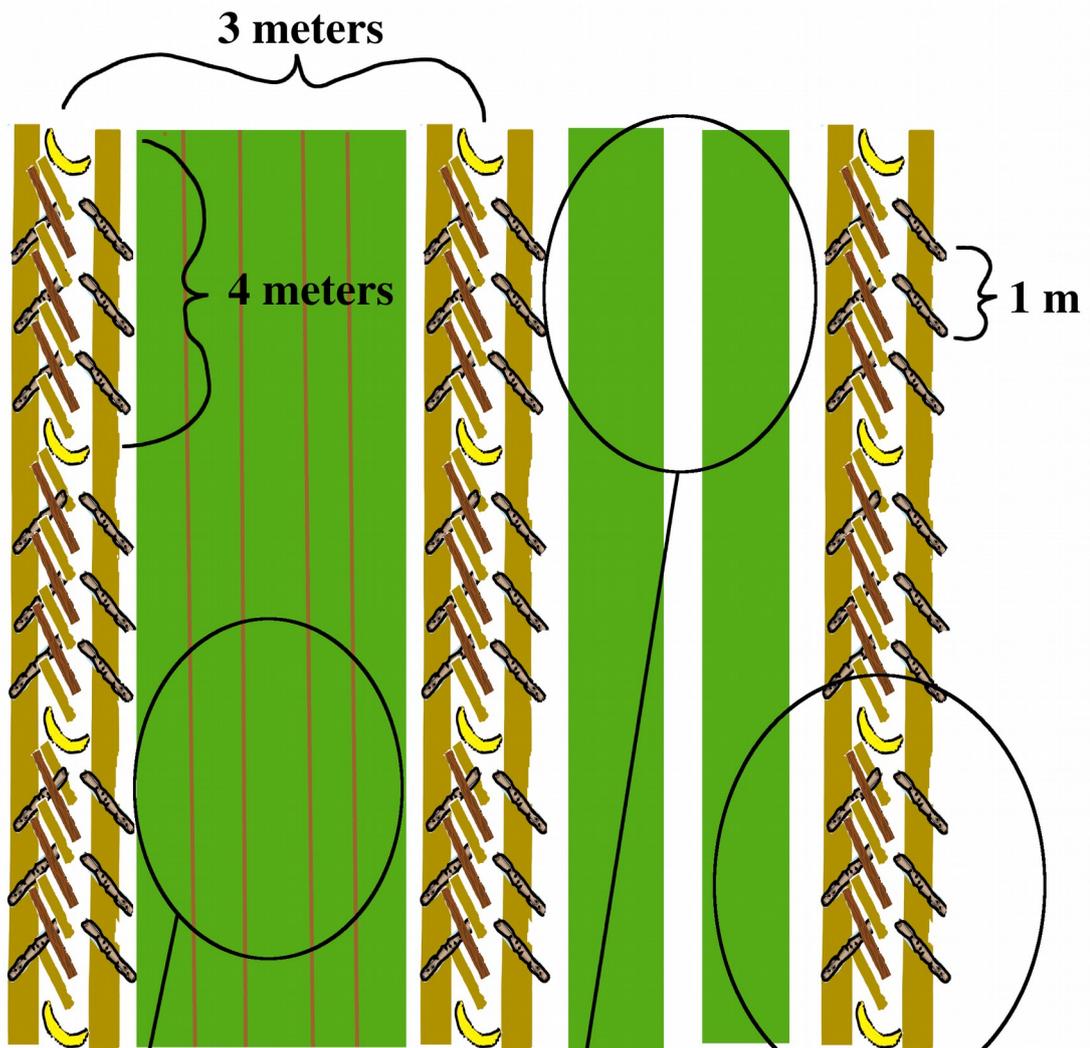


Overview Design Haiti 2021

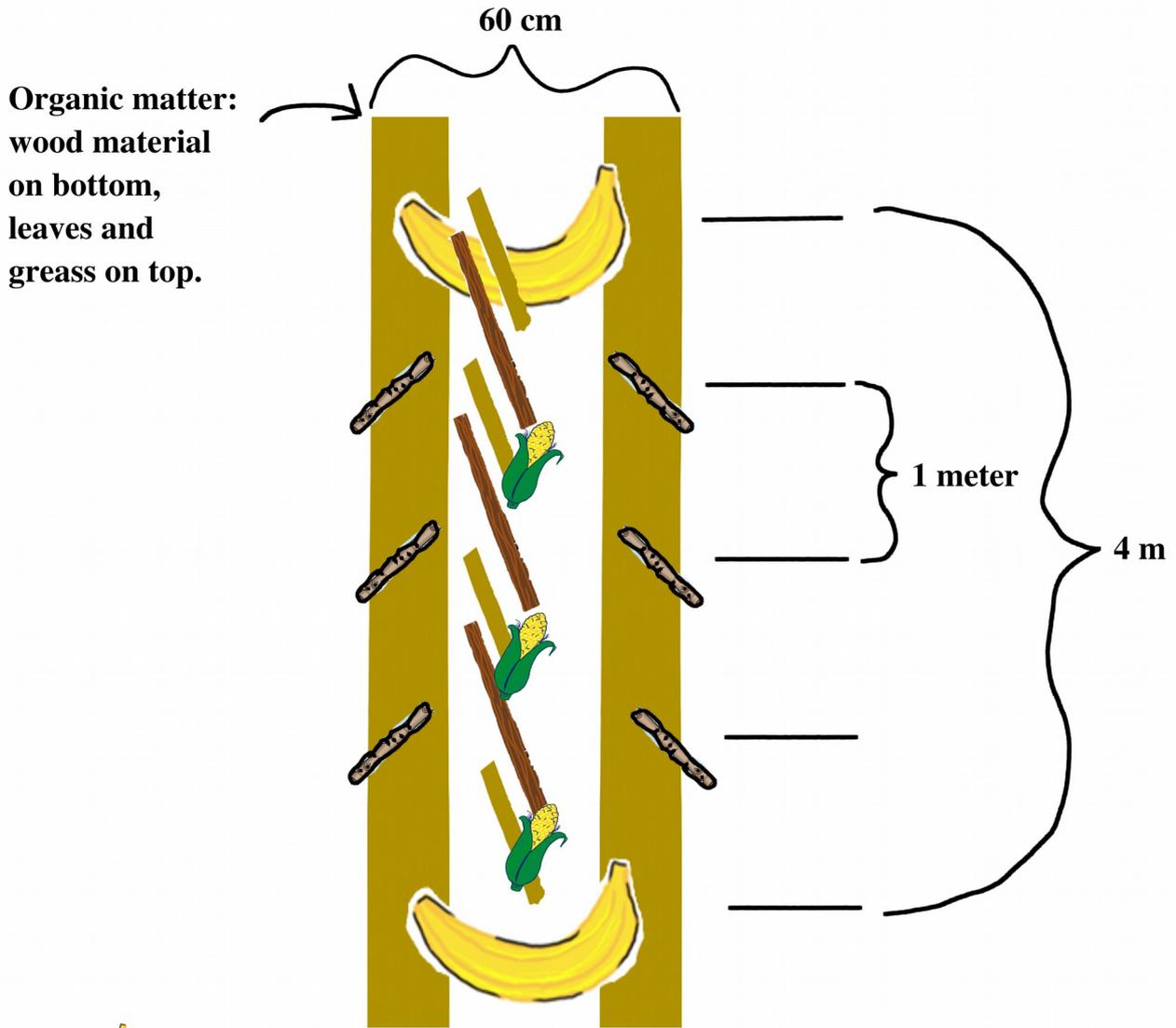


See zoom tree line design

Refer to your personal notes

See zoom crops design

Tree Line Design Zoom



Banana - 4 m

Sticks - 1/2 m

Manioc - 1 m

Corn and jack bean (alternate with manioc) - 1m

No symbol Pigeon pea seeds (alternate with corn) - 1 m

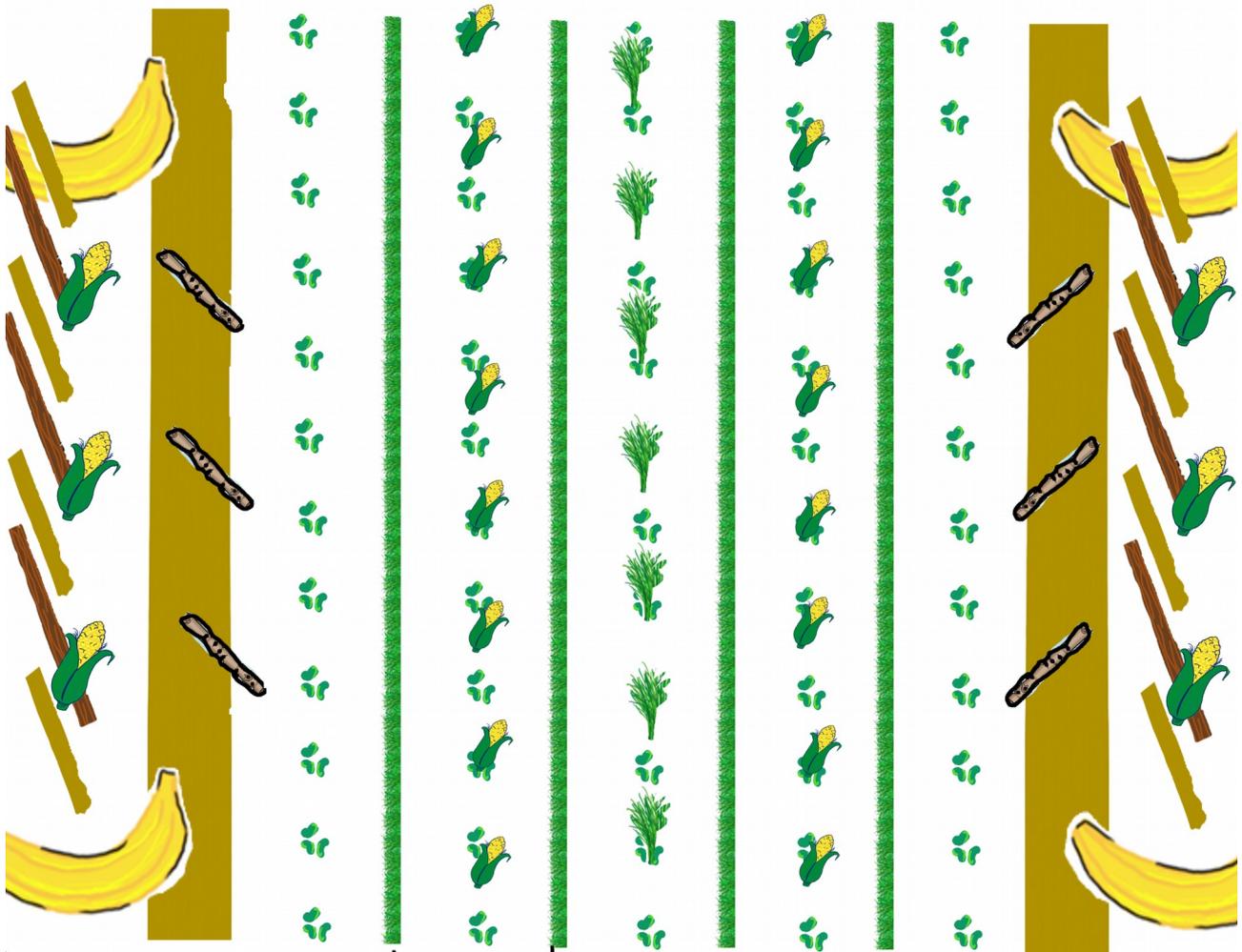
No symbol Chaya - between the sticks

No symbol Tree seed mixes and fruit tree seeds - in row, especially near manioc

Tree Line Photo



Zoom Crops Design



45 cm

2.4 m



Grass



Beans - 30 cm



Pigeon Pea - 50 cm



Corn - 50cm

Crops Photo



Instructions

Planting Instructions

Tree line:

- Mark a straight tree line. Orient the rows depending on your needs. North – south is best if the focus is on production from the tree line. East – west is best if the focus is on production from the B-area (such as crops, market garden or low stratum trees such coffee and cocoa).
- Dig a trench with a pic or narrow hoe. Then break the soil beneath that trench with the pic, if there is layer of compacted soil.
- Check to verify they compacted soil is loose by poking a machete into the trench. It should pass easily.
- Add any soil amendments, if desired (manure, compost, ashes, etc).
- Plant bananas every 4 meters. Plant sticks, chaya and also any seedlings as per design. Use any sticks from trees which grow from cuttings, such as those used in living fences. For example, yellow monbin, gliricidia, bursera simbera, siddegwella.
- Collect as much organic matter as possible in the surrounding area. Sometimes trees and grass may need to be cut and harvested for biomass. Use anything, as long as it doesn't have thorns and as long as it won't regrow invasively.
- Arrange the organic matter in two long mounds on each side of the trench. Wood is placed first, directly on the soil, larger pieces first, smaller ones later. Then cover with leaves and grass.

- Plant manioc, on angles as described elsewhere.
- Plant seeds and seed mixes in excess, especially near the manioc cuttings. Manioc serves as a good nursery plant for delicate young trees.
- Plant annuals (placenta I and II) seeds, as per design.

Crops:

- Mark lines for grass as per design.
- Create a small trench, add amendments (if desired) and then plant the seeds and recover.
- Between each line of grass, plant crop seeds per design or whatever crops the farmer desires.

Management Instructions

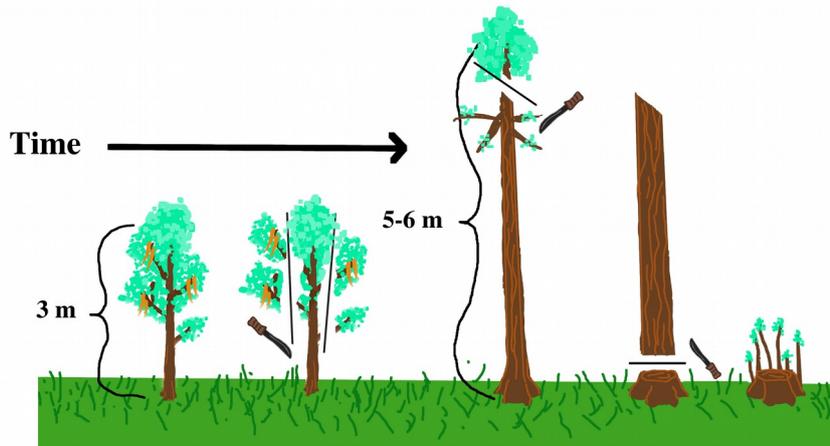
Tree line:

- If you have Jack bean, prune it when it starts flowering and keep pruning every time it starts again or when it starts to get in the way of other plants. Prune it back to the first true leaves, but leaving them intact.
- Harvest the corn when ready, usually 90-120 days.
- When pigeon pea starts to flower, prune it back to about waist level.
- When the sticks and chaya start to grow, cut all the lower side branches, which will encourage them to grow upwards.
- If the chaya grows very fast, it may need to be pruned 4-5 times/year. Place the cuttings on top of the biomass pile. If it is contacting the soil directly, it can root and spread.
- As the manioc grows, prune the lower side branches to create space for the trees. It is best not to harvest the manioc in the tree line, to let the roots feed the soil life and trees.
- For the biomass trees, usually only the lateral branches are pruned the first 2 years. Leave about 30% of the original canopy intact on the top. When the biomass trees are about as thick as a wrist and 3 meters or taller, then the top can be pruned. The height at which the biomass tree will be pruned depends on the other trees and plants to be grown in the garden. They need to be about 1 meter taller. Leave some branches intact, so the tree can grow back strongly and will send less shoots from the trunk itself. See the photo below. Use the organic matter to refill the biomass along the tree rows.
- If there are multiple trees growing from where the seed mix was planted, then remove the excess until there are only 1-2 of the strongest ones remaining.
- Later as the biomass trees get larger (both those grown from seed and from cuttings) they will grow into each other. Again at this time some will need to be removed so that the strongest have the space for their canopies.
- After 1.5 years the bananas will be producing fruits. If they are being grown for biomass they can be harvested early than that, always leaving a baby intact to grow again. If being grown for fruit, then harvest the fruit and cut up the pseudostem afterwards.
- If mango seeds are planted in abundance, the trees will need to be thinned whenever they start to grow into other tree canopies.

Crops:

- Harvest the black bean around 60 days
- Harvest the corn around 90-120 days depending on whether the farmer wants fresh or dry corn.
- Harvest pigeon pea
- Let grass grow unless it creates shade for the crops. Also cut when it starts to seed. Cut back to 10cm. Keep re-cutting, after it has grown to its maximum, but before it seeds. This could be as much as 4-6 times per year, once it is established. Place the organic matter on the biomass piles for the tree lines.

Biomass Tree Pruning

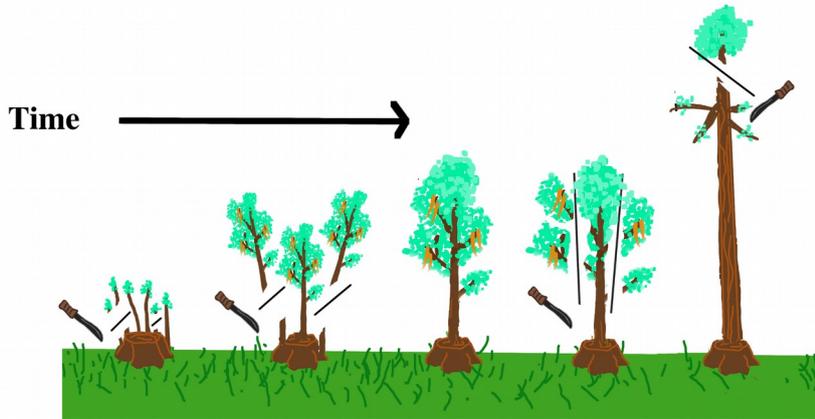


About 1-2 years or 3 m tall, prune side branches

About 5-6 m tall, prune top

When desired, cut trunk for wood

Stump will grow again



Prune all new growth, except 3-5 strong ones

Prune sticks when desired for wood

When 2-3 m tall, prune side branches

Cut top when 5-6 m tall

