

THE FUNDAMENTALS OF AGROECOLOGY

Agroecology is the integrated use of resources and mechanisms of nature in the objectives of agricultural production.

It combines the economic, ecological and social dimensions and aims to take advantage of the interactions between plants, humans, animals and the environment.



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Collective intelligence



Human interactions, sharing of experiences and collective projects are crucial to initiate change. The training of actors makes it possible to put innovative behavior into practice but also to mobilize new fields of knowledge.

Coverage and rotation



Some crops increase soil carbon and nitrogen levels, prevent erosion and suppresses weed. Crop rotation, cover crops and reduced tillage are three key practices for Conservation Agriculture.

Climate adaptation



The fixation of organic matter in the soil contributes to the storage of greenhouse gases. An increase of 0.4% of soil organic matter would store an entire year's worth of greenhouse gas emissions.

Soil biodiversity



Worms, fungus and bacteria living in the soil have a positive impact on its structure, which promotes rooting and water retention. They protect crops from pests and diseases. They have a central role in the decomposition of nutrients, an influence on plant growth.

Nitrogen fixation



Some elements are essential for crop nutrition. They can be produced by certain plants like legumes from gaseous elements present in the atmosphere. Fixed by the plant, they return to the soil and benefit the following crops.

Crop-livestock synergy



Production systems integrating crops and livestock promote efficient recycling of resources. The products or by-products of one component serve as a resource for the other. The manure is used for crops and the crops feed livestock.

Energy management



Efficiency and alternative to fossil fuel energy are very strategic. All sources of energy from biomass are favoured: solar, wood fuel, methanisation. The latter in particular can produce heat or electricity by recycling manure, slurry and plant waste.

Biocontrol



Plant protection techniques should be based on natural mechanisms of regulation and the management of the balance of aggressors' populations. Their eradication with phytochemicals is no longer targeted.

Agroforestry



Trees produce wood and fruits. They restore soil fertility and water quality. Making crops or livestock coexist with trees sustainably improves the productivity of agricultural land and is good to biodiversity.

Biodiversity



Agricultural areas are the refuge of remarkable animal or plant species. Insect-eating wildlife such as birds or bats are very useful against crop pests. The protection and use of this remarkable or functional species is necessary.

Pollination



Some insects, by foraging from flower to flower, allow plants to produce the fruits and seeds that are part of our diet. Honey and wild bees are essential auxiliaries to agricultural production. They also play an essential role in maintaining plant biodiversity.

Water management



Reasoned management of resources must be implemented in the agroecosystem. Through practices that limit runoff, erosion and evapotranspiration, the priority is to avoid pollution and promote the storage in the soil.

Sustainable seeds



Genetics is the basis of agricultural systems. Maintaining resistant and varied varieties limit the use of phytosanitary products. The production of resources locally adapted and accessible to all represents a challenge.

Local food system



Diversification, transformation and sale of agricultural production are key points for relocating food systems. Bringing producers and consumers closer together involves changes in farms and territories.