The Design Principles of a Micro-Farm

Agencement spatial ergonomique, orientation des planches, brise-vents, gestion des flux d'eau, chemins et optimisation de chaque zone.



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The design of a micro-farm helps you produce more efficiently, with less effort, and maintain a farm that will last

over time.

This module shows you how to organize your farm according to your needs and your land.



MARKET GARDENING

TRAINING

THE DESIGN PRINCIPLES OF A

MICRO-FARM

PARTIE 3 SUR 18

3

In a bio-intensive market gardening system using living soil, good spatial organization makes it possible to:



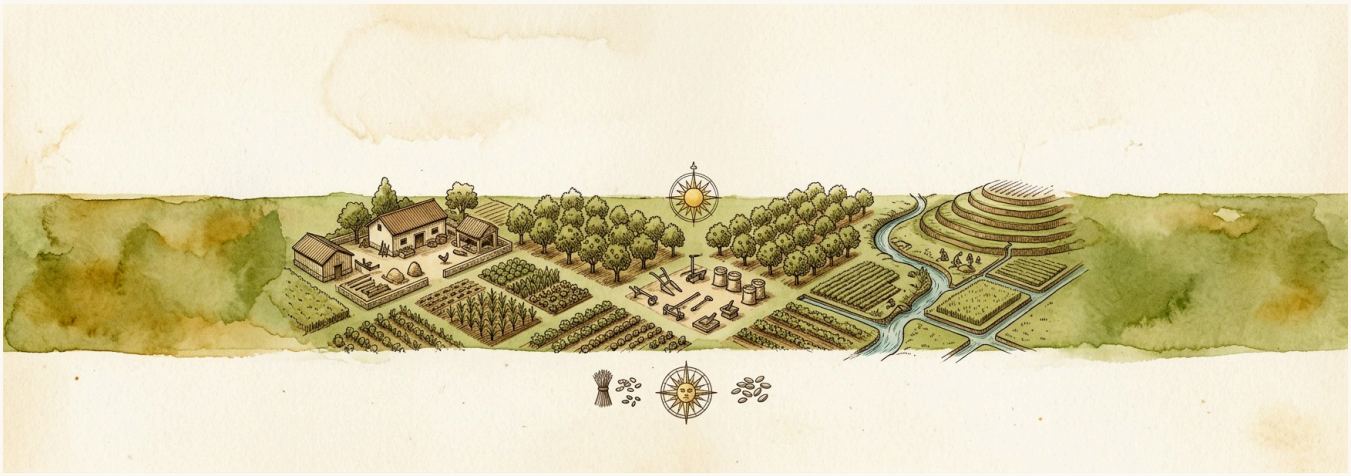
In a bio-intensive market gardening system using living soil, good spatial organization makes it possible to:

reduce effort and optimize working time,

protect and improve the soil,

ensure crop health,

adapt to the climate and available resources.



The principles of effective organization

The principles of effective organization



A good design makes use of every corner of the farm: corners, edges, the backs of buildings, spaces under certain

structures, or areas near fences are not wasted space.

They can be used for compost bins, educational displays, tool storage, organic material storage, sheltered nurseries, medicinal plants, or useful hedges (windbreaks, fodder, wood production). When used effectively, these spaces free up central areas for cultivation and improve traffic flow and the overall organization of the farm.

Good space organization allows you to work faster and with less effort. The goal is to reduce unnecessary



Good space organization allows you to work faster and with less effort. The goal is to reduce unnecessary

movement and make everyday tasks easier.

Here are a few principles to apply:

Place water, compost, and tools in close proximity to the growing beds.

Organize work areas in a logical and compact manner.

Provide clear paths that are accessible on foot or by wheelbarrow.

Create simple and visible storage spaces.



Use the zoning technique

Use the zoning technique



ZONE o

ZONE 1

ZONE 2

ZONE 3

Zoning means placing each element of the farm according to how often it is used: the more often it is used, the closer it is.

Here is a typical layout:

Zone 0: central management, storage, and rest area.

Zone 1: intensive cultivation beds requiring daily monitoring.

Zone 2: long-cycle crops, fruit trees, green manure, compost bin.

Zone 3: organic matter storage or extension space.

For example, in practice:

The 10 bed plots are grouped around zones 0 and 1 to limit movement.

The compost bins and water reserves are accessible to several plots.

Trees on permanent beds at the edge provide shade, protection, and production.



Taking climate into account in your organization

Taking climate into account in your organization

1



1

5

4

3

2

Once the space is well organized, you need to think about the orientation and protection of crops from the climate.

1. Orient the beds according to the sun's path (north-south or east-west depending on the crops).
2. Protect sensitive areas (nurseries, lettuce, etc.) with natural shade or shade nets.
3. Protect against wind and dust with windbreaks or trees along the edges.
4. Manage rainwater with ditches, raised beds, or good drainage.
5. Install small shelters for tools, young plants, or seeds.

Considering these elements from the design stage ensures good crop growth and limits losses.



Key features of a micro-farm

Key features of a micro-farm



SHELTER AND STORAGE

ACCESSIBLE WATER SOURCES

Once the space has been organized and protected, you need to plan for the structures that are essential to the smooth running of the micro-farm.

Storage: Seeds and tools protected from moisture. Harvests to be kept in the shade before sale or processing.

Tool shelters: Large tools under a simple roof. Small tools hung up or stored so they remain accessible.

Water: Main reserve + small water points close to crops.



COMPOST BIN

FRUIT TREES

CLOSING

Compost: 1 compost bin for a small farm, 2 for a medium-sized farm, up to 4 for a large farm. It is advisable to place compost bins slightly away from living and working areas to avoid nuisances related to odors, insects, or foot traffic, while ensuring that they remain easily accessible from growing areas.

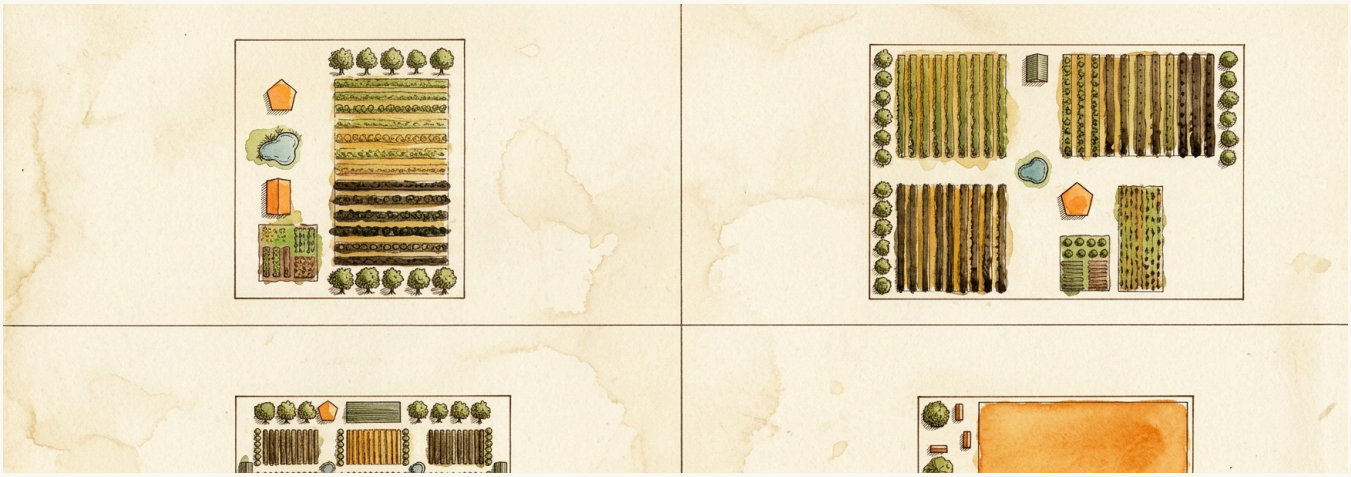
Fruit trees: Plant one row at the front edge of the crops and another at the end of the plot (spaced 1.5 m apart).

They provide shade, fruit, and protection.

Fence: Sturdy, well-placed, with an easy-to-access gate.

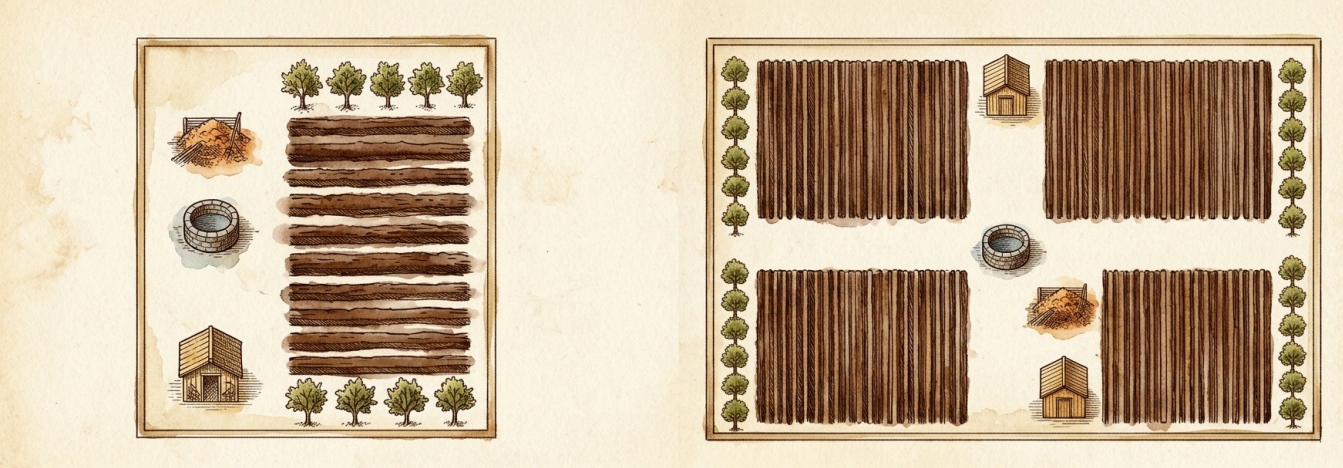
Anticipating these elements avoids costly reorganizations and makes the system run more smoothly from the start.

Examples of organizational models



Examples of organizational models

Examples of organizational models



SUBSISTENCE FARM

LARGE FARM-BUSINESS

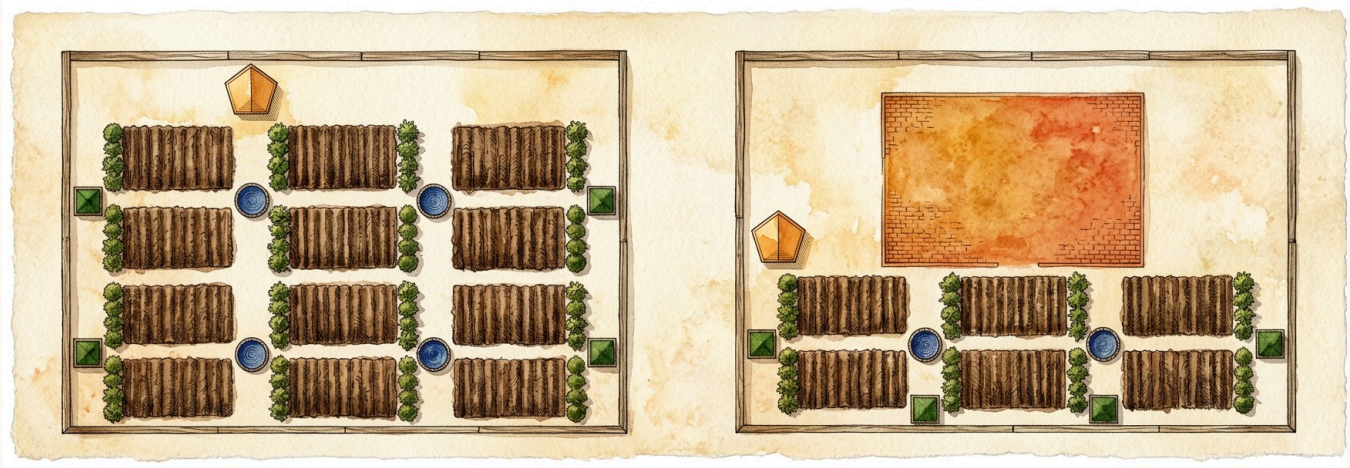
MEDIUM FARM

FARM SCHOOL

TRAINING AREA

There is no single right model: how a farm is organized depends on its objectives, resources, and land. Here are four concrete examples, which can be adapted as needed.

The important thing is to design a coherent, functional, and scalable system that is tailored to your circumstances.



SUBSISTENCE FARM

CLOSURE

PERMANENT BED

Subsistence farm

1 plot (10 beds) + 1 compost bin

Fruit trees along the edge

MEDIUM FARM

FRUIT TREE

WATER RESERVOIR

COMPOST BIN

TOOL SHED

Medium-sized farm

3 plots (10 beds each) + 2 compost bins

Shared water supply for all plots



LARGE FARM-BUSINESS

FARM SCHOOL

TRAINING AREA

CLOSURE

PERMANENT BED

FRUIT TREE

Large farm business

12 plots + 4 compost bins spread across the site

Easy access for wheelbarrows and carts

WATER RESERVOIR

COMPOST BIN

TOOL SHED

Farm school

Production area (6 to 12 plots)

Training area (shelter, educational storage)

3 to 4 compost bins + wooded area



A good design is a coherent and practical system. It simplifies your daily work.

Efficiency: organize the space to reduce movement and keep tools, water, and compost always within reach.

Adaptability: design with climate, available resources, and terrain constraints in mind.

Scalability: think of a flexible design that can grow or adjust over time.