

A GARDEN FOR THE CHICKENS

Permaculture design "Chicken garden", Barbara Scheltus – van den Berg, 2015

THIS DESIGN ISN'T FINISHED YET BECAUSE I NEED TO RE-DESIGN
FOR THE DESTRUCTIVE POWERS OF OUR CHICKENS



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INTRO

We want healthy, happy chickens that provide us with high quality eggs.

To keep them healthy, we give them a wide variety of food next to their grinded corn, like grains and seeds, food left overs and kitchen scraps, larve and bugs that we find in the garden and fresh cabbage leaves.

To keep them happy, they have a coop with a save outdoor winter cage that they can enter from their sleeping house. We make a daily hot compost heap in their stable in winter; a heap that they can scratch around in. We let them out in an enclosed area (the "chicken garden") when it's possible and we hang bundles of cabbage in the stable so they have to jump (exercise) for their vitamins.

We don't want them to forage in the garden because we use straw mulch on the beds and wood chips mulch on the paths. They scratch everything all over the place, and they damage small plants, lettuce and cabbage plants.

We also don't want them roaming free on the other side: the parking spot. They can be caught by a hawk, run under a car or get caught by a playing dog.

The best we can do for the chickens is to improve the save, enclosed area behind the stable, called "the chicken garden". That is what this permaculture design is about.

SURVEY OF THE (ZONE 2) CHICKEN GARDEN

The chicken garden is a 6x9 almost oval, fenced area. The fence (1m60 high) is closed; the chickens cannot get out and walking predators like foxes cannot get in (but flying predators can). Also little birds like sparrows, titmice and blackbirds like to attend the garden.

The area is sloping to the south-east. Over a length of 10 metres the slope is 1,5 metre.

When it rains, the water runs off from west (up) to east (down) quite fast. under the stable roof you can see a water run off erosion gully.

With drought the upper (west) part of the garden is the most dry.

The soil is black & beautiful, probably a bit acidic because of the chicken manure. In winter all weeds die and in spring the soil is bare, fully exposed.

On the upper (west) side there is a walnut tree with a suffering plum next to it, and down in the middle-east we have a poor plum tree that has fungi.

The stable is situated on the north side.

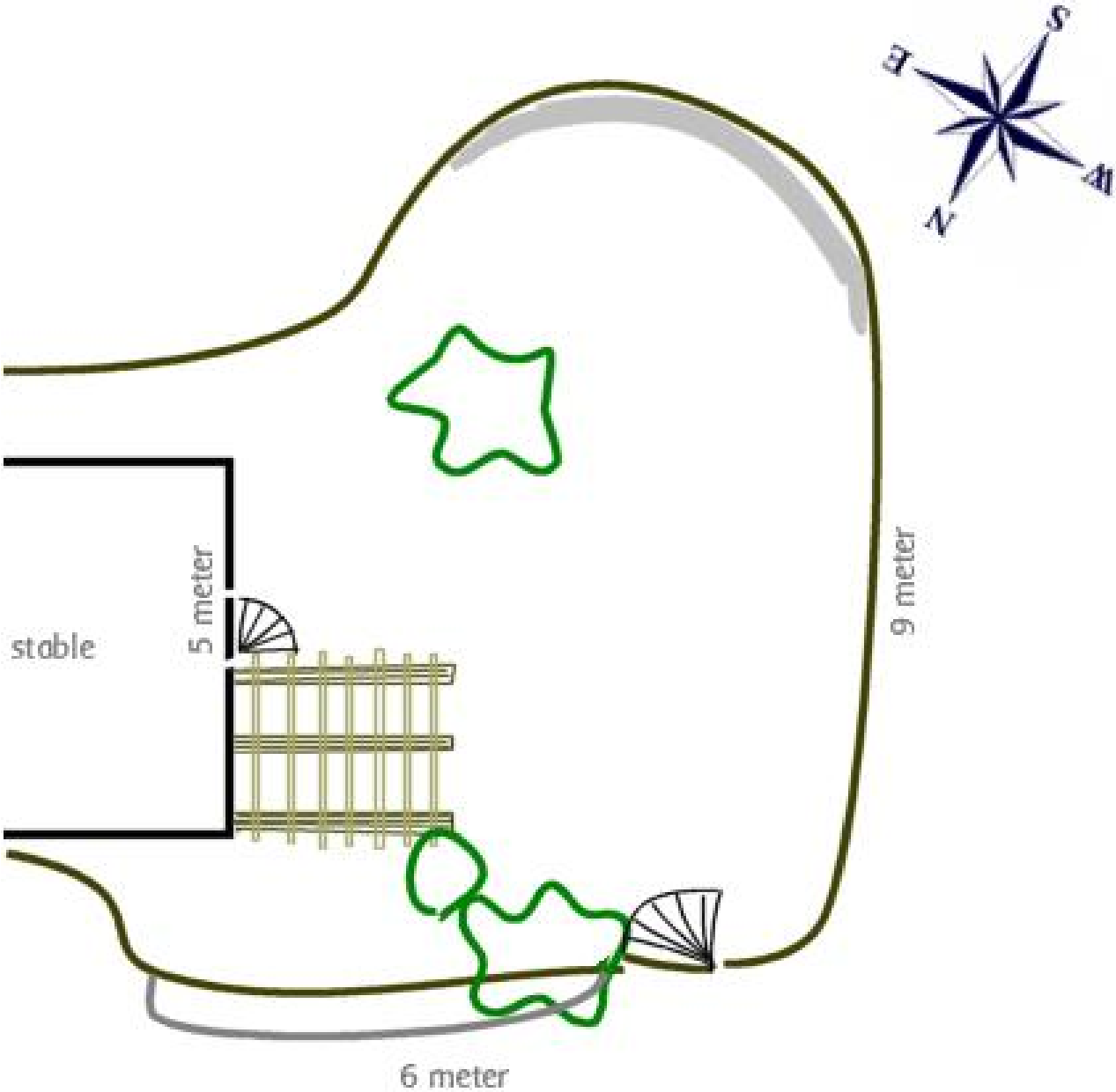
On the east side we have a walnut tree and an apple tree and behind that the vegetable garden.

On the south side we have grass with peach trees, a giant mulberry tree, a young but fast growing cherry tree and a few hazelnut shrubs at the edge of the terrain.

On the west side we have some plum trees, grass, gravel path and the parking area for cars.



MAP OF THE CHICKEN GARDEN



CLIMATE

The garden is situated on the top of a hill in inland Croatia. Land climate. In summer it can get up to 43° Celcius and in cold winter nights it can be -20° Celcius.

The garden gets a lot of sun all year round. Only under the walnut tree (up, west) and at the foot of the fence there is some shade.

The garden is quite secluded; there is not very much wind. Only in summer, the southern winds can blow into the garden. The chickens never seemed to mind the wind.

There are no frost pockets and cold air can't be trapped because the fence is an open structure.

STRUCTURES



Stable

On the north-east side there is the wooden stable. It is a 5 metre long, 4 metres high open wood structure with a 45° angle tiled roof. There is no rain gutter; rain from the roof falls directly into the garden. The roof overhang and drip line is 50 cm around the stable.
2 Wooden walls of the stable stand in the chicken garden.

Cage

Attached to the stable (and the chicken coop) there is a little fenced cage where the chickens can forage safely in winter. This cage is 2 metres wide and 3 long. It takes only a little of the chickens garden space because the chickens can walk up the roof. It starts at 30cm high and ends under the stables roof (2 metres high).



Fence

The fence is made of sticks and metal wire. Sticks are easy to replace when you loosen the wire. There are 25 segments, connected with bigger poles. Each segment is approximately a meter wide.



Entrance doors

The stable has an entrance door to the garden and on the east corner the fence has another

entrance.

PLANTS

The plant diversity is poor. There is blackberry growing all over the garden, there is a lot of artemisia vulgaris (mugwort) and there is only one clump of grass left, and a rosemary shrub.

The garden has 1 fast growing walnut tree, 4 metres tall and about 3 metres wide. I guess now, in 2015, it is 5 years old.

Near to this walnut tree, next to the cage, there is a young plum tree growing. It is not planted; it's growing from the roots of a big tree that is cut down. It looks healthy.

In the middle of the south part of the garden grows a small, almost dead plum tree that doesn't have much leaves. The branches are growing almost vertical, close to the tree, because of strangling bramble and other climbers. There is also a fungi growing on the trunk.

There used to grow grass in the chicken garden but the chickens ate it all. There is only one type of grass left at the moment.

ELEMENTS

There is an old wooden box (30cm wide, 60cm long, 20cm high on inside) that used to be a feeder for goats or sheep.

There are 4 or 5 logs (30-40 cm diameter) of rotting wood lying around. The chickens love to catch the ants and bugs in it.

Now there is a plastic box on the drip line, to catch some water that runs off the roof. The water is used as drinking water for the chickens and rabbits, or as cleaning water if it's unsuitable to drink. When the chickens forage in their garden, they use this box for drinking.

The rabbits in the stable live on straw. That straw and their droppings don't need to ferment before using in the garden so the straw can immediately be applied as (rich) mulch when I clean the rabbit housing.



ZONING

This zoning map is made out of human's point of view. The chickens use all zones almost evenly if they get the chance.

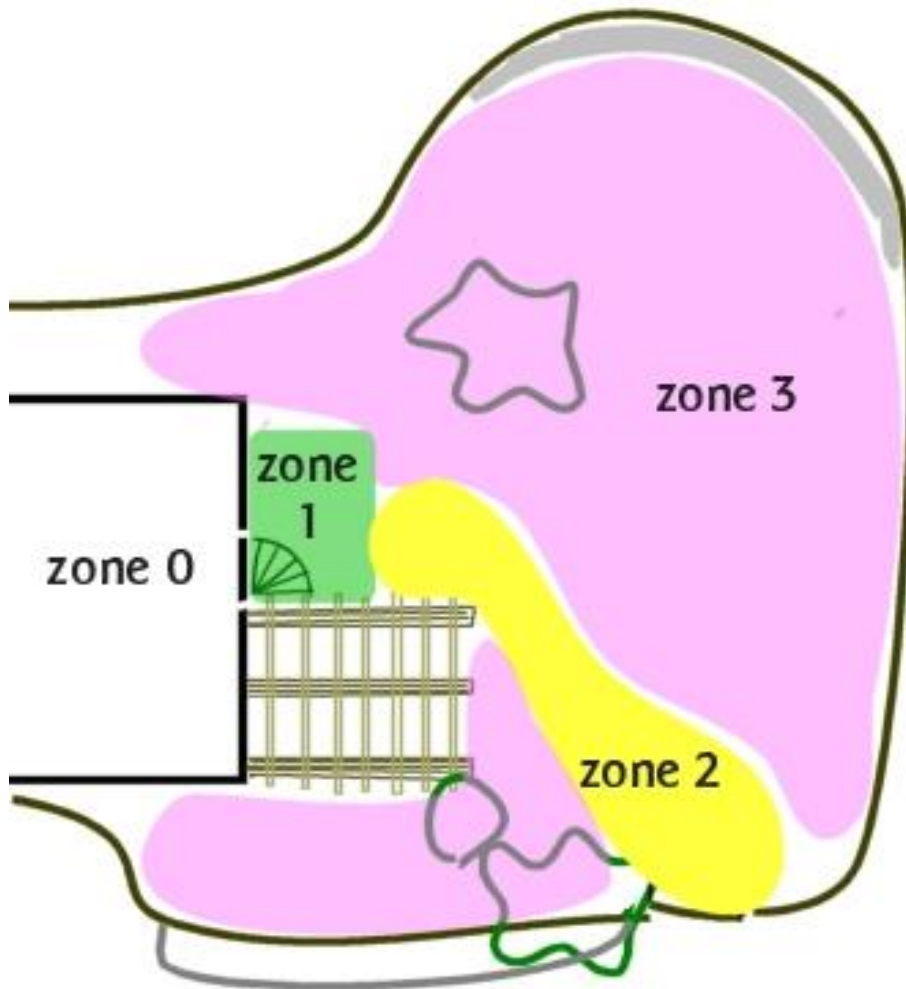
Zone 0: stable.

Zone 1: closest to the entrance from the stable. Used especially when it rains.

Zone 2: the path between the stable and the garden door. Also the path "up", to dump the mulch.

Zone 3: this is where I plan to grow things for the chickens.

Zones 4 & 5: not relevant



SOIL

The soil Ph is between 5.8 – 6.5: slightly acidic.

On some spots at the top the soil is quite compact and there aren't many worms or other visible creatures living in it. In the cutting I see a 3 cm brown top soil layer and under it is orange-yellow sandy clay, with parts of kaolin clay in it.

But 2 metres further (down) the soil is black, 20 cm deep black and much more loose. But still not many worms.

WISHES & NEEDS

At the moment the chicken garden is an ugly part of the terrain. The soil is bare where there are no brambles growing. There is a tipi made of sticks that is partly collapsed; some strangling vines are keeping it upright.

The chickens don't have much to do in this garden and there is no food growing for them. The only good thing is that when they brush the rosemary, it will help them stay clean from mites.

Right now the garden is ugly and too slippery. No problem for the chickens, but it is for us. It is a mess with all the blackberry and the trees are not in their best shape. The bare soil looks poor and there are holes where I dug up the blackberry roots.

Bogata Suma's vision is to create beauty through love, dedication and celebration. At the moment there is hardly any beauty in the chickens garden and that shows that there was no dedication.

At Bogata Suma we also aim on self sufficiency. We live more and more food self sufficient, but about 90% of the food for the chickens we still buy.

The chicken garden should be a nice and natural area where the chickens can happily forage. The garden should also be good for their health. Herbs against mites and lice and vegetables for extra vitamins.

If we can grow (a part of) the chickens food (corn, grains) in their own garden, that would be great.

The chickens garden should be a safe place, where they have shelter from flying predators. Maybe their safety is already guaranteed when there are shrubs and no landing/take off strip for birds.

We wish for an easy way to get rid of the rabbits straw & droppings, and for the chicken poo that needs to ferment for at least a year before we can use it. Also kitchen waste could go here because we walk between the kitchen and the stable 3 times a day anyway. Two compost boxes, easy to reach, also when it rains, would be great.

Compost is also nice for chickens to find some extra food and scratch around. So they should be able to access the kitchen compost. But not their straw-sawdust-chicken shit compost!

If there is a water storage in the chicken garden, it should be accessible for humans without getting (too) wet when it rains, and the path shouldn't be slippery.

When we're working in the chicken garden, the chickens cannot go there. They would be in the way and it would be dangerous for them. They will probably also make work undone by curiously scratching and picking around.



WISHES

- Beautiful garden
- horizontal & safe paths, not slippery
- garden adds to the chicken's health (food & herbs)
- place to grow their food (corn & grains)

- safe from predators
- compost boxes with access for chickens
- solution for rabbits straw
- ready before end of April

RESOURCES

We don't want to spend money on the chickens garden and we think we have enough materials lying around on the terrain. We have forests with wood, leaf compost and soil, we have pallets, screws and nails for compost boxes and we have many seeds and herbs in our nursery. We can also take root cuttings from plants to multiply them.

For the work we can get the help of WWOOF volunteers or we can organize a weekend workshop where people can learn about designing and implementing a permaculture design.

If we can organize a workshop where people pay, we use that money for the project.



ANALYSIS

The focus of the design is to make the chicken garden a beautiful, low maintenance source of health for the chickens.

Beauty

If the terrain is well looked after, carefully built up with nice looking herbs like lavender, rosemary, lemon balm, marjoram and easy flowers like marigold and sunflowers, it will easily look good.

Low maintenance

When the soil is well looked after and the slope is stabilized by making terraces, the nutrients will stay in place.

We can add nutrients by applying the rabbit straw & manure as mulch. But take note: chickens love to scratch the mulch around and it will definitely not stay neatly in the beds or around the plants.

Dividing the garden beds from the paths is not functional because the chickens will scratch the ground cover around anyway. There is no divider high enough.

Therefore it's much easier to keep it all the same. Paths and beds will all be mulched with rabbit straw. And since it is most likely that the straw will be scratched down hill, there should be a good wheelbarrow path to the upper side to start the mulching there.

Herbal health for the chickens

Parasitic worms, body lice and mites are the most common problem of chickens. All problems can be solved with herbs.

Calendula: anti inflammation, detoxifying, blood cleaning, stimulates liver and stomach, helps digestion

Comfrey: *Symphytum officinale*. Perennials. Hardy to Zone 5. Rich in protein, potassium, and calcium. Beneficial to chickens for their general health and laying, but their leaves can be harmful to humans if ingested.

Dandelion: detoxifies, cleans blood, cleans lymphatic system

Garlic is the best organic treatment for worms.

Fennel: *Foeniculum vulgare*. Annuals. Zones 6–9. A striking plant (especially the bronze variety) up to six feet tall. Lacy pods of yellow flowers can attract butterfly larvae and beneficial insects. Full sun. Their foliage and seeds are good for chickens to eat for general health.

Feverfew: *Tanacetum parthenium*. Perennials. Zones vary by species. Easily reseeds itself in the garden. Feverfew is an excellent insect repellent if you dry its small daisylike flowers.

Hyssop: anti septic, stimulates the gastro intestinal system

Lavender: *Lavandula* species. Zones vary by species. Evergreen shrubs. Full sun. One of the most popular and wellloved herbs. Lavender is a good insecticidal herb. Plant a row of lavender around your chicken coop. Put dried lavender in your chicken coop for an enhancing fragrance and to calm chickens.

Wild marjoram: boosts the immune system and cleanses the body of bacteria, viruses, fungi, yeast and other germs

Nasturtium: *Tropaeolum majus*. Annuals and perennials. Zones vary by species. Full sun. A great general herb for chicken health. Extremely attractive with vibrant edible flowers. It has antiseptic and antibiotic properties. Its seeds can be used as a natural chicken dewormer. It also has insect repellent qualities. It reseeds itself.

Nettle is a good preventative for worms and it gives vitamins and minerals. The nettles should be boiled and the liquid added to mash when cold.

Rosemary: *Rosmarinus officinalis*. Perennials. Evergreen shrubs. Zones 6–10. Full sun. It has showy flowers that come in blue, pink, and lavender, depending on the variety. Many different varieties in different forms. Use as a small hedge for groundcover. Its aromatic scent repels insects.

Sage: *Salvia* spp. Perennial evergreen herbs in Zones 9–10, and annuals in colder zones. Full sun. Many different varieties, and quite striking in a garden setting. Sage is a good herb for chickens' general health.

Wormwood: *Artemisia absinthium* and

Mugwort: *Artemisia vulgaris*. Perennials. Hardy to Zone 4. Beneficial as an insect repellent for chickens, prepared as a steeped tea mixture. Grow next to your chicken coop to help control external parasites.

And also:

onion

chickweed

rue

cleavers

cress

mint

vervain

mullein roots

thyme
mugwort
parsley

Safety with trees

A bird of prey has just enough space to land and take off with a chicken if the garden is empty. So if we plant trees, there are natural barriers for predator birds to attack our chickens.

Chickens love sun, but we also need to provide them with shade because in summer it can get too hot for them. A tree can provide the chickens with shade, create leaf mulch to scratch around, the tree can be a host for insects and it gives fruits as extra food for the chickens.

But since one of the plum trees (the one in the best location!) is hardly alive, we'd better replace it by another type of tree. Maybe mulberry or cherry because the chickens might like the fruits and those trees grow fast in our area.

Compost

Since we're visiting the stable at least 3 times a day, this would be a perfect spot for our compost box. The slope in the garden is too much. Nutrients run down hill and the terrain is too steep to walk safely in winter or in wet times. Terraces would solve the problem.

DESIGN

Herbal corridors so their feathers have to brush the shrubs.

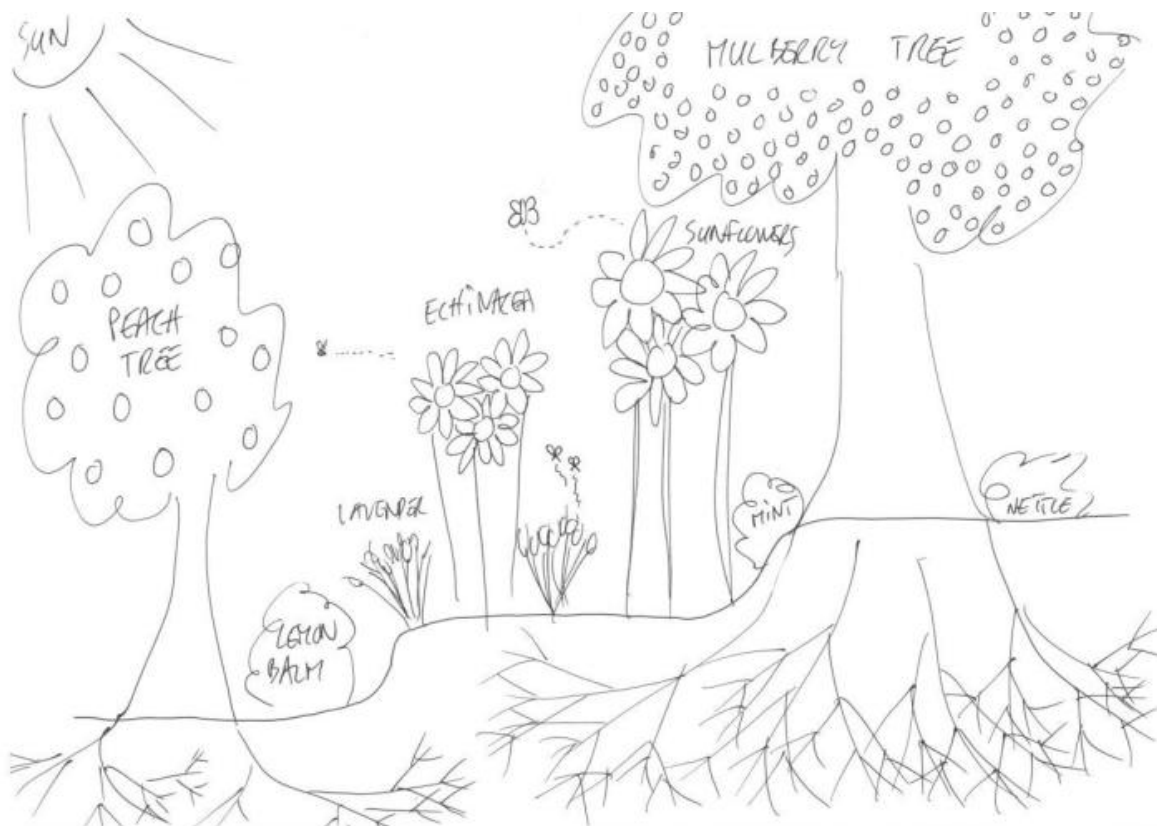
Replace "poor plum" by cherry or mulberry

Water catchment

Compost boxes

Dust bath with wood ash

Lettuce in hanging pots that we can take down



IMPLEMENTATION

MAINTENANCE

EVALUATION

Chickens do much more damage than thought; their garden is bare after a few days of scratching.