

Annex 4. Main differences between conventional agronomy and permaculture

Needs of a vegetable garden	Predominant conventional agronomy		Permaculture	
	Resources and means	Impact and consequences	Resources and means	Impact and consequences
Soft soil	Mechanical labour (with tools or machinery)	Erosion Compaction CO2 release	Biological work (roots or insects)	Increased retention of nutrients, water and oxygen
Water	Irrigation and rainfall	Increased need	Irrigation and rainfall Soil moisture conservation (biological tillage, mulching)	Reduced need
Labour	Mechanisation (technification, industrialisation)	Reduced need for people	Manual work	Increased need for people
Planification	Monoculture	Depletion of soil nutrients.	Policulture Crop rotation	Generation of new sources of nutrient incorporation (different species make different contributions).

Needs of a vegetable garden	Predominant traditional agronomy		Permaculture	
	Resources and means	Impact and consequences	Resources and means	Impact and consequences
Nutrients	<p>Synthetic fertilisers</p> <p>Extraction crops without replenishment (Amazon soybean)</p>	<p>Soil compaction.</p> <p>Leachate.</p> <p>Eutrophication (of land and water).</p> <p>Dependence on external inputs</p> <p>Soil contamination (heavy metals, sodium)</p> <p>Imbalance of microbiota</p> <p>Shearing</p>	<p>Biofertilisers (plant-based slurry or manure)</p> <p>Soil regeneration (fallow, mulching, efficient micro-organisms)</p> <p>Green manure (crops that generate biomass and salvage nutrients from the soil and are then returned to the soil)</p> <p>Organic fertiliser (compost, manure)</p>	<p>Increased soil organic matter.</p> <p>Good Carbon - Nitrogen ratio.</p> <p>Increased microbial life.</p> <p>Structuring / aeration of the soil.</p> <p>Good water retention capacity.</p> <p>Stability of nutrients in the soil (less percolation).</p> <p>Less dependence on external inputs.</p> <p>Less waste.</p>
Atmospheric conditions	<p>Greenhouse</p> <p>Adapt crops to the zone</p>	<p>Electricity consumption and use of plastics</p> <p>Reduces biodiversity in each zone</p>	<p>Seasonal crops</p> <p>Mulching</p>	<p>Resilience</p> <p>Reduced environmental impact</p>



	Predominant traditional agronomy		Permaculture	
Needs of a vegetable garden	Resources and means	Impact and consequences	Resources and means	Impact and consequences
Plant Health	Herbicides	Weed resistance Compaction Operator health hazards Crop weakening	Mulching (limits the growth of unwanted weeds) Manual weed removal Respect for biodiversity	Respect for biodiversity Reduced dependence on external inputs Limitation of residues in food and environment
	Pesticides	Pest resistance Persistent residues in food and environment Biodiversity damage (bees, butterflies, amphibians and fish) Contamination during the production process	Cultural work (hindering access and development of pests with manual interventions) Strengthening of plants Repellent crops Trap crops Integrated control (carnivorous insects) Plant extracts	