

ARBA MINCH - PERMACULTURE TRAINING AND DEMONSTRATION CENTER

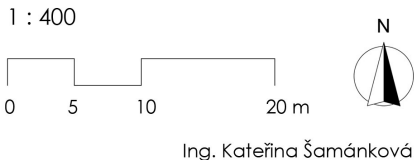
ETHIOPIA



Ing. Kateřina Šamánková



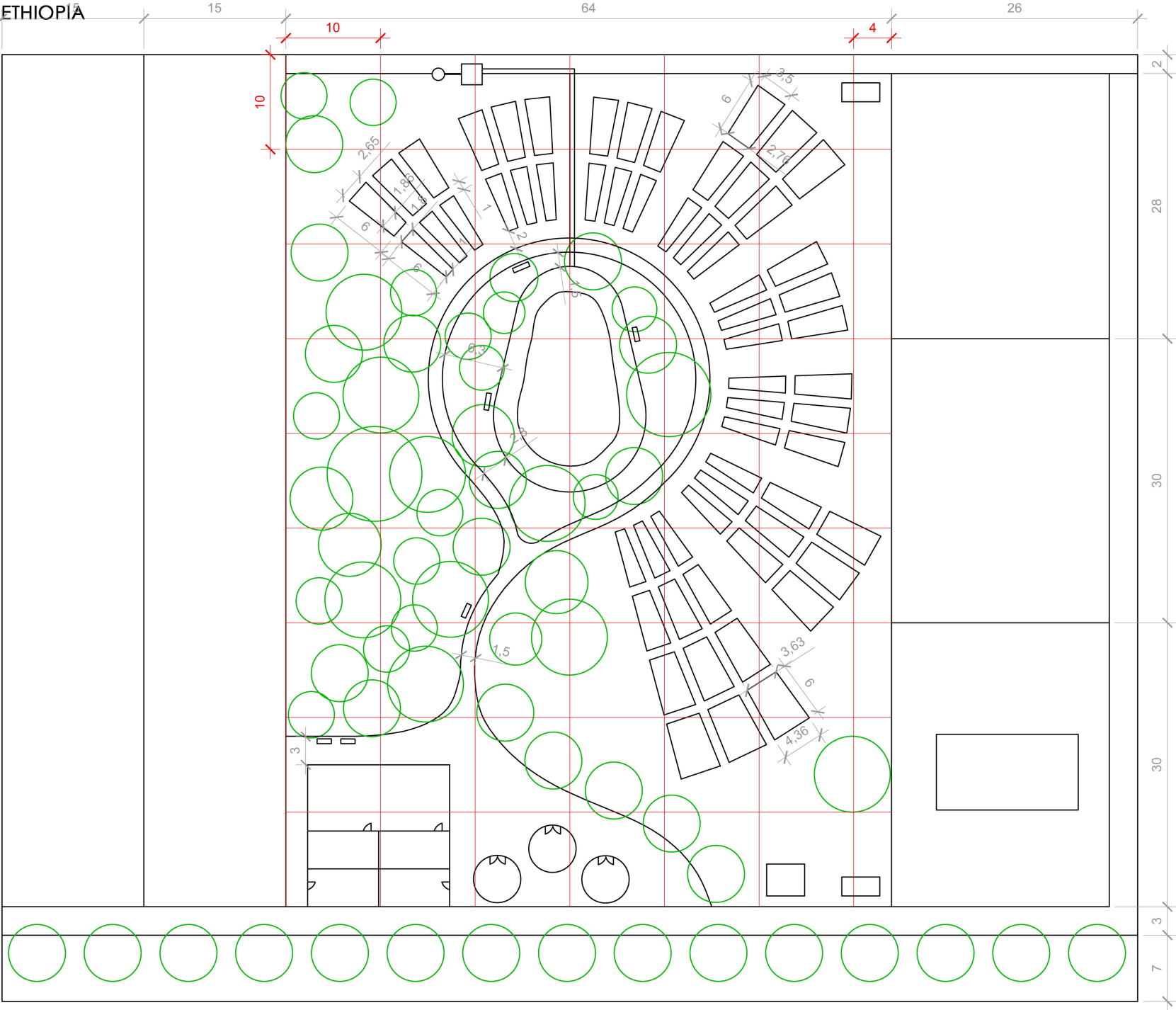
- LEGEND
- A Moringa plantation
 - B Moringa plantation
 - C Permaculture area
 - D Grafting area
 - E Nursery
 - F Greenhouse area
- 1 Fish pond
 - 2 Vegetable, fruit and herb beds
 - 3 Food forest / fruit and nut trees
 - 4 Bank vegetation / shubs and trees
 - 5 Fruit trees
 - 6 Treeline
 - 7 Hedge / shrubs
 - 8 Path / gravel surface
 - 9 Access road
 - 10 Main house / presentation room, office, kitchen, wash room
 - 11 Traditional round house / drying room
 - 12 Traditional round house / store room
 - 13 Traditional round house / treatment of crop
 - 14 Water borehole with pump
 - 15 Reservoir 10 m³
 - 16 Water borehole
 - 17 Compost
 - 18 Bench





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SITE PLAN WITH GRID
AND DIMENSIONS



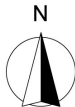
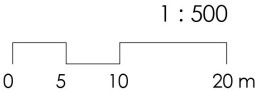
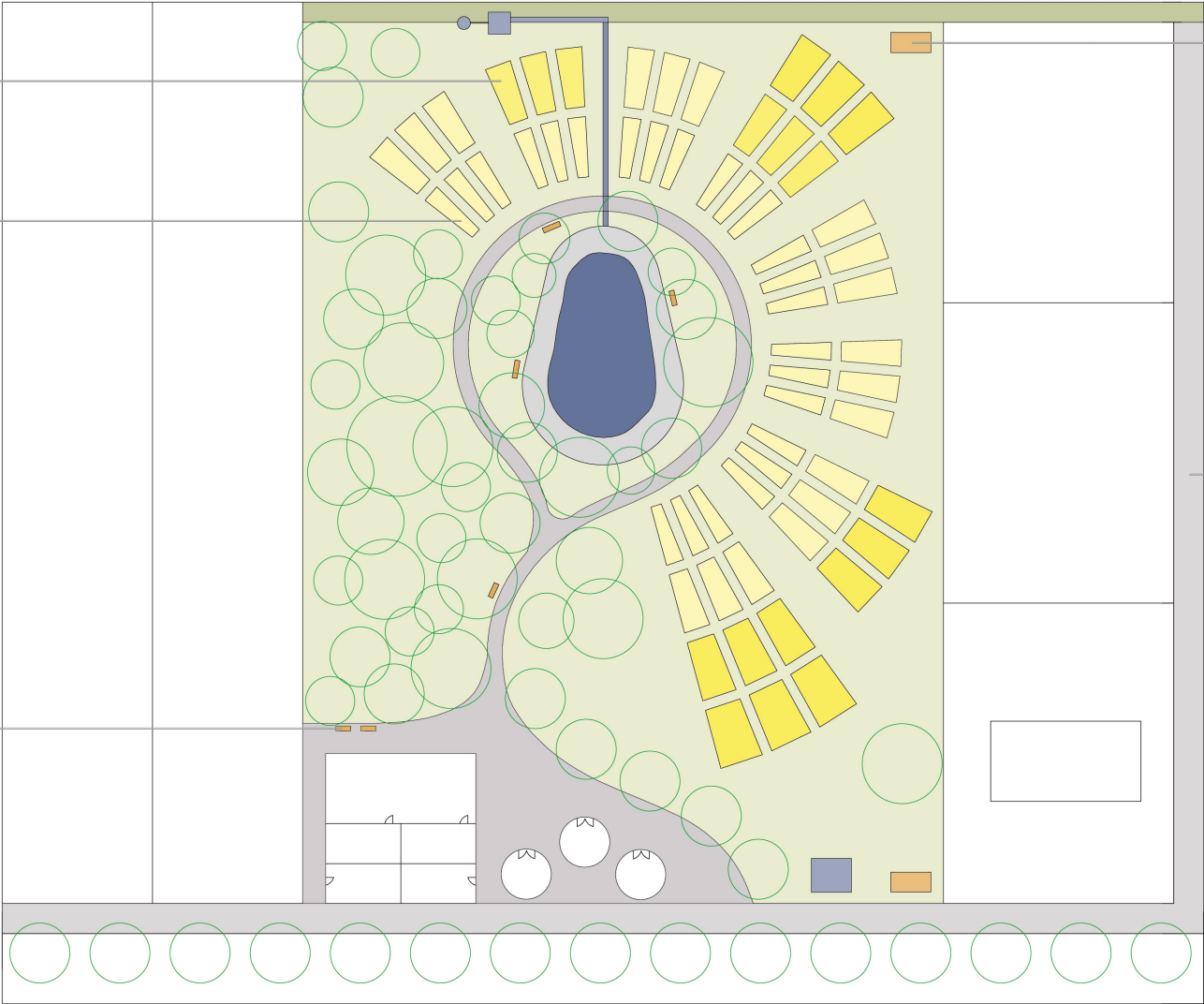
Beds with constructions
for climbing plants
/material: bamboo/

Beds
/bamboo fence, height: 20 cm
24 pcs: dimensions - length 600 cm,
width 100 cm, 180 cm
24 pcs: dimensions - length 600 cm,
width 186 cm, 265 cm
9 pcs: dimensions - length 600 cm,
width 276 cm, 350 cm
3 pcs: dimensions - length 600 cm,
width 363 cm, 436 cm/

Bench
/dimensions 150x50 cm
material: bamboo/

Composter
/material: wood
2 pcs/

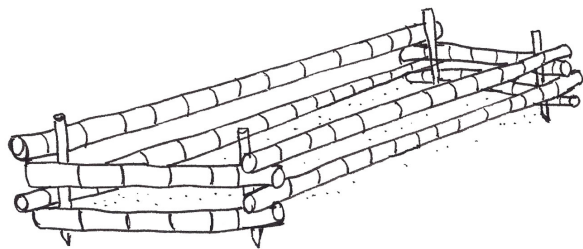
Roads
/material: gravel
access road - width 300 cm
path - width 150 cm/



Constructions of vegetable beds

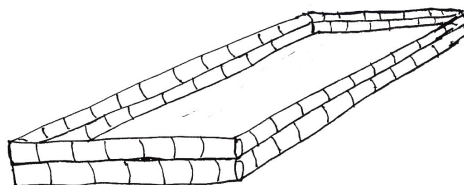
Version 1: Bamboo fence

- height 20 cm
- existing terrain



Version 2: Raised bamboo bed

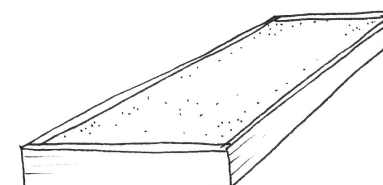
- height 15 cm
- raised terrain



Example of raised bamboo bed

Version 3: Raised wooden bed

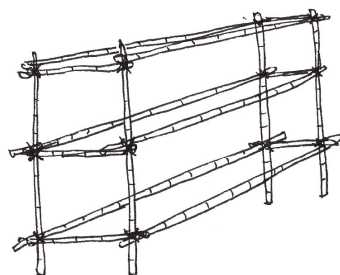
- height 15 cm
- raised terrain



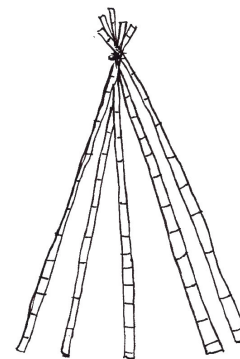
Example of raised wooden beds

Construction for climbing plants

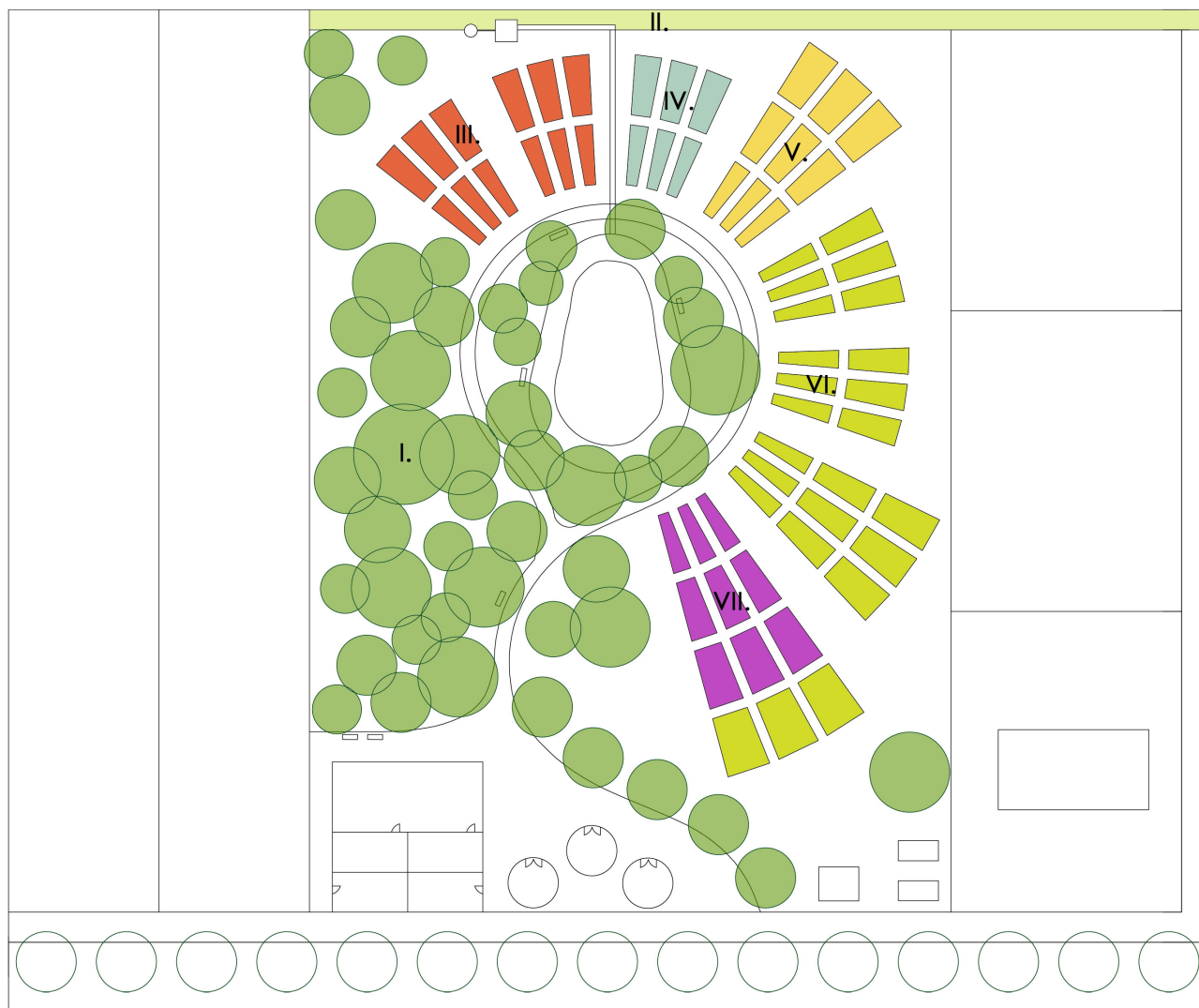
- material: bamboo



Example of bamboo construction for climbing plants 1



Example of bamboo construction for climbing plants 2



LEGEND:

I. Food Forest (1520 m²)

Anacardium occidentale, Keshu
Annona reticulata, Anona
Azadirachta indica, Neem tree
Carica papaya, Papaya
Citrus × sinensis, Orange
Citrus limon, Lemon
Citrus reticulata, Mandarinine

Gleditsia triacanthos, Honey locust
Malus domestica, Apple
Mangifera indica, Mango
Morus alba, Mulberry
Persea americana, Avocado
Prunus amygdalus, Almond
Prunus armeniaca, Apricot
Psidium guajava, Guava
Theobroma cacao, Cacao
Vachellia nilotica, Acacia

Shrubs layer:

Sauropus androgynus, Sweet leaf
Sambucus nigra, Elderberry

Additional plant species:

Mentha × piperita, Mint
Plumeria rubra, Frangipani

II. Hedge (180 m²)

Dovyalis caffra, Dovyalis
Leucaena leucocephala, Leucaena

Opuntia ficus indica, Opuntia
Sambucus nigra, Elderberry
Sesbania grandiflora, Hummingbird tree

III. Superfoods (134 m²)

Lycium chinense, Goji
Cnidoscolus aconitifolius, Chaya
Hibiscus acetosella, Rosemallow
Moringa Oleifera, Moringa
Moringa Stenopetala, Moringa
Sorghum bicolor, Sorghum

IV. Edible weeds (67 m²)

Chenopodium album, Lambs quarter
Cichorium intybus, Chicory
Portulaca oleracea, Purslane
Rumex acetosa, Sorrel
Rumex crispus, Yellow dock
Stellaria media, Chickweed

V. Fruits (123 m²)

Ananas comosus, Pineapple
Citrullus lanatus, Watermelon
Cucumis melo, Honeydew melon
Fragaria vesca, Wild strawberry
Musa acuminata, Banana
Opuntia ficus indica, Opuntia
Passiflora edulis, Passion fruit
Rubus fruticosus, Blackberry
Saccharum Officinarum, Sugarcane
Vitis vinifera, Wine

VI. Vegetable beds (329 m²)

Allium cepa, Onion
Allium sativum, Garlic
Apium graveolens, Celery
Asparagus officinalis, Asparagus
Brassica oleracea, Cabbage
Capsicum annuum, Chilli
Colocasia esculenta, Taro
Cucurbita maxima, pumpkin
Cucurbita moschata, Squash
Cucurbita pepo, Courgette
Daucus carota, Carrot
Helianthus annuus, Sunflower
Ipomoea batatas, Sweet potato
Manihot esculenta, Cassava
Phaseolus coccineus, Runner beans
Phaseolus vulgaris, Bush beans
Pisum sativum, Peas
Sechium edule, Chayote
Solanum lycopersicum, Tomato
Spinacia oleracea, Spinach
Tropaeolum majus, Nasturtium
Voandzeia subterranea, Bambara groundnut
Zea mays, Corn
Additional plant species:
Anethum graveolens, Dill
Achillea millefolium, Yarrow
Foeniculum vulgare, Fennel

Lupinus albus, Lupines
Medicago sativa, Alfalfa
Tanacetum cinerariaefolium, Pyrethrum

VII. Medicinal plants and spices (123 m²)

Stevia rebaudiana, Stevia
Agastache foeniculum, Anise hyssop
Achillea millefolium, Yarrow
Allium schoenoprasum, Chives
Aloe vera barbadensis, Rosemary
Aloysia citrodora, Lemon verbena
Anethum graveolens, Dill
Artemisia absinthium, Artemisia
Artemisia dracunculus, Tarragon
Catha edulis, Khat
Cymbopogon citratus, Lemon grass
Foeniculum vulgare, Fennel
Laurus nobilis, Bay leaves
Lavandula angustifolia, Lavender
Leonorus cardiaca, Leonurus
Matricaria chamomilla, Chamomile
Melissa officinalis, Lemon balm
Mentha spicata, Spearmint
Mentha × piperita, Peppermint
Nepeta cataria, Catnip
Ocimum basilicum, Basil
Origanum majorana, Marjoram
Origanum vulgare, Oregano
Piper nigrum, Pepper
Salvia officinalis, Sage
Satureja hortensis, Savory
Tagetes erecta, Marigold
Thymus pulegioides, Thyme
Thymus vulgaris, Thyme
Zingiber officinale, Ginger

1 : 500

0 5 10 20 m



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LIST OF PLANT SPECIES

FORMATION	SCIENTIFIC NAME	COMMON NAME	TYPE	NOTE
Food Forest	Anacardium occidentale	Keshu	Tree	
	Annona reticulata	Anona	Tree	
	Azadirachta indica	Neem tree	Tree	Medicinal uses.
	Carica papaya	Papaya	Tree	Water demanding tree. Plant near water sources.
	Citrus × sinensis	Orange	Tree	
	Citrus limon	Lemon	Tree	
	Citrus reticulata	Mandarine	Tree	
	Gleditsia triacanthos	Honey locust	Tree	Edible pods, nitrogen fixer
	Malus domestica	Apple	Tree	
	Mangifera indica	Mango	Tree	
	Morus alba	Mulberry	Tree	
	Persea americana	Avocado	Tree	
	Prunus amygdalus	Almond	Tree	
	Prunus armeniaca	Apricot	Tree	
	Psidium guajava	Guava	Tree	
	Theobroma cacao	Cacao	Tree	
	Vachellia nilotica	Acacia	Tree	Medicinal uses.
	Sauropus androgynus	Sweet leaf	Shrub	
	Sambucus nigra	Elderberry	Shrub	
	Additional plant species:	Mentha x piperita	Mint	Perrenial
Plumeria rubra		Frangipani	Tree	Small ornamental tree.
Hedge	Dovyalis caffra	Dovyalis	Shrub	Edible fruits, rich in Vitamin C
	Leucaena leucocephala	Leucaena	Shrub	
	Opuntia ficus indica	Opuntia	Shrub	Edible fruits
	Sambucus nigra	Elderberry	Shrub	
	Sesbania grandiflora	Vegetable hummingbird	Tree	Edible flowers.
Superfoods	Lycium chinense	Goji	Shrub	
	Cnidoscolus aconitifolius	Chaya	Shrub	Tree spinach.
	Hibiscus acetosella	Rosemallow	Shrub	Edible leaves, medicinal uses of flowers.
	Moringa Oleifera	Moringa	Tree	
	Moringa Stenopetala	Moringa	Tree	
	Sorghum bicolor	Sorghum	Annual	
Edible weeds	Chenopodium album	Lambs quarter	Annual	
	Cichorium intybus	Chicory	Annual	
	Portulaca oleracea	Purslane	Annual	
	Rumex acetosa	Sorrel	Perennial	
	Rumex crispus	Yellow dock	Perennial	
	Stellaria media	Chickweed	Annual	
Fruits	Ananas comosus	Pineapple	Perennial	
	Citrullus lanatus	Watermelon	Annual	

	<i>Cucumis melo</i>	Honeydew melon	Annual	
	<i>Fragaria vesca</i>	Wild strawberry	Perennial	
	<i>Musa acuminata</i>	Banana	Perennial	Water demanding crop.
	<i>Opuntia ficus indica</i>	Opuntia	Shrub	
	<i>Passiflora edulis</i>	Passion fruit	Shrub	Climbing plant
	<i>Rubus fruticosus</i>	Blackberry	Shrub	Climbing plant
	<i>Saccharum Officinarum</i>	Sugarcane	Annual	Water demanding crop.
	<i>Vitis vinifera</i>	Wine	Shrub	Climbing plant
Vegetable beds	<i>Allium cepa</i>	Onion	Annual	
	<i>Allium sativum</i>	Garlic	Annual	
	<i>Apium graveolens</i>	Celery	Perennial	Combine with brassicaceae .
	<i>Asparagus officinalis</i>	Asparagus	Perennial	
	<i>Brassica oleracea var. capitata</i>	Cabbage	Annual	
	<i>Capsicum annuum</i>	Chilli	Annual	
	<i>Colocasia esculenta</i>	Taro	Perennial	Water demanding crop.
	<i>Cucurbita maxima</i>	pumpkin	Annual	
	<i>Cucurbita moschata</i>	Squash	Annual	
	<i>Cucurbita pepo var. cylindrica</i>	Courgette	Annual	
	<i>Daucus carota</i>	Carrot	Annual	
	<i>Helianthus annuus</i>	Sunflower	Annual	
	<i>Ipomoea batatas</i>	Sweet potato	Perennial	
	<i>Manihot esculenta</i>	Cassava	Shrub	
	<i>Phaseolus coccineus</i>	Runner beans	Annual	Climbing plant, combinate with spinach.
	<i>Phaseolus vulgaris</i>	Bush beans	Annual	Nitrogen fixer.
	<i>Pisum sativum</i>	Peas	Annual	Nitrogen fixer.
	<i>Sechium edule</i>	Chayote	Annual	
	<i>Solanum lycopersicum</i>	Tomato	Annual	
	<i>Spinacia oleracea</i>	Spinach	Annual	Plant under shade of climbing beans.
	<i>Tropaeolum majus</i>	Nasturtium	Annual	
	<i>Voandzeia subterranea</i>	Bambara groundnut	Annual	
	<i>Zea mays</i>	Corn	Annual	
Additional plant species	<i>Anethum graveolens</i>	Dill	Annual	Combine with cabbage and tomatos against pests.
	<i>Achillea millefolium</i>	Yarrow	Perennial	Combine withwith brassicaceae - against pests.
	<i>Foeniculum vulgare</i>	Fennel	Perennial	Combine with cabbage and tomatos against pests.
	<i>Lupinus albus</i>	Lupines	Perennial	Nitrogen fixer, edible seads.
	<i>Medicago sativa</i>	Alfalfa	Perennial	Nitrogen fixer
	<i>Tanacetum cinerariaefolium</i>	Pyrethrum	Perennial	Insecticide.
Medicinal plants and spices	<i>Stevia rebaudiana</i>	Stevia	Perennial	
	<i>Agastache foeniculum</i>	Anise hyssop	Perennial	
	<i>Achillea millefolium</i>	Yarrow	Perennial	
	<i>Allium schoenoprasum</i>	Chives	Perennial	
	<i>Aloe vera barbadensis</i>	Rosemary	Perennial	
	<i>Aloysia citrodora</i>	Lemon verbena	Perennial	
	<i>Anethum graveolens</i>	Dill	Annual	
	<i>Artemisia absinthium</i>	Artemisia	Perennial	
	<i>Artemisia dracunculus</i>	Tarragon	Perennial	
	<i>Catha edulis</i>	Khat	Shrub	
	<i>Cymbopogon citratus</i>	Lemon grass	Perennial	Use also as mosquito repelent.

<i>Foeniculum vulgare</i>	Fennel	Perennial	
<i>Laurus nobilis</i>	Bay leaves	Shrub	
<i>Lavandula angustifolia</i>	Lavander	Perennial	
<i>Leonorus cardiaca</i>	Leonurus	Perennial	
<i>Matricaria chamomilla</i>	Chamomile	Perennial	
<i>Melissa officinalis</i>	Lemon balm	Perennial	
<i>Mentha spicata</i>	Spearmint	Perennial	
<i>Mentha x piperita</i>	Peppermint	Perennial	
<i>Nepeta cataria</i>	Catnip	Perennial	Use also as mosquito repellent.
<i>Ocimum basilicum</i>	Basil	Perennial	
<i>Origanum majorana</i>	Marjoram	Perennial	
<i>Origanum vulgare</i>	Oregano	Perennial	
<i>Piper nigrum</i>	Pepper	Perennial	Climbing plant
<i>Salvia officinalis</i>	Sage	Perennial	
<i>Satureja hortensis</i>	Savory	Perennial	
<i>Tagetes erecta</i>	Marigold	Annual	Use also as mosquito repellent.
<i>Thymus pulegioides</i>	Thyme	Perennial	
<i>Thymus vulgaris</i>	Thyme	Perennial	
<i>Zingiber officinale</i>	Ginger	Perennial	Water demanding plant.