depend on them to live



Mistletoe causes loss of cocoa tree strength and reduces yield



Cutting out mistletoe is best done during the mistletoe flowering season when you can easily see the plants



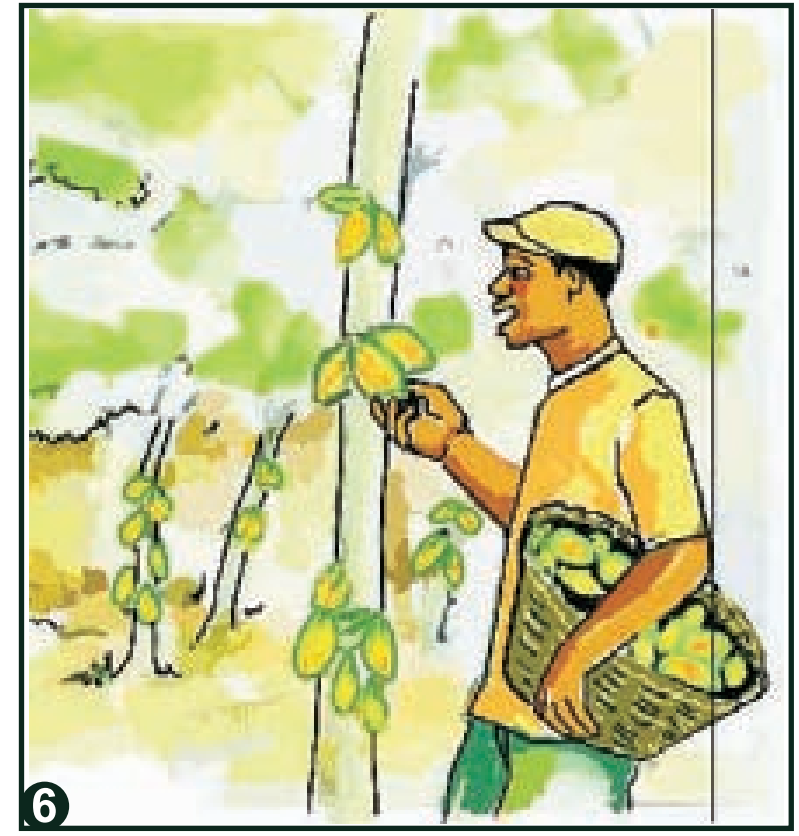
REMOVING MISTLETOE



4 Use a pod-harvesting hook (a small sickle) tied to a long pole for cutting-out young mistletoe and a long-handled pruner for older mistletoe



5 Use a machete to cut out mistletoe plants from young cocoa trees



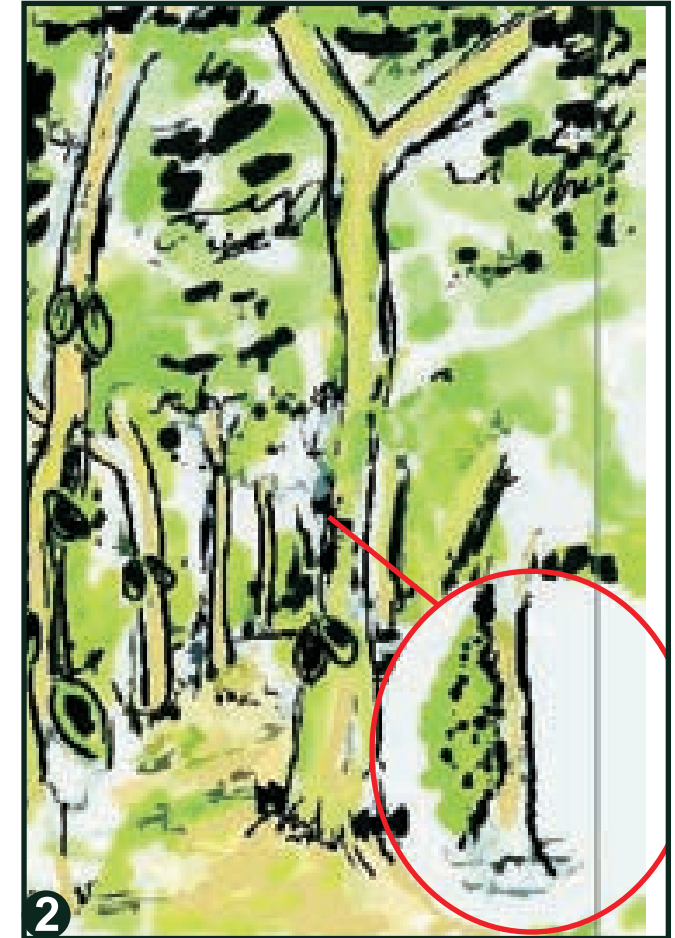
6 Removing mistletoe will improve your yields



REMOVING MOSS



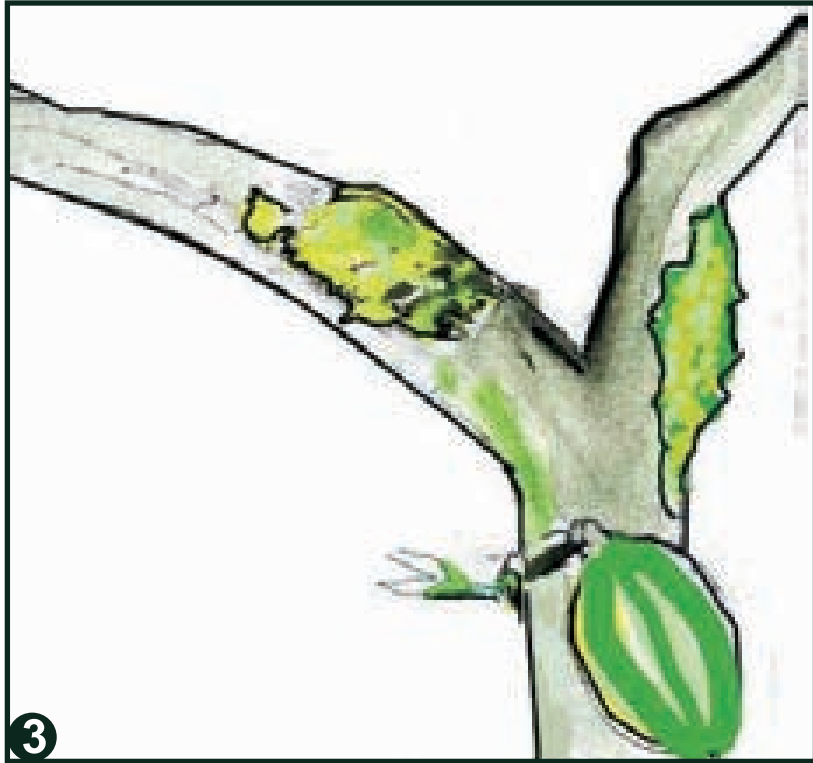
Moss reduces cocoa yields



Moss holds moisture and increases the risk of black pod disease and tree canker



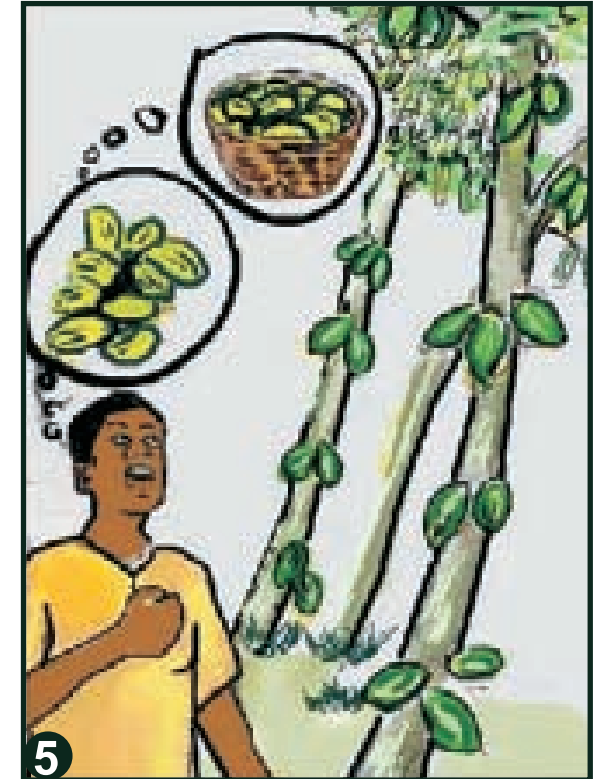
REMOVING MOSS



Moss stops flowers from growing on flower cushions and reduces the number of pods produced



Remove moss by careful scraping the tree with a machete, taking care not to damage the bark.



Removing moss will lead to a good harvest



MANAGING SHADE



Heavy shade from other trees and other cocoa trees encourages the development of diseases such as black pod



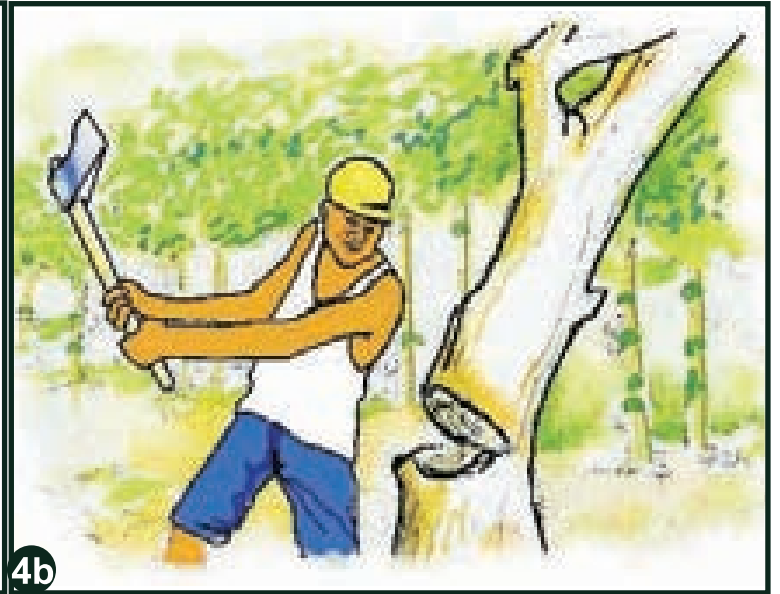
Too much light encourages pests such as mirids



MANAGING SHADE



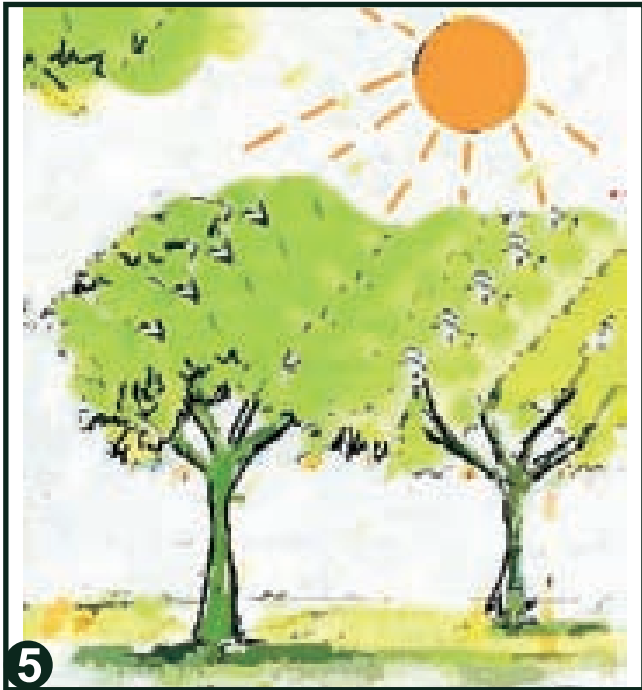
Heavy shade leads to low yields



Remove undesirable shade trees from your cocoa farm



MANAGING SHADE



A cocoa farm should have a good balance of shade and light

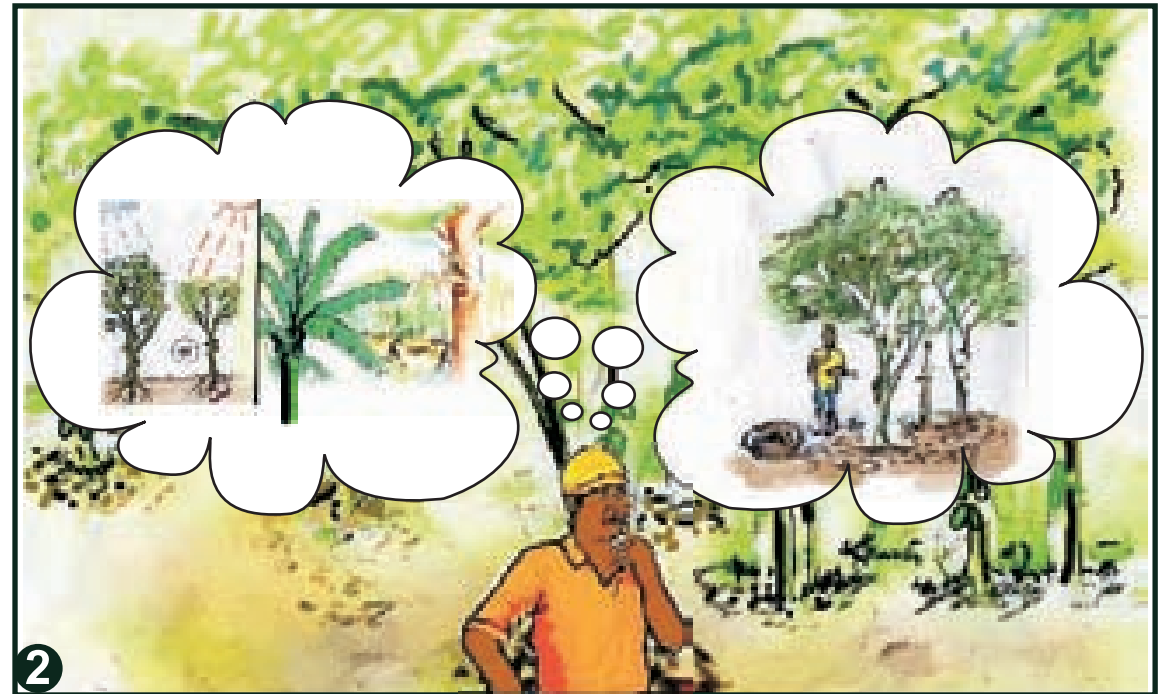


Good shade management leads to good cocoa production





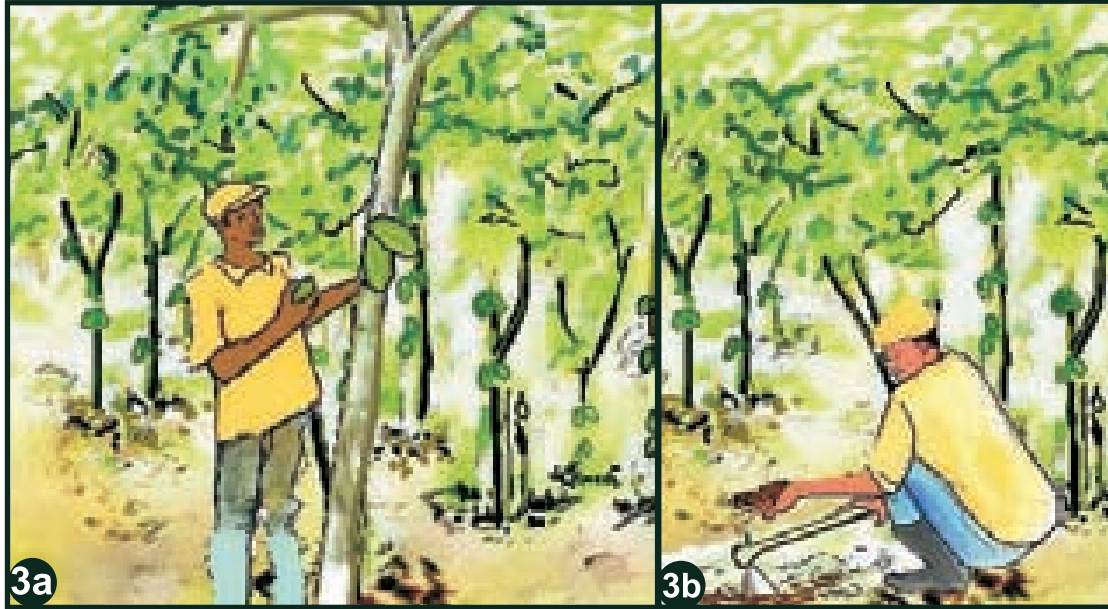
1 To manage a cocoa farm well, it is necessary to understand all the things that are found within a cocoa farm, both living and non-living



2 All living and non-living things on a cocoa farm (cocoa trees, other trees, soil, insects and diseases and animals, the weather and many other parts) affect each other



M A K I N G O B S E R V A T I O N S
O N Y O U R C O C O A F A R M

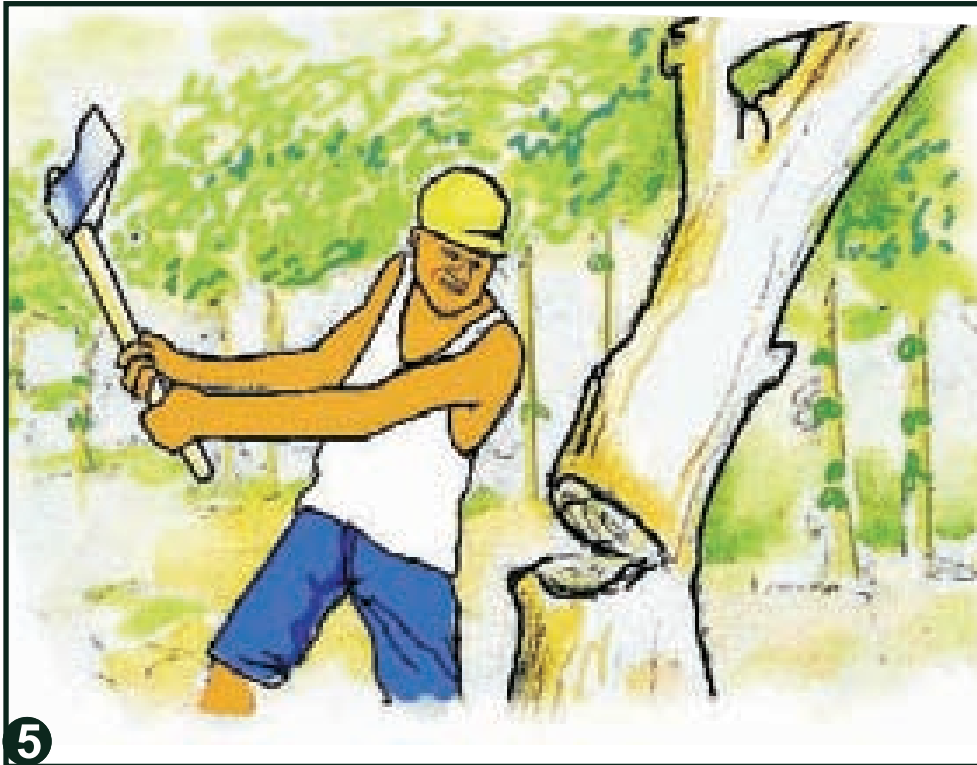


Observe the cocoa trees, other trees, soil, insects and diseases and many other parts of the farm to know what is happening to the crop



Make decisions about how to manage your farm and overcome your problems





Act to implement the management decision you choose to overcome the problem observed



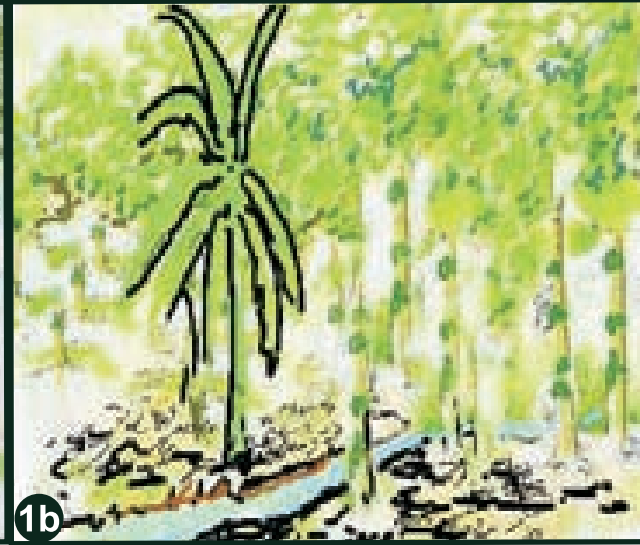
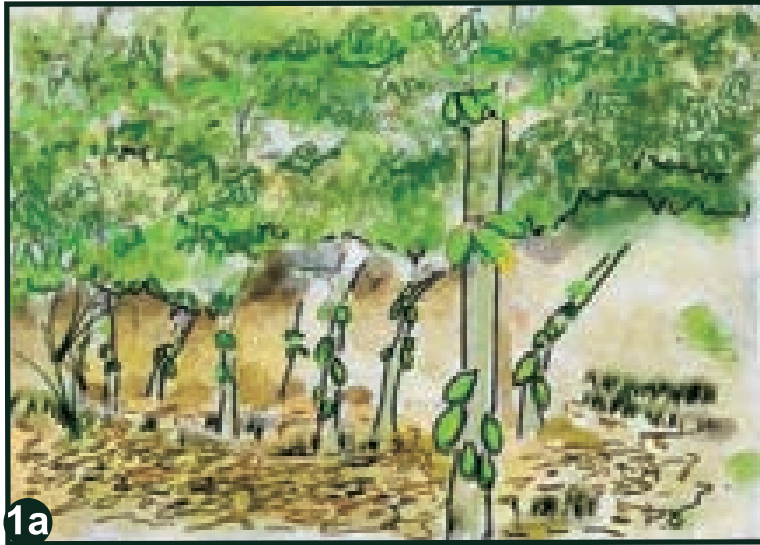
Changing one thing on a cocoa farm will affect many other things



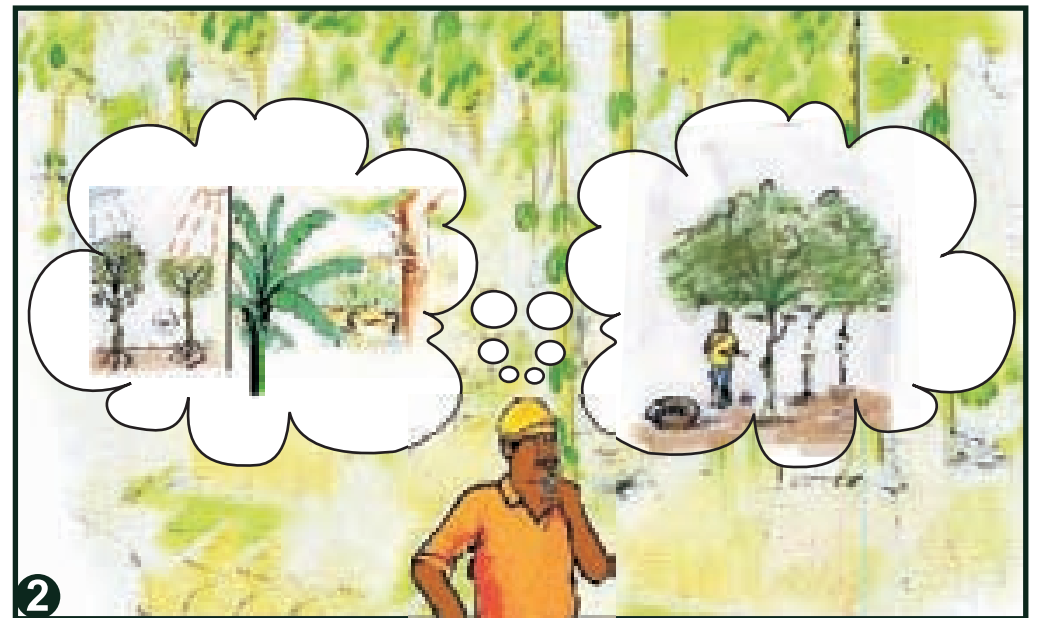
Action based on observation can improve your cocoa production



TRYING NEW IDEAS ON YOUR COCOA FARM



Each cocoa farm is different



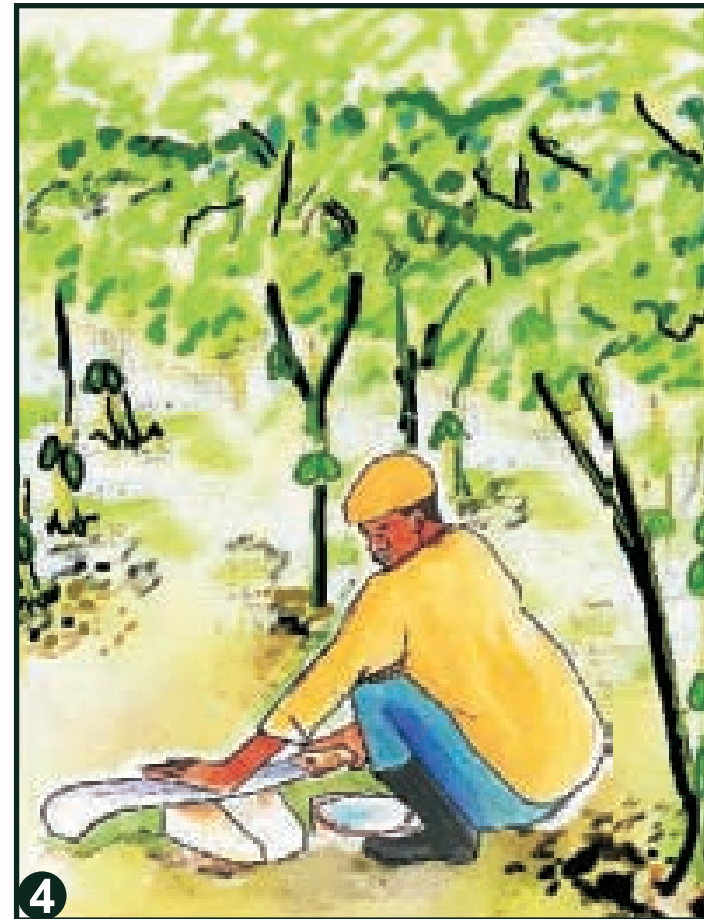
Be the expert on your farm by understanding your specific problems and conditions



TRYING NEW IDEAS ON YOUR COCOA FARM



Think of different options for
overcoming your problems



Have confidence to try out new ideas that
no one has taught you



TRYING NEW IDEAS ON YOUR COCOA FARM



Learn by trying out new ideas that someone taught you



Learn by trying out new ideas that no one has taught you



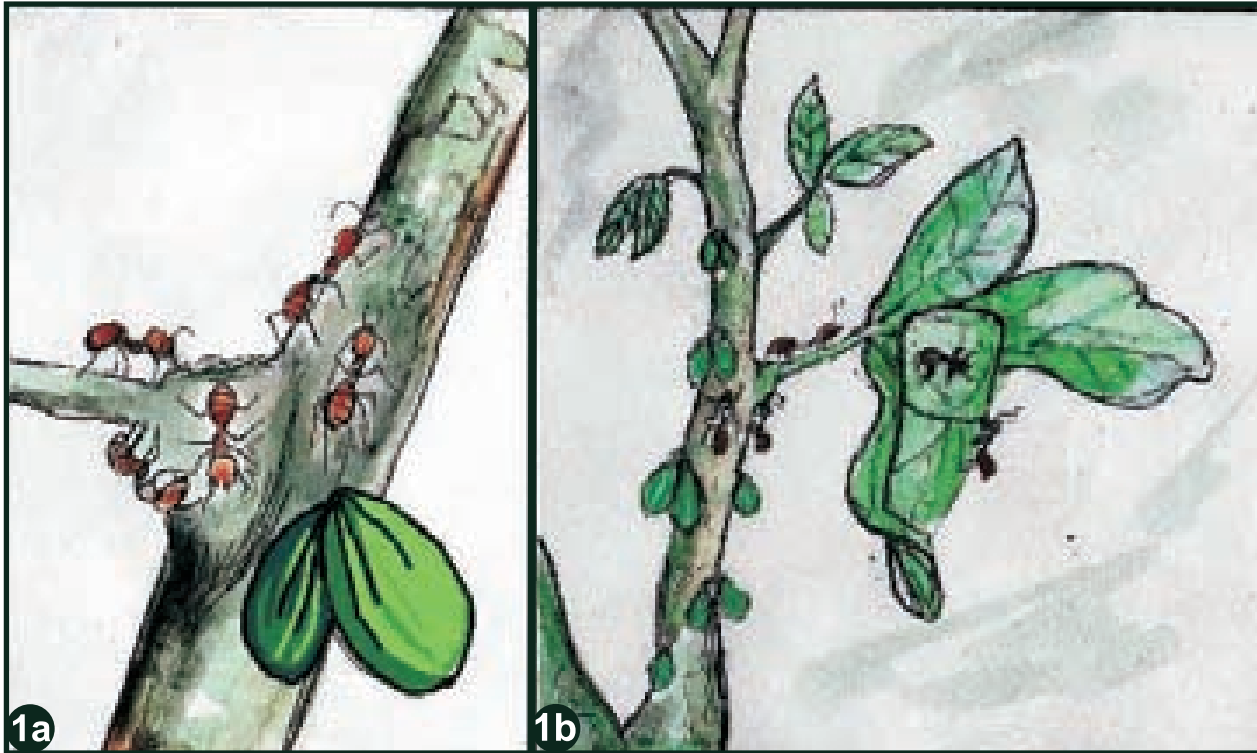
TRYING NEW IDEAS ON YOUR COCOA FARM



Trying new ideas can improve your cocoa production



NOT ALL INSECTS ARE HARMFUL



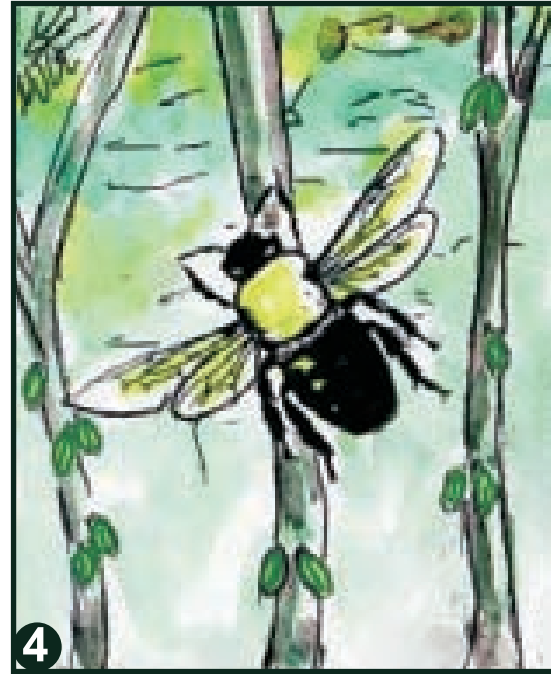
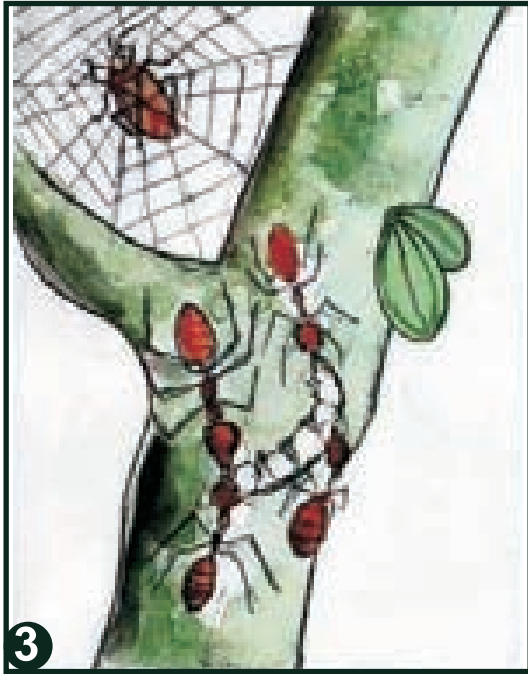
Not all insects in a cocoa farm are harmful to cocoa



Some insects are the enemy of the farmer (pests) because they damage the crop



NOT ALL INSECTS ARE HARMFUL



Other insects are the friend of the farmer because they eat pests and help control them

Some insects are neither friends nor enemies of the farmer

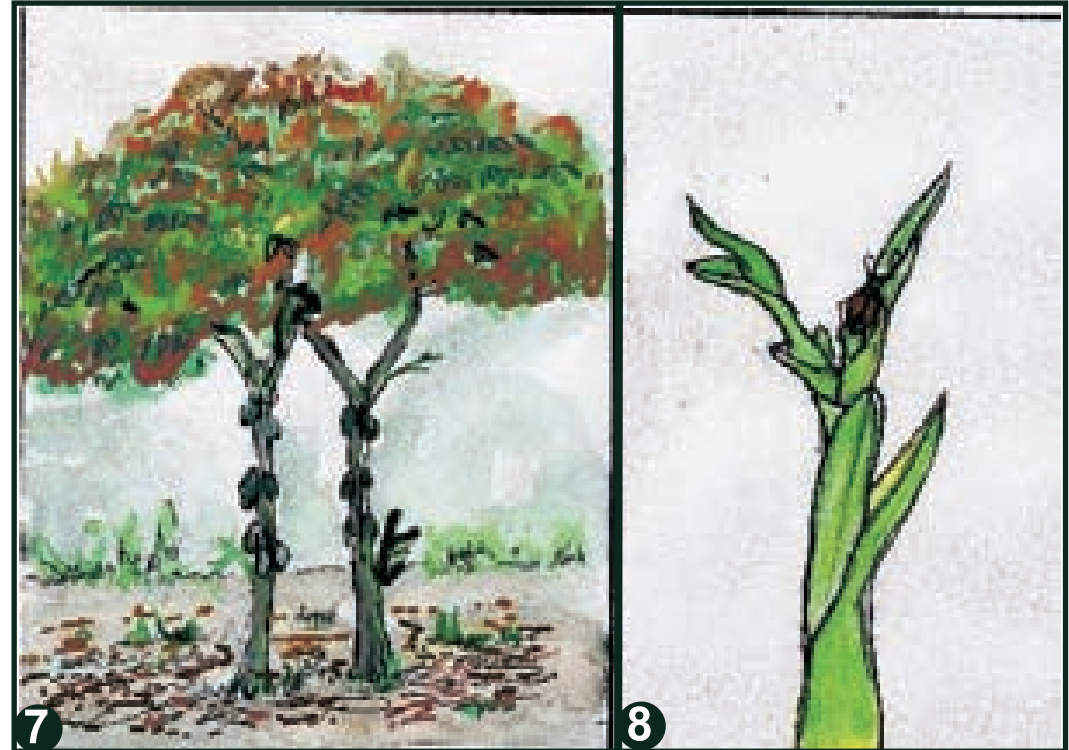
Some insects like mirids, use needle-like mouthpart to pierce cocoa pods or young shoots to suck the sap



NOT ALL INSECTS ARE HARMFUL



Mirids make little scars on cocoa pods



Mirids also damage leaves and young shoots



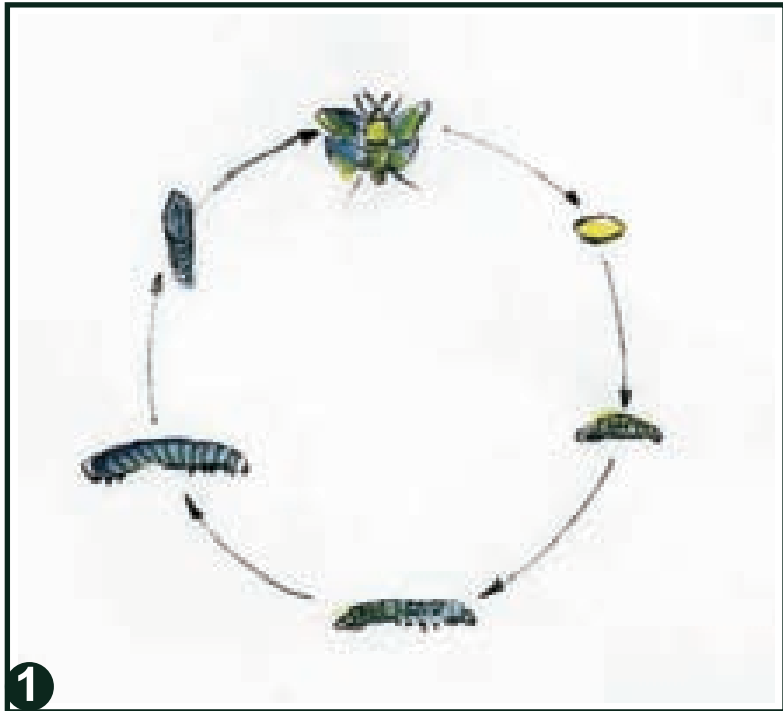
NOT ALL INSECTS ARE HARMFUL



Knowing which insects are good and which are harmful
allows you to decide how to use insecticide

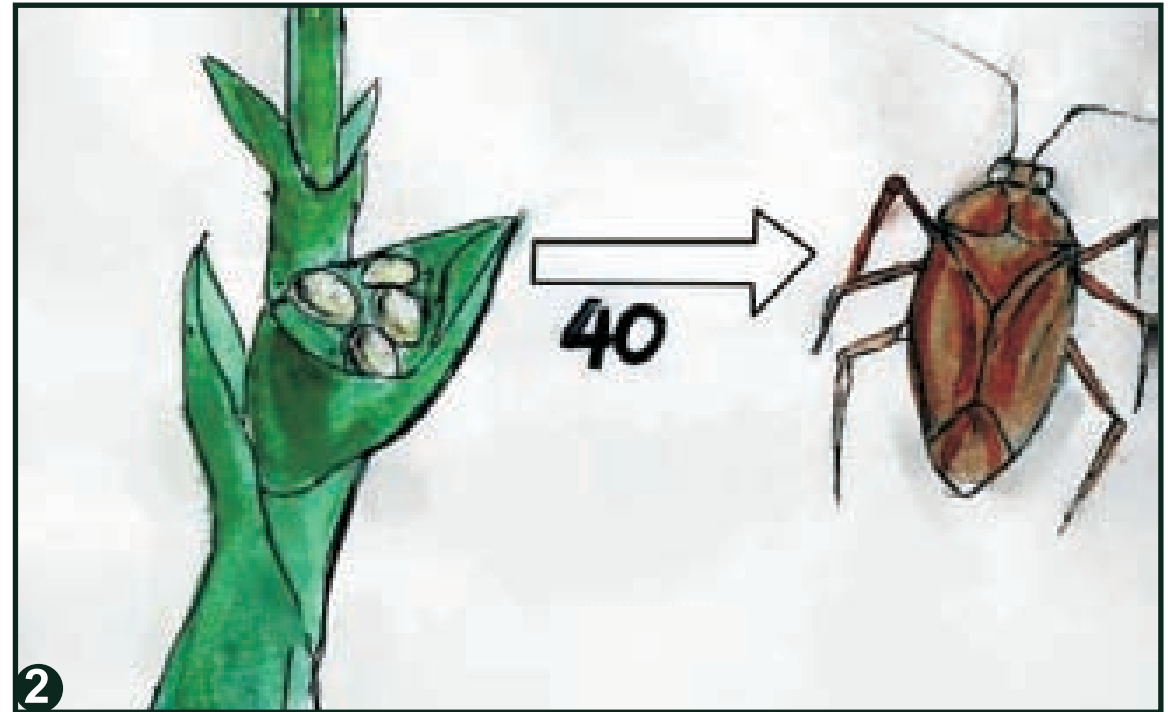


UNDERSTANDING INSECTS



1

Insects go through different stages of development

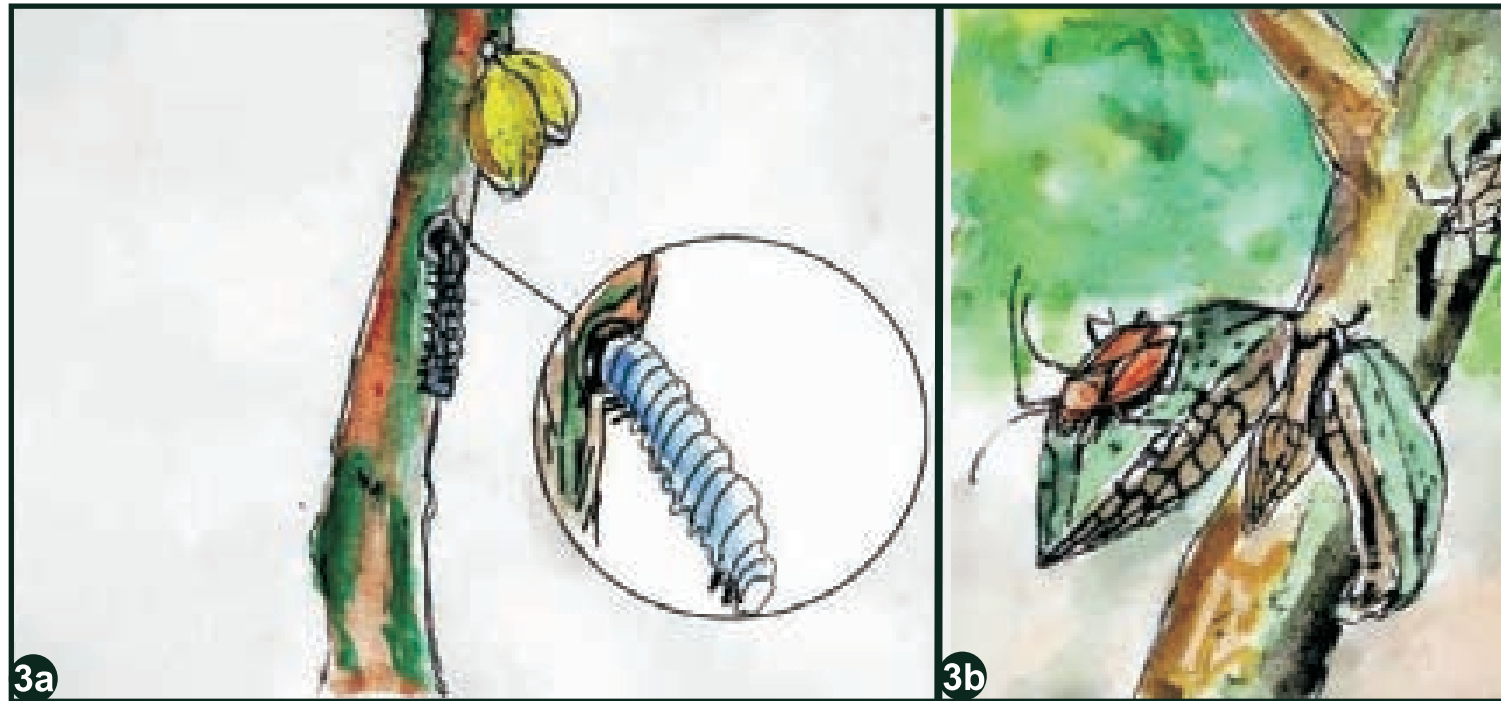


2

It takes about 40 days for a mirid to develop from egg to adult



UNDERSTANDING INSECTS



Insects damage plant parts in different ways, depending on the stage of development



UNDERSTANDING INSECTS



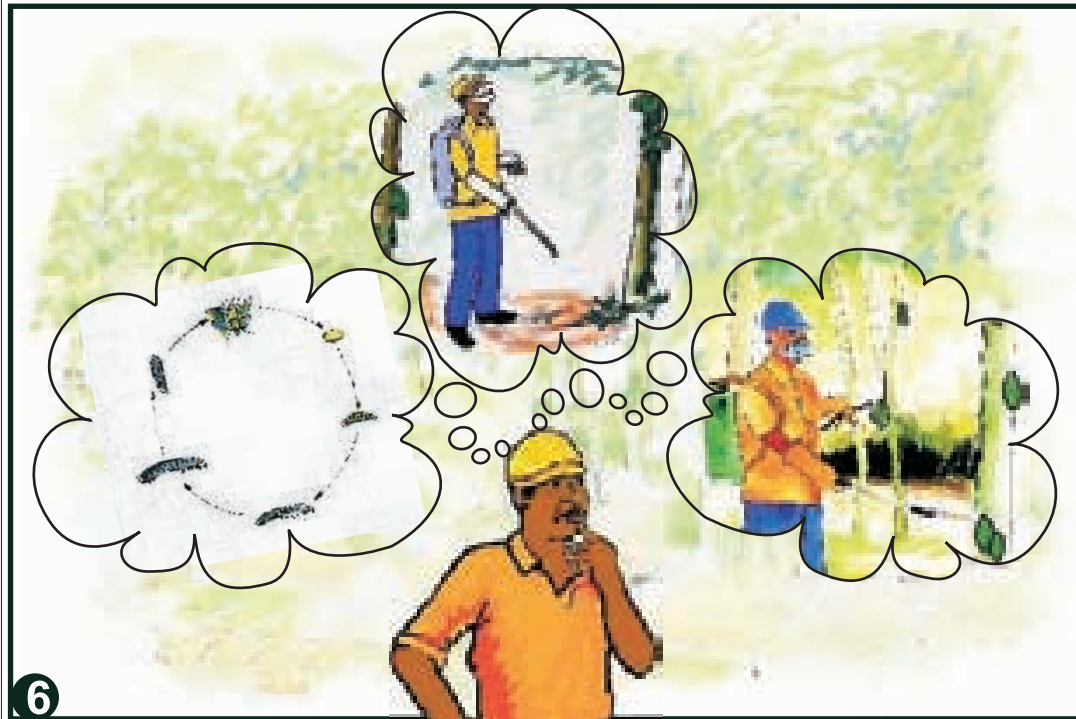
Insecticides kill all insects, both friends and enemies of the farmer



It is important to carefully choose the type of insecticide you use so as not to kill friends of the farmer



UNDERSTANDING INSECTS



Only use insecticide if you have to and use as little as possible



Understanding insects will help you to decide how to use insecticide

