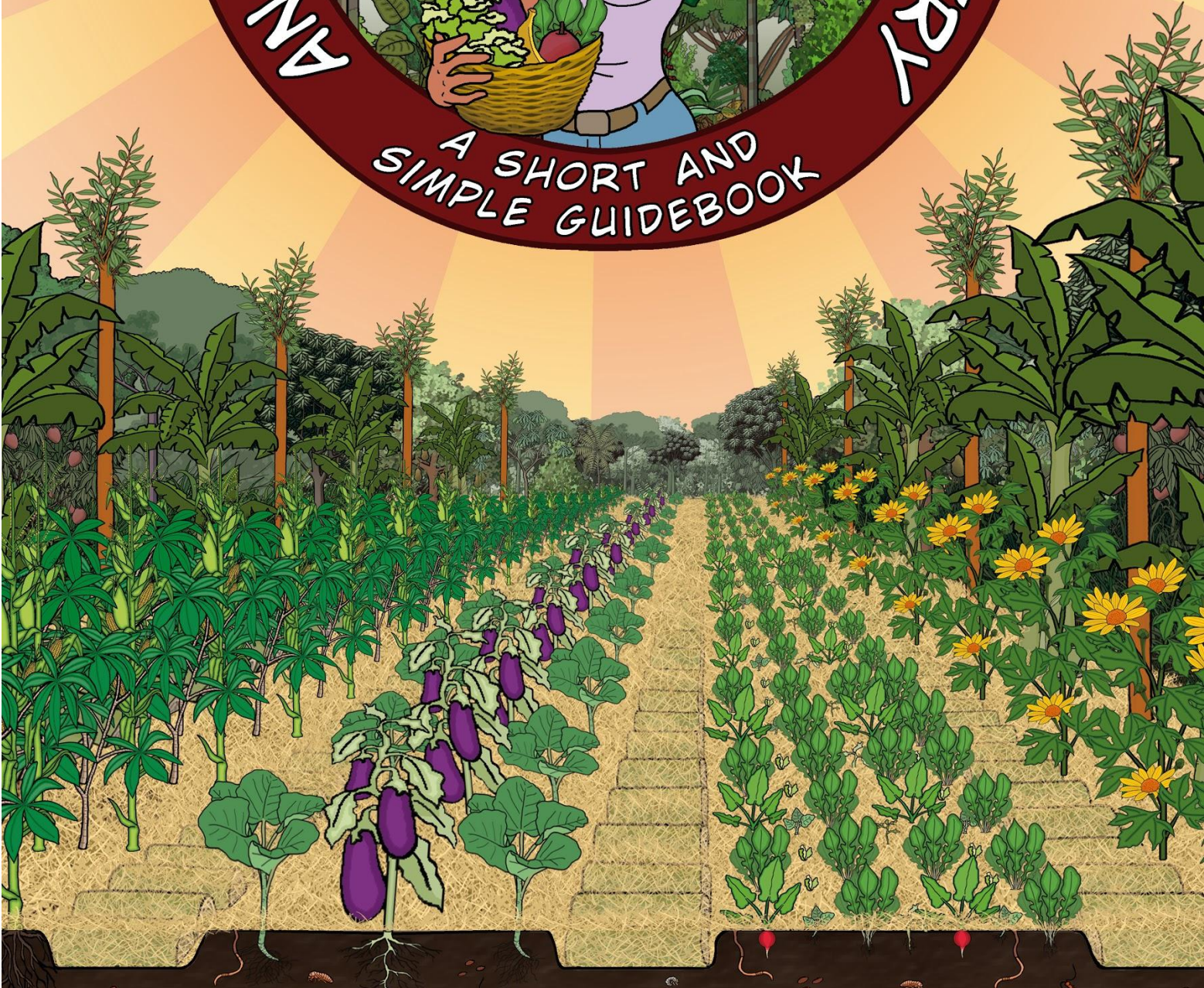


# AN ILLUSTRATED GUIDE TO AGROFORESTRY

A SHORT AND SIMPLE GUIDEBOOK





# An illustrated guide to agroforestry

## A short and simple guidebook

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**AGROFORESTAEMQUADRINHOS.WORDPRESS.COM**

Organization

**João Paulo Becker Lotufo Junior**

BORAPERMACULTURAR@GMAIL.COM

BORAPERMACULTURAR.WORDPRESS.COM

Drawings

**César Claro Trevelin**

CESARTREVELIN@YAHOO.COM.BR

CESARTREVELIN.COM.BR

Translation

**Hans Boersma**

**Roger Gietzen**

**Gideon den Tex**

Partners



GREETINGS!

ON THE FOLLOWING PAGES WE WILL INTRODUCE YOU TO FOREST FARMING. OUR INTENTION WITH THIS MANUAL IN THE FORM OF A COMIC BOOK IS TO TEACH AND CREATE THE JOY. WITH THE MOTTO "FOR EVERY DRAWING A SEED" WE PRESENT IN A SIMPLE AND OBJECTIVE WAY THE FIRST STEPS TOWARDS A WAY TO GROW FOOD WHILE AT THE SAME TIME TAKING CARE OF THE ENVIRONMENT.

MANY HAVE HELPED AND INSPIRED US DURING OUR JOURNEY TO CREATE THIS MANUAL. TO YOU WHO PARTICIPATED IN IT, WE LEAVE OUR GRATITUDE AND ADMIRATION. IN PARTICULAR FABIANA, WHICH GAVE US A SUPER SUPPORT ON SOME TECHNICAL PROBLEMS. A BIG THANK YOU ALSO TO OUR MOST IMPORTANT REFERENCES:

MASTER ERNST GÖSTCH: WE HONOR YOU. THANK YOU FOR DEDICATING YOUR LIFE TO FOREST FARMING AND FOR HAVING DEVELOPED A STRATIFIED SUCCESSION METHOD. WE HAVE TRIED TO EXPLAIN IT IN A SIMPLE WAY, BUT AS EASIER THAN WE WOULD LIKE IN THIS MANUAL. UNDOUBTEDLY, YOUR LIFE AND WORK IS A GREAT INFLUENCE FOR US.

AND TO OUR DEAR PETER WEBB, WHOSE WAY OF CARING FOR PEOPLE THROUGH THE FOREST FASCINATES AND TEACHES US SO MUCH. WE ARE GRATEFUL THAT YOU HAVE PRESENTED FORESTRY FARMING IN SUCH A POETIC AND REGENERATIVE WAY.

FINALLY, WE HOPE THAT THIS READING WILL AWAKEN IN YOU, THE READER, THE DESIRE TO REINTEGRATE INTO A PLANET WHOSE AGRICULTURE IS EXPRESSED IN THE SAME SHAPES AND PATTERNS THAT NATURE USES.

WE WISH YOU AN EDUCATIONAL AND FUN EXPERIENCE,

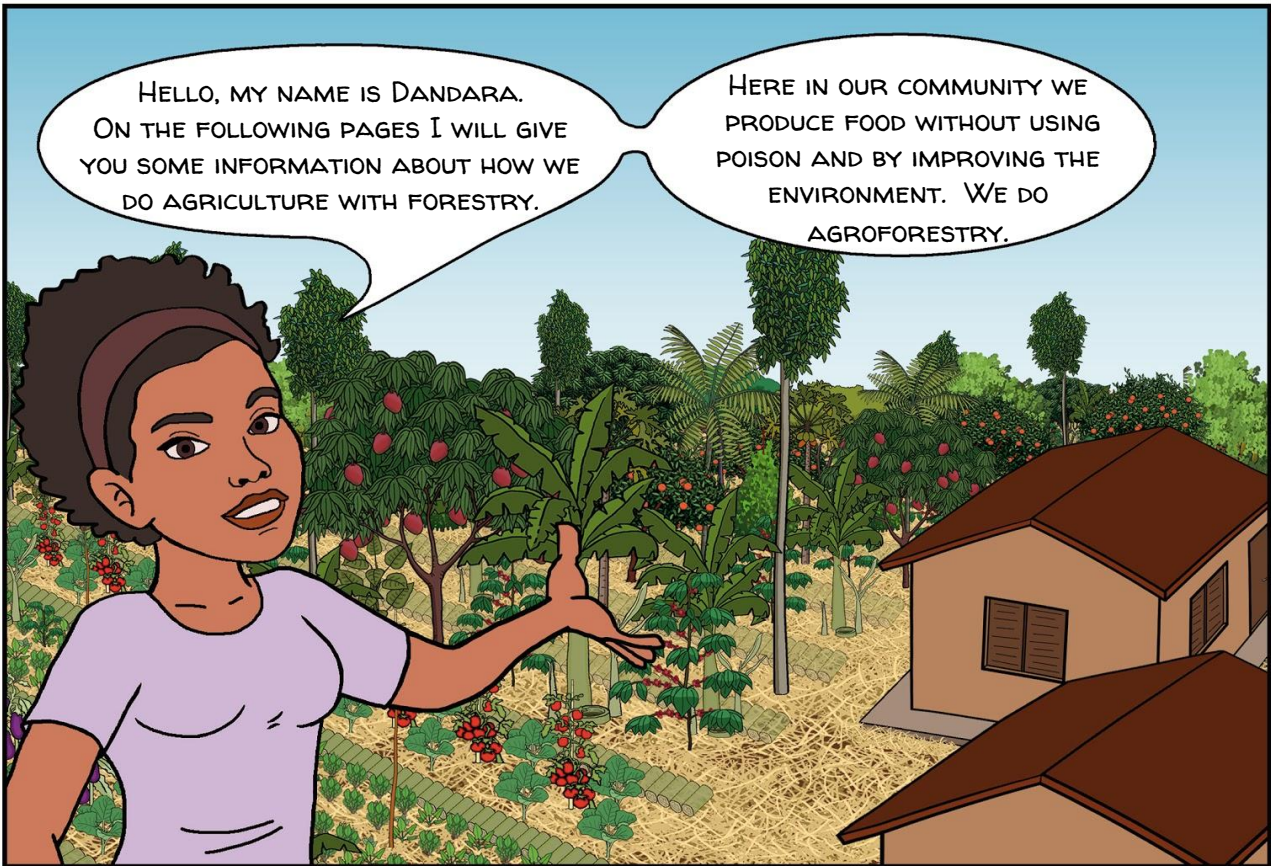
João & César

Bora  
Permaculturar



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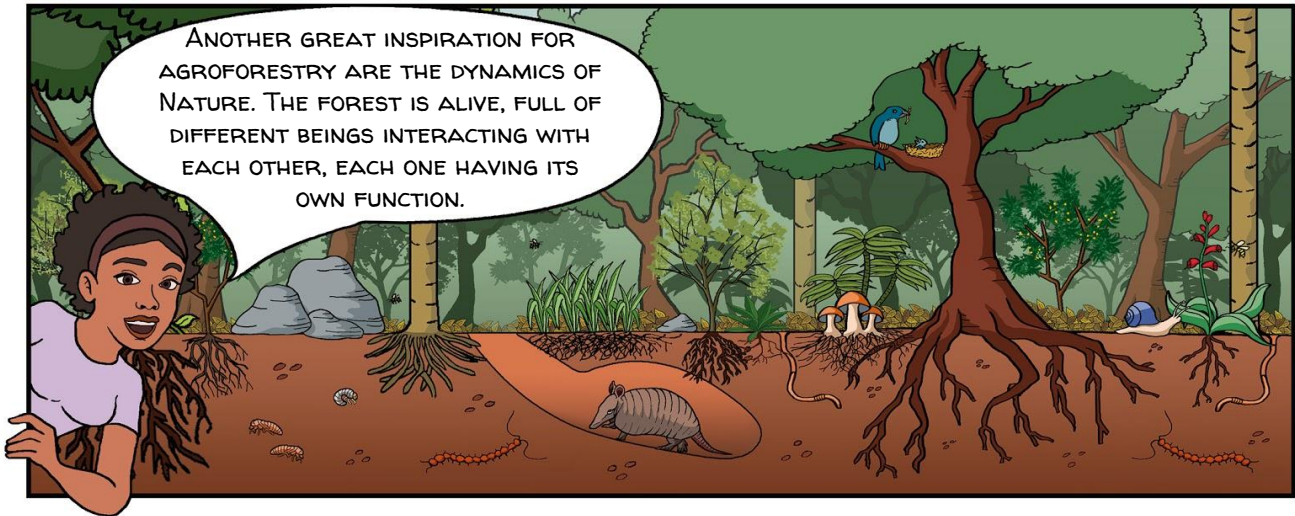
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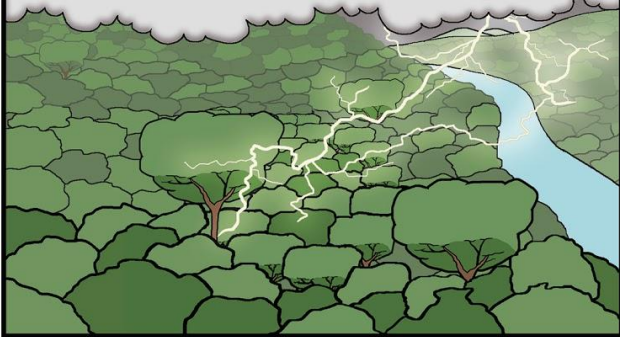
PRODUCING FOOD IN THE FORESTS IS AN ANCIENT TRADITION THAT WAS PRACTICED IN SOUTH AMERICA LONG BEFORE THE EUROPEAN OCCUPATION. THIS TRADITIONAL PRACTICE OF PRODUCING FOOD TURNED THE LAND INTO A CONTINUOUS FOREST-AGRICULTURE AREA. THIS POSSIBILITY TO LIVE WITH AND FROM THE FOREST IS ONE OF THE INSPIRATIONS OF AGROFORESTRY.



NATURE'S DYNAMICS



FOR EXAMPLE, IF A CLEARING IN THE FOREST IS OPENED, THE ENVIRONMENT CHANGES...



AND NEW INTERACTIONS BETWEEN THE LIVING BEINGS THAT LIVE THERE BEGIN TO HAPPEN.



SOME SPECIES DISAPPEAR AND OTHERS APPEAR ACCORDING TO THE NEW CHARACTERISTICS OF THE ENVIRONMENT.



IN AGROFORESTRY WE TRY TO REPLICATE AND OPTIMIZE THESE PROCESSES...



IN ORDER TO PRODUCE FOOD AND IMPROVE THE ENVIRONMENT.



LAYERS AND SUCCESSION

IN THE FOREST THE PLANTS OCCUPY DIFFERENT SPACES, WHICH ARE DISTRIBUTED AT DIFFERENT HEIGHTS, THE SO-CALLED STRATA. THE SUNLIGHT IS FILTERED IN EACH LAYER AND THIS INFLUENCES THE TYPE OF PLANTS THAT GROW THERE.

EMERGENT LAYER  
HIGH CANOPY LAYER  
SHRUBS MIDDLE LAYER  
LOWER LAYER

WHEN WE PLANT A FOODFOREST, WE FOLLOW THE SAME SYSTEM.

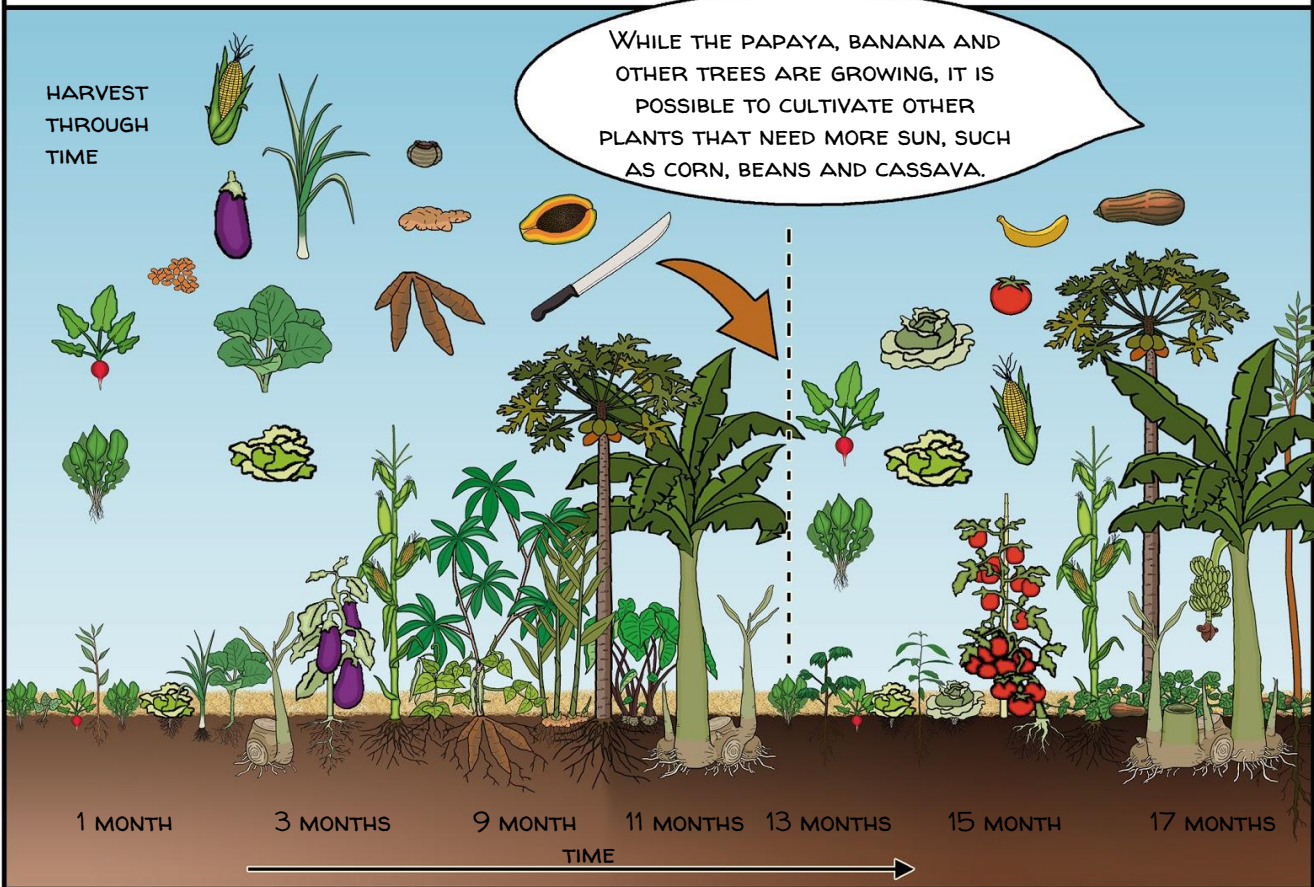
THIS LOGIC CAN ALSO BE APPLIED TO THE MOST DIVERSE FIELDS IN AGRICULTURE AND HORTICULTURE.

ANOTHER IMPORTANT FACTOR IN THE ORGANIZATION OF THE FOREST IS TIME. EVERY PLANT HAS A LIFE CYCLE WITH DIFFERENT GROWTH RATES, WHICH ARE ALSO INFLUENCED BY THE CHARACTERISTICS OF THE SITE. WE CALL THIS THE ORGANIZATION OF TIME IN ECOLOGICAL SUCCESSION.

PLACENTA PIONEERS SECONDARY PRIMARY

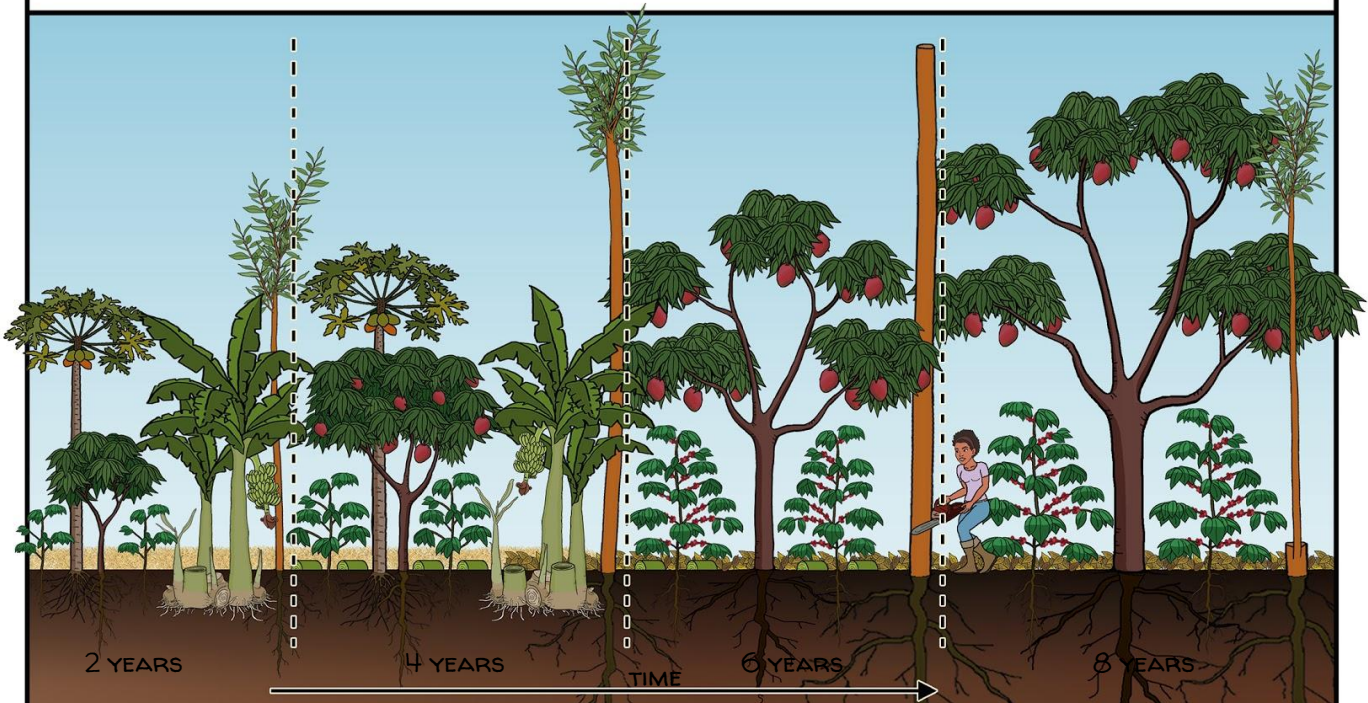


THEREFORE, THE AGROFORESTRY PLAN SHOULD CONSIDER LAYERS AND SUCCESSION TO COMBINE THE CHOSEN PLANTS.



BY PRUNING THE BANANA TREES, WE LET THE SUNLIGHT ENTER AGAIN. IN THIS WAY WE CAN SUPPORT THE CULTIVATION OF PLANTS THAT NEED MORE LIGHT.

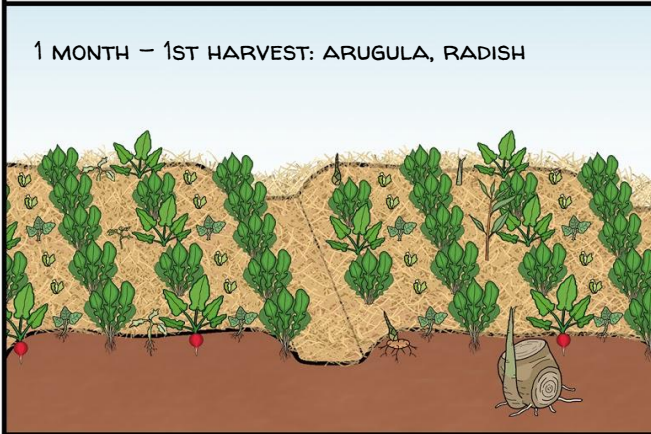
OVER TIME, THE FARMER CAN MANAGE THE SITE BY SELECTING THE PLANTS HE PREFERS TO GROW BY PRUNING AND PUTTING THE ORGANIC MATTER ON THE GROUND AS MULCH AND FERTILIZER. IN THIS WAY THE ENVIRONMENT WILL IMPROVE AND OTHER PLANTS WILL START TO GROW.



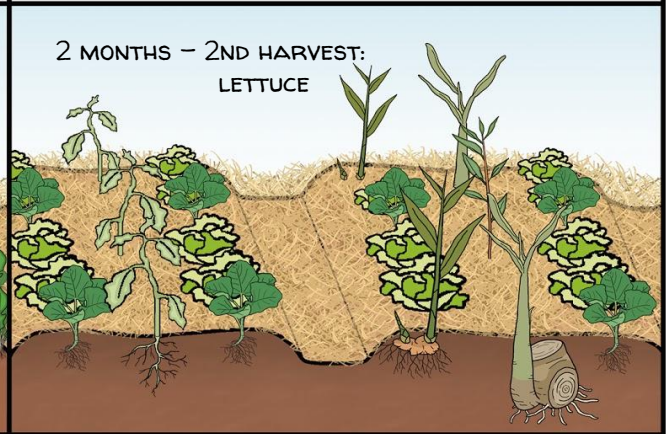
## SUCCESSION GARDEN

FOR EXAMPLE, WHEN WE START A VEGETABLE GARDEN, WE COMBINE PLANTS WITH DIFFERENT CYCLES (LIFETIMES) AND LAYERS (STRATA) FOR OPTIMAL USE OF THE PLACE.

30 DAYS AFTER PLANTING, THE FAST-GROWING PLANTS ALREADY OCCUPY THE LARGEST SPACE AND PROTECT THE SLOWER GROWING SEEDLINGS.



AFTER THE FIRST HARVEST, THE FORMER SPACE OF THESE PLANTS IS GRADUALLY OCCUPIED BY THOSE WITH SLOWER GROWTH.



AFTER ANOTHER HARVEST, THE SPACE IS FREE AGAIN FOR PLANTS WITH A LONGER LIFE CYCLE, WHICH CONTINUE TO GROW IN THE BEDS.



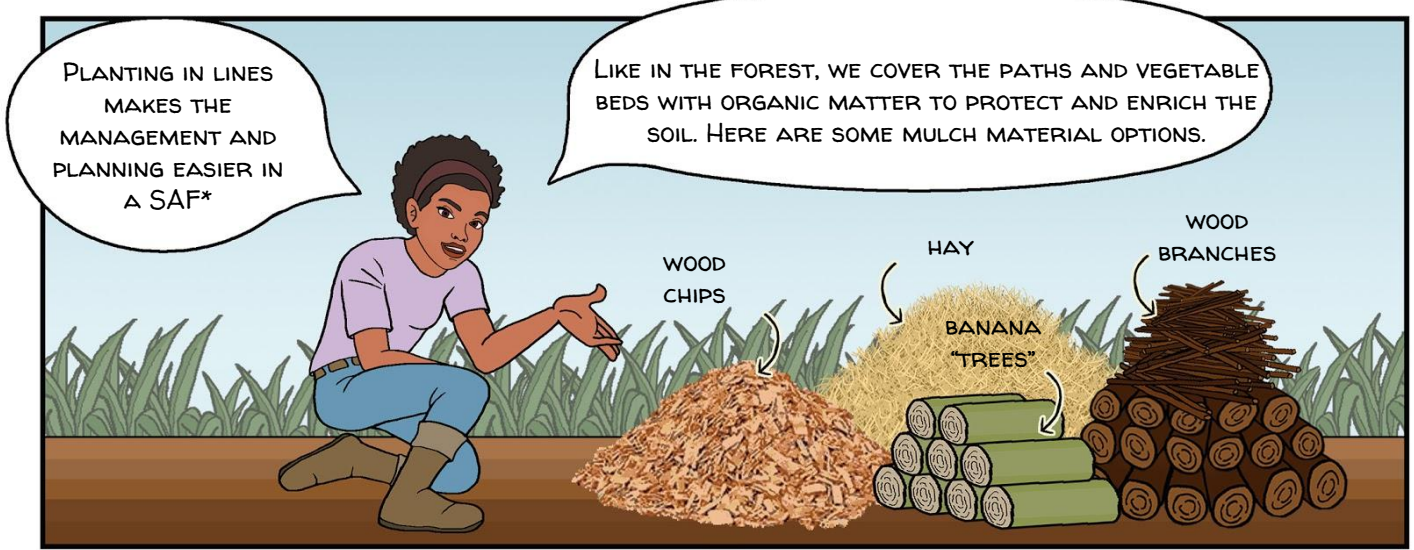
FINALLY, WHEN IT'S TIME TO RENEW THE BEDS, WE PRUNE THE TREES AND BANANAS, TRANSFORMING THEM INTO ORGANIC SOIL COVER AND START PLANTING AGAIN.



IN THIS WAY WE PLANT A PLOT OF LAND ONCE AND HAVE FOUR HARVESTS OVER TIME!  
ANOTHER TIP IS TO REPLANT THE BEDS AT DIFFERENT TIMES. FOR EXAMPLE, ONE BED EVERY WEEK. THIS IS HOW WE ENSURE THAT DIFFERENT CYCLES OCCUR DURING THE SAME PERIOD, WHICH GIVES US A GREATER VARIETY OF FOOD.

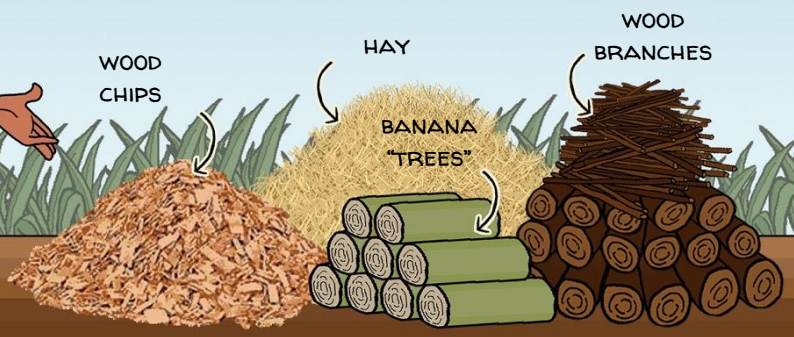


BEDS



PLANTING IN LINES MAKES THE MANAGEMENT AND PLANNING EASIER IN A SAF\*

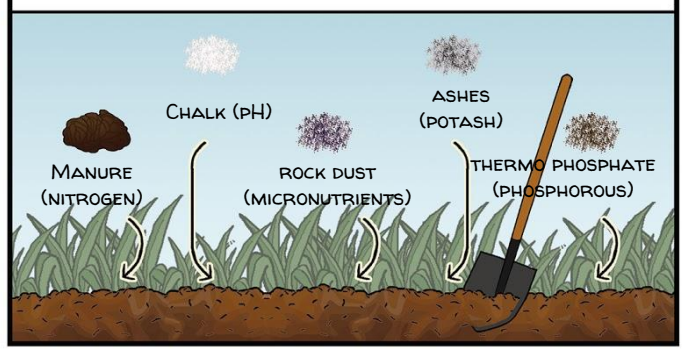
LIKE IN THE FOREST, WE COVER THE PATHS AND VEGETABLE BEDS WITH ORGANIC MATTER TO PROTECT AND ENRICH THE SOIL. HERE ARE SOME MULCH MATERIAL OPTIONS.



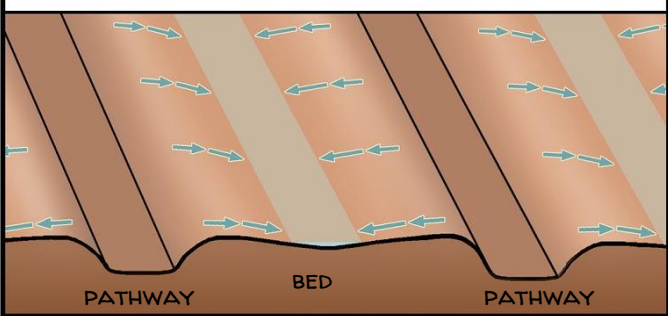
1. FOR THE SET UP OF THE VEGETABLE BEDS WE OPEN UP THE GROUND AND MARK THE PATHS AND BEDS.



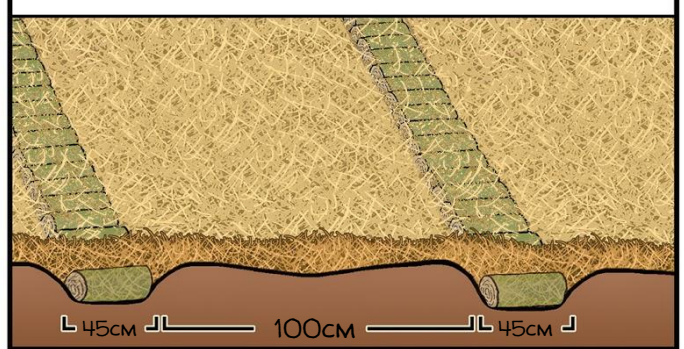
2. WE MINERALIZE AND FERTILIZE THE GROUND BY ADDING THE INPUTS TO THE SOIL.



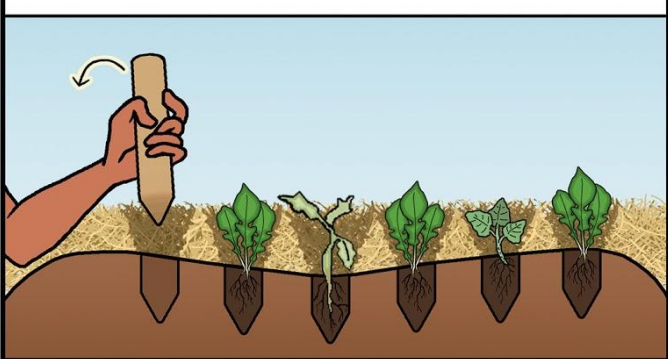
3. WE FORM A NEST SHAPED BED (THE SIDES SLIGHTLY HIGHER THAN IN THE MIDDLE) SO THAT WE DON'T LOSE WATER AND NUTRIENTS TO THE PATHS.



4. WE COVER EVERYTHING WITH ORGANIC MATTER AND PAY SPECIAL ATTENTION TO THE EDGES OF THE BEDS.



5. WE REMOVE THE SOIL COVERING OF THE PLANTING PLACE FOR EACH SEEDLING AND PLANT THEM WITH THE HELP OF A PLANTING STICK ACCORDING TO THE CHOSEN CONSORTIUM.



FOR THE RENEWAL OF THE BEDS IT IS ONLY NECESSARY TO CARRY OUT FERTILIZATION AND LOOSENING OF THE SOIL, PREFERABLY WITHOUT TURNING IT. FOR EXAMPLE, IF YOU INSERT A BROADFORK INTO THE SOIL AND JUST MOVE IT, YOU'LL VENTILATE THE SOIL WITHOUT TURNING IT OVER.



\*AGROFORESTRY SYSTEM

## RESTORING DEGRADED AREAS

AGROFORESTRY CAN ALSO BE USED AS A TECHNIQUE FOR SOIL REGENERATION IN DEGRADED AREAS. THIS WAS THE CASE IN OUR COMMUNITY FARM, WHERE WE USED THE "BUSH" TO HELP TO BUILD THE PLANTATION.

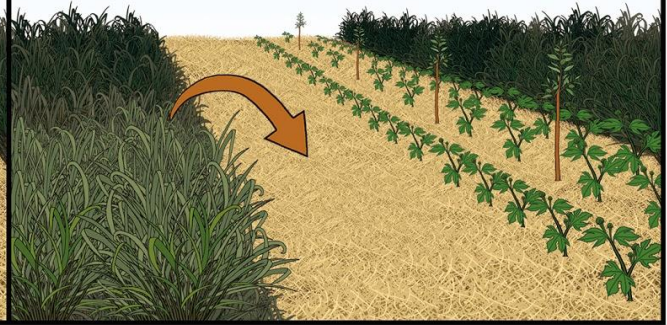
IN THE FIRST YEAR, WE USE OUR OWN WEEDS TO BUILD UP ORGANIC MATERIAL AT THE SITE OF THE FUTURE SEED BEDS.

1 YEAR



THE ACCUMULATION OF ORGANIC MATERIAL IN THE FUTURE BED BEGINS TO ALTER SOIL CHARACTERISTICS AND ALLOWS THE PLANTING OF FERTILIZER CROPS SUCH AS LEGUMES AND MEXICAN SUNFLOWERS.

1,5 YEAR



THE ABUNDANCE AND VARIETY OF ORGANIC MATTER PRODUCED BY THE FIRST BEDS WILL FURTHER IMPROVE THE ENVIRONMENT. AS SOILS BECOME RICHER AND RICHER, STRUCTURE, WATER STORAGE CAPACITY AND NUTRIENT AVAILABILITY IMPROVE AND ALLOW FOR GREATER DIVERSITY.

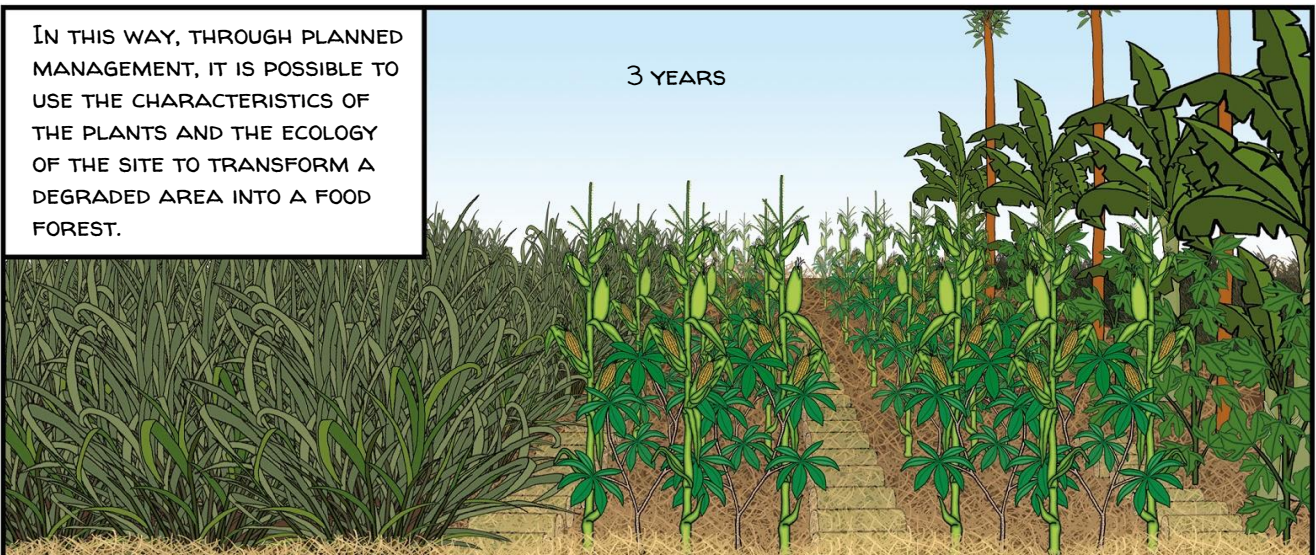
2 YEARS



SEE AGROFLORESTANDO O MUNDO DO TRATOR AO FAÇÃO

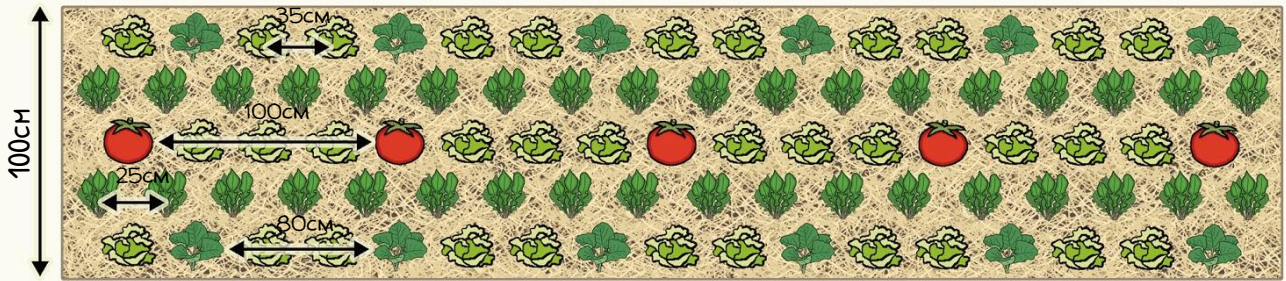
IN THIS WAY, THROUGH PLANNED MANAGEMENT, IT IS POSSIBLE TO USE THE CHARACTERISTICS OF THE PLANTS AND THE ECOLOGY OF THE SITE TO TRANSFORM A DEGRADED AREA INTO A FOOD FOREST.





3 YEARS



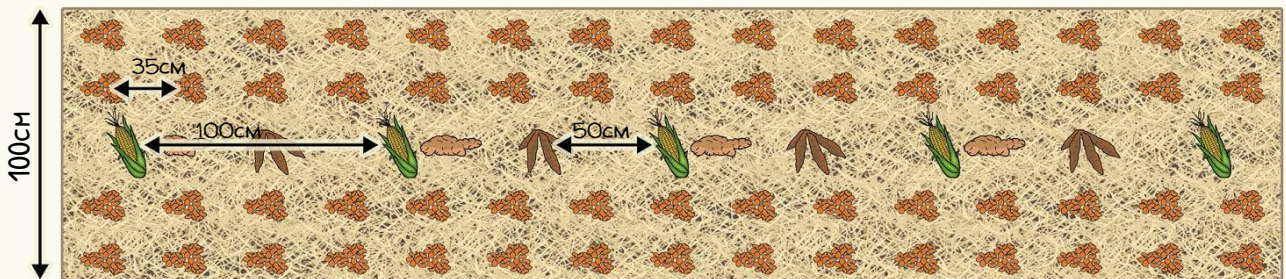
## PLANTING PLANS





THIS IS THE PLANTING SCHEME OF OUR SUCCESSIONAL VEGETABLE GARDEN.



-  25-DAY CYCLE SYSTEM FOR HARVESTING E.G. ROCKET/ ARUGULA OR RADISH
-  45-60-DAY CYCLE SYSTEM FOR HARVESTING E.G: SALAD OR CHARD
-  90-DAY CYCLE SYSTEM FOR HARVESTING E.G: CABBAGE
-  120-DAY CYCLE SYSTEM FOR HARVESTING E.G. TOMATO OR EGGPLANT

AND OUR PLANTATION FOR A YEARLY CYCLE WAS PLANNED IN THIS WAY:



-  3-4 MONTHS CYCLE SYSTEM FOR HARVESTING E.G. CORN OR OKRA
-  3 MONTHS CYCLE SYSTEM FOR HARVESTING E.G: BEANS
-  9 MONTHS CYCLE SYSTEM FOR HARVESTING E.G: CASSAVA
-  12 MONTHS CYCLE SYSTEM FOR HARVESTING E.G. GINGER

AND THE LINES OF FERTILIZER TREES, BANANA TREES AND FRUIT TREES WERE ALREADY LIKE THIS:

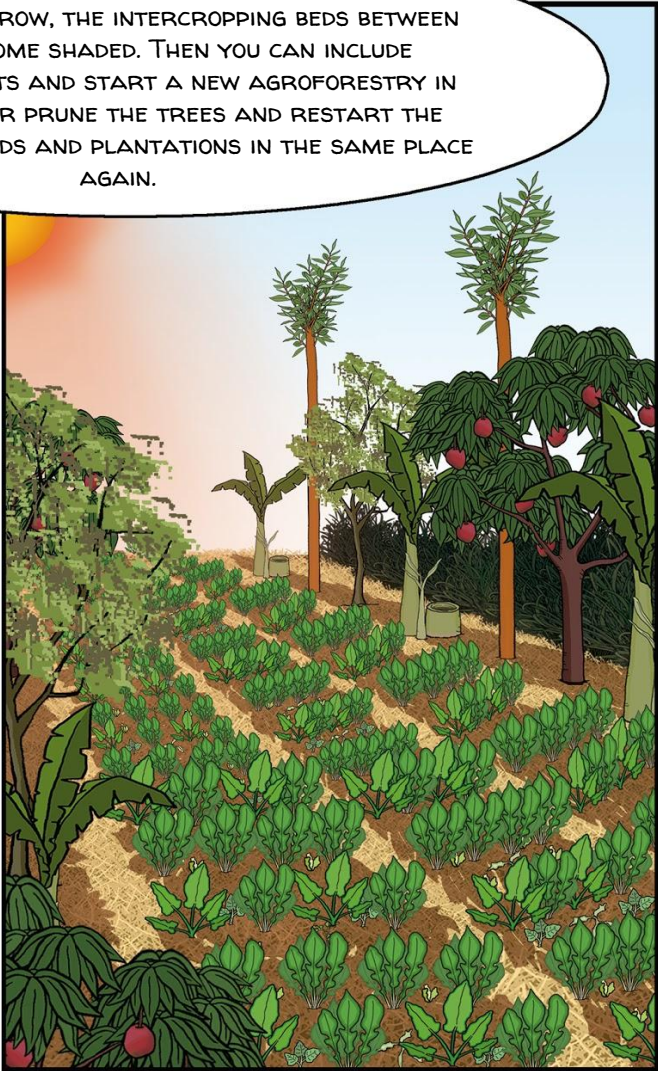


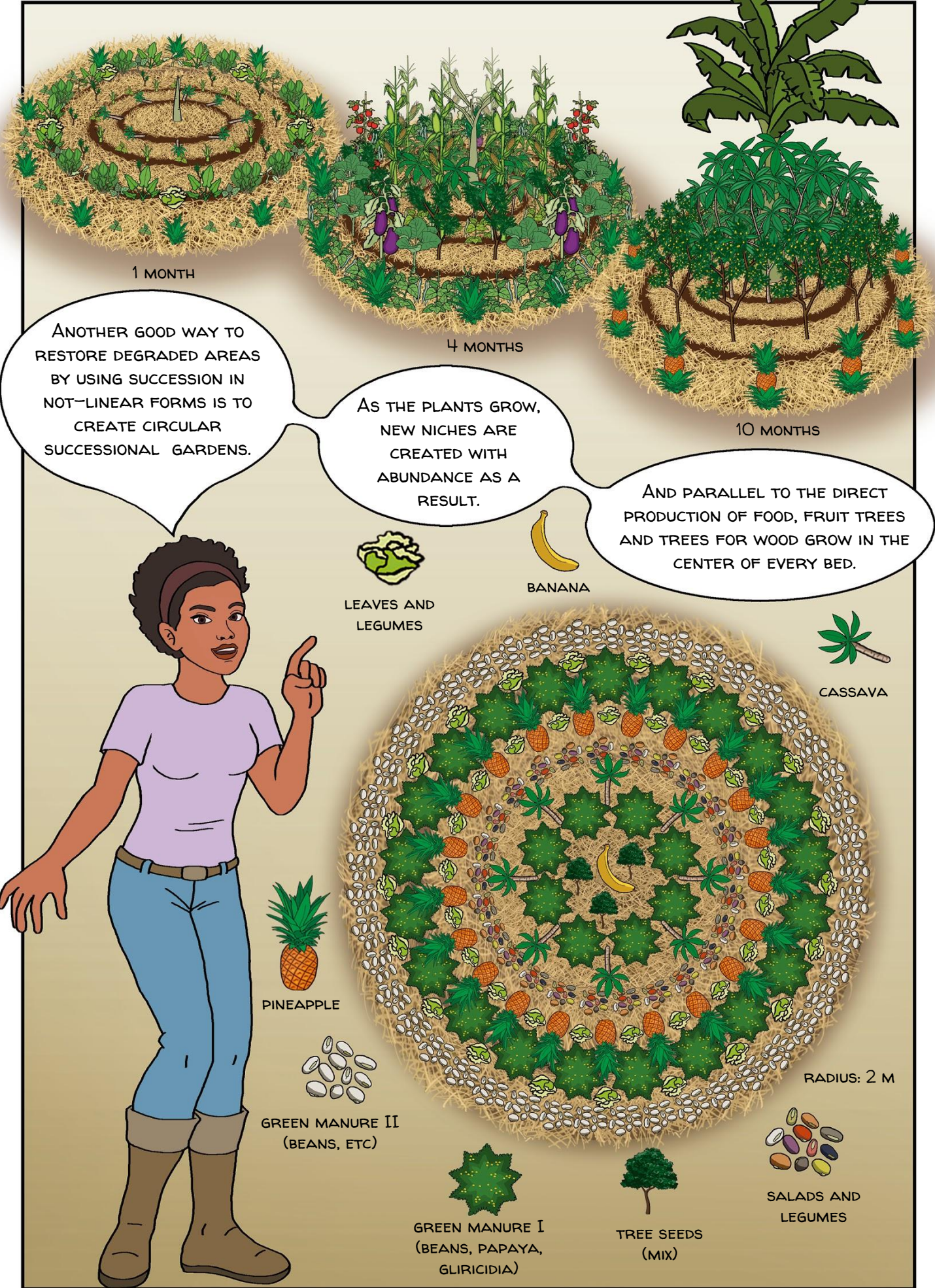
-  EUCALYPTUS
-  BANANA
-  FRUIT TREE
-  MANIOC
-  CORN

IN GENERAL WE PLANT ALL TREES, LIKE TREES FOR MULCH AND FERTILIZATION, FRUIT TREES AND TREES FOR WOOD HARVESTING, IN ROWS. BETWEEN THE ROWS OF THESE TREES, WE REALIZE PLANTATIONS OR VEGETABLE GARDENS.

TREE LINE  
INTERCROP GARDEN  
TREE LINE  
5 METERS  
1 METER

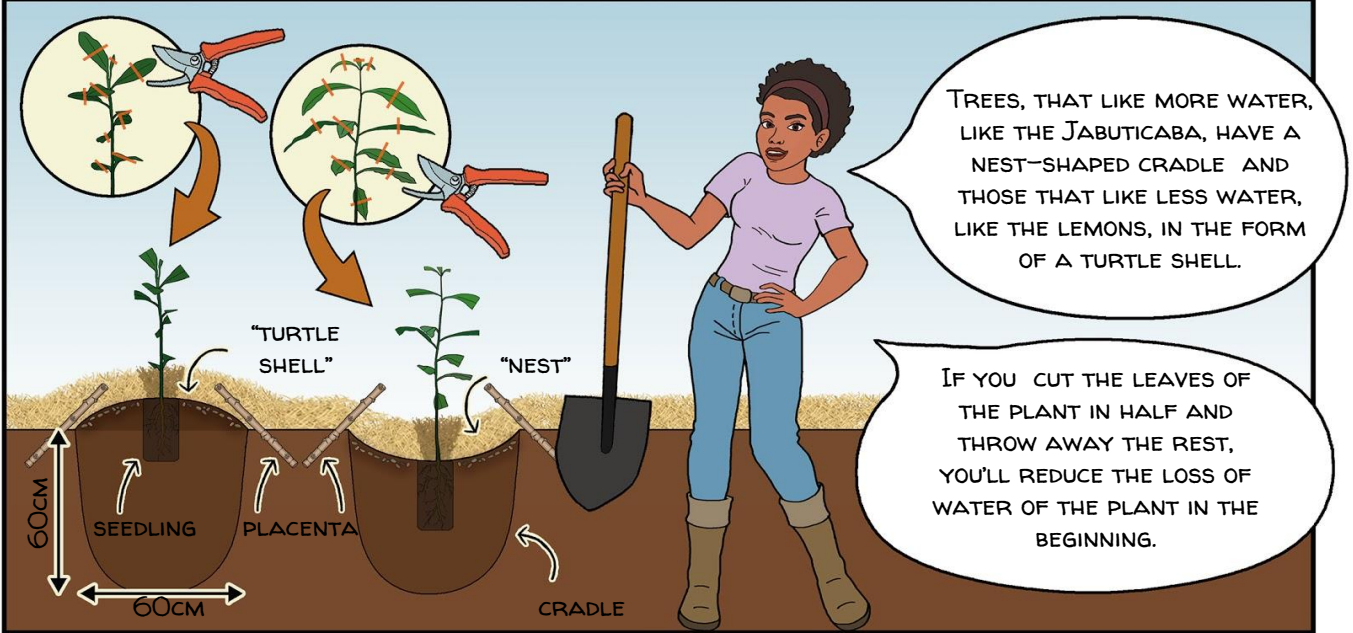
WHEN THE TREES GROW, THE INTERCROPPING BEDS BETWEEN THEM WILL BECOME SHADED. THEN YOU CAN INCLUDE HALF-SHADE PLANTS AND START A NEW AGROFORESTRY IN ANOTHER PLACE OR PRUNE THE TREES AND RESTART THE PROCESS OF ORCHARDS AND PLANTATIONS IN THE SAME PLACE AGAIN.



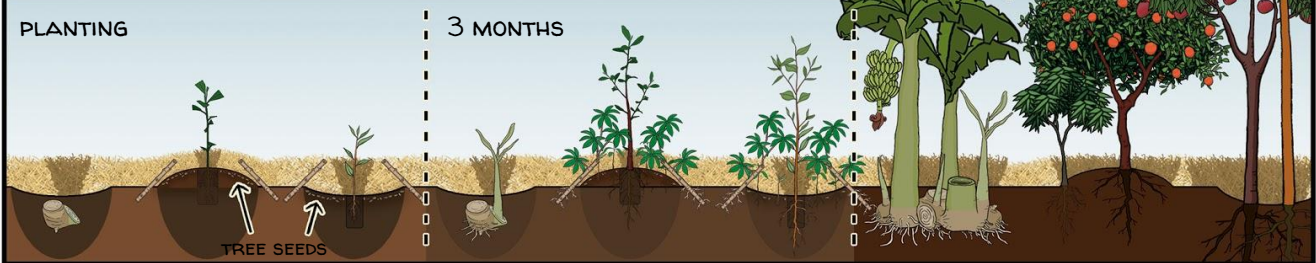


MANAGEMENT TIPS: BEDS, "MUVUCA" AND PLACENTA

IF WE INVEST TIME AND ENERGY AT THE BEGINNING OF PLANTING BY CREATING GOOD CRADLES (PLANTING HOLES), THE SMALL PLANTS WILL USE THEIR ENERGY TO GROW MORE VIGOROUSLY. IT IS IMPORTANT THAT THE CRADLE HOLE IS MUCH LARGER THAN THE ROOT CLOD AND WELL FED WITH WATER, MINERALS AND COMPOST.



FOR PLANTING WE USE THE PLACENTA METHOD, WITH WHICH SEEDS OF PLANTS FOR GREEN MANURE AND CASSAVA CUTTINGS GROW TOGETHER, PROTECTING NEW SEEDLINGS AND THE SEED MIX OF TREES. THEREFORE, PLANTS FROM DIFFERENT CYCLES AND STRATA ARE PLANTED TOGETHER TO BE MANAGED IN THE FUTURE ACCORDING TO THE STAGE OF AGROFORESTRY.

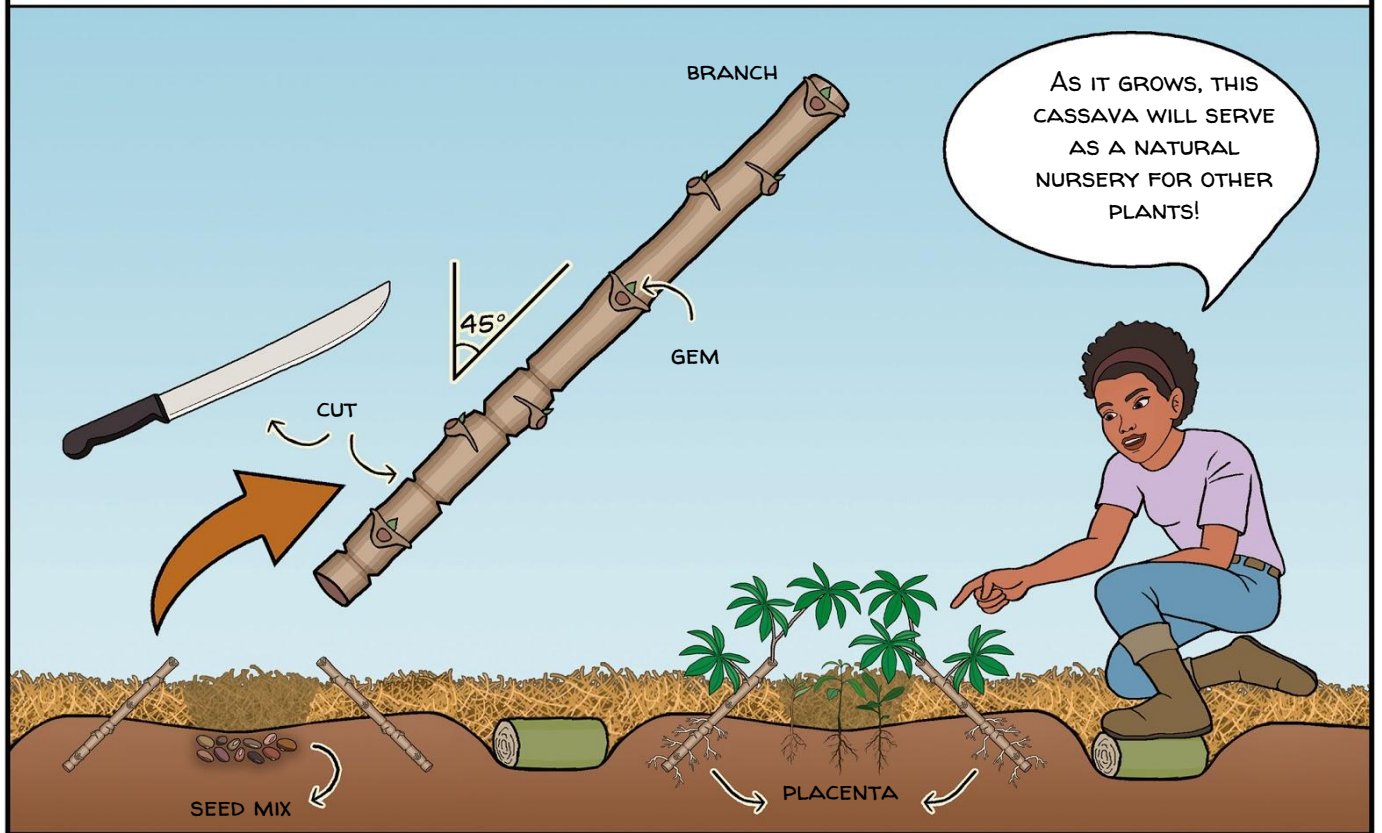


IN THIS WAY, A PIONEER TREE THAT PREFERS THE DIRECT SUN FROM AN EARLY AGE WILL GROW AND CHANGE THE ENVIRONMENT SO THAT A SECONDARY TREE THAT PREFERS A LITTLE MORE SHADE WILL DEVELOP BETTER AND SO ON. IN THE MEANTIME, IT IS OUR JOB TO OBSERVE, TAKE CARE AND PRUNE IF NECESSARY.

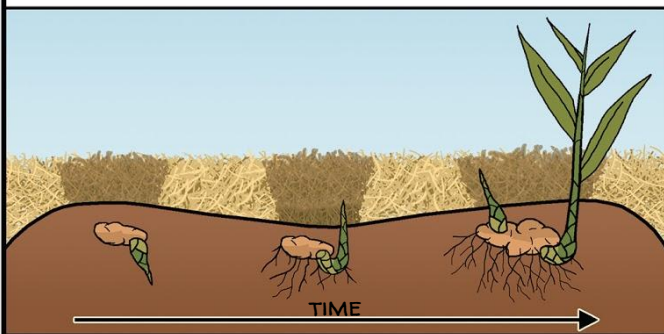


MANAGEMENT TIPS: FORMS OF PLANTING

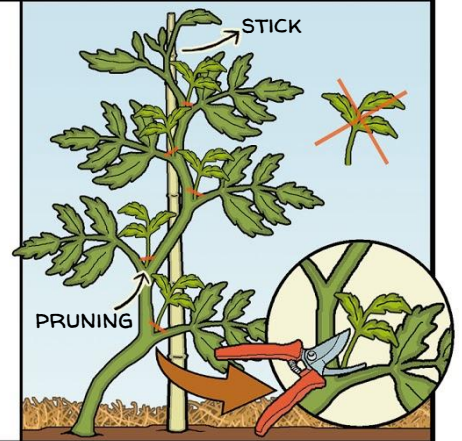
TO PLANT THE CASSAVA, WE CUT OFF THE BRANCHES, POSITION THEM WITH THE BUDS UPWARDS AND MAKE SOME CUTS IN THE LOWER PART TO FACILITATE ROOT FORMATION. WE PLANT THE BRANCHES BY LEADING THE ROOTS OUT OF THE BED AT AN ANGLE OF 45 DEGREES.



ROOTS SUCH AS YAMS, TURMERIC AND GINGER ARE PLANTED WITH EYES (SHOOTS) POINTING DOWNWARDS.



FOR TOMATOES, WE USE BAMBOO OR A GUIDELINE AND CUT NEW BRANCHES SO THAT ALL THE PLANT'S ENERGY IS DEDICATED TO THE FRUITS OF THE MAIN BRANCH.



FOR THE DIRECT PLANTING OF SEEDS, E.G. RADISH AND CARROTS, WE REMOVE THE STRAW LAYER IN ROWS WHERE WE DISTRIBUTE THE SEEDS AND THEN THIN THEM.



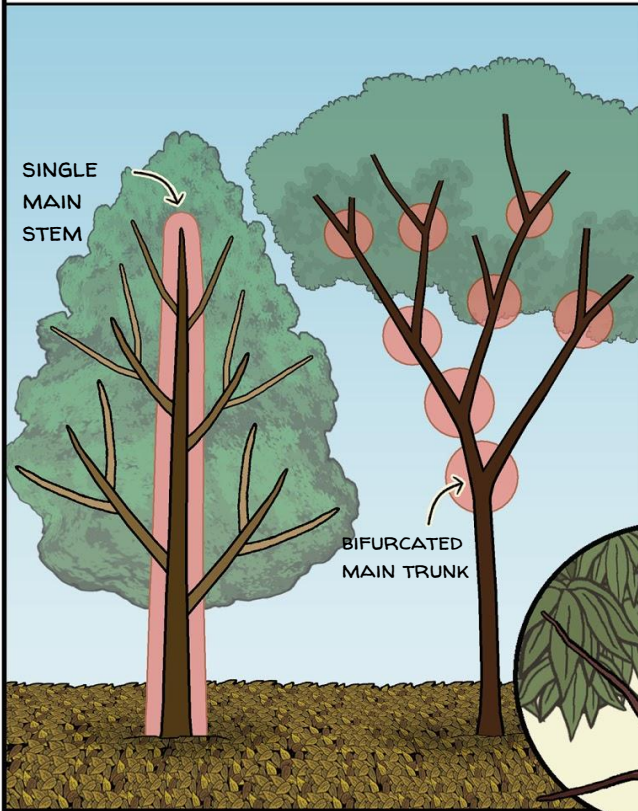
FOR OTHER NO-TILL CROPS, SUCH AS CORN OR BEANS, WE USE OUR MACHETE TO OPEN STRAW AND SOIL FOR SOWING. KEEP THE BACK OF THE MACHETE TO THE SIDE OF THE HAND WHILE PLANTING THE SEEDS!



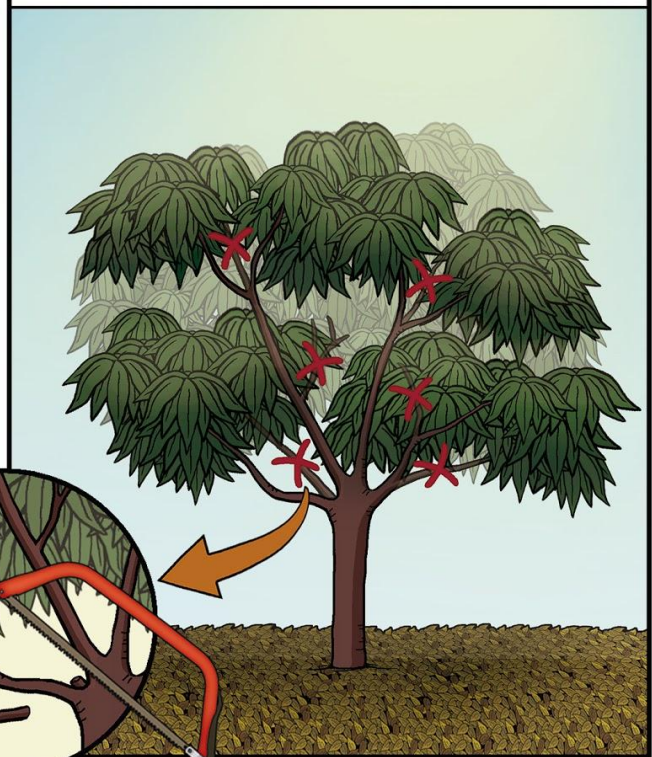
MANAGEMENT TIPS: PRUNING

IN ADDITION TO PLANTING, PRUNING IS ALSO AN ESSENTIAL PART OF MANAGING AN AGROFORESTRY SYSTEM. IN THIS WAY WE PRODUCE ORGANIC MATTER, ENCOURAGE THE ENTRY OF LIGHT OR ELIMINATE SOMETHING FROM THE SYSTEM.

WHEN PRUNING A TREE, IT IS IMPORTANT TO PRESERVE ITS NATURAL STRUCTURE (ARCHITECTURE).

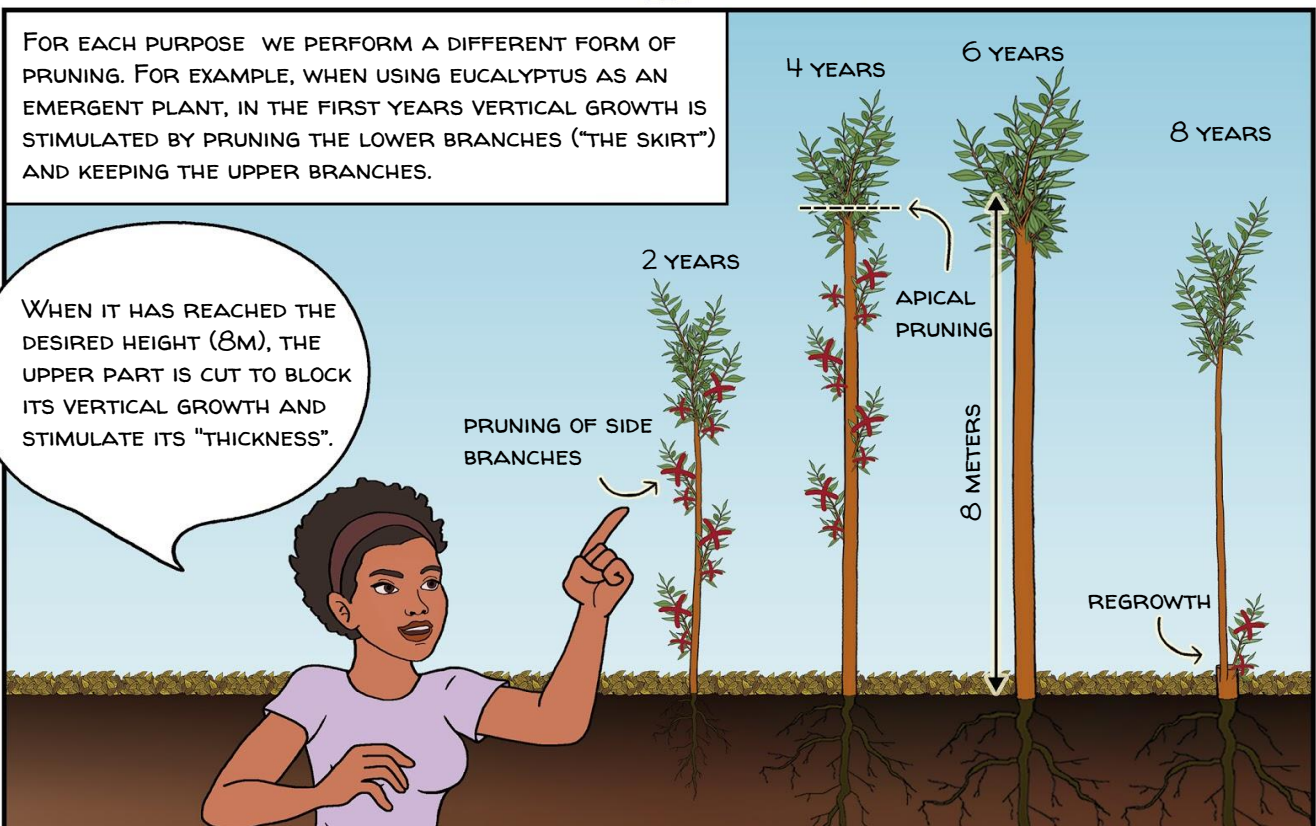


FOR MOST FRUIT TREES, WE OPEN THE CANOPY FOR MORE LIGHT AND KEEP THE HORIZONTAL BRANCHES TO STIMULATE FRUIT PRODUCTION.



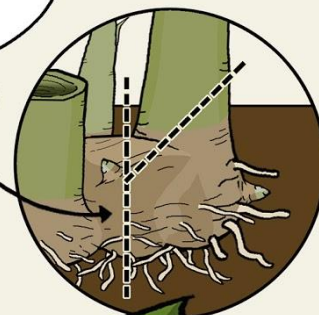
FOR EACH PURPOSE WE PERFORM A DIFFERENT FORM OF PRUNING. FOR EXAMPLE, WHEN USING EUCALYPTUS AS AN EMERGENT PLANT, IN THE FIRST YEARS VERTICAL GROWTH IS STIMULATED BY PRUNING THE LOWER BRANCHES ("THE SKIRT") AND KEEPING THE UPPER BRANCHES.

WHEN IT HAS REACHED THE DESIRED HEIGHT (8M), THE UPPER PART IS CUT TO BLOCK ITS VERTICAL GROWTH AND STIMULATE ITS "THICKNESS".

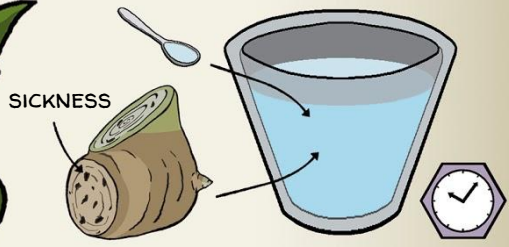


THE BANANA IS A VERY GOOD PLANT TO PRODUCE ORGANIC MATTER, EASY TO REPLICATE AND WITH CONSTANT REGROWTH. TO HAVE A GOOD FRUIT PRODUCTION, THE PLANTS ARE ALWAYS KEPT AT DIFFERENT STAGES OF DEVELOPMENT: "GRANDMOTHERS, MOTHERS AND DAUGHTERS"

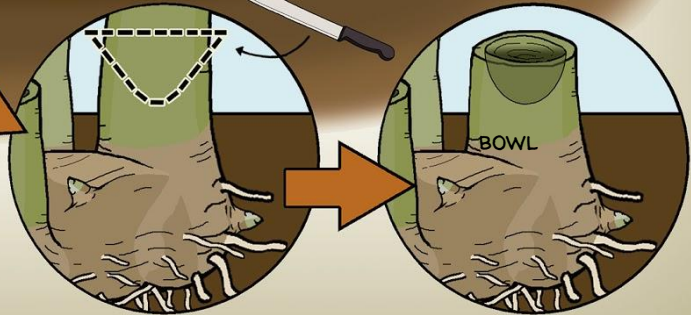
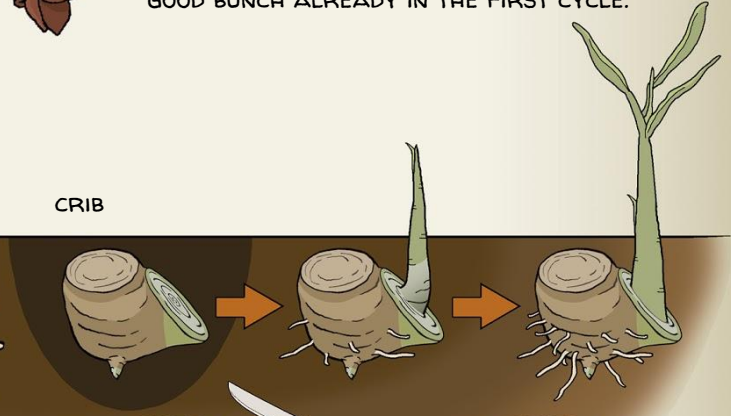
TO PLANT A NEW PLANT, WE REMOVE THE SEEDLING AND PREPARE ITS "POTATO", WHICH SHOULD BE ABOUT 1 KG. WE CLEAN THE POTATO BY CUTTING THE ROOTS AND MAKING A 45 DEGREE CUT BETWEEN BASE AND STEM.



IF THE SCION IS SICK, WE PUT THE "POTATO" IN A BUCKET OF WATER FOR 24 HOURS BEFORE WE PLANT IT, AND IN THE LAST TWO HOURS, WE PUT A FEW TABLESPOONS OF CHLORINE OR BLEACH IN THE WATER.



WE DIG A CRADLE AND PLANT THE "POTATO" OF THE BANANA TREE SIDWAYS, WITH THE CUT OF THE MOTHER PLANT UPWARDS. THIS PROCEDURE ENSURES THAT THE NEW INDIVIDUAL IS HEALTHY AND PRODUCES A GOOD BUNCH ALREADY IN THE FIRST CYCLE.



AFTER THE BANANA HARVEST WE CUT THE BANANA TREE. THE REMAINING PART OF THE "POTATO" SHOULD BE CUT INTO A BOWL, TO PREVENT FURTHER CONTAMINATION AND DISEASE.

RAISING ANIMALS IN AN AGROFORESTRY SYSTEM

AGROFORESTRY IS ALSO A GOOD PLACE TO BREED ANIMALS. FOR EXAMPLE, IF WE INCLUDE A CHICKEN COOP WITH PERMANENT PICKETS IN THE MIDDLE OF THE SAF FARM, THE TREE AND LAWN AREAS WILL PROVIDE A DIVERSE, NUTRITIOUS AND HEALTHY ENVIRONMENT FOR THE ANIMALS.

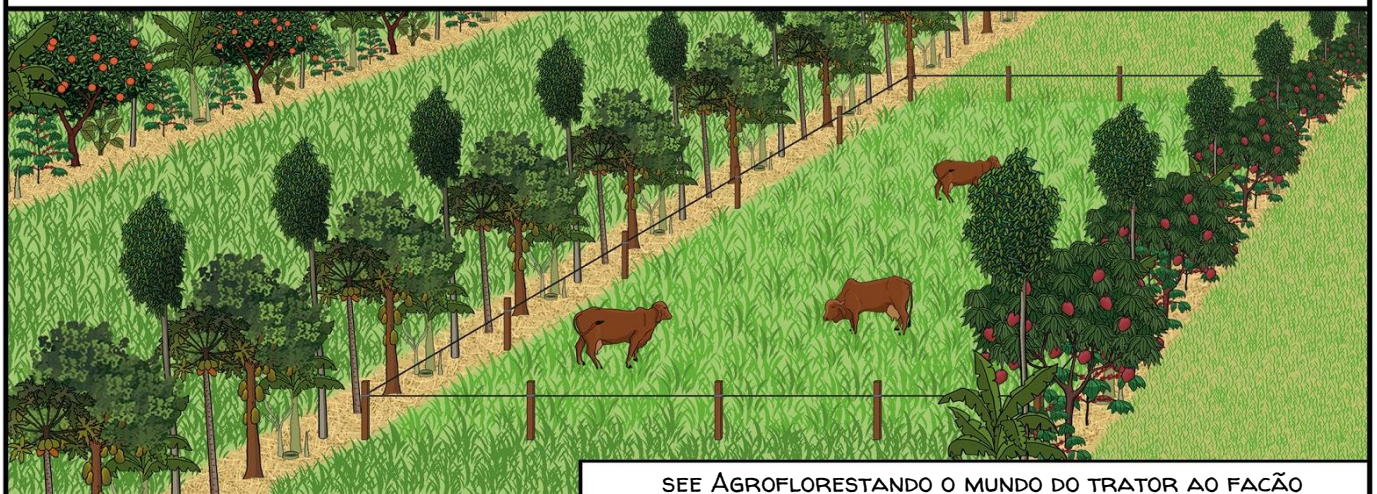
The diagram illustrates a central chicken coop with two gates leading to paddocks. The paddocks are divided into sections containing grass, green manure, and fruit trees. Chickens are shown in the paddocks. A speech bubble from the woman explains the strategy.

Labels in the diagram: FRUIT TREES, GRASS, GREEN MANURE, GRASS, PADDOCKS, GRASS, GREEN MANURE, GRASS, FRUIT TREES, GATES, CHICKEN COOP.

Speech bubble 1: THE COOP WITH SLEEPING PLACES AND LAYING NESTS IS LOCATED IN THE CENTER, SURROUNDED BY FENCES. THE ANIMALS STAY ONLY A FEW DAYS ON EACH PLOT AND THEN MOVE ON TO THE NEXT. IN THE MEANTIME, THE PLANTS ARE TREATED JUST LIKE THE OTHER PARTS OF THE SAF FARM. IN THIS WAY, INSTEAD OF DAMAGING THE SITE THE CHICKENS WILL HELP TO IMPROVE THE PLACE.

Speech bubble 2: THE STRATEGY FOR ANIMALS TO HELP TO IMPROVE THE ENVIRONMENT IS TO NOT KEEPING THEM STUCK IN ONE PLACE!

ANOTHER WAY TO MOVE THE ANIMALS WITHIN THE SAF FARM IS TO USE MOBILE ELECTRIC FENCES BETWEEN THE LINES. IN THIS WAY, THE ANIMALS FEED INTENSIVELY IN ONE PARTICULAR PLACE THAT CHANGES DAILY, FORCING AN INTENSE ENVIRONMENTAL STRESS, FOLLOWED BY REST AND VIGOROUS REGROWTH.



SEE ÁGROFLORESTANDO O MUNDO DO TRATOR AO FACÃO

# SKETCH

WHEN PLANNING AN AGROFORESTRY IT IS IMPORTANT TO DRAW YOUR SKETCH. IN IT WE DEFINE EACH PLANT SPECIES IN THE AREA. REMEMBER THAT THE TREE LINES WILL CONSIST OF FERTILIZER AND FRUIT SPECIES FROM DIFFERENT STRATA AND SUCCESSIONS (SEE THE TABLE ON PAGE 24 FOR VARIOUS EXAMPLES).



FRUITS  
EG. MANGO



GREEN MANURE  
EG. BANANA

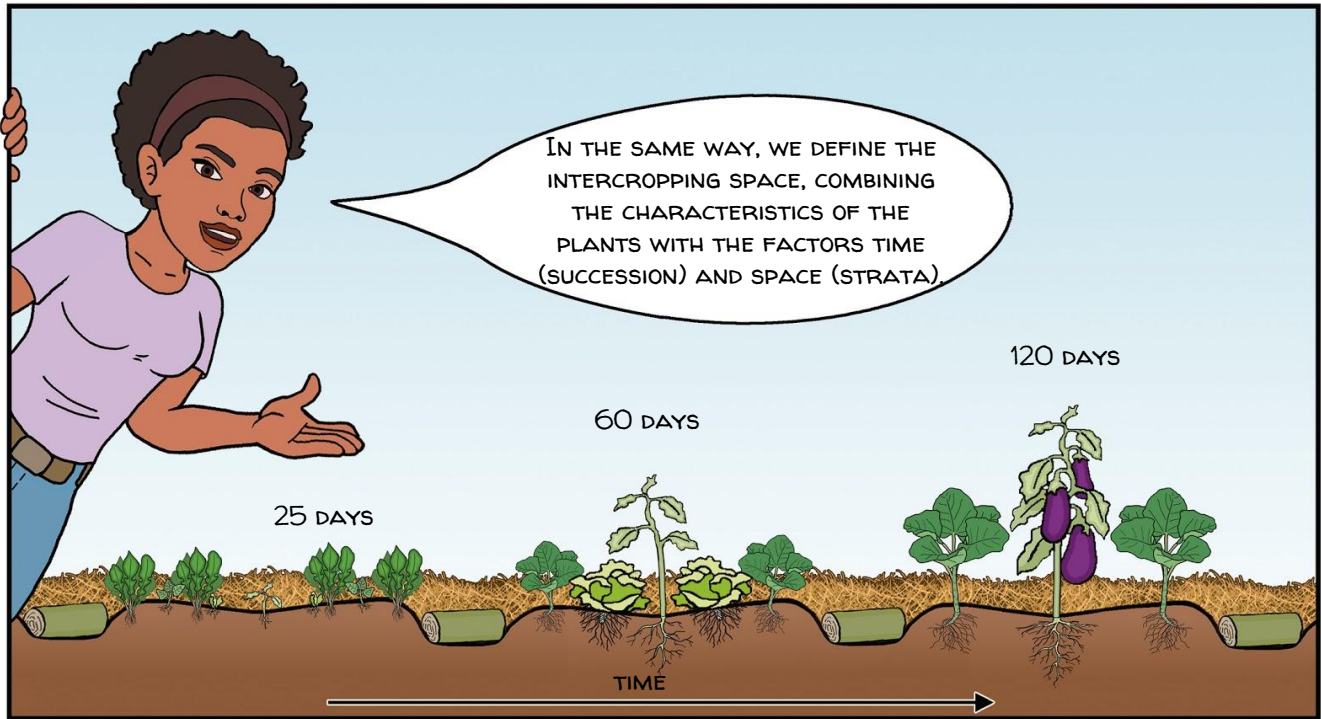


WOOD  
EG. EUCALYPTUS

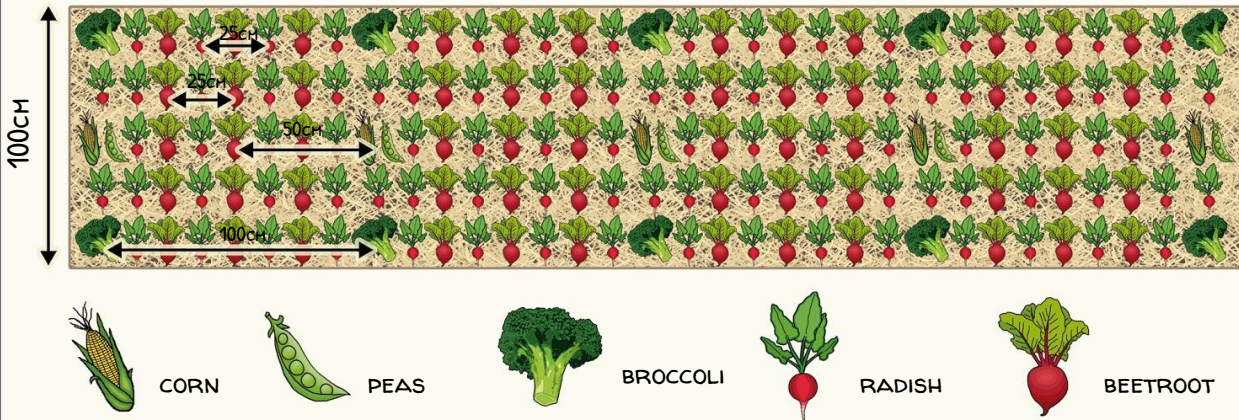


PLACENTA  
EG. CASSAVA

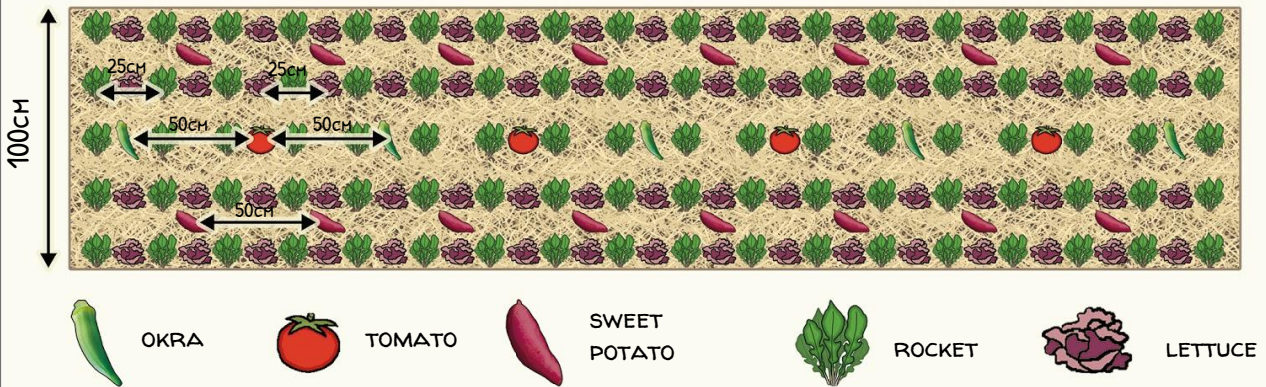
CONSORTIUM SUGGESTIONS



FOR EXAMPLE IN THE LOWER CONSORTIUM WE HAVE 3 CYCLES IN ONE PLANTED BED. IN THE 90-DAY CYCLE WE HAVE CORN WITH EMERGENT STRATUM ON EVERY METER AND BEETROOT WITH MEDIUM STRATUM ON EVERY 25 CM. TOGETHER WITH IT WE INCLUDE A 60-DAY CYCLE OF BROCCOLI (HIGH STRATUM) AND CLIMBING BEANS TO CLIMB THE EMERGENT STRATUM CORN. AND, ALSO A QUICK 25 DAYS CYCLE OF RADISH.



IN THIS OTHER CONSORTIUM WE HAVE OKRA (EMERGENT - 120 DAYS), TOMATO (HIGH STRATUM - 120 DAYS), SWEET POTATO (LOW - 100 DAYS), PURPLE AND CURLY SALAD (MEDIUM - 45 DAYS) AND ROCKET (MEDIUM - 25 DAYS).



EXERCISE

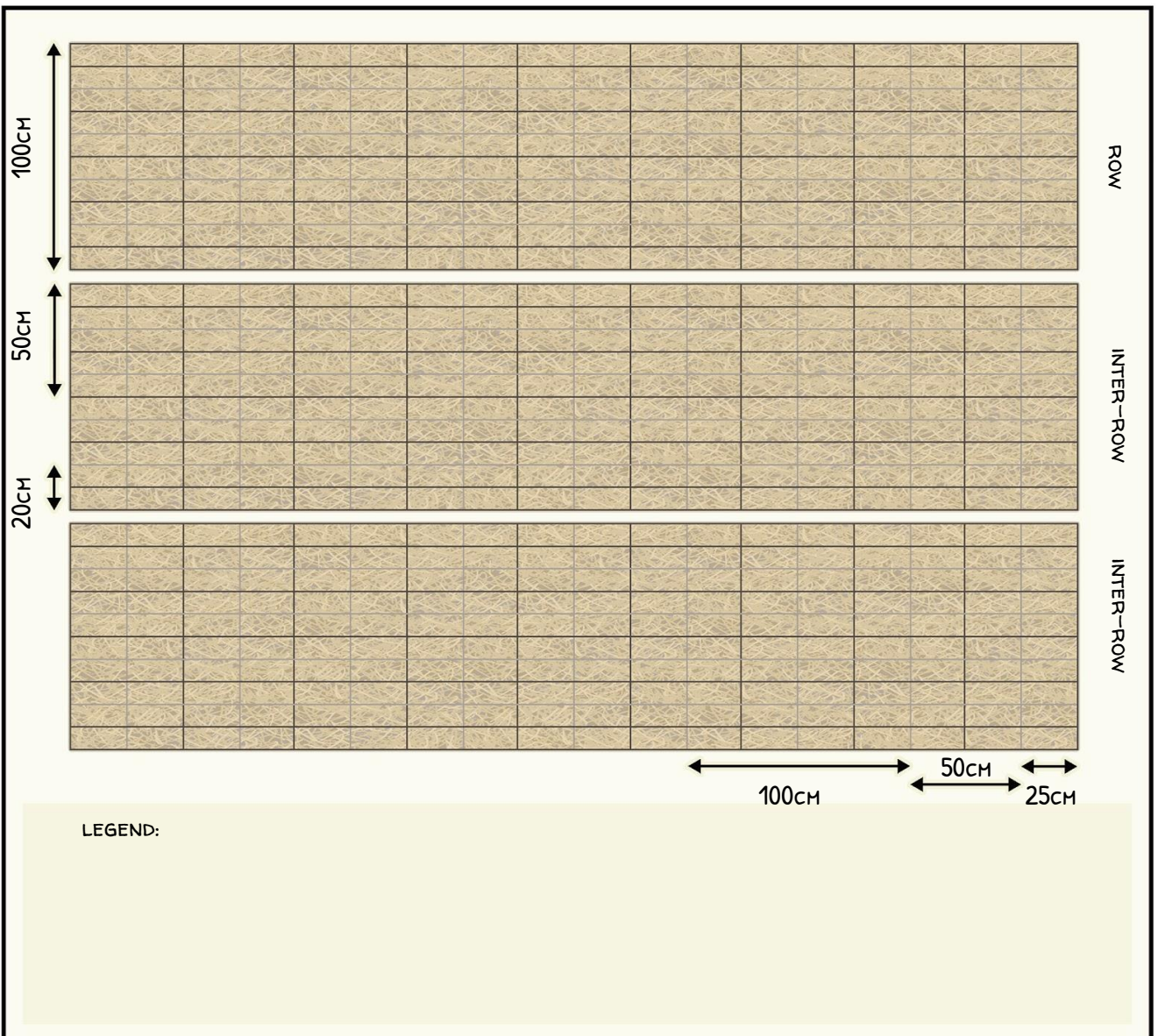
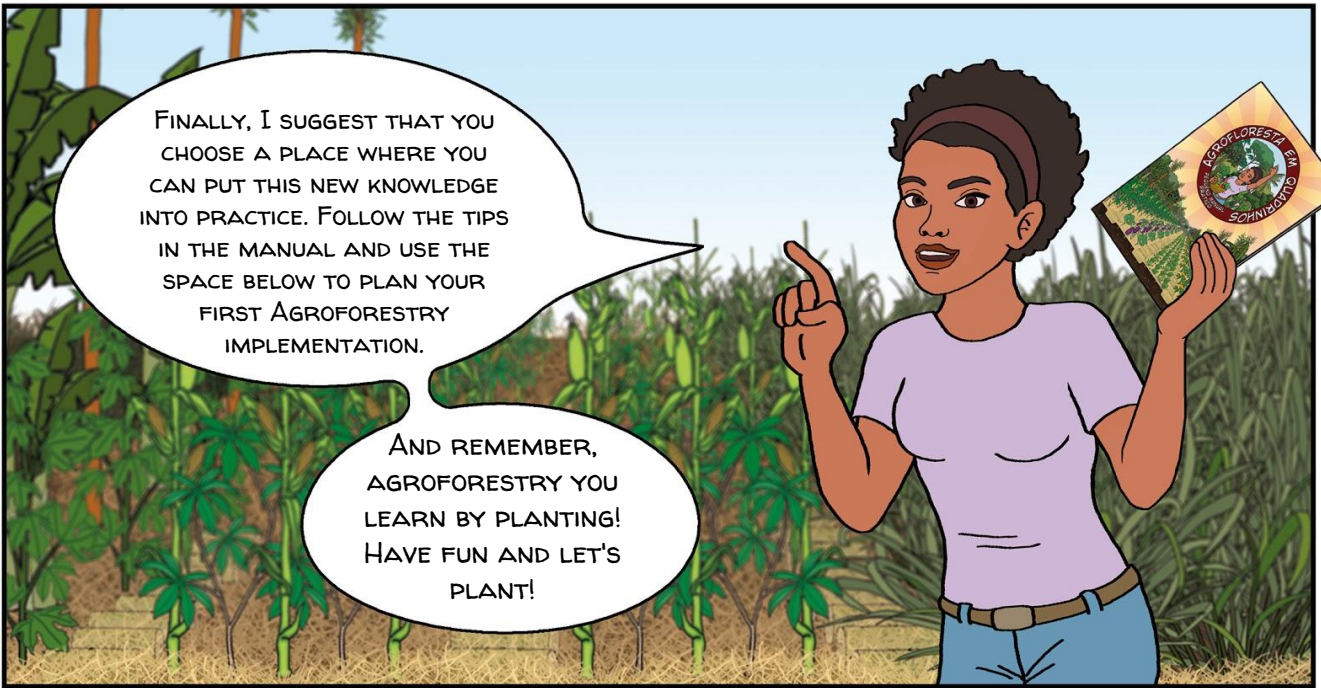


TABLE OF CYCLES AND LAYERS

LAYER	OCCUPIED SPACE	CYCLES/SUCCESSION					[LONG TERM TREES]	
		45 DAYS	60 DAYS	90 DAYS	6 MONTHS	3 YEARS	BIOMASS / WOOD	FRUITS / NUTS
EMERGENT	20%	SUNN HEMP	SUNFLOWER	CORN	OKRA	CASTOR-OIL PLANT	EUCALYPTUS	BRAZILIAN PINE
				SESAME		PAPAYA	AFRICAN MAHOGANY	PECAN NUT
				AMARANTH			ROBLE	PUPUNHA PALM TREE
							JAPAN GRAPE	
CANOPY	40%		CAULIFLOWER	TOMATO	COWITCH	CASSAVA	BRAZILIAN ORCHID TREE	JACK FRUIT
			BROCCOLI	PEA	EGG PLANT	YACON	MEXICAN LILAC	MANGO
			PEARL MILLET	CHIVES	SWEET BASIL	CONGO BEAN	DWARF BANANA	DWARF BANANA
			SORGHUM	CABBAGE	BISHOP'S CROWN PEPPER	SWEET BASIL	PORTUGUESE PLUM	JAMBO
			COW PEA	WHEAT		LEMON BASIL	ICE CREAM BEAN/INGA	INGA AND BARU NUT
			CLIMBER PEA	BELL PEPPER			SOMBREIRO	GUAVA
				ROSELLE			MEXICAN SUNFLOWER	KAKIFRUIT
				GILO			TIGERWOOD	CHERRIES OF RIO GRANDE
MEDIUM	60%	RADISH	LETTUCE	POTATO	ONION	TABASCO PEPPER	DWARF BANANA	EGG PLANT TREE
		ROCKET	3 MONTHS' RICE	CANADA LETTUCE	PEPPER	ARRACACHA	BLANTAINE	MULBERRY
		LETTUCE	CHICORY	FLAX	RICE	GARLIC		DWARF BANANA
		PURPLE LETTUCE	ALMEIRAO	LEEK	BROAD BEAN	HANGING LOBSTER CLAW		CAMBUCCI
		CORIANDER	CHARD	CARROT	PUMPKIN	GREATER BURDOCK		GRUMICHAMA
			TURNIP	BEETROOT				BRAZILIAN CHERRY
				WILD CELERY				UVAIA
				ZUCCHINI				MANDARIN
LOWER	80%		BLACK TURTLE BEANS	JACK BEAN	PEANUTS	GINGER		COFFEE
			WATERCRESS	WATERMELON	PARSLEY	NIRA AND YAM		LEMON
			PINTO BEANS	SWEET POTATO	MINT	OREGANO		PINEAPPLE
			CUCUMBER	MELON		PENNYROYAL		TAHTI LEMON
			GHERKIN	SPINACH		ARROWROOT		LIME
			GREEN BEAN	SOY		MARJORAM		JABUTICABA SABARA
				AZUKI BEAN		BUTTERFLY GINGER		COCOA
						ARROWLEAF		QUINCE



*AGROFLORESTA: APRENDENDO A PRODUZIR COM A NATUREZA / STEENBOCK W., VEZZANI F.M. - CURITIBA, 2013.*

*AGROFLORESTANDO O MUNDO DE FACÃO A TRATOR / NETO, N. E. C. ... ET AL. PALMEIRA, 2016.*

*DA HORTA À FLORESTA - FROM GARDEN TO FOREST / AGENDA GOTSCH (VÍDEO).*

*RESTAURAÇÃO ECOLÓGICA COM SISTEMAS AGROFLORESTAIS: COMO CONCILIAR CONSERVAÇÃO COM PRODUÇÃO. OPÇÕES PARA CERRADO E CAATINGA / MICCOLIS A. ... ET AL. BRASÍLIA, 2016.*

*SISTEMAS AGROFLORESTAIS: USO DA SUCESSÃO E DA ESTRATIFICAÇÃO EM CONSÓRCIOS ENTRE LAVOURAS E HORTALIÇAS / FLYER COOPERAFLORISTA.*

THE MANUAL "AN ILLUSTRATED GUIDE TO AGROFORESTRY" WAS CREATED TO FACILITATE THE INTRODUCTION TO STRATIFIED SUCCESSIONAL AGROFORESTRY. THE EXAMPLE PRESENTED HERE IS JUST ONE OF THE MANY POSSIBILITIES FOR THE BIOMES OF THE ATLANTIC FOREST. EACH SYSTEM IS UNIQUE. FOR EACH PLACE THERE IS A STORY AND A CONTEXT THAT MUST BE UNDERSTOOD WITH EYES AND EARS WIDE OPEN BOTH TOWARDS PEOPLE AND TOWARDS NATURE.

Bora  
Permaculturar 



## SCIENTIFIC NAMES

<b>Abiu</b> <i>Pouteria caimito</i>	<b>Cauliflower</b> <i>Brassica oleracea convar</i>	<b>Guava</b> <i>Psidium guajava</i>	<b>Papaya</b> <i>Carica papaya</i>	<b>Sorghum</b> <i>Sorghum bicolor</i>
<b>African mahogany</b> <i>Khaya ivorensis</i>	<b>Chard</b> <i>Beta vulgaris var. cicla</i>	<b>Heliconia</b> <i>Heliconia rostrata</i>	<b>Parsley</b> <i>Petroselinum crispum</i>	<b>Soybean</b> <i>Glycine max</i>
<b>Amaranth</b> <i>Amaranthus spp.</i>	<b>Cherries of the Rio Grande</b> <i>Eugenia involucrata</i>	<b>Ice cream bean</b> <i>Inga edulis</i>	<b>Peach</b> <i>Prunus persica</i>	<b>Spinach</b> <i>Spinacia oleracea</i>
<b>Arrowleaf</b> <i>Xanthosoma sagittifolium</i>	<b>Chives</b> <i>Allium schoenoprasum</i>	<b>Jack bean</b> <i>Canavalia ensiformis</i>	<b>Peanuts</b> <i>Arachis hypogaea</i>	<b>Sugarloaf</b> <i>Cichorium intybus</i>
<b>Arugula, Rocket</b> <i>Eruca sativa</i>	<b>Cocoa</b> <i>Theobroma cacao</i>	<b>Jackfruit</b> <i>Artocarpus heterophyllus</i>	<b>Pearl millet</b> <i>Pennisetum glaucum</i>	<b>Sunflowers</b> <i>Helianthus annuus</i>
<b>Azuki bean</b> <i>Vigna angularis</i>	<b>Coffee</b> <i>Coffea sp.</i>	<b>Japanese raisin tree</b> <i>Hovenia dulcis</i>	<b>Peas</b> <i>Pisum sativum</i>	<b>Sunn hemp</b> <i>Crotalaria juncea</i>
<b>Baru nut</b> <i>Dipteryx alata</i>	<b>Congo bean</b> <i>Cajanus cajan</i>	<b>Java plum</b> <i>Syzygium cumini</i>	<b>Pecan nut</b> <i>Carya illinoensis</i>	<b>Sweet basil</b> <i>Ocimum basilicum</i>
<b>Beat root</b> <i>Beta vulgaris</i>	<b>Coriander</b> <i>Coriandrum sativum</i>	<b>Jucara palm</b> <i>Euterpe edulis</i>	<b>Pennyroyal</b> <i>Mentha pulegium</i>	<b>Sweet potato</b> <i>Ipomoea batatas</i>
<b>Bell pepper</b> <i>Capsicum annuum</i>	<b>Corn</b> <i>Zea mays</i>	<b>Kakifruit</b> <i>Diospyros kaki</i>	<b>Pepper</b> <i>Capsicum baccatum</i>	<b>Tabasco pepper</b> <i>Capsicum frutescens 'Malagueta'</i>
<b>Black turtle bean</b> <i>Phaseolus vulgaris L. 'Black Turtle'</i>	<b>Cow pea</b> <i>Vigna unguiculata</i>	<b>Kale, Cabbage</b> <i>Brassica oleracea</i>	<b>Pepper 'Bishop's crown'</b> <i>Capsicum baccatum var. pendulum</i>	<b>Tahiti lime</b> <i>Citrus × latifolia (?)</i>
<b>Brazil cherry (Grumichama)</b> <i>Eugenia brasiliensis</i>	<b>Cowich bean</b> <i>Mucuna pruriens</i>	<b>Leek</b> <i>Allium ampeloprasum</i>	<b>Peruvian carrot</b> <i>Arracacia xanthorrhiza</i>	<b>Tigerwood</b> <i>Astronium fraxinifolium</i>
<b>Brazil cherry (Pitanga)</b> <i>Eugenia uniflora</i>	<b>Cucumber</b> <i>Cucumis sativus</i>	<b>Lemon</b> <i>Citrus limon</i>	<b>Pineapple</b> <i>Ananas comosus</i>	<b>Tomato</b> <i>Solanum lycopersicum</i>
<b>Brazilian grapetree</b> <i>Plinia peruviana</i>	<b>Curled lettuce</b> <i>Lactuca sativa var. crispa</i>	<b>Lemon basil</b> <i>Ocimum × africanum</i>	<b>Pinto bean</b> <i>Phaseolus vulgaris L. Pinto group</i>	<b>Turmeric</b> <i>Curcuma longa</i>
<b>Brazilian orchid tree</b> <i>Bauhinia forficata</i>	<b>Eggplant</b> <i>Solanum melongena</i>	<b>Lettuce</b> <i>Lactuca spp.</i>	<b>Plantain</b> <i>Musa × paradisiaca</i>	<b>Turnip</b> <i>Brassica rapa subsp. rapa</i>
<b>Brazilian pine</b> <i>Araucaria angustifolia</i>	<b>Eucalyptus</b> <i>Eucalyptus globulus</i>	<b>Lime</b> <i>Citrus aurantiifolia</i>	<b>Potato</b> <i>Solanum tuberosum</i>	<b>Uvaia</b> <i>Eugenia pyriformis</i>
<b>Broad bean</b> <i>Vicia faba</i>	<b>Flax</b> <i>Linum usitatissimum</i>	<b>Mandarin</b> <i>Citrus reticulata Blanco</i>	<b>Pumpkin</b> <i>Cucurbita spp.</i>	<b>Watercress</b> <i>Nasturtium officinale</i>
<b>Broccoli</b> <i>Brassica oleracea convar. botrytis var. italica</i>	<b>Garlic</b> <i>Allium sativum</i>	<b>Mango</b> <i>Mangifera indica</i>	<b>Pupunha palm tree</b> <i>Bactris gasipaes</i>	<b>Watermelon</b> <i>Citrullus lanatus</i>
<b>Butterfly ginger</b> <i>Hedychium coronarium</i>	<b>Garlic chives</b> <i>Allium tuberosum</i>	<b>Marjoram</b> <i>Origanum majorana</i>	<b>Quince</b> <i>Cydonia oblonga</i>	<b>Wheat</b> <i>Triticum</i>
<b>Cabbage lettuce</b> <i>Lactuca sativa var. capitata</i>	<b>Gherkin</b> <i>Cucumis anguria</i>	<b>Melon</b> <i>Cucumis melo</i>	<b>Radish</b> <i>Raphanus raphanistrum subsp. sativus</i>	<b>Wild celery</b> <i>Apium graveolens</i>
<b>Cabbage, Kale</b> <i>Brassica oleracea convar. capitata</i>	<b>Gilo</b> <i>Solanum aethiopicum var. Gilo</i>	<b>Mexican sunflower</b> <i>Tithonia diversifolia</i>	<b>Rice, 3 months rice</b> <i>Oryza sativa</i>	<b>Wild chicory</b> <i>Cichorium intybus L.</i>
<b>Cambuci</b> <i>Campomanesia phaea</i>	<b>Ginger</b> <i>Zingiber officinale Roscoe</i>	<b>Mint</b> <i>Mentha spp.</i>	<b>Roble</b> <i>Tabebuia spp.</i>	<b>Yacón</b> <i>Smallanthus sonchifolius</i>
<b>Canada lettuce</b> <i>Lactuca canadensis</i>	<b>Gliricidia</b> <i>Gliricidia sepium</i>	<b>Mulberry</b> <i>Morus sp.</i>	<b>Rose apple</b> <i>Syzygium jambos</i>	<b>Yam</b> <i>Dioscorea spp.</i>
<b>Carrot</b> <i>Daucus carota subsp. sativus</i>	<b>Greater Burdock</b> <i>Arctium lappa</i>	<b>Okra</b> <i>Abelmoschus esculentus</i>	<b>Roselle</b> <i>Hibiscus sabdariffa</i>	<b>Zucchini</b> <i>Cucurbita pepo var. cylindrica</i>
<b>Cassava</b> <i>Manihot esculenta</i>	<b>Green bean (bush bean)</b> <i>Phaseolus vulgaris</i>	<b>Onion</b> <i>Allium cepa</i>	<b>Sesame</b> <i>Sesamum indicum</i>	<b>Thanks for the update Hans!</b>
<b>Castor-oil plant</b> <i>Ricinus communis</i>	<b>Green bean (climber)</b> <i>Phaseolus vulgaris L.</i>	<b>Oregano</b> <i>Origanum vulgare</i>	<b>Sombreiro</b> <i>Clitoria fairchildiana</i>	<b>Let's plant some trees!</b>



WHEN JOÃO FIRST SHOWED ME AGROFLORESTA IN QUADRINHOS AT THE FOOD AUTONOMY FESTIVAL IN AMSTERDAM I WAS AN IMMEDIATE FAN. THE NICE DRAWINGS AND THE DETAILED INFORMATION CAME BEAUTIFUL TOGETHER. THIS IS THE PERFECT WAY TO PRESENT THIS HOPEFUL MESSAGE. SO WHEN JOÃO ASKED ME TO HELP WITH THE ENGLISH TRANSLATION I FELT VERY HONORED.

AS THE TRADITIONAL AGRICULTURE WITH MONOCULTURE ON A MASSIVE SCALE IS EXHAUSTING THE PLANET, THE NEED FOR AN ALTERNATIVE SYSTEM THAT IS BUILDING UP THE SOIL AND ENRICHING BIODIVERSITY IS FELT STRONGER THAN EVER.

IN THE TIME THAT I SPENT IN BRAZIL I SAW THAT THE EXAMPLES OF SMALLER AND BIGGER AGROFLORESTA FARMS ARE GAINING IMPACT. VIA LOCAL ORGANIC MARKETS THEIR PRODUCTS FIND THEIR WAY TO CONSUMERS WHO ARE SUPPORTIVE AND WILLING TO PAY A FAIR PRICE.

I HOPE THIS GUIDE WILL HELP YOU TO PARTICIPATE IN THIS GROWING MONDIAL MOVEMENT TOWARDS ABUNDANCE AND A HEALTHIER WORLD.

HANS BOERSMA

PARTNERS



ORGANIZATION

Bora Permaculturar 