

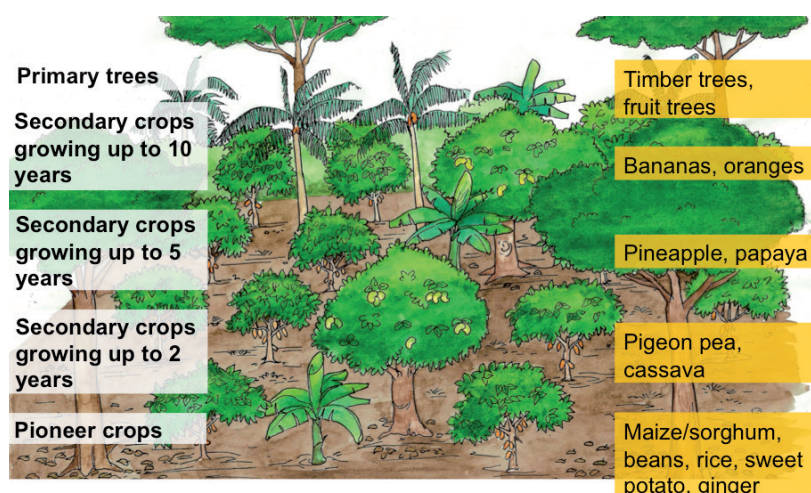
GROWING COCOA THE ORGANIC WAY



Creating a diverse and stratified forest system and pruning cocoa and shade trees regularly are the keys to sustainable cocoa production.

According to the International Federation of Organic Agriculture Movements (IFOAM, 2008) organic agriculture is «a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.»

Creating suitable growing conditions



Ideal growing conditions

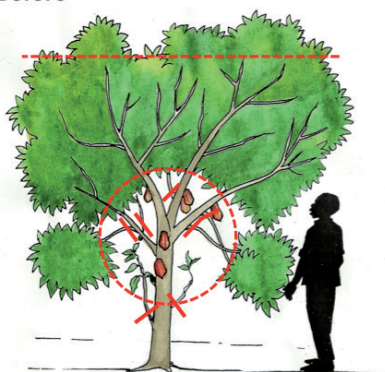
- > Temperatures from 25 °C to 28 °C
- > High and well-distributed rainfall with a short dry period
- > Shade with periods of higher light penetration through the canopy
- > Deep soil with good drainage and sufficient organic matter

Appropriate cropping system

A multistorey agroforestry system with various annual crops and tree crops provides adequate shade to protect the soil and the cocoa trees from the sun.

Proper pruning

Before



After

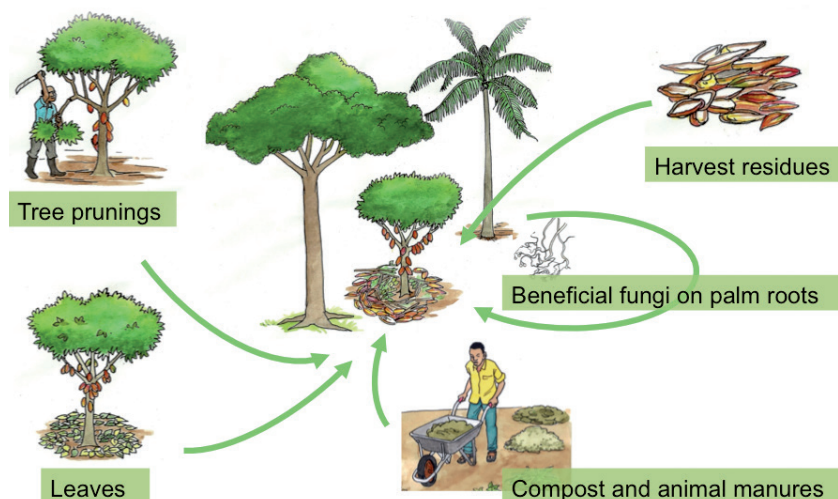


Prune cocoa and shade trees 6 months before expected harvest to stimulate flowering of cocoa and facilitate harvesting.

How to prune cocoa trees:

- > Limit fan branches to 3 or 4.
- > Remove all branches within 60 cm of the jorquette.
- > Remove all old and diseased branches, all branches growing into the centre of the tree canopy, and remove all basal chupons at regular intervals.
- > Trimm off branches that hang below the jorquette and top branches above 2.5 to 3 m.

Soil fertility management



- › Cover the soil with tree prunings and harvest residues to ensure continuous addition of organic material to the soil.
- › Integration of palm trees that grow in symbiosis with mycorrhiza-fungi improves availability of phosphorus and other nutrients.
- › Regular application of animal manure and compost provides nutrients and improves soil structure and its capacity to hold water and nutrients.

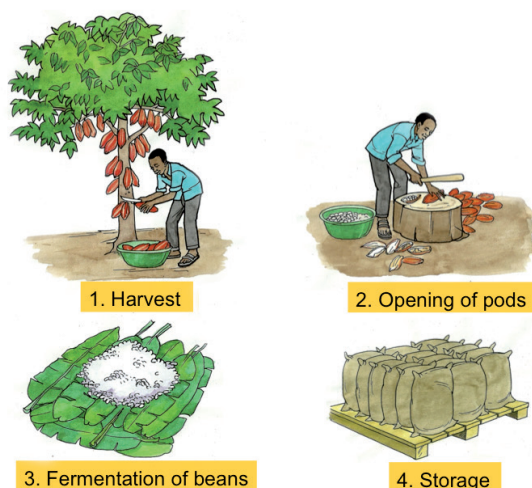
Management of diseases and pests

Common pests and diseases

Mirids (capsids)	<ul style="list-style-type: none"> › Sucking insects damaging young shoots and cocoa pods › Brown or black sap lesions, later infested by disease › Young cocoa trees are very vulnerable when grown without shade.
Mealybugs	<ul style="list-style-type: none"> › Vectors of CSSV
Cocoa swollen shoot virus disease (CSSV)	<ul style="list-style-type: none"> › Virus transmitted by mealybugs. › Swelling of roots and stems, red interveinal chlorosis of leaves, trees becoming yellow, infected trees can die.
Black pod	<ul style="list-style-type: none"> › Caused by several species of the fungi <i>Phytophthora</i> › Pods can be infected at any stage of development. › Small translucent spots turn into a chocolate brown colour, then the whole pod turns black and mummifies. Infected pods have white spores on their surface.

- › Use disease resistant and pest tolerant varieties and healthy planting material only.
- › Ensure field hygiene by regularly removing diseased plant material and pods.
- › Regularly prune cocoa trees to decrease the humidity within the canopy and reduce the risk of diseases.
- › Maintain soil fertility to improve general health of the cocoa trees.
- › Regularly cut weeds to provide needed air circulation and reduce humidity.

Proper harvesting and postharvest handling



- › Harvest every 1.5 to 3 weeks without damaging the stem.
- › Store the pods for a few days.
- › Open the pods without damaging the beans.
- › Ferment the beans by wrapping them in banana leaves, making heaps of 100 kg or stacking and covering them on trays.
- › Move the beans every 2nd day until they have turned brown.
- › Dry the fermented beans by spreading them in the sun.
- › Store the beans in a dry place with good ventilation.