



TEASERS

GROWING COMMUNITIES:
Empowerment through social permaculture



Co-funded by the
Erasmus+ Programme
of the European Union



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This intellectual output has been conceived and developed by the Strategic Partnership in "Growing Communities" project under the coordination and responsibility of the Eduplus Association.

Thanks to all partners for their precious contributions!



STRATEGIC PARTNERSHIP

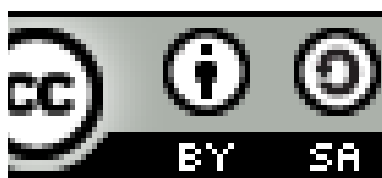
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Kulturlabor – Trial & Error (DE)
Dominou Association (RO)
Eduplus Association (ES)

AUTHORS

Alejandra Goded
Jonai Pérez Díaz
Anca Dudau
Claire Chaulet
Anna Verones
Rūta Vimba
Alina Dumitrascu
Ani Draghici

Editorial coordinator: Anca Dudau

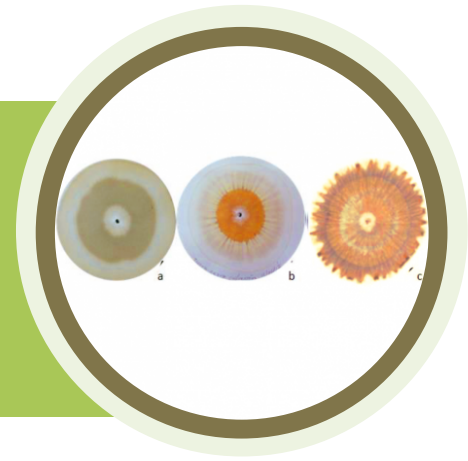


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SOIL HEALTH



Soil is the great neglected element of conventional agronomy. Look at the difference in richness between conventional and organic soil.

The soil of our vegetable garden is the central element. We can know its composition with analyses like this one (Pfaffner chromatography) where it is separated into its different components. Here we see a soil of traditional agronomy (a) that only retains the compacted mineral part, while (b) organic agriculture has an aerated soil, rich in active microorganisms and organic matter.



THE ECO-SYSTEM AROUND US

We want to deepen the understanding about how the diverse elements of a living eco-system are interconnected.

An ecosystem includes all the living things in a give area interacting with each other and also with their non-living environnement. In a eco-system we can find four (4) components:

- 1) Abiotic substances: Mineral elements. Organic compounds. Water Physical matters, e.g., sunlight, wind, gaseous elements
- 2) Producers: all green plants and autotrophic bacteria
- 3) Consumers: insects, birds, cows, etc. and
- 4) Decomposers and converters: microorganisms Go for a walk in your closest park and find one of each of these components.

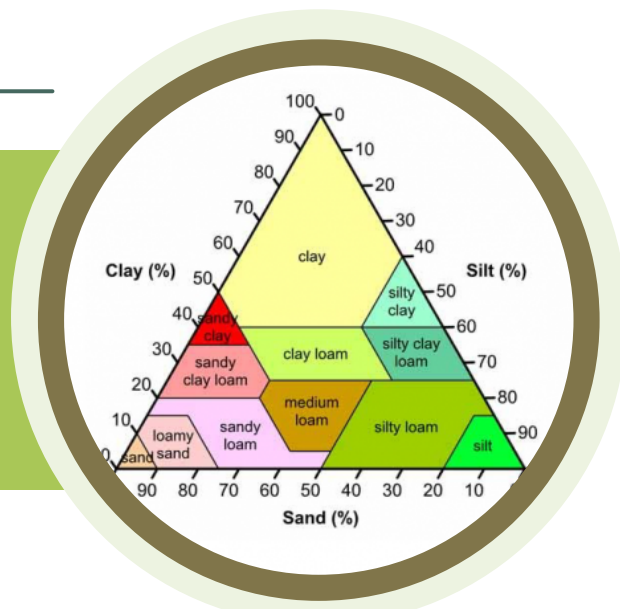
What connections do these components have?

You can draw a small organigram in which the connecting lines represent the different relationships between the components.



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SOIL TEXTURE



Have you ever realized how important the soil is?

Soil is the foundation of every kind of ecosystem living on earth. When planting and growing food, soil becomes a fundamental aspect to take into consideration. Soil testing is a key tool in sustainable soil management and allows us to monitor in time what's the impact of our activities in terms of soil regeneration.

Do you want to learn more about soil testing?

Come and join us. We will practice the so called Jar Test, which will give us a picture of the soil texture. In the triangle you can see how the texture of the soil varies with the composition of clay, sand and silt. Together we will then get our hands dirty and see how these elements compose the soil. We will discuss how texture impact on plant growth and other functions of the soil.

It would be great if you'd manage to bring some soil from different locations. That way we could compare different soils and see if there are differences in the texture.



HOW MUCH SUNLIGHT DOES EACH PLANT NEED?

Learn about the needs of plants to make the best use of your garden space.

At first sight, a permaculture garden may seem a bit messy, but in reality there is a lot of planning involved. For example, when it comes to distributing the plants in the garden, we can make better use of the space if we know the sunlight needs of each plant and thus reserve the shaded areas for the less demanding ones. In case you don't find your plant in the list, you can be guided by this saying:

"If you grow if for the fruit, it needs full sun. If you grow if for the leaves partial sun is all you need".



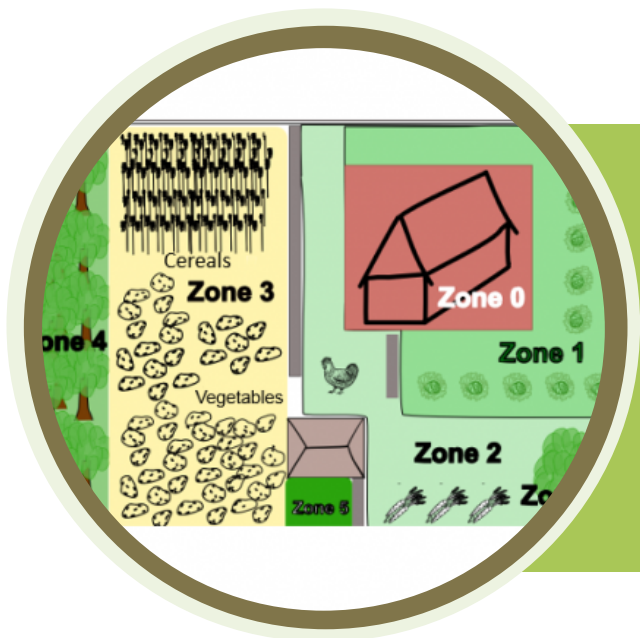
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GARDEN EXPLORATION



Our aim is to discover the biodiversity in our own neighbourhoods and also the threats to it. Due to the direct experience and contact with the diversity and endangered species we get a more tangible awareness about biodiversity and our impact on it.

Download the app "PlantNet" and scan the first plant you find in your house or neighborhood, and get familiar with the different options of the app.



PERMACULTURE ZONING

Permaculture zones help us organize our spaces according to how (and how often) we use them. As a design strategy, zones are a super powerful way to make choices about where to place elements of the ecosystem, in order to enhance their ecological performance. Try to imagine: how could these zones be envisioned? In our micro training, you will get more practical experience about how this principle work and how human and natural interactions occur.



WATER USAGE



Learn the sources of water and how it is used by humans:

- **70%** of our Earth's surface is water
- **93.8%** is ocean water,
- **2.5%** is fresh water
- **0.375%** is accessible to humans
- **0.3%** of water is in lakes & ponds
- **0.06%** is in soil & forests,
- **0.03%** is in rivers,
- **0.035%** is in the atmosphere.



Sources of water in the environment:

- **13%** of precipitation is rain
- **86%** of precipitation is from condensation of sea air, mists & fog

Who uses all the water?

85% agriculture,

- **7.5%** industry,
- **7.5%** domestic & residential, of which:
 - 26% from toilet flushing,
 - 17% from showering,
 - 15% from taps,
 - 22% from washing cloths,
 - 14% by sub surface leaks5% from other uses

Industry uses:

- **62.7 litres** (16.5 gallons) of water to make 1/3 litre (12 ounce) can of soda
- **70 litres** (18 gallons) of water to grow one apple
- **120 litres** (31 gallons) of water to make one glass of wine
- **7900 litres** (20,86 gallons) of water to make one pair of shoes
- **73,700 litres** (19,469 gallons) to raise a cow to 18 months of age
- In the west, **100 litres** (26 gallons) of water for an average shower or average day of flushing the toilet
- **350 litres** (92 gallons) of water is average use per person per day
- **1.8 million tonnes** (4 billion pounds) of trash per year comes into the ocean, killing one million sea birds and 100,000 marine animals annually



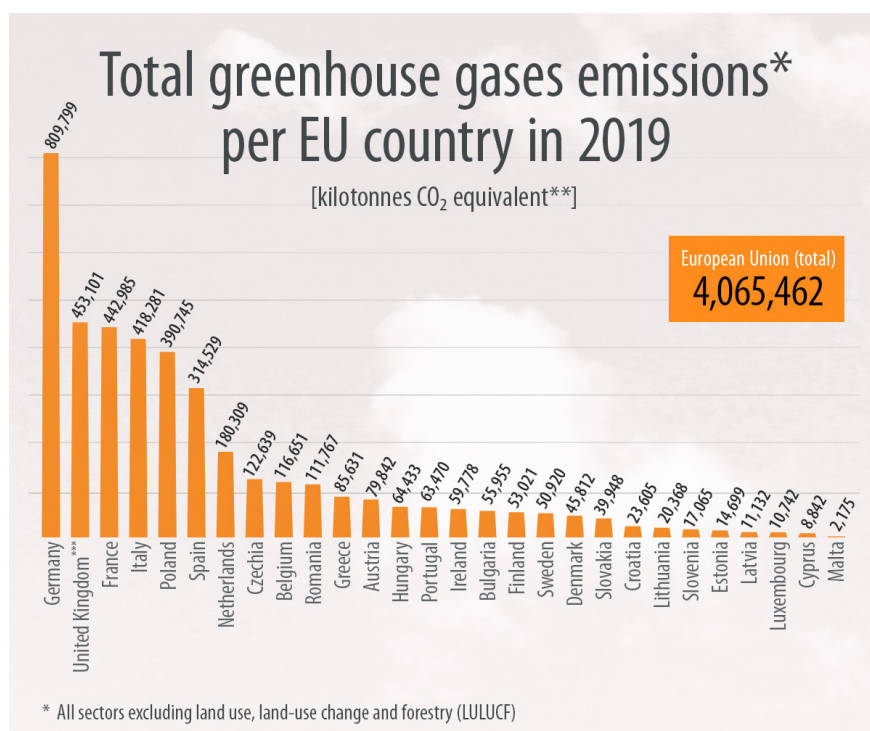
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WHAT CAN ONE PERSON DO ABOUT CLIMATE CHANGE?



We constantly receive messages alerting us that our standard of living is unsustainable. However, we rarely receive accurate information on what we can do, beyond changing the light bulbs in our house.

We may feel overwhelmed when we see that our way of life is unsustainable. We are facing a very serious and unprecedented environmental crisis, in the face of which people are powerless and helpless. At the same time, environmental warning messages are not predominant and share space with advertising and other messages that invite us to consume and maintain our standard of living unchanged. It is therefore interesting to know what science says about climate change: what are the actions that can have the most positive impact on the environment? What aspects of our lives are worth changing so that we do not contribute to climate change unnecessarily? A recent study analysed the impact of different food products. You can see a report with graphs and analysis at this link. Our particular summary: base your diet on vegetables as much as possible, no matter if they are locally produced or not. It also happens to be the healthiest option!





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ARTIFICIAL PRESERVATIVES



Learn about natural and artificial preservatives used to preserve food and how to read a product label.

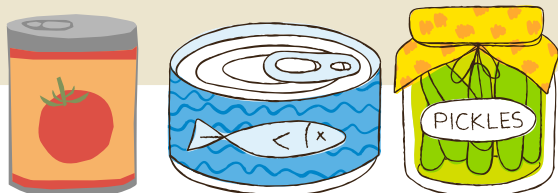
It's "common" for food to contain artificial preservatives. That's because they can "prevent spoilage, improve appearance and texture, and maintain the food's nutritional quality". It's not just fast food restaurants using artificial preservatives, either.

There are also **natural preservatives** — like salt, sugar, vinegar and citrus juice — but using them usually comes at a higher cost to the food manufacturer.

Artificial preservatives help decrease the price of that food product for the consumer.

But alongside these benefits, there may be some health concerns that come along with artificial preservatives. Artificial preservatives are chemical substances that get added to food during the manufacturing process.

Some of the most popular are sodium benzoate, sorbic acid, butylatedhydroxyanisole (BHA) and butylatedhydroxytoluene (BHT).



However, **natural doesn't always mean healthier**. For example, alternative preservatives that are 'all natural' can include things like sugar and salt. We know that excess amounts of these in our diets aren't healthy for us, even if they do come from natural sources.

Choosing to use natural preservatives can also be more expensive. If you do want to avoid artificial preservatives, you can do so by closely examining package labels. These ingredients are usually listed at the very end of the list as they are only used in small quantities. Find food labels at home or in a shop and take a picture of the label. Find the unhealthy ingredients.

Sodium benzoate is a preservative and microbial agent used in tomato products, pickles, sauces, fruits, fruit salads, jams, cider, salad dressing, and some meat and poultry products. On labels, sorbic acid is sometimes called calcium sorbate or potassium sorbate. "It's a preservative used in jams, cold-processed smoked and salted fish paste, concentrate juice (except frozen concentrate juice), minced meat, marmalade with pectin, jam, syrup, pickles, relishes, smoked or salted dried fish, ketchup, tomato paste, tomato puree, margarine and salad dressing."

BHA and BHT are preservatives with "antioxidant properties". They help fats stay fresh longer by preventing the oils from becoming rancid. They're used in fats and oils, potato chips, dried breakfast cereals, parboiled rice and chewing gum. Some artificial preservatives, such as nitrites or nitrates used in processed meats, have been shown to be bad for our health.

Consuming these preservatives has been shown to increase our risk of colon cancer and should be limited in our diets" In an effort to avoid artificial preservatives, some people try to use natural preservatives.



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SELECTIVE WASTE COLLECTION AND RECYCLING



Learn about the benefits of selective waste collection and recycling on the environment and society.

Selective collection and recycling often reduce the negative impact of waste affecting the environment and society. Selective waste collection involves the management of waste, by their temporary storage, by categories, in specially arranged places, for recycling.

Recycling is the collection, separation and processing of products / materials already used or some of their components to be transformed into new useful goods.

Paper recycling saves about 25% of the amount of electricity and 90% of the amount of water used to produce one kilogram of paper;

A wide range of products can be manufactured from **recycled PETs**: roof insulation films, components for the automotive industry or for lighting fixtures, kerosene for aircraft, textiles, etc. At the same time, very large spaces are required for PET storage. So, it is best to contribute to their recycling.

Cardboard boxes used for packaging beverages (milk, juices, for example) are made of paper protected by thin layers of plastic (polyethylene). Aseptic boxes have a thin layer of aluminium that makes it easier to keep the contents fresh for longer, without the need for preservatives, as this prevents oxygen and light from entering the package. Boxes of this kind can be recycled.



Waste spends different periods of time in the process of natural grading biodes, aided by moisture, bacteria, lack of light, etc.:

- fruit and vegetable peels – 2-5 months;
- a paper bag – 3-5 months;
- newspapers – 3-12 months;
- a matchstick – 6 months;
- chewing gum – 5 years;
- a leather shoe – 25-50 years;
- a dose of aluminum – up to 100 years;
- a PET – over 500 years;
- a credit card – about 1000 years;
- a glass container – 1,000,000 years old



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2022



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