



**Youth Multimedia and Food**  
*Raising the profile and skills of young people  
by working with and recording sustainable enterprises that produce and  
process food*

# Food Guide

## to producing and processing sustainable healthy food

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### Growing food sustainably – From Plot to Plate

An approach to growing food where the aim is to cooperatively create environmentally sound, economically viable, and socially just food systems.

- Local, minimum external inputs eg. Local community volunteers/ members, Hand tools
- Renewable resources eg. Compost, seed saving
- Diversity – eg. Crops, varieties, layers, pollinators
- Self-regulating ecological system

#### Keeps and builds good soil structure and fertility

- Recycles and composts crop wastes and animal manures
- Tills the soil in the right way at the right time
- Rotates the crops
- Grows green manures and legumes
- Mulches and always covers the soil surface

#### Controls pests, diseases and weeds

- Plans the type and timing of crops
- Uses resistant crops
- Rotates crops
- Encourages useful predators that eat pests
- Increases genetic diversity
- Uses natural pesticides
- Grows a polyculture of crops

Also involves:

- Uses water carefully

Avoids crop and food waste

- Minimises gluts, or shares/sells excess produce
- Grows a variety of crops that can be processed, stored

#### Agroecology

- Biodynamic growing – Rudolf Steiner
- Permaculture – Bill Mollison
- No-tillage or Min-till – Charles Dowding and Natural farming – Masanobu Fukuoka
- Agroforestry – Martin Crawford

### **Non Sustainable Agrochemical**

- Competition
- Market economy
- Linear economy
- Fossil fuel inputs
- Global
- Monoculture
- Private land
- Power of landowner

### **Sustainable Agroecological**

- Cooperation
- Sharing economy
- Circular economy
- Organic inputs
- Local
- Polyculture
- Public/community/common land
- Power of grower

### **Sustainable food production**

- Agroecology – Methods of growing and processing
- Food Sovereignty – Rights of the growers and consumers
- Economic Democracy – Decisions that are fair and cooperative

## **Types of crops**

Vegetable and Fruit Cards, Garden Organic

<https://www.gardenorganic.org.uk/growyourown>

### **Crop families**

Look for the defining (diagnostic) features of crop plant families.

- Legumes - Root nodules to fix nitrogen. Beans, peas,
- Solanaceae - Tomatoes, Peppers, Potatoes, aubergines
- Rosaceae - Apple, Pear, Plum, Peach, Apricot
- Cucurbits - Pumpkin, melon, cucumber, courgette
- Lily - Onion, Leek, garlic
- Umbellifers - Carrot, coriander,
- Brassicas - cabbage, kale,
- Composites - Lettuce
- Labiates – Many herbs

### **Food parts**

- Root crops
- Leaf crops
- Stem crops
- Flower crops
- Fruit crops

### **Growing years**

- Annuals - 1 season/year -
- Biennials - 2 years - Brassicas,
- Perennials - Many years - rhubarb, horse radish, asparagus, strawberries, raspberries, blackberries, vines, plums, apples, pears

Knowing these groupings or classifications helps with all aspects of growing crops: pests and diseases eg. Blight on Solanum  
rotation of crops eg. Legumes adding nitrogen  
methods of production eg. Seed saving

## **Crop rotation**

Based on this classification by crop families and food parts.

Examples

4 equal sized plots over 4 years.

Solanum – Root/ Leaf crops – Brassicas - Legumes

Root – Flower – Leaf/Stem - Fruit

Potato – Resting year of green manure – Root/ Leaf crops - Legumes - Separate Brassicas

## **Stages of growing crops**

- Seed and growing composts
- Soil preparation
- Sowing/planting out - in blocks, rows, successional
- Tree, shrub and herb cuttings
- Weeding, mulching
- Harvesting
- Seed saving
- Food processing

Monthly or seasonal timetable for planting, harvesting and preserving different crops (from seed to seed).

## **Seeds**

- Seeds - suited to locality - water, temperature, soil. Seed producers. Ownership of local varieties.

## **Tools**

- Mechanical tools, Hand tools, Hand-made tools, tool repairs
- Hand tools for Digging. Clearing. Weeding. Planting. Mowing. Harvesting. Seed cleaning.
- Processing - Pressing, Drying
- Preparing food. Cooking.
- Storing, cleaning, sharpening, repairing tools

## **Types of livestock**

Honey bees

Poultry

Chickens

Geese

Turkeys

Goats

Sheep

Pigs

Cattle

Deer

Breeding/ Incubating

Housing

Healthcare

Feeding

Handling manure

Killing

Butchering

# More Extensive Notes

## Organic farming

“Feed the soil to feed the plant to feed the body” is a basic principle of organic farming and gardening.

Organic farming has a [history](#) as long as farming. Traditional farming has been practiced for thousands of years. It is now considered to be organic farming although at the time there were no known inorganic methods. However an organic movement began in the 1940s as a reaction to agriculture's growing reliance on synthetic fertilisers and pesticides.

Organic farming revolves around the concepts of soil life and soil biology. A basic tenet is that biological diversity and soil organic matter are drivers of productive organic farming systems, and that soil high in organic matter leads to a healthy, biologically active soil that will have fewer crop fertility, pest, and disease problems.

Organic farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yields without harming the natural environment or the people who live and work in it. The methods and materials that organic farmers use are summarised as follows:

To keep and build good soil structure and fertility:

- recycled and composted crop wastes and animal manures
- the right soil cultivation at the right time
- crop rotation
- green manures and legumes
- mulching on the soil surface

To control pests, diseases and weeds:

- careful planning and crop choice
- the use of resistant crops
- good cultivation practice
- crop rotation
- encouraging useful predators that eat pests
- increasing genetic diversity
- using natural pesticides

Organic farming also involves:

- careful use of water resources
- sustainable animal husbandry

Organic farming provides long-term benefits to people and the environment. Organic farming aims to:

- increase long-term soil fertility.
- control pests and diseases without harming the environment.
- ensure that water stays clean and safe.
- use resources which the farmer already has, so the farmer needs less money to buy farm inputs.
- produce nutritious food, feed for animals and high quality crops to sell at a good price.

### Modern approach

Organic farming does not mean going back to traditional methods. Many of the farming methods used in the past are still useful today. Organic farming takes the best of these and combines them with modern scientific knowledge. Every insect is not a pest, every plant out of place is not a weed and the solution to every problem is not a synthetic chemical spray. The aim is not to eradicate all pests and weeds, but to keep them down to an acceptable level and make the most of the benefits that they may provide.

### Combined systems and approaches

On an organic farm, each system would not normally be used on its own. The farmer would use a range of organic systems at the same time to allow them to work together for the maximum benefit.

## Enlightened agriculture

A wider, more political and growing concept, developed by the [Campaign for Real Farming](#), is Enlightened agriculture – farming that is expressly designed to provide everyone, everywhere, forever, with food of the highest quality, nutritionally and gastronomically, without wrecking the rest of the world – integrating the three key principles of [agroecology](#), [food sovereignty](#) and [economic democracy](#).

Organic farming, as well as all the other sustainable farming systems – [agroecology](#), [biodynamic agriculture](#), [permaculture](#), [no-tillage](#), [natural farming](#), [agroforestry](#), [crop rotation](#) fits into this global and holistic concept. Enlightened agriculture campaigns for an agricultural renaissance (rather than reform or revolution).

Enlightened agriculture suggests that we should be productive (produce enough food for everyone), sustainable (keep the soil, biosphere and planet in good heart) and resilient (be adaptable to changing conditions, such as climate).

## Learning from nature

Enlightened agriculture also suggests we should learn five lessons from nature:

- **Nature is diverse** - making each organism less vulnerable to pests and pathogens. So this means mixed farming with different species and genetic diversity (polyculture).
- **Nature cooperates** - organisms often interact in a way that greater than the sum of the individual organisms (synergism). So this also means diverse mixed farming, especially on a small scale.
- **Nature recycles** – the waste from one organism is the input, through food chains, for another organism. So this means integrating inputs and outputs in a cyclical and rotational way.
- **Nature is low input** – energy comes directly from the sun, and fertility is slowly increased by recycling, mineralisation and nitrogen fixation. So this means using the energy and fertility that nature provides.
- **Nature does not cultivate** – but there is micro-cultivation by roots and soil organisms. So this means minimum or zero cultivation with little digging or ploughing.

So what is needed is small-scale, complex, skills-intensive farming, with limited machinery.

## Principles of organic farming

Organic farming is based on principles of agroecology. These include:

### Generally

- Improvement and maintenance of the agro-ecosystem based on conservation of soil water and biodiversity
- Preventing exploitation and pollution of natural resources
- Reduction in consumption of non-renewable energy
- Production of nutritious and high quality products
- Conservation of indigenous knowledge and traditional farming systems
- Protection of freedom and independence of farmers with respect to seed sovereignty and other inputs and markets
- Diversity of crops, livestock and wildlife
- Decentralisation of production and processing

### Practically

- Conservation of soil
- Maintenance of soil fertility
- Natural nutrient mobilisation
- Pest management through biological pest control
- Increase in biodiversity genetic base
- No use of synthetic and agrochemicals
- Prohibition of genetic engineering and related products
- Use of farm manures and crop residues

- Biologically active soil life

### Essential characteristics

- Sustainable use of local resources
- Ensuring basic biological functions of the soil-water-nutrient-humus continuum
- Maintenance of diversity of plants
- Maintenance of nutrient cycle within the farm
- Stability due to diversification
- Optimum input output ratio

### IFOAM Principles

According to the International Federation of Organic Agriculture Movements (IFOAM) (2002), the organic agriculture practices are based on the following principles:

- **Principle of health** - the role of organic agriculture, whether in farming, processing, distribution, or consumption, is to sustain and enhance the health of ecosystems and organisms from the smallest in the soil to human beings. In view of this, it should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.
- **Principle of ecology** - organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustaining them. Organic management must be adapted to local conditions, ecology, culture and scale. The reduction of inputs by reuse, recycle and the efficient management of materials and energy will contribute to improve environmental quality and will conserve resources.
- **Principle of fairness** - This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. It also insists that animals should be provided with the conditions and opportunities of life according with their physiology, natural behaviour and well-being. Natural and environmental resources that are used for production and consumption should be managed in a socially and ecologically fair way and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.
- **Principle of care** - This principle states that precaution and responsibility are the key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound. However, it must consider valid solutions from practical experiences, accumulated traditional and indigenous knowledge and prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones, such as genetic engineering.

### Comparing agroecology with agribusiness

	<b>Small-scale, long-term agroecology</b>	<b>Large-scale, short-term agribusiness</b>
Land	Small (<1-10 ha)	Large (10-1000 ha or more)
Tools	Simple - hand tools and few small machines	Complex – large machines – tractors, ploughs, drills, balers, combine harvesters, etc.
Crops	Many species (5-50), land races, no genetic improvement, wide genetic base	Few species (1-5) or varieties, improved narrow genetic base
Animals	Several species (2-5)	Sometimes few (1-2) species
Type of farm	Mixed	Often only arable
Energy	Renewable – Mainly manual, human energy, animal power	Non-renewable - Mechanical and electrical energy, fossil fuels
Labour	Intensive - Often unpaid – family, cooperatives, volunteers,	Extensive - Always paid – few workers eg. One/200 ha

	neighbours exchange	
Soil fertility	Organic manure, legumes, cover crops, foliar feeds, rotations	Inorganic fertilisers, lime, gypsum
Weed control	Manual, cultural – cover crops, manure, rotations	Mechanical or chemical - herbicides and fossil fuel products
Pest and diseases	Physical, cultural – companion planting, small scale, diverse crop and animal varieties	Mainly mechanical or chemical - insecticides, fungicides, bactericides, nematocides, rodenticides
Crop management	Manual	Chemical - Growth regulators for defoliation, control of flowering, ripening, fruit drop etc.
Harvesting	Manual, cooperative, with simple tools	Mechanical, tractors plus implements - pickers, balers, threshers, combine harvesters
Post-harvest	Simple sun-drying and oven fires	Mechanical forced-air artificial drying using fossil fuels, sometimes refrigeration

## Comparing sustainability

		<b>Small-scale, long-term agroecology</b>	<b>Large-scale, short-term agribusiness</b>
Economy	Employment	More labour	less labour - larger machines
	Enterprises	More new small enterprises	Less jobs - less services
	Trade	with local consumers	with global commodity dealers
Environment	Soil	Cover crops, Organic matter. More soil organisms	Compaction and erosion. Less soil organisms
	Carbon sink	More a carbon sink in soil, organic matter and plant cover	More a carbon source of greenhouse gases from fossil fuels
	Biodiversity	More diversity - Polycultures, many varieties, small fields	Less diversity - Monocultures, few varieties, pesticides, large fields
	Energy	Less fossil fuels - organic matter, hand tools, less tillage, transported locally	More fossil fuels - fertiliser, machines, tillage, transported globally
	Food waste	Less waste - all parts used or processed	More waste - along long supply chain
Society	Food quality	More fresh and diverse	More processed, preserved, and standardised
	Food variety	Less exotic, more seasonal	More exotic and aseasonal
	Health	Less animal health scares	More animal health scares
	Community	More landworkers - community cohesion	Less landworkers - commuting community





# Links

## Living and Learning on Organic Farms (LLOOF)

[www.lloof.eu](http://www.lloof.eu)

### LLOOF Guide in Spanish and English

- Managing soils and composts 6
- Growing vegetables, fruits, nuts and herbs 11
- Managing grassland, including weeds and boundaries 16
- Managing crops, including water, weeds, pests and diseases 21
- Using and maintaining hand tools 43

### The LLOOF Youtube channel playlists

[https://www.youtube.com/channel/UCm2wBY0aKAedwA\\_8fQg3k\\_w/playlists](https://www.youtube.com/channel/UCm2wBY0aKAedwA_8fQg3k_w/playlists)

- National Federation of City Farms and Community Gardens [www.farmgarden.org.uk](http://www.farmgarden.org.uk)
- NCFCG Community Growing videos [www.farmgarden.org.uk/resources/community-growing-videos](http://www.farmgarden.org.uk/resources/community-growing-videos)
- Selling produce [www.farmgarden.org.uk/system/files/beginners\\_guide\\_to\\_selling\\_produce.pdf](http://www.farmgarden.org.uk/system/files/beginners_guide_to_selling_produce.pdf)
- Free permaculture book <http://library.open.oregonstate.edu/permaculture>
- Growing Together – a partnership of key organisations who support community growing [www.growingtogether.community](http://www.growingtogether.community)
- Principles of organic growing [www.gardenorganic.org.uk/principles](http://www.gardenorganic.org.uk/principles)
- Incredible Edible Network <http://incredibleediblenetwork.org.uk>
- The Permaculture Association Knowledge base <https://knowledgebase.permaculture.org.uk>
- Local Food Roots [www.youtube.com/watch?v=1CeoLJfAjWc&t=1236s](http://www.youtube.com/watch?v=1CeoLJfAjWc&t=1236s)

### Videos

- Organic v conventional farming <https://www.youtube.com/watch?v=1dKUhUN5Yx4>
- Industrial v sustainable agriculture <https://www.youtube.com/watch?v=7TRI7yeeYQQ>
- [A Farm for the future](http://www.youtube.com/watch?v=xShCEKL-mQ8) [www.youtube.com/watch?v=xShCEKL-mQ8](http://www.youtube.com/watch?v=xShCEKL-mQ8)

### Organisations

- Food and Agriculture Organisation of the United Nations [www.fao.org/organicag/oa-faq/oa-faq7/en](http://www.fao.org/organicag/oa-faq/oa-faq7/en)
- Research Institute for Organic Agriculture [www.fibl.org/english](http://www.fibl.org/english)
- Sustainable Agriculture Research and Education [www.sare.org](http://www.sare.org)
- Organic Research Centre [www.organicresearchcentre.com](http://www.organicresearchcentre.com)
- The International Centre for Research in Organic Food Systems [www.icrofs.org/Pages/About\\_ICROFS/index.html](http://www.icrofs.org/Pages/About_ICROFS/index.html)
- The Soil Association [www.soilassociation.org](http://www.soilassociation.org)

### Networks

- The International Federation of Organic Agriculture Movements [www.ifoam.org](http://www.ifoam.org)
- AgriCultures Network [www.ileia.org](http://www.ileia.org)
- Neo-Agri Network <http://neo-agri.org>

### Publications

- Training manual for organic agriculture [www.fao.org/fileadmin/templates/nr/sustainability\\_pathways/docs/Compilation\\_techniques\\_organic\\_agriculture\\_rev.pdf](http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Compilation_techniques_organic_agriculture_rev.pdf)

- Organic farming, Wikipedia [https://en.wikipedia.org/wiki/Organic\\_farming](https://en.wikipedia.org/wiki/Organic_farming)
- Danish Research Centre for Organic Farming <http://orgprints.org/378/1/organic/index.html>
- Principles of organic farming - Renewing the Earth's harvest  
[www.navdanya.org/attachments/Organic\\_Farming3.pdf](http://www.navdanya.org/attachments/Organic_Farming3.pdf)
- Organic agriculture's contribution to sustainability <http://www.fao.org/docrep/018/aq537e/aq537e.pdf>
- Master publication list – ATTRA, The National Sustainable Agriculture Assistance Program  
<https://attra.ncat.org/publication.html>
- Soil and Health Library [www.soilandhealth.org](http://www.soilandhealth.org)

# Across Europe

## The state of organic farming

Demand for good food and good farming is on the rise in Europe. People of all ages, including farmers and citizens, are hungry for change and want to see better food and farming policies based on agroecology approaches. In recent years, EU policymakers have slowly come to recognise the dual role of organic farming. On the one hand, it strives to meet the consumers' demand for high quality products. On the other, it fulfils an important role in securing certain public goods.

Today organic agricultural land represents nearly 6% of all EU agricultural land, whilst Europe is the second largest market of organic products, valued at EUR 22.7 billion in Europe for 2012 and growing. Organic farming in the EU has continued to record substantial growth with the area of organically managed agricultural land almost doubling over the last decade.

## European Union Agriculture policy

The Common Agricultural Policy (CAP), being one of the oldest policies of the European Union (since 1962), is strongly rooted in the European integration project. Due to the CAP's long history, it is also a policy that has been reformed on many occasions, in particular during the past decade and a half. As well improving agricultural productivity, ensuring a stable supply of affordable food, and ensuring that EU farmers can make a reasonable living, it now also aims to keep the rural economy alive, improve food security, mitigate and adapt to climate change and promote sustainable management of natural resources.

The current CAP 2013 – 2020 has introduced some Greening Measures, which some critics say only promotes weak agroecology. However, it is a start and for the first time, the delivery of public good (in contrast to productivity) is a significant part of the CAP.

Under Pillar 1, direct payment eligibility depends on farmers undertaking three basic farming practices – crop diversification, the protection of permanent grassland and the allocation of 7 % of farmland as ecological focus areas. Collectively, these are known as the Greening Measures. This new element represents 30 % of national funding for Pillar 1.

Furthermore, under Pillar 2 Member States are legally required to spend at least 30 % of their rural development budgets on environmental measures, including commitments in support of organic production and agri-environmental climate protection practices which go beyond the Pillar 1 greening.

## Links - Across Europe

### Organisations

- IFOAM EU [www.ifoam-eu.org](http://www.ifoam-eu.org)
- Organic Europe [www.organic-europe.net](http://www.organic-europe.net)

### Networks

- ARC2020 Agriculture and Rural Convention [www.arc2020.eu](http://www.arc2020.eu)
- The European Network of Organic Agriculture Students [www.enoas.org](http://www.enoas.org)
- IFOAM EU Group <http://www.ifoam.bio/en/regional-bodies/ifoam-eu-group>
- European Agrobiodiversity Network <http://agrobiodiversity.net>

### Publications

- Organic agriculture in the European Union [http://ec.europa.eu/agriculture/organic/index\\_en.htm](http://ec.europa.eu/agriculture/organic/index_en.htm)
- Facts and figures on organic agriculture in the European Union [http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013\\_en.pdf](http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013_en.pdf)
- The European market for organic food [www.biofach.fibl.org/fileadmin/documents/de/news/2014/willer-schaack-2014-biofach-europe-market.pdf](http://www.biofach.fibl.org/fileadmin/documents/de/news/2014/willer-schaack-2014-biofach-europe-market.pdf)
- A Decade of EU-funded, low input and organic agriculture research (2000- 2012) [http://ec.europa.eu/research/bioeconomy/pdf/189756\\_2011\\_2695\\_a\\_decade\\_of\\_eu\\_en.pdf](http://ec.europa.eu/research/bioeconomy/pdf/189756_2011_2695_a_decade_of_eu_en.pdf)
- The Common Agricultural Policy (CAP) [http://ec.europa.eu/agriculture/cap-history/index\\_en.htm](http://ec.europa.eu/agriculture/cap-history/index_en.htm)
- Farming policy in the EU today, European Environment Bureau <http://www.eeb.org/index.cfm/activities/biodiversity-nature/agriculture/farming-policy-in-the-eu-today>

- European Union Agriculture policy  
[http://europa.eu/pol/agr/index\\_en.htm](http://europa.eu/pol/agr/index_en.htm)
- The rapid growth of EU organic farming  
[http://ec.europa.eu/agriculture/markets-and-prices/market-briefs/pdf/03\\_en.pdf](http://ec.europa.eu/agriculture/markets-and-prices/market-briefs/pdf/03_en.pdf)
- Facts and figures on organic agriculture in the European Union  
[http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013\\_en.pdf](http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013_en.pdf)
- Organic in Europe – Prospects and development  
<https://www.fibl.org/fileadmin/documents/shop/1634-organic-europe.pdf>
- Organic farming - A guide on support opportunities for organic producers in Europe  
[http://ec.europa.eu/agriculture/organic/documents/eu-policy/european-action-plan/support-opportunities-guide\\_en.pdf](http://ec.europa.eu/agriculture/organic/documents/eu-policy/european-action-plan/support-opportunities-guide_en.pdf)
- The EU organic (r)evolution  
[http://ec.europa.eu/agriculture/organic/images/infographics/organic-farming\\_en.pdf](http://ec.europa.eu/agriculture/organic/images/infographics/organic-farming_en.pdf)