

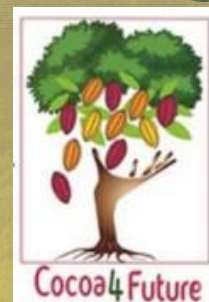
Integrating companion trees in cocoa farms

Method to support cocoa farmers on agroforestry techniques

for agricultural technicians and advisors

**A Nitidæ Guide
October 2025**

Summary




nitidæ
landscapes & value chains

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Outlook of this guide

Agroforestry is one of many strategies for maintaining cocoa farms in a postforest environment. The (re)integration of trees is part of a broad range of farmer innovations that some cocoa farmers implement naturally.

Agroforestry is multifaceted, so ways of promoting it will depend on the regional setting (soil-climate conditions) and farmers' needs: diversification, resilience, fertility, etc.

That is why most agroforestry programs based on seedling distribution and/or environmental service payments have yielded mixed results.

This guide offers a new approach to support the transition of cocoa farming systems via detailed assessments of the specific needs of each plot, greater farmer involvement and close monitoring.

The guide is designed to provide farmers with better agricultural advice while supporting farming technicians, advisors, cooperative staff and project leaders in their efforts to foster agroforestry.

Nitidæ's experience

By assessing the current state of agroforestry in cocoa farms, documenting farmers' know-how and carrying out ongoing experiments on our approach to (re)integrating companion trees in cocoa farms, Nitidæ has developed comprehensive, broad ranging agroforestry expertise.

This wealth of experience has enabled us to outline key principles for an effective approach to supporting agroforestry transitions in cocoa farming systems.

How to use this guide

This guide is divided into two parts, as follows:

The first part, entitled 'Companion trees and cocoa trees', highlights the diversity of cocoa agroforestry systems and the various ways other trees in the stand affect cocoa trees, while explaining the difficulties involved in supporting the agroforestry transition in cocoa farms.

The second part, 'Agricultural advisory steps', explains the method implemented by Nitidæ to help farmers make the agroforestry transition in their cocoa farms. The fact sheets summarise the method so as to facilitate its application by agricultural advisors and technicians.

This part also discusses the costs involved and the vital complementary resources needed to (re)integrate companion trees in cocoa farms.

Available tools

Fact sheets are proposed throughout the guide under this banner:

FACT SHEET

The guide also includes recurring features to foster effective dynamic agricultural advisory services in close liaison with farmers. These include:



My stance as an efficient advisor

These speech bubbles explain how to offer dynamic agricultural advice with solutions tailored to my farmers' needs.



Tapping farmers' natural know-how

Some farmers' practices are emerging naturally that could guide agricultural advisory services.

Advisor-farmer discussions

I can thus offer dynamic agricultural advice and solutions tailored to my farmers' needs.



As a woman farmer, I feel more supported and better understood when agricultural advisors take my experience into consideration, which means I can get quick solutions tailored for me.

PART I: Companion trees and cocoa trees

A range of cocoa agroforestry systems

Agroforestry refers to situations where cocoa trees and companion trees grow alongside in the same plot.

As you may guess, not just one but countless agroforestry systems exist, as illustrated by the following examples:



High-density agroforest: cocoa trees are planted in heavy shade under a sparse forest canopy.



Association of two dominant species: cocoa and limba trees. The latter are mainly grown here for subsequent timber production.



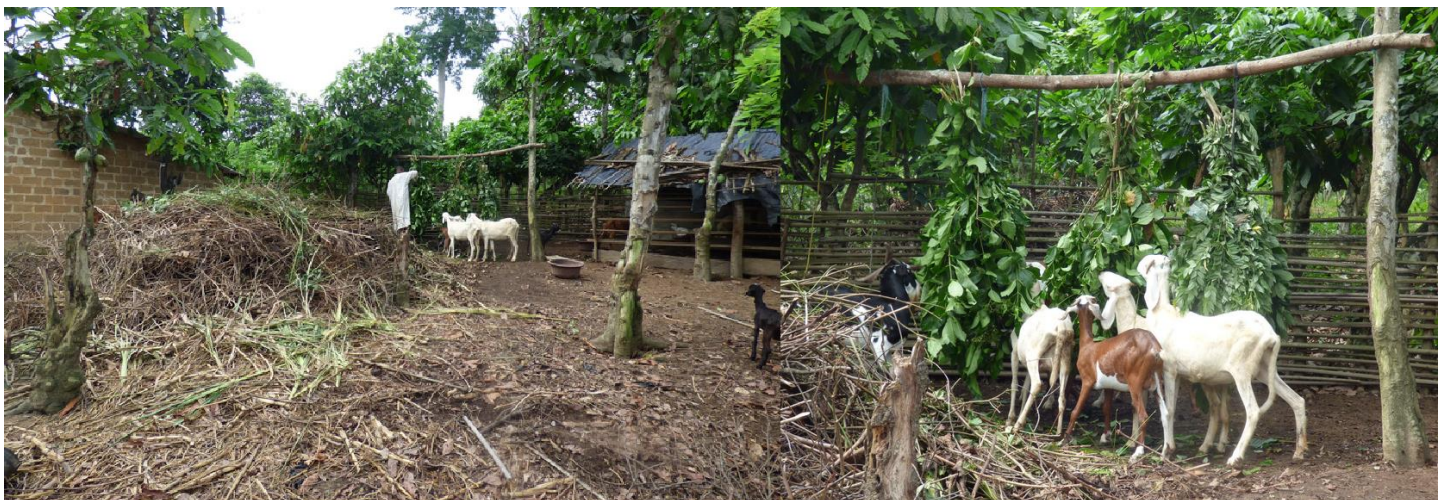
Low-density agroforest: trees are planted and wildlings/regrowth trees are preserved for their beneficial agronomic (shade, soil fertility, etc.), commercial, medicinal and food features.



Two-species association:
Cocoa/*Gliricidia sepium* trees: the aim is to tap the agronomic benefits, i.e. boost the nutrient supply for cocoa trees. Leguminous *G. sepium* trees have a positive impact on cocoa stand soil fertility.



Cocoa/banana tree association: in young plantations, commercial income may be generated earlier from banana trees than from cocoa trees, while boosting available water supplies for young cocoa trees.



Livestock rearing/cocoa tree association: forest sandpaper fig trees in the plot are pruned regularly as a fodder supply for penned sheep and goat rearing. The livestock dung is composted and used to fertilize the cocoa stand.

Effects of companion trees on cocoa trees

Cocoa farmers sometimes have many other trees growing in their cocoa stands.

Farmers keep these trees for their diverse benefits: food, medicine, fodder, timber, etc.

These trees also interact with cocoa trees.

In *Les Arbres des Cacaoyères*, a compendium of farmers' knowledge (ref. page 37), companion tree species are classified in four main categories according to their effects on cocoa trees.

POSITIVE SPECIES

These species have a range of positive effects on cocoa pod production and tree growth.

AMBIVALENT SPECIES

These species may combine positive (e.g. enhancing soil fertility) and negative (e.g. excessive shade) effects.

NEGATIVE SPECIES

Conversely, these species have a negative impact on cocoa pod production and tree growth. They are kept in the stands because of their other functions: food, medicinal, economic, etc.

NEUTRAL SPECIES

The presence of these species has little noticeable impact on cocoa trees.

Types of companion trees in cocoa farms

Companion trees in cocoa farms may differ in terms of their origins and uses in the plot.

Let's have a quick look!

RESIDUAL TREES

When a cocoa orchard is planted, some of the previous trees may be deliberately kept and others left standing because they are hard to fell.

Right: an old baku (*Tieghemella heckelii*) tree.



PLANTED FOREST TREES

Some farmers even plant forest trees in their cocoa stands, but the species may differ from those growing spontaneously.

They are chosen by the farmers so as to benefit from the services they provide: economic, medicinal, etc.

Right: a limba (*Terminalia superba*) tree – often planted because it grows quickly.



REGROWTH TREES/WILDLINGS

Some farmers select so-called 'wildlings' that could be beneficial in their plots.

There are several advantages:

- No financial output for the farmer.
- Wildlings are very resistant and have a low mortality rate due to their highly developed root system.
- When the plot is nearby a forest, the regrowth tree diversity may be quite high.



Above: a kapok tree (*Ceiba pentandra*).

Different companion tree names

In the following discussions, companion trees are often referred to by their Baoulé or French names. An index of their scientific names, and English common names, is available on page 38.

Companion trees – an agronomic ally for farmers

Farmers may have various reasons for keeping companion trees in their stands (food, medicine, fodder, timber, etc.), but they are sometimes less aware of their agronomic value and positive effects on cocoa trees.

COMPANION TREES – AN ALLY FOR FARMERS

**MAINTAIN OR
ENHANCE
COCOA
FARM
PRODUCTION**

**EXTEND THE
LIFESPAN OF
THE PLOT**

**REDUCE INPUT
RELIANCE IN
THE PLOT**

1. **COMPANION TREES – AN ALLY IN COMBATING DROUGHT**
2. **COMPANION TREES – AN ALLY IN BOOSTING FERTILITY**
3. **COMPANION TREES – AN ALLY IN CONTROLLING PESTS AND DISEASES**

Companion trees – an ally in combating drought

Hey Peter!

Look at my plot—the drought is really taking its toll but yours is looking very healthy. How do you do it?



Well come on into my plot. See I've left African mahogany trees standing. It's really moist and fertile underneath them!



Right: an African mahogany (*Khaya ivorensis*) tree.



Oh yeah, I'd noticed that. So, can any other trees help me cope with the drought?



There are lots of trees that can help you out. Some offer good shade for the cocoa trees, like essia or African mahogany trees. Others, like broom-cluster fig, will keep the soil moist. Some others, like brimstone tree, even weep during the dry season. But there are also others that may dry out your soil.



Companion trees – an ally in boosting fertility

Hey Amanda!
Look at my plot – the soil's exhausted, but yours is looking very healthy. How do you do it?



Well come on into my plot. See I've left some broom-cluster fig trees in it. Their fallen fruit and leaves strengthen the soil.



Right: an broom-cluster fig
(*Ficus sur*) tree.



Some leguminous trees like the African locust bean may enrich the soil with nitrogen. Their root systems generally grow deeper than those of cocoa trees, so they can pump up other nutrients that may benefit the cocoa trees.



Companion trees – an ally in controlling pests and diseases

Hey Amanda!
Look at my plot – I have too many cocoa mirid outbreaks and the control products are getting expensive, but your plot looks great. How do you do it?



Well come on into my plot. See I've planted some boundary and kola trees.



Below: kola nuts
(*Cola nitida*)



Below: a boundary tree
(*Newbouldia laevis*)



Kola nut trees cast too much shade on cocoa trees. But this may be very useful for some cocoa trees because they attract red ants which, although maybe not as effective as pesticides, could help the trees defend themselves from the mirids.



I've also planted neem trees and use their leaves in preparations to control mirids and black pod rot.



**Farmers often need help when integrating trees in their cocoa farms.
How can they be supported in this task?**

Current agroforestry integration campaign... with mixed outcomes

**POOR PLANTING
PERIOD**

**NO FARMER
INVOLVEMENT**

**RANDOM PLANTING
IN THE PLOTS**

**POOR TREE
CHOICES**

**NO CROP
PROTECTION**



**EXCESSIVELY LOW SURVIVAL RATE OF
PLANTED TREES**



Above: an *Acacia mangium* tree supplied by the cooperative but eliminated by the farmer because it was unsuitable.



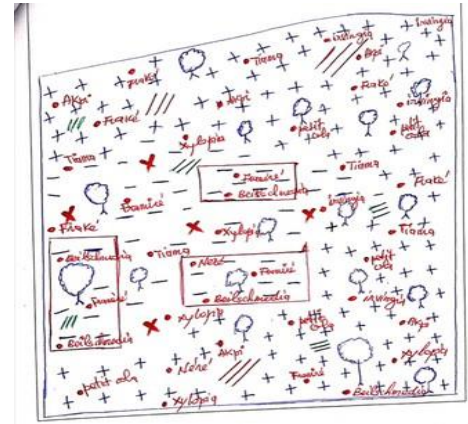
Above: two *Gliricidia sepium* trees planted by the farmers alongside a trail for non-agronomic reasons.

PART II: Agricultural advisory steps



1. ASSESS AND MAP THE PLOT:

Alongside the farmer during plot visits to be able to identify production problems and their specific locations.



2. ADVISE ON TREE

PLANTING LOCATIONS:

Companion trees are not just randomly planted in the plot, they should be located where production problems have been identified.

Agricultural advisory steps

3. SUPERVISE TREE PLANTING:

This will help farmers plant trees in the right place to overcome the relevant problem under the best conditions for their survival.

4. MONITOR THE PLANTED TREES:

Monitoring the mortality and growth of the planted trees helps improve the approach in the long term.



Plot assessment and mapping

My stance as an efficient advisor

Both the farmers and their plots differ markedly. It is thus essential to offer agricultural advice that is tailored to the plot by identifying the production constraints and considering whether companion trees could overcome them, and if so which ones?



Getting to know the farmers and their plots better

If the advisor does not know the farmer, it is important to explain the process and request a bit of information so as to reassure the farmer while honing the agricultural advice.

It is essential to get information on the farmer (first and last name, cooperative, section, etc.), the plot (surface area, when it was set up, number of forest trees present) and its production level (over the previous 3 years, while making a distinction between small and big harvests).

Visiting the farm plots to identify the production problems

The advisor will ask the farmer to visit the plot, explain the reasons for poor production in given areas (e.g. excessive black pod rot), the identified causes of these constraints (e.g. too much shade, insufficient pruning time) and the practices used to deal with each constraint (e.g. fungicide sprays, etc.).

Drawing up a plot layout chart

After a thorough visit of the plot, by cross checking the farmer's answers through the lens of the agricultural technician's expertise, then – in liaison with the farmer – a precise plot layout chart may be drawn up highlighting low and high production areas, locations of production constraints (drought, mirids, black pod rot, swollen shoot, termites, etc.) and of other trees already growing in the plot.

Plot assessment with Luke



Hi Luke, I'd like to get some general information on you and your plot.



Background information						
First and last names	Cooperative	Section	Area (ha)	Cropping history	Plantation age	Number of trees
Luke Mambo	Kokoa Cooperative		2	Old fallow land	15 years	10

OK tell me how much you yielded at each big and small harvest in the last 3 years?



2018/2019		2019/2020		2020/2021	
Large-scale harvest	Small scale harvest	Large-scale harvest	Small scale harvest	Large-scale harvest	Small scale harvest
700 kg	300 kg	600 kg	250 kg	850 kg	350 kg

Now let's have a look at your plot.
We want to clearly identify the symptoms in your cocoa farm (good and poor production areas) and gain insight into the causes of these symptoms.



Arrival at Luke's plot

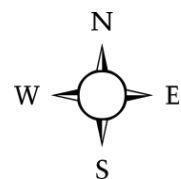
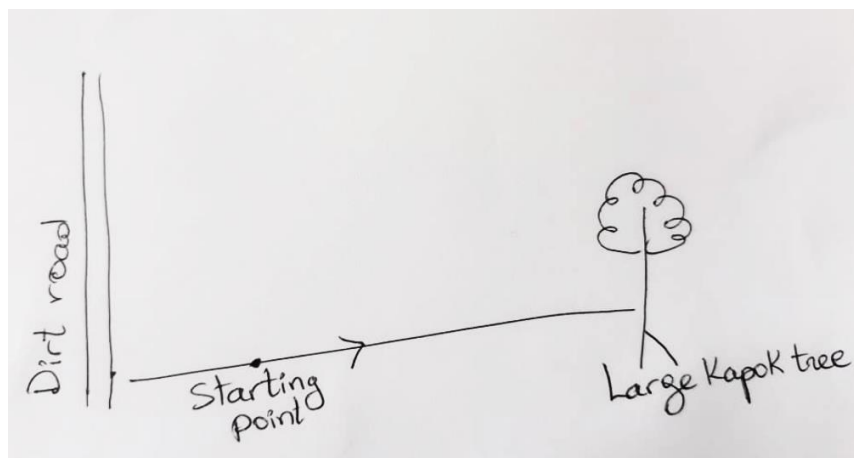
We get to the plot, and I start sketching my plot layout chart on a sheet of paper.

1 – I add a legend that I'll use throughout the process.

2 – I orient my chart.

3 - I add elements highly visible from my position to better show my spatial position in the plot.

4 - I indicate the direction of my plot visit by a small arrow.



Criteria:

Positions of already present trees

Positions of high production areas

Positions of low production areas

Zones of high mirid pressure

Zones of high black pod rot pressure

Zones of high termite pressure

Zones of drought around cocoa trees

Zones of high swollen shoot pressure

Legend



+

-



x



Mapping the plantation with Luke

Here we are on your plot. Show me where the low and high production areas are.



OK! The plot's producing well, but the environment isn't great – the soil's dry and exhausted!

Let's take a tour of your plot.
I need to know what's bothering you in each area, whether it's bugs/mirids, termites, rot, drought, etc.



Lots of things are bothering me! Let me show you exactly where.

To be able to advise you properly, I need to understand whether these problems are really causing your poor production. Is the soil dry because it doesn't rain enough? Or is it dry because there isn't enough shade? Or isn't there enough organic matter?

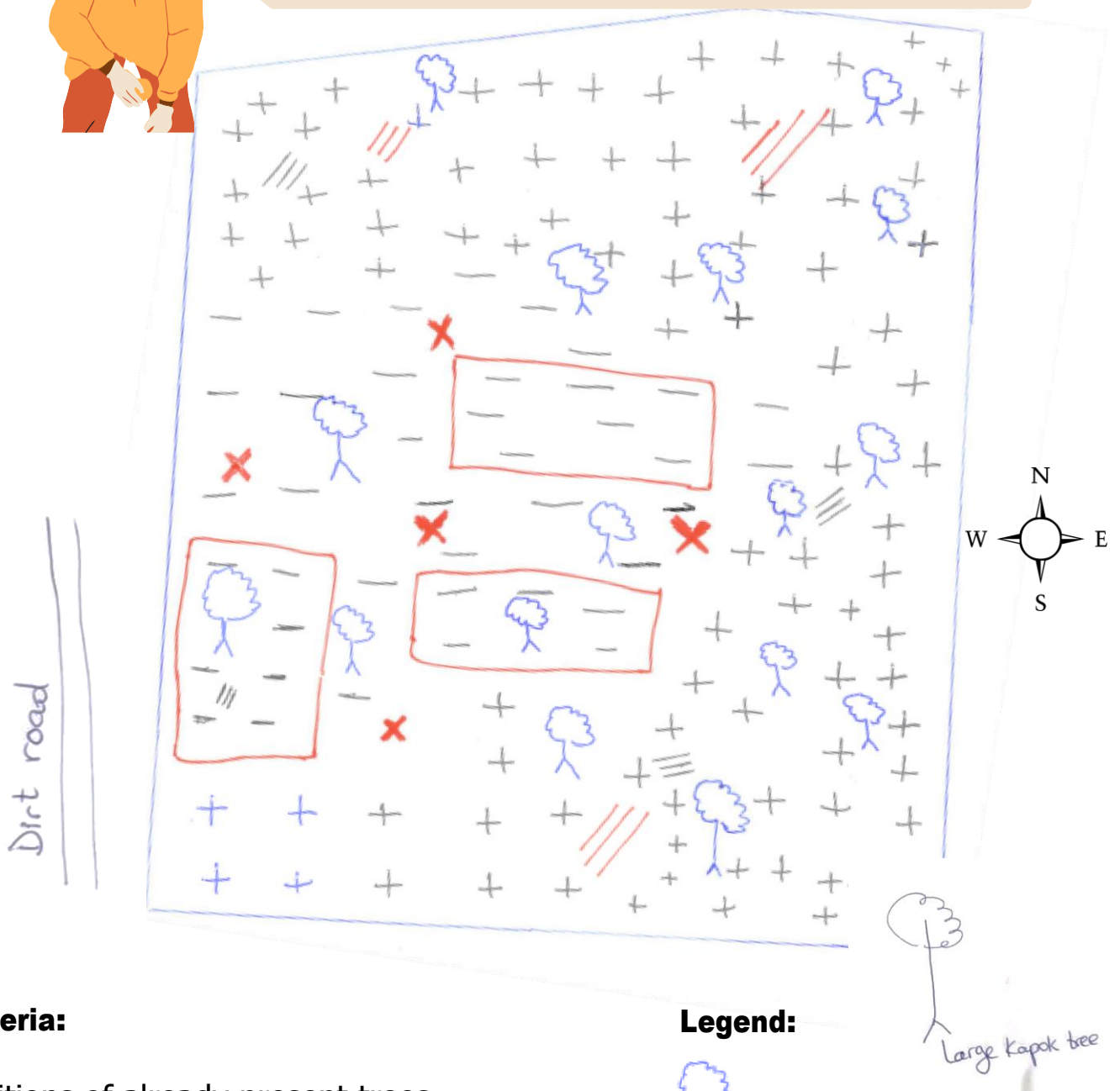


In Luke's case, although it rains quite a lot in the region, I notice that the dry areas are generally where there's a shortage of trees.





Oh, you've sketched a nice accurate chart of my plot!



Criteria:

- Positions of already present trees
- Positions of high production areas
- Positions of low production areas
- Zones of high mirid pressure
- Zones of high black pod rot pressure
- Zones of high termite pressure
- Zones of drought around cocoa trees
- Zones of high swollen shoot pressure

Legend:



Advice on planting locations

Agricultural advice regarding tree locations is geared towards pinpointing areas where a certain tree species will be able to overcome a production problem in the cocoa farm.

This requires:

1. **Identifying trees that could solve production problems (e.g. a fertility-enhancing tree when the soil is exhausted)**

The compendium shown on the right sheds light on interactions (positive, negative, ambivalent) between forest trees and cocoa trees.

The effects of some companion trees commonly found in cocoa farms, according to Nitidæ's farmer survey, are outlined on page 23.

LES ARBRES DES CACAOYÈRES

RECUEIL DE CONNAISSANCES PAYSANES
SUR LES INTERACTIONS ENTRE ARBRES COMPAGNONS
ET CACAOYERS EN CÔTE D'IVOIRE



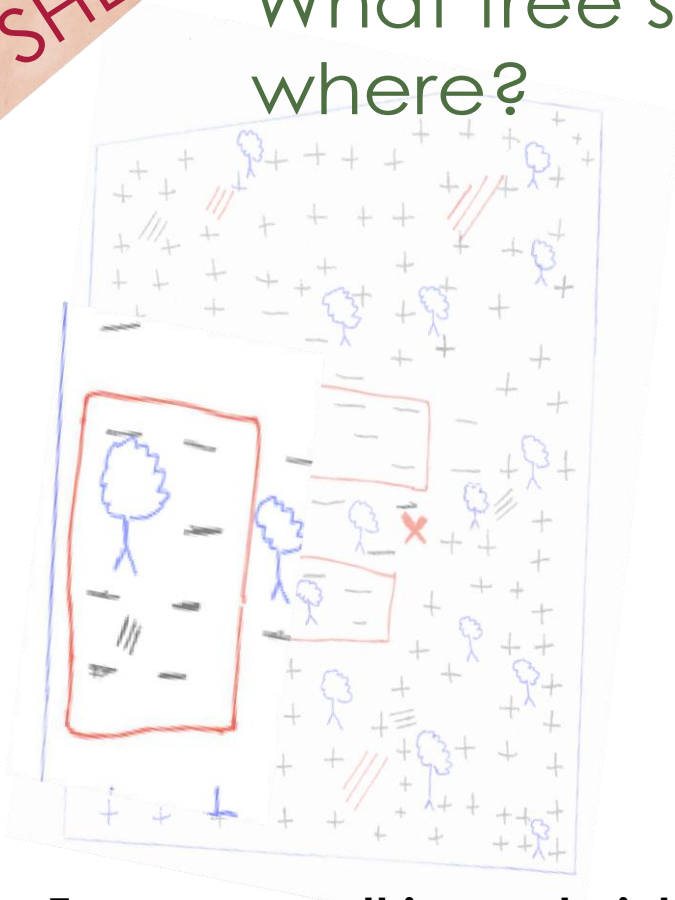
2. **Planting companion trees in places where they will be able to thrive.**

A summary of current knowledge on ideal conditions for the growth of certain commonly planted trees is presented on page 25.

What are the main effects of companion trees?

Species	Ecosystem effects			Effects on cocoa trees		
	Maintain moisture	Enhance fertility	Bioprotection	Promote growth	Promote pod production	Promote foliage development
Black afara (<i>Terminalia ivorensis</i>)				x		
Limba (<i>Terminalia superba</i>)					x	
Bitter kola (<i>Garcinia kola</i>)		x		x		
Wild mango (<i>Irvingia gabonensis</i>)	x	x		x	x	
African pepper (<i>Xylopi aethiopica</i>)	Neutral species					
Tiama (<i>Entandrophragma angolense</i>)	x			x		
African nut tree (<i>Ricinodendron heudelotii</i>)	x				x	x
African nutmeg (<i>Monodora myristica</i>)	Neutral species					
Baku (<i>Tieghemella heckelii</i>)		x		x		
African mahogany (<i>Khaya ivorensis</i>)	x	x		x	x	
Kola nut (<i>Cola nitida</i>)			x	No positive effects except bioprotection: ambivalent species		
Nitta tree (<i>Parkia biglobosa</i>)		x		Unknown		
Spicy cedar (<i>Beilschmedia mannii</i>)	Neutral species					

What tree should be planted where?



Zone A: southwestern part of the plot

Cocoa trees do not produce or grow well in this sunny and sparsely vegetated area. This could be due to several factors: drought, mirids, perhaps soil fertility, etc.

To overcome this constraint, trees should be planted that promote cocoa tree growth.

In the light of the *Arbres des Cacaoyères* compendium and the previous table, we see that several companion trees offer this effect:

black afara, bitter kola and wild mango, etc.

How can we choose between these three species?

It is essential to choose the species with the best chance of surviving in this part of the plot – I'll use the table on the next page as a guide. This area is sparsely vegetated and very sunny. Young bitter kola and wild mango seedlings cannot thrive under full light conditions whereas young black afara seedlings can.

So, I'm going to plant a black afara.

If there are other choices, I ask the farmer which tree is most useful or least attractive to timber poachers (page 25).

Optimal conditions for tree growth

When two trees can overcome the same constraint, the one that has the best chance of surviving should be chosen.

This table will help you assess the chances.

Species	Forest stratum	Growth conditions		
		Light requirements at seedling stage	Light requirements at adult stage	Soil type
Black afara (<i>Terminalia ivorensis</i>)	Upper	Full light	Full light	Wide range of soil types
Limba (<i>Terminalia superba</i>)	Upper	Full light	Full light	Alluvial and well-drained soils
Bitter kola (<i>Garcinia kola</i>)	Middle	Shading	Light shade	
Wild mango (<i>Irvingia gabonensis</i>)	Upper	Light shade	Full light	
African pepper (<i>Xylopia aethiopica</i>)	Middle	Shading	Shade or full light	
Tiama (<i>Entandrophragma angolense</i>)	Middle	Shading	Full light	Drained soil
African nut tree (<i>Riciodendron heudelotii</i>)	Middle	Full light	Full light	Drained soil
African nutmeg (<i>Monodora myristica</i>)	Middle	Shading	Light shade	
Baku (<i>Tieghemella heckelii</i>)	Upper	Light shade	Full light	
African mahogany (<i>Khaya ivorensis</i>)	Upper	Light shade	Full light	Moist, drained soils
Kola nut (<i>Cola nitida</i>)	Middle	Full light	Shade or full light	Humus-rich, deep soils
Nitta tree (<i>Parkia biglobosa</i>)	Middle	Full light	Full light	Deep, well-drained soils
Spicy cedar (<i>Beilschmedia mannii</i>)	Upper	Shading	Full light	

Do planted companion trees attract timber poachers?

My efficient advisor stance

My discussions with farmers will help assess the risk of planting certain trees in terms of their attractiveness to timber poachers. We will then opt to plant a few more, or less, trees of certain species.

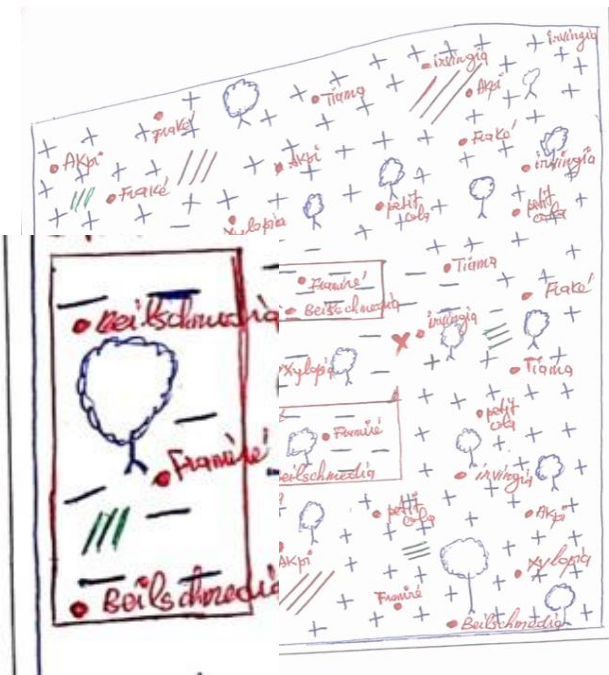


Species	Forest stratum	Attractiveness for timber poachers
Black afara (<i>Terminalia ivorensis</i>)	Upper	High
Limba (<i>Terminalia superba</i>)	Upper	High
Bitter kola (<i>Garcinia kola</i>)	Middle	Low
Wild mango (<i>Irvingia gabonensis</i>)	Upper	Low
African pepper (<i>Xylopia aethiopica</i>)	Middle	Low
Tiama (<i>Entandrophragma angolense</i>)	Middle	High
African nut tree (<i>Ricinodendron heudelotii</i>)	Middle	Low
African nutmeg (<i>Monodora myristica</i>)	Middle	Low
Baku (<i>Tieghemella heckelii</i>)	Upper	High
African mahogany (<i>Khaya ivorensis</i>)	Upper	High
Kola nut (<i>Cola nitida</i>)	Middle	Low
Nitta tree (<i>Parkia biglobosa</i>)	Middle	Low
Spicy cedar (<i>Beilschmedia mannii</i>)	Upper	Low

- For instance in Luke's plot:



Now let's look at the advice in detail!

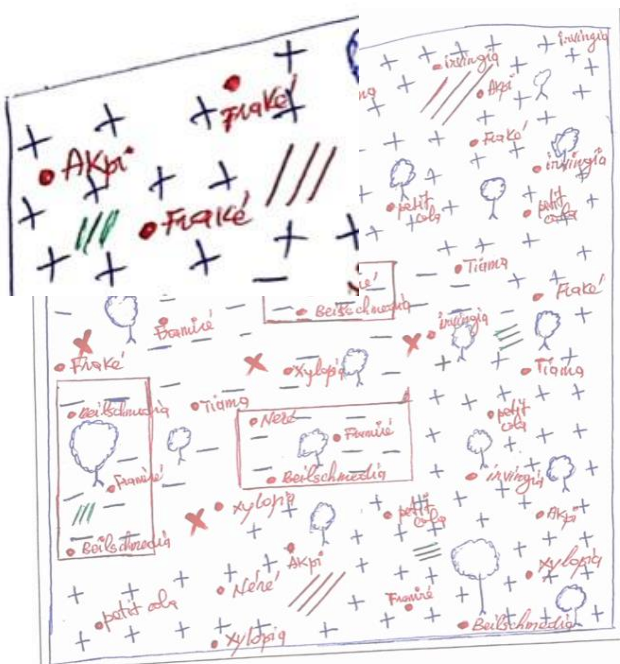


Zone A: in the southwestern part of the plot

Two constraints were noted in this low production area: 1. drought; 2. mirids.

Black afara, a fast-growing tree with suitable shade, could help reduce drought effects.

Cocoa trees are more vigorous under shade and less susceptible to mirids.



**Zone B: in the
northwestern part of
the plot**

This high production area is affected by mirid infestations and black pod rot. The integration of akpi (African nut tree) and fraké (limba) trees could offer some shade and reduce the mirid pressure, while preserving or enhancing the production of cocoa trees in the vicinity.

Moreover, black pod rot pressure should not increase since these trees only offer slight shade.

Tree planting support



Follow a precise timetable: planting should be done once rainfall is firmly established at the onset of the rainy season so that the soil will be well moistened, i.e.

April-May in Côte d'Ivoire.

Seedlings should be planted soon after their reception.

If they arrive later, the seedlings will have to be watered very frequently, and some farmers might not have time for this.



Support farmers before seedling planting

It is essential to:

- Let the farmers know when the seedlings will be arriving so that they will be prepared.
- Visit the plot before the plants arrive to check all the holes and the species labelling.
- Visit the plot after the planting to check that everything went well.



Protect and highlight the seedlings



Otherwise, the newly planted seedlings might be cut down inadvertently during subsequent plot weeding operations.

Right: an example of a seedling highlighted with brightly coloured tape.



Tree planting support

All companion trees do not need the same extent of maintenance.

Some species will not require any, whereas other may need watering, weeding, shading, etc.

Species	Agricultural advice on planting seedlings	
	Risk of mortality after planting	Recommendations for reducing the mortality risk
Black afara (<i>Terminalia ivorensis</i>)	Low	
Limba (<i>Terminalia superba</i>)	High	Recommend regular weeding around plants, with watering at the first signs of water stress.
Bitter kola (<i>Garcinia kola</i>)	Medium	Plant seedlings under dense shade
Wild mango (<i>Irvingia gabonensis</i>)	High	Plant seedlings in the shade of unproductive cocoa trees. Trim the cocoa trees to provide light as the wild mango trees grow. Water the trees regularly during drought and weed around them. Plant the seedlings upon their arrival. Mulching is sometimes needed around the trees.
African pepper (<i>Xylopia aethiopica</i>)	Low	
Tiama (<i>Entandrophragma angolense</i>)	Low	Plant seedlings under shade.
African nut tree (<i>Ricinodendron heudelotii</i>)	High	Recommend regular weeding around plants, with watering at the first signs of water stress.
African nutmeg (<i>Monodora myristica</i>)	None	
Baku (<i>Tieghemella heckelii</i>)	To be determined	
African mahogany (<i>Khaya ivorensis</i>)	To be determined	
Kola nut (<i>Cola nitida</i>)	To be determined	
Nitta tree (<i>Parkia biglobosa</i>)	To be determined	
Spicy cedar (<i>Beilschmedia mannii</i>)	To be determined	

Seedling monitoring

My efficient advisor stance

I visit the plots once or twice a year to see if the trees have survived or died. These visits enhance the farmers' involvement. They also enable me to fine-tune my maintenance recommendations in subsequent years.



Hi Luke! We planted the seedlings 3 months ago. I'd like to know how well they've held up. How many have died?



Well! Overall, they've held up fine. But it was too dry, so all 4 wild mango trees died.

OK. Did you treat these wild mango trees like all the other trees?



Yes, I treated them like the others. I watered them once a month and carefully weeded around them.

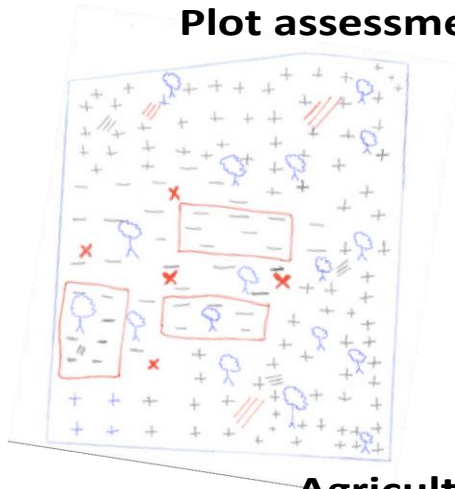
Well, that's good to know. Next year, I'll insist that you water the wild mango trees more often and even mulch around them.



Timeline of the Nitidæ approach



Plot assessment:



This can reveal production problems and their exact locations.

It can also locate trees already growing in the plot.



Agricultural advice:

Insight into the effects of companion trees in cocoa farms makes it possible to identify tree species that could help overcome production problems such as drought, low soil fertility and pest pressure.

Other parameters such as the tree growth conditions help to fine-tune the agricultural advice.



Planting:

Successful planting requires:

- Compliance with a precise planting timetable (April-May planting) with very short storage of the supplied seedlings.
- Farmer involvement, while offering them maintenance advice on the different companion tree species.



Monitoring:

Regular post-planting follow-up is essential:

- To determine why some trees have died.
- To enhance the overall process for subsequent seasons.

Further information

Apparent costs of the Nitidæ approach

The Nitidæ approach seems more expensive due to the high agricultural advisory costs.

The prices quoted below are merely for guidance.

FOR A GROUP OF 10 FARMERS

SUBSTANTIAL NEED FOR COMPANION TREE INTEGRATION IN COCOA FARMS



NITIDÆ APPROACH

COST PER TREE: FCFA400

TECHNICIAN COST

FOR PLOT ASSESSMENT AND ADVICE: FCFA 70

- FOR PLANTING: FCFA90

- FOR MONITORING: FCFA 90

**TOTAL COST PER
TREE: FCFA650**



CONVENTIONAL APPROACH

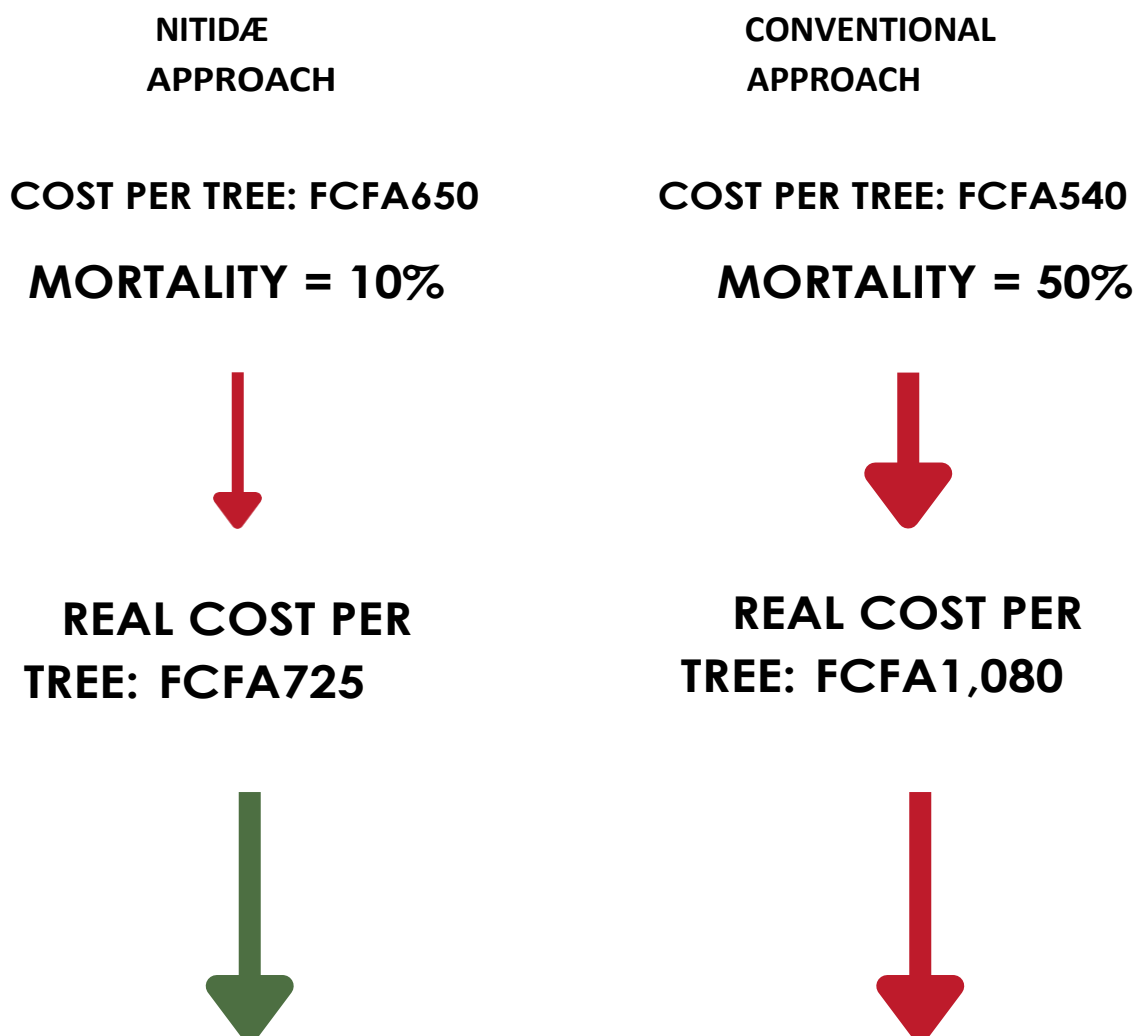
COST PER TREE: FCF400

TECHNICIAN COST PER TREE: FCFA140

**COST PER TREE:
FCFA540**

Actual costs of the Nitidæ approach

But this approach just seems more expensive!



**PROVIDING FARMERS WITH TAILORED ADVICE
IS AN EFFECTIVE WAY TO MEET THE NEED FOR
COMPANION TREE INTEGRATION!**

Other agroforestry transition support levers

Promoting natural regrowth

Promoting natural regrowth complements companion tree planting in cocoa farms. And some farmers already do this on their own.

Hey Amanda! Why do you prefer to let wildlings grow instead of planting nursery trees?



Well nursery trees cost money. Wildlings may take a bit time to look after, but they grow for free. Afterwards I keep the ones I prefer.



But aren't nursery trees more robust?



Not always. Wildlings may be adapted to the local environment and thus thrive – they're vigorous. And the species that grow are not always the same, and this diversity is beneficial.



Land certification

The land certification procedure, which may be undertaken via the *Agence Foncière Rurale* (AFOR) website, is expensive.

This certification process may not change everything, but it enables farmers to manage their land in the long term – while sometimes integrating more trees!

The inclusion of land certification in agroforestry programs is therefore highly relevant.

Amanda, why are you so reluctant to plant trees unless someone brings them to you?



Well timber poachers are often around. They come at night, cut down the big trees and break a lot of cocoa trees. This can spoil the plot for several years.

Would you plant trees if you had a land certificate?



It would be an incentive for me to plant some, while maybe reducing the risk of timber poacher visits to my plot.
And then maybe one day my grandchildren would be able to sell the trees for a decent price!

Further information

Resources

Les arbres des cacaoyères, Nitidæ, 2022.

A compendium of farmers' knowledge regarding interactions between companion and cocoa trees in Côte d'Ivoire.

https://www.nitidae.org/files/3d5cd5ec/les_arbres_des_cacaoyeres_recueil_de_connaissances_paysannes_sur_les_interactions_entre_arbres_compagnons_et_cacaoyers_en_cote_d_ivoire.pdf

The photos on pages 9-10-12-13 and 14 are from this compendium (see pages 91-93 for the photo credits).

Elsa Sanial, *À la recherche de l'ombre, géographie des systèmes agroforestiers émergents en cacaoculture ivoirienne post-forestière*, PhD dissertation under the supervision of Dr. François Ruf, Université Jean Moulin (Lyon 3), France, 2019.

The cover photo and those on pages 6-7 and 15 are from this document.

Constant Yves Adou Yao et al., *Pratiques culturelles, valeurs d'usage et perception des paysans des espèces compagnes du cacaoyer dans des agroforêts traditionnelles au centre de la Côte d'Ivoire*, Revue d'ethnoécologie, 9 | 2016

The first photo on page 6 is from this article.

Index of Baoulé, French and English common names / scientific names

A

Albizia adianthifolia= Kpamgba=flat crown

Albizia zygia= kohé=albezia

Alstonia boonei= emien= alstonia

B

Bombax buonopozense= kapokier= Gold Coast bombax

Beilschmedia mannii= spicy cedar

C

Canarium schweinfurthii= Aiélé= African elemi

Ceiba pentandra =fromager= kapok tree

Cola nitida= colatier=kola nut

E

Entandrophragma angolense= tiama= tiama

F

Ficus exasperata= dédé=forest sandpaper fig

Ficus sur= aloma=broom-cluster fig

G

Garcinia kola= petit cola=bitter kola

Gliricidia sepium= mother of cocoa

I

Irvingia gabonensis = kplé = wild mango

K

Khaya ivorensis=acajou bassam= African mahogany

M

Milicia excelsa= iroko=African teak

Monodora myristica= faux muscadier = African nutmeg

Morinda lucida= koya= brimstone tree

N

Newbouldia laevis= hysope africaine= boundary tree

P

Parkia biglobosa = néré= Nitta tree

Petersianthus macrocarpus= abalé= essia

Pycnanthus angolensis= ilomba = false nutmeg

R

Ricinodendron heudelotii= akpi= African nut tree

T

Tarrietia utilis=niangon= niangon

Terminalia ivorensis =Framiré= black afara

Terminalia superba=fraké= limba

Tieghemella heckelii =makoré= baku

Triplochiton scleroxylon= samba=African whitewood

X

Xylopia aethiopica= poivre africain= Africa pepper

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