



**GROWING COMMUNITIES**  
EMPOWERMENT THROUGH SOCIAL PERMACULTURE

**edu+plus**  
Socio-Educational Association



ENGAGEMENT PROGRAM

# ACTIVITIES

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**edu+plus**  
Socio-Educational Association



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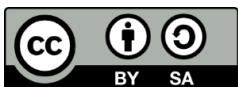
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## 1. Activities for micro-trainings

### 1.1 Micro-Training 1: Traditional Vs Permaculture Approaches



















#### Description

The activity consists of looking at some of the most characteristic techniques and means of traditional agronomy and relating them to their impacts and consequences for the vegetable garden. Permaculture alternatives are then presented in order to compare the two approaches to agronomy.

#### Teaser

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

#### Photos/Images

Lower Sunlight 3-4 hours a day	Medium Sunlight 4-6 hours a day	High Sunlight 6-8 hours a day
 Swiss Chard	 Beets	 Peppers
 Cos Lettuce	 Carrots	 Tomatoes
 Lettuce	 Potatoes	 Water-melon
 Parsley	 Broccoli	 Okra
 Arugula	 Radishes	 Eggplant
 Asian Greens	 Turnips	 Straw-berries

<http://www.thegardeningcook.com>

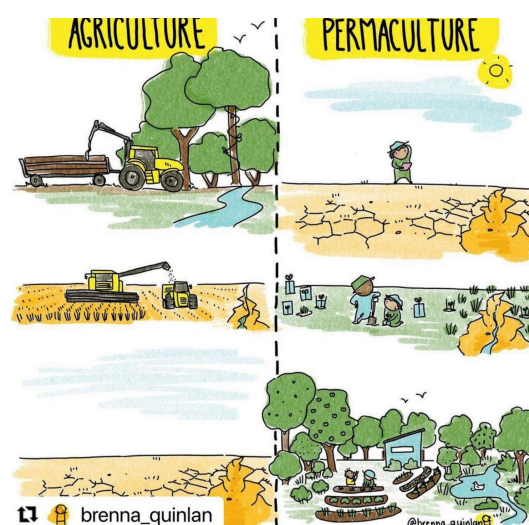


## Competences addressed

- Knowledge about benefits of permaculture.
- Knowledge about the most common techniques of permaculture.
- Communication
- Learning to learn

## Learning objectives

- To reflect on the uses of external inputs in traditional agronomy.
- To learn about the environmental impact of some of the most commonly used inputs in traditional agronomy.
- To learn about some of the most common uses of plants in permaculture.
- To learn how to use one's own crops to get an added yield from them within the garden system.



## Preparation for the activity

- Print and cut out the cards provided in annexes 1, 2 and 3. (We recommend to print them on a coloured paper, different for each document and double side)
- Prepare a table for each working group you are going to form.
- Place craft paper on each of the tables.
- Draw the columns to be filled in:
  1. conventional agronomy techniques,
  2. benefits and impacts and
  3. permaculture techniques.

## The activity / the content

It is important to clarify that each type of production uses the means and resources of the other. When we speak of predominant traditional agronomy, we do not mean that traditional farmers do not also use some means of organic farming, such as crop rotation or organic fertilisers, traditional seeds, etc. It is important to emphasise this, especially for those participants who may

be offended by simplifying their way of working.

1. Introduce the topic:

*To this day, conventional agronomy is based on the use of inputs to improve crop productivity (fertilisers, phytosanitary products, tillage machinery), which, in most cases, come from outside the plot. These supplements are highly effective during the first years of use. However, their long-term use results in a system that is increasingly dependent on external inputs, with the consequent economic cost and environmental impact (soil erosion, reduction of soil microbiota, contamination of aquifers).*

*It is therefore necessary to look for new forms of production that are more resilient and make use of the garden's own products, to achieve a system that, although it means waiting a few seasons until it is effective, in the long term is more efficient and, undoubtedly, more environmentally friendly. We are going to compare some aspects of traditional agronomy with permaculture starting with the most basic approaches: objectives, needs of the garden and means to achieve them.*

2. Ice-breaker:

In a circle, ask every participant to think and express through mime, one activity that is used in conventional agronomy. The rest of the participants shall guess what the mime refers to.

3. Divide the participants in groups of 4-5 people. Assign a table for each group. And give them the cards.

4. On each table there should be a piece of paper (the bigger the better, depending on the possibilities of the class). The paper will have a table with three columns drawn on it, with the headings:

- Resources and techniques of conventional agronomy
- Benefit, impact and consequences
- Resources and techniques of permaculture

Predominant conventional agronomy		Permaculture
Resources and means	Impact and consequences	Resources and means

5. Give the groups the first and the second fist of cards, that corresponds to the first and the second header: *Resources and techniques of conventional agronomy* and *Benefit, impact and consequences*.

Ask them to read the cards and match each technique with its impact using the table. If they do not understand any of the techniques, they can read the definitions on the other side, or, if it is not possible to print the cards double-sided, on a separate sheet of paper.

6. When they finish task 5, give them the third group of cards, corresponding to *Resources and techniques of permaculture*. Ask them to put them in the table matching the conventional techniques they are an alternative for.
7. If a group is well motivated and they finish soon enough, you can ask them to write a fourth column with some of the benefits and impacts of permaculture techniques they can deduce.
8. Have a debriefing to check the results. The aim is not to correct mistakes of wrong matches, but to allow participants to share what they have learned. Ask each group to name one thing that stood out to them and to name one benefit of permaculture that they learned from the activity.
9. In Annex 2 you can find the table with solutions, in case you want to print them or if anybody asks for it.

### Questions for reflection, self-assessment and conclusions

- How would you summarise the advantages of permaculture in one sentence?
- What are its disadvantages?
- Which practices would be easily exportable to other types of agronomy and would have a big impact?

### Recommendations on how to adapt to different target groups

- Add pictures on the cards for disadvantaged groups that are not used to reading a lot.
- Make a big panel with the whole group, ask each participant to read one card and place it in order.

## 1.2 Micro-Training 2: Garden Web

### Description

This game aims to deepen the understanding about how the diverse elements of a living ecosystem are interconnected. In this game each participant gets a card for a different organism or natural element and the group forms an ecosystem of a garden. During the activity the participants look for the other elements they depend on to be able to live and discover how all the participants in an ecosystem depend on each other. At least six people are needed to play this game, and it could be played with a large group as well.

The extension of this game is to introduce “disturbing” factors like pesticides, which with scissors cut the connection lines.

### Teaser activity

Ask participants to sit on a bench in their closest park with papers and pen: they should list all the organisms they can observe. Once they have listed them, they should try to draw an organogram where the connection lines are different relations of the organisms.

Teaser-video:

<https://www.ourplanet.com/en/video/what-is-biodiversity/>

### Photos/Images



### Competences addressed

#### Ecological competences:

- Awareness about biodiversity and ecosystems
- Awareness about human impact on biodiversity
- Knowledges about needs and benefits of plants and animals

#### Social and individual competences:

- Group work and communication
- collaboration

## Learning objectives

- The participants identify the different organism in a garden
- The participants identify the different relations of organisms in an ecosystem
- The participants are getting familiar with holistic approaches of gardening
- The participants learn to identify needs and benefits of different organism

## Group characteristics

Activity can be done in groups of 6 till 30 participants.

## Preparation for the activity

There is no need for special knowledge to do this activity.

Material needed:

- as many cards as participants
- As many pens as participants
- A ball of string
- optional: a flipchart, scissors

Place needed:

- 1) natural space / Garden
- Big enough that people can make a circle

## The activity / the content

- 1) Go in a garden or in a specific natural place with your group
- 2) ask them to observe their surroundings and ask them to list the different organisms /elements they observe or they presume are present in the garden. At this phase moderator can write all the elements mentioned by participants on the cards and also gather the observations on a flipchart.
- 3) Gather the cards and put them in a box. Everybody picks a card.
- 4) The person leading the game should explain that the group now represents an ecosystem – a community of living things. Everyone should go around the circle and read out their plant or animal. The person leading the game should make sure that everyone knows what the plants and animals are.
- 5) The person leading the game should give someone the ball of string.
- 6) The person with the ball of string should look around the circle and find something they think they're connected to, for example, something they'd eat (or be eaten by!) or a place they'd live.
- 7) The player with the string should hold onto the end of the string, throw the rest of the ball of string to the player they're connected to and so on. Everyone should continue making connections and throwing the ball of string around until everyone is connected at least once.



- 8) When everybody is connected at least once everyone should talk about their different connections and what kind of connections it is (alimentation, fertilisation etc.).
- 9) The person leading the game can then introduce “disturbing factors” like a specific pesticide or cutting a tree.
- 10) The group should then decide what effects on these strings the disturbing factor is inducing. Eventually they should cut the connection with scissors.
- 11) Everyone should say how cutting one or two strings affects him/her or other parts of the web. Encourage everyone to think about the domino effect on other species. How will removing one plant or animal end up affecting the whole ecosystem?
- 12) The person leading the game should help everyone understand that this shows why all sorts of life is really important. This variety of life is called biodiversity
- 13) The person leading the game should explain that humans are part of this web of life – we need biodiversity to survive.

### Questions for reflection, self-assessment and conclusions

- Which organisms are missing and could be beneficial for this garden ?
- Which organisms are in danger?
- Are there “useless” organisms?

### Recommendations on how to adapt to different target groups

- If people have difficulties with language, they can also draw on the card
- If people are shy or demotivated you can also start with an ice-breaker game with the ball of string

### References

[https://library.uniteddiversity.coop/Permaculture/Permaculture\\_Facilitators\\_Resource\\_Book-Training\\_Assessment.pdf](https://library.uniteddiversity.coop/Permaculture/Permaculture_Facilitators_Resource_Book-Training_Assessment.pdf)

<https://www.amnh.org/explore/ology/biodiversity/web-of-life/activity-instructions>

### 1.3 Micro-Training 3: The Jar Test

#### Description

This activity is a mix between a **role-playing game** and a **board game**, which will help participants to familiarise themselves with the internal dynamics of a permaculture garden. This activity consists in identifying the elements of a permaculture garden and understanding how they interconnect.

Participants are then asked to become one of these elements and natural factors and locate themselves where they think they'll have more chances to prosper. In this way, participants will be able to better empathise with the natural ecosystem and understand its challenges. The experience will also give them an idea about how natural ecosystems can be imitated for co-living in teams and, on a larger scale, in societies.

#### Teaser

Permaculture zones help us organise 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 works and how human and natural interactions occur.

#### Competences addressed

##### Ecological:

- Knowledge about geographical structures and landscapes
- Knowledge about crop management
- Knowledge about botanical processes and natural cycles
- Knowledge about climate and climate change
- Knowledge about biodiversity and fauna
- Knowledge about energy and energy-saving
- Knowledge about permaculture

##### Personal:

- Attention and care
- Sense of control
- Ownership on actions
- Creativity
- Precision and structure
- Social:

- Project-management
- Ownership of public space
- Collective and democratic decision-making
- Sense of belonging
- Sense of usefulness
- Sense of support and solidarity
- Sense of responsibility and commitment

→ *The experiment makes clear the interdependence between elements in the natural ecosystem and supports participants in the learning process through real experiences. Each participant is part of the ecosystem and part of the collective mission, with a function and a role. Each part of the system relies on others and the team is strengthened when everybody's action is aimed at the overall mission.*

### Learning objectives

- Learn about how to design a garden considering the impact of different actors and trying to maximise the capacity of these actors to interoperate and support each other.
- Make participants experience the relationships in the garden.

### Group characteristics

There is no strict number of participants in this activity. Of course, the larger the group the more possibilities we will have to explore different elements and see them in action.

### Preparation for the activity

The materials needed for this activity are cheap and simple (see below).

You would need a surface where you can draw the different zones as different concentric circles that expand from zone 0 (the centre) to zone 5 (the furthest from the centre). For that, you can use a cartoon or a big piece of paper. You can also figure out other ways (e.g. circles on the grass, circles with different materials, etc.)

You can prepare some cards with elements that are typical of a permaculture garden; we'd suggest preparing some empty cards as well because participants could think about an element that didn't come to your mind. It's always better to let it open for further ideas.

Don't forget to bring some pens and pencils for drawing lines, connections or new elements. Keep in mind that colourful cards and drawings make the activity always more attractive, increasing the opportunities to become active learners.

If you are in an open space, you could think about designing that specific space as a permaculture garden. Participants will then have the space to spread around and experience the space. Ideally, start the activity in the centre.

### The activity / the content

1. Introduce the game and the concept of zoning in permaculture (see "Useful resources" for information)
2. You can choose between:
  - i. leaving the cards covered on the table and asking participants to uncover one and place it in the "right" zone
  - ii. presenting the cards uncovered and asking participants to pick one and place it in the "right" zone

→ give participants the possibility to propose a new element if that's not on the cards!

→ rounds: in order for everybody to be active and participate (even the shiest ones) go around in circles and let everybody speak when their turn comes
3. Discussion: Why did you put it there? How does this element relate to other elements? You can draw lines to highlight these interconnections.
4. Consent: the entire group should reach consent about where the element would be located. If someone does not agree, he/she should object and the group should find a better solution
5. If you find yourself in a place that allows that, you can pretend that the area around you is the garden you have to design.
  - i. Locate Zone 0 - all together, through consent
  - ii. Ask participants to pick an element and locate themselves in the spot where those elements could live at best. Remember participants to act as a team and consider the interconnection with other elements (the team is now an ecosystem and interconnections among elements are extremely important for a self-sustaining ecosystem).

b. Ask participants to take a moment for themselves once they have found their location (meditate, sing, dance, do whatever they want!) and then come back to the center for follow-up and reflection.

### Questions for reflection, self-assessment and conclusions

- How did you feel when you were in your zone?
- How did you perceive the other elements?
- What inspiration can we take for the organisation of human societies?
- How do interactions among social individuals reflect interactions among natural elements?

### Recommendations on how to adapt to different target groups

Try to find a barrier-free space to run the activity.

If people have disabilities or are for any reason not able to follow the game, try to put them together with another participant, who can help. Together it could be easier.

### References

<https://www.freepermaculture.com/permaculture-zones/>

This BSL tool was developed by the Feld Food Forest community for the design of the West Feld Garden (Tempelhofer Feld, Berlin), a permaculture community garden that sees the participation of more than 10 different organisations. The tool was therefore intended to be as participatory as possible, to ensure that everybody's voice is heard and the participants are empowered to participate in the co-creation process.

## 1.4 Micro-Training 4: Uses And Functions Of Plants

### Description

The activity consists of looking at the uses and functions that we can give to the different plant species in our permaculture garden.

Each group works with a pack of cards with information about different plant species. The groups read the information and try to deduce what uses can be given to that plant in order to achieve a balanced ecosystem within the garden.

### Teaser

Title: How much sunlight does each plant need?

Summary: Soil is the great neglected element of conventional agronomy. Look at the difference



in richness between conventional and organic soil.

Text: The soil of our vegetable garden is the central element. We can know its composition with analyses like this one (Pfeiffer 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 organic agriculture has an aerated soil, rich in active microorganisms and organic matter.

## Photos/Images

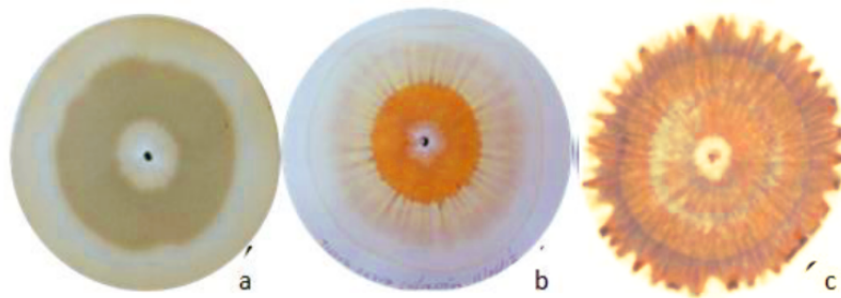


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## Competences addressed

- Knowledge about biodiversity and fauna
- Diversity and inclusion (biodiversity)
- Communication
- Learning to learn

## Learning objectives

- Know some of the uses of different species within permaculture.
- Understand the importance and benefits of biodiversity
- To know some natural alternatives to the use of pesticides.

## Preparation for the activity

Print and cut the cards in Annex 1

Prepare 4 pieces of paper **for each group** with the titles:

- Protection
- Health (of plants)
- Human use
- Fertilisation

Prepare 1 table for each group

## The activity / the content

### 1. Introduce the subject:

*One of the principles of permaculture is based on observing nature in order to try to emulate it and create a system that is self-regulating.*

*In a permaculture garden, many species of plants, animals and micro-organisms coexist to form a small ecosystem. Each of the species has a role to play in establishing a natural balance.*

*We have seen that combining different plant species in a garden allows us to reduce dependency on external inputs. In addition, we can combine our plants in an efficient way so that some species benefit others. In this sense, we can assign some functions or utilities to the plants according to the benefit they bring to the garden system as a whole. Let's take a look at some of them.*

### 2. Describe the four main functions we can give plants in our garden:

**Protection:** Some plants serve to modify the climatic conditions of the orchard and make them more suitable for the rest: protection against the wind, absorption of excess humidity, providing shade, etc.

**Health:** We can grow plants that serve to minimise the impact of pests on our crops by repelling or confusing harmful insects.

**Human use:** Most plants are cultivated for the benefits they have for us. Mainly to provide us with food, but also to produce medicinal preparations, condiments, wood, dyes...

**Fertilisation:** Some plants have the ability to extract nutrients from the atmosphere or from deep soil layers. We can grow these species and then integrate them into the soil or make preparations that fertilise the soil.

3. Show the cards to the participants (Annex 1). Explain that each card contains a description of the species in the picture.
4. Divide the group into small subgroups of 3-5 people. Give each group a pack of cards and 4 pieces of paper with the names of the 4 functions of plants.
5. Give the instructions: Each group should read the information on the cards and assign a place to each one according to the function they think the plant might have in a vegetable garden by placing it next to the label with the name of that function. Make it clear that some cards may have more than one function and that they will therefore have to place them in a way that shows that they are in several groups at the same time.
6. While the groups are working, visit the tables to clarify doubts. Point out that for plants that have two or more uses, it is not necessary to choose only one, help them to find a way to represent several functions at the same time (for example, we can place the orange tree between the labels "protection" and "human use" to show that it has both functions at the same time). Let each group find their own way to represent this.
7. Invite the groups to share the information they found most interesting.
8. After the reflection, you can give the participants a summary table of uses of plants (Annex 2)

### Questions for reflection, self-assessment and conclusions

- Which of these species are commonly found in a traditional kitchen garden? Which are not?
- What benefits can biodiversity conservation have?
- Why do permaculture gardens sometimes look like jungles full of mixed species?



## 1.5 Micro-Training 5: Urban-Nature-Tour

### Description

The biodiversity is decreasing due to many human activities. About 40 percent of the 40,177 species assessed using the [IUCN Red List](#) criteria are now listed as threatened with [extinction](#) and scientists have estimated that millions more species are at risk which have not been formally recognized.

This activity aims at discovering biodiversity in our own neighbourhoods and also the threats to it. Due to the direct experience and contact with the diversity and endangered species, participants get a more tangible awareness about biodiversity and our impact on it.

### Photos/Images



### Teaser activity

Ask participants to download the app “PlantNet” and scan the first plant they meet in their neighbourhood, so they can get familiar with the app.

## Competences addressed

For the competences you can follow the ASK model:

- Attitudes
- Skills
- Knowledge

Traditional schooling has emphasis on knowledge and, especially in adult learning, it is very important to focus on hands-on activities, based on experiential learning.

### Ecological:

For ecological competences, the ask model has a correspondence in the heart, head and hand model, where the competence and activities must include all these components to be considered acquired

Personal: select competences that also promote personal development, such as self-awareness on personal identity, values, strengths and weaknesses in connection with the environment.

### Social:

Take into account a constructivist approach that valorizes the competences already existent in the group and teamwork competencies.

Ecological competences:

- Awareness about biodiversity
- Awareness about human impact on biodiversity
- increased responsibility in own actions and choices..
- Knowledges about plants

Social and individual competences:

- Group work
- Sense of observation
- Use of digital tools

## Learning objectives

To define the learning objectives in accordance to the envisioned competences, you can take the operational objectives approach or the SMART objectives approach:

- Operational objectives are attainable, action-oriented, short-term goals organisations set and accomplish as a means of partially achieving larger, long-term objectives.

- SMART: S – Specific, M – Measurable, A – Attainable, R – Realistic, T – Time-bound



- The participants can recognize the plants in their city
- The participants learn basic infos of the plants of their city: where they come from, which environment they need, which fruits they have, if they have genetic input, if they are used by humans etc.,
- The participants can recognize plants which are threatened to disappear
- The participants learn to use a digital app for acquiring knowledges
- The participants learn to teach others about their discoveries and share knowledges
- Sense of belonging: as knowing some “special things” about the city they live in, participants should feel more connected to the place they live.

### Group characteristics

Activity can be done in groups of 6 till 30 participants.

### Preparation for the activity

#### Instructions for us:

The purpose of this part is for the participants to know what materials they need before doing the activity and, at the same time, give them confidence that they don't need much prior knowledge in order to do the activity and encourage them to just do it.

There is no need for special knowledge to do this activity.

- 1) Participants should install a Plant identification app on their mobile like “PlantNet”. If participants have no mobile or no internet, organize that they have one in each couple. All the participants should install the same app.
- 2) Prepare printed maps of the city: divide the city in areas. Number of areas correspond to half of the number of your participants: If you have 20 participants divide in 10 areas. Print the map of the areas. Prepare a pen for each area.
- 3) Prepare a small game where the participants are divided into couples, and attribute an area of the city to them. (maybe it's good if in every area there is also a park)
- 4) Prepare a briefing in simple languages
- 5) Prepare a bag of seeds as rewards
- 6) Prepare a safe space for meeting, sharing and reflecting

### The activity / the content

#### Instructions for us:

Try to divide and structure the activity in small steps so it is easy to follow by our target groups.

You can include links, videos, images etc. in this section in order to make the activity easier to understand and the resource more interactive.

Try to predict possible obstacles, doubts and questions that may arise. This part can also be finalised after the national pilot tests.

- 1) Divide the participants into couples and give them a printed map of an area of the city: best is to make this task together with an ice-breaker if people don't know each other
- 2) Explain to them the task: participants have 45 min (or more according to your participants). To discover as many different types of plants as possible in their defined area. Every plant they discover, they take a picture of it, scan it and then write it on their map with the name and basic infos. Every plant = 1 point.
- 3) Explain to them the use of the app: once they scan the plant, they can identify by crossovers and they can go on different pages with different infos about the plant. Make an example with one plant in front of the group.
- 4) They can gain special points with 1) Plant who comes from other land = 2 points, 2) Plants who come from other continents = 3 Points and finally Plant which is threatened of extinction (red list plants) = 5 points.
- 5) When coming back together, Install the maps of the participants so that participants can do a "gallery walk" of the
- 6) participants make a "puzzle" of their mobiles on the ground with an image of a plant which was not covered by others. Phones need here to be put in no sleeping modus.
- 7) You gather the points and as reward every point with 1 seed of a flower (for example), which they can plant.

*NOTA: If you don't want to play with points and competition, you can also give them instructions: find 5 plants like this, 3 plants which were imported, 1 plant which is threatened by extinction etc.*

## Questions for reflection, self-assessment and conclusions

### Notes

For inspiration, you can use the questions from Kolb's experiential learning model.

Did you notice?

Why did that happen?

Does that happen in life?

Why does that happen?

How can you use that?

- Which plant surprised you?
- Which plant should have more space/presence in the city? And why?
- Are certain areas more diverse than others and why?
- Why is it important to have a diversity of plants in the city?

## Recommendations on how to adapt to different target groups

- Check if there is some app in the language of your participants
- If people are afraid to walk through the city, you should organise a “mentor” for these groups, which can accompany the exploration
- Writing and reading: if there are some participants who have difficulties reading and writing, put them in couple with one person who can and give them the responsibility to take the picture and identify with the scan.

## 1.6 Micro-Training 6: Water Management

### Description

Water management is very necessary but adults that are not actively involved or studied the subject have little knowledge about challenges and techniques to solve them. Water management requirements done through laws appear to regular people as absurd or unnecessary because they do not know the logic behind.

Polluted water is toxifying the planet and harming people. Caused by :

- Agriculture which pollutes groundwater
- Automobiles whose emissions pollute clouds
- Industry polluting air, soil and water
- Salinization caused by deforestation, rising water tables & agricultural watering
- Bottled water and cement are taking water out of the hydrologic cycle
- Erosion is a natural process that moves water, nutrients and resources.

Erosion can disturb existing systems and may replenish water sources, spread nutrients and feed life. Consider reducing erosion by storing or directing water, reinforcing soil with plants or physical materials.

In the following ‘learning-by-doing’ team game participants will have the chance to explore water management challenges and mitigation techniques.

### Teaser activity

Ask the participants to read the text and react with 3 emojis:

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 percent of precipitation is rain

86 percent of precipitation is from condensation of sea air, mists & fog

Who uses all the water? 85% agriculture, 7.5% industry, 7.5% domestic & residential

- 26% from toilet flushing, 17% from showering, 15% from taps, 22% from

washing cloths, 14% by sub surface leaks and 5% 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  
(Stats from [www.grandforks.ca](http://www.grandforks.ca))
- 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  
(Stats from [www.epa.gov](http://www.epa.gov))
- 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

### Competences addressed

#### Ecological competences:

- Development of documentation skills
- Demonstrating an understanding of the consequences of one's behavior in relation to the environment
- Demonstrating an ecological way of thinking in making decisions
- Understanding the importance of water management for environment preservation.
- Developing a proactive attitude towards applying water management techniques in their home community.

#### Social competences:

- Ability to collaborate with specialists in other fields.
- Developing interpersonal relationships and strengthening the skills needed for teamwork.
- Ability to appreciate diversity and multiculturalism
- Stimulating creativity and developing a competitive and innovative spirit, as well as teamwork.

### Learning objectives

- Training and cultivating adults' interest and responsibility for water management.
- Promoting and stimulating healthy behaviors towards the elements of the environment.
- Empowering adults to decrease water pollution in their community and to engage in water cleaning and reuse.
- Stimulating the critical and self-critical spirit regarding the attitude towards water management.
- Increase knowledge about water management techniques

### Group characteristics

Activity to be done preferably in groups of 4 to 6 trainees.

### Preparation for the activity

Prepare 4 islands contours drawn on flipchart papers.

You need to give paper and coloured pens/markers to the groups of trainees you train, plasticine and cardboard.

The trainees need access to the internet or pictures and articles about the water management techniques.

“Water friends” stickers for the end of the game, for each participant.

### The activity / the content

The trainer reads the storytelling scenario:

“As a consequence of climate change, your city near the water is now submerged. You escape with members of your community on 4 ships, bringing as much materials and resources you can with you.

During your voyage, winds separate the ships, that end up on four different islands”

The participants are split between 4 groups, with the following scenarios for water challenges for each island:

- **Island 1: Drought** – It’s summer, it’s extra hot and it has not rained in over 2 months. There are water restrictions, not allowing garden watering. What techniques can you use to ensure your plants can remain healthy and resilient?
- **Island 2: Water contamination** – there has been oil activity in your area. You notice the water tastes funny and animals have been getting sick. You suspect water contamination. What techniques can you use to keep the water in your area clean and safe?
- **Island 3: Flooding** – It’s a warmer spring than usual and there is more run off from the mountains than expected, causing devastating flooding. What techniques can you implement to handle extra water flow during these historical weather events?
- **Island 4: Soil erosion** – you live in a climate with heavy rain. In sloped areas, especially in the deforested area, there is mass soil erosion and your landscape is being depleted. What techniques can you use to restore the soil to avoid more soil erosion?

Participants water challenge and 2-3 techniques and are asked to consider their scenario and to create a design that solves their challenge using the techniques they are given:

- **Island 1: Drought** – Dew collection, Rain Tanks and Cisterns.  
Dew collection: is primarily used in dried or arid environments and can provide much of a system's water in these conditions. High humidity and low cooling temperatures create the best yield for dew collection.  
Rain tanks and Cisterns: used to catch water from different sources, mainly from roofs. Tanks should be level and if possible, raised for water pressure. A first flush system is recommended with roof water catchment.
- **Island 2: Water contamination** – Gray water treatment, Rain garden  
Gray water treatment: effective for cycling, cleaning water and flushing nutrients into your agricultural systems. There are a series of phases, including filtration, settling, aeration and UV exposure.



Rain garden: Low cost and low maintenance systems used for water capture and filtration. Typically built on a higher part of a property and connected to a downspout or a gray water system.

- **Island 3: Flooding** – Flow through dam, Swales

Flow-through dams are built solely for flood control and are used to protect against flooding in downstream areas. Because this type of dam is built solely for flood control, the opening (spillway) is at the same level as the riverbed. This means that when there isn't excess water, the river will continue its natural flow. However, when water levels rise, the dam slows the water flow through the opening to prevent flooding.

Swales: a level ditch on contour with planted downhill berm intended for catching overland flow and infiltrating into the ground to recharge the surrounding soils, plant root systems and aquifer.

- **Island 4: Soil erosion** – Reforestation, keyline design

Reforestation: Trees effectively condense water from the air at night and increase air humidity, cloud formation and rain. Tree roots also help reduce erosion during heavy rain and flooding events.

Keyline design is a landscaping technique of maximizing the beneficial use of the water resources of a tract of land and prevent erosion. The "keyline" denominates a specific topographic feature related to the natural flow of water on the tract. Keyline design is a system of principles and techniques of developing rural and urban landscapes to optimize use of their water resources.

- Participants are encouraged to use illustrations on their flipchart papers, make 3D sculptures with plasticine or use other creative means to share their designs.
- Players can also trade techniques with other groups and are welcomed to use their own elements in addition to the ones they were given.

In the end we do a "gallery walk" with everyone to visit each group's design. Participants can become teachers, sharing their essential learnings and the techniques they used to the whole group.

At the end of each presentation, the participants receive "Water friends" stickers.

### Questions for reflection, self-assessment and conclusions

- What did today's activity consist of?
- Would you have liked to be on another island? Why?
- Do you have any other solutions for other islands?
- How can we apply what we have learned in our daily lives? Which scenario is relevant for your home region?

### Recommendations on how to adapt to different target groups

If the group doesn't have a lot of time available, only one of the steps of the tool can be performed.

### References

Permaculture Design.

<https://www.permaculturedesign.ca/>

## 1.7 Micro-Training 7: Permaculture Zoning

### Description

This activity is a mix between a **role-playing game** and a **board game**, which will help participants to familiarise themselves with the internal dynamics of a permaculture garden. This activity consists in identifying the elements of a permaculture garden and understanding how they interconnect.

Participants are then asked to become one of these elements and natural factors and locate themselves where they think they'll have more chances to prosper. In this way, participants will be able to better empathise with the natural ecosystem and understand its challenges. The experience will also give them an idea about how natural ecosystems can be imitated for co-living in teams and, on a larger scale, in societies.

### Teaser

Permaculture zones help us organise 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 works and how human and natural interactions occur.

### Competences addressed

#### Ecological:

- Knowledge about geographical structures and landscapes
- Knowledge about crop management
- Knowledge about botanical processes and natural cycles
- Knowledge about climate and climate change
- Knowledge about biodiversity and fauna
- Knowledge about energy and energy-saving
- Knowledge about permaculture

### Personal:

- Attention and care
- Sense of control
- Ownership on actions
- Creativity
- Precision and structure
- Social:
- Project-management
- Ownership of public space
- Collective and democratic decision-making
- Sense of belonging
- Sense of usefulness
- Sense of support and solidarity
- Sense of responsibility and commitment

→ *The experiment makes clear the interdependence between elements in the natural ecosystem and supports participants in the learning process through real experiences. Each participant is part of the ecosystem and part of the collective mission, with a function and a role. Each part of the system relies on others and the team is strengthened when everybody's action is aimed at the overall mission.*

### Learning objectives

- Learn about how to design a garden considering the impact of different actors and trying to maximise the capacity of these actors to interoperate and support each other.
- Make participants experience the relationships in the garden.

### Group characteristics

There is no strict number of participants in this activity. Of course, the larger the group the more possibilities we will have to explore different elements and see them in action.

### Preparation for the activity

The materials needed for this activity are cheap and simple (see below).

You would need a surface where you can draw the different zones as different concentric circles that expand from zone 0 (the centre) to zone 5 (the furthest from the centre). For that, you can

use a cartoon or a big piece of paper. You can also figure out other ways (e.g. circles on the grass, circles with different materials, etc.)

You can prepare some cards with elements that are typical of a permaculture garden; we'd suggest preparing some empty cards as well because participants could think about an element that didn't come to your mind. It's always better to let it open for further ideas.

Don't forget to bring some pens and pencils for drawing lines, connections or new elements. Keep in mind that colourful cards and drawings make the activity always more attractive, increasing the opportunities to become active learners.

If you are in an open space, you could think about designing that specific space as a permaculture garden. Participants will then have the space to spread around and experience the space. Ideally, start the activity in the centre.

### The activity / the content

1. Introduce the game and the concept of zoning in permaculture (see "Useful resources" for information)
2. You can choose between:
  - i. leaving the cards covered on the table and asking participants to uncover one and place it in the "right" zone
  - ii. presenting the cards uncovered and asking participants to pick one and place it in the "right" zone

→ give participants the possibility to propose a new element if that's not on the cards!

→ rounds: in order for everybody to be active and participate (even the shiest ones) go around in circles and let everybody speak when their turn comes
3. Discussion: Why did you put it there? How does this element relate to other elements? You can draw lines to highlight these interconnections.
4. Consent: the entire group should reach consent about where the element would be located. If someone does not agree, he/she should object and the group should find a better solution
5. If you find yourself in a place that allows that, you can pretend that the area around you is the garden you have to design.
  - i. Locate Zone 0 - all together, through consent
  - ii. Ask participants to pick an element and locate themselves in the spot where those elements could live at best. Remember participants to act as a team and consider the interconnection with other elements (the team is now an ecosystem and

interconnections among elements are extremely important for a self-sustaining ecosystem).

- b. Ask participants to take a moment for themselves once they have found their location (meditate, sing, dance, do whatever they want!) and then come back to the center for follow-up and reflection.

### Questions for reflection, self-assessment and conclusions

- How did you feel when you were in your zone?
- How did you perceive the other elements?
- What inspiration can we take for the organisation of human societies?
- How do interactions among social individuals reflect interactions among natural elements?

### Recommendations on how to adapt to different target groups

Try to find a barrier-free space to run the activity.

If people have disabilities or are for any reason not able to follow the game, try to put them together with another participant, who can help. Together it could be easier.

### References

<https://www.freepermaculture.com/permaculture-zones/>

This BSL tool was developed by the Feld Food Forest community for the design of the West Feld Garden (Tempelhofer Feld, Berlin), a permaculture community garden that sees the participation of more than 10 different organisations. The tool was therefore intended to be as participatory as possible, to ensure that everybody's voice is heard and the participants are empowered to participate in the co-creation process.

## 1.8 Micro-Training 8: Impact Of Food Production In Conventional Agriculture

### Description

This is an activity designed to reflect on the environmental impact of the food we eat. Each group receives cards with food that they have to sort according to their impact. They are then given access to scientific data so that they can compare them with their own predictions and share them with the rest of the groups.

## Photos/Images



<https://www.freepik.es/fotos/cesta-comida>

Foto de cesta comida creado por bearfotos - [www.freepik.es](http://www.freepik.es)



## Competences addressed

### Ecological competences:

- Environmental liability. Awareness of the impact of everyday life decisions on our environment and on the lives of others.
- Belonging. Generating a sense of belonging to a group that can have a greater impact than the individual.
- Analysing information. Interpreting scientific data and relating it to everyday life.
- Applying information. Understand the environmental impact of different types and aspects of food production.

### Social competences:

- Active listening. Listening to other people's opinions and ideas in order to build common knowledge.
- Cooperation. Awareness of the power of cooperation to face major problems of humanity.

## Learning objectives

- The trainee understands the impact of the food industry on global warming compared to other types of production in the world.
- The trainee learns about different types of environmental impacts of intensive livestock farming and agriculture.
- The trainee compares the impact of animal products versus plant products on global warming.
- The trainee knows the impact of transport compared to the total impact of a food from production to consumption.
- The trainee understands the benefits of producing and consuming local products.

## Group characteristics

Activity to be done in groups of 2 to 4 trainees.

## Preparation for the activity

Print and cut the cards with the name of the products. Print a separate pack of cards for each group, as each group will do a different exercise. (Annex)

Print the solutions for each exercise. (Annex)

For the activity of representing the data, it will be necessary to have different materials such as beans, chickpeas, stones, wool, fabric scraps, coloured paper, wooden blocks, bottle caps...

## The activity / the content

### 1) Lead in: The price is right

The participants get together in groups of two or three and have to estimate on a piece of paper or a blackboard some of the questions that the trainer will ask. Whoever comes closest to the exact amount will win 10 points.

*The questions the trainer will ask are:*

- *What percentage of total greenhouse gas emissions are due to food production?*
- *What percentage of a product's emissions derives from transport, i.e. the fact that it was produced thousands of kilometres away?*
- *How many tonnes of CO2 equivalent are emitted to produce 1 kg of cheese?*
- *What about cabbage?*
- *And almonds?*
- *And beef?*

At the end, all the results are displayed on a panel or blackboard for further reflection.

### 2) Collaborative learning: Sort the line

Each team receives cards with the names of several foods. They should place them in a line according to the environmental impact they estimate they have on global warming, from the food with the most impact to the food with the least impact.

It is not necessary to have previous knowledge, the aim is to share the reflections, doubts, ideas and intuitions of all the members of the group in order to build common knowledge.

### 3) Compare and reflect: What the science says

Each group is given a table with emission values for each food, taken from a scientific study. They are asked to use this information to rearrange the cards.

### 4) Sharing the results

Each group briefly presents its results and reflections. A general analysis of all types of impact is made and the most important foods to avoid are concluded.

### 5) Optional: Represent data with recycled materials

If there is enough time, this phase of the activity is the most creative and challenging.

The groups are asked to represent in a visual way the numerical data they have been given. They can do this using all kinds of recyclable materials, e.g. they can use a pile of beans where each bean represents a tonne of CO<sub>2</sub>, or cut out a strip of paper where the length represents the amount of emissions... The more diverse materials they come up with, the more creative the participants will be.

Each group then presents their creations and reflections to the rest of the class.

Some questions for reflection:

- Do your estimates resemble the results found by the scientific community?
- What are the most surprising facts?
- Which foods have the greatest environmental impact?

## 6) Reflection. Local production

The trainee then asks whether, with the information analysed, it can be concluded that local production is more beneficial for the environment. After a short input, the participants are asked to give arguments for and against the consumption of local products taking into account the following aspects:

- Agro-diversity
- Production model
- Conditions for farm workers
- Nutritional quality of food
- Food processing

## Questions for reflection, self-assessment and conclusions

- What did today's activity consist of?
- How did you feel when you were confronted with scientific information?
- What information was the most surprising?
- How can we apply what we have learned in our daily lives?

## References

J. Poore and T. Nemecek, Reducing food's environmental impacts through producers and consumers. Science 01 Jun 2018: Vol. 360, Issue 6392, pp. 987-992 DOI: 10.1126/science.aag0216

Available on: [doi.org/10.1126/science.aag0216](https://doi.org/10.1126/science.aag0216)

Our world in data: <https://ourworldindata.org/environmental-impacts-of-food>

## Exercise 1:

Rank the following foods according to kgCO<sub>2</sub> equivalent emissions from highest to lowest

- Beef
- Cheese
- Chocolate
- Coffee
- Lamb
- Nuts
- Peas
- Pig and poultry
- Roots
- Sugar

### Solution for exercise 1

• Nuts	0.3
• Roots	0.4
• Peas	0.9
• Sugar	3
• Pig and poultry	7
• Coffee	17
• Chocolate	19
• Cheese	21
• Lamb	24
• Beef	60

### Exercise 2:

Rank the following actions according to the (positive) impact they have on reducing greenhouse gas emissions

- Avoid one continental flight
- Avoid one transoceanic flight
- Conserve energy
- Eat a plant-based diet
- Eat local
- Have one fewer child
- Join organisation
- Live car free
- No food waste
- Plant a tree
- Purchase green energy
- Recycle
- Reusable shopping bag
- Switch to electric car

### Solution for exercise 2<sup>1</sup>

• Reusable shopping bag	5
• Plant a tree	40
• Eat local	180
• Conserve energy	210
• Recycle	210
• No food waste	370
• Avoid one continental flight	700
• Purchase green energy	900
• Switch to electric car	1100
• Eat a plant-based diet	1600
• Live car free	2400
• Avoid one transoceanic flight	2800
• Have one fewer child	58600
• Join organisation	???

## 1.9 Micro-Training 9: Healthy Food Preservation

### Description

Food preservation allows us to take advantage of nature's abundance long after its growing season has ended, and enjoy it year round! By preserving food grown on you own site and supporting local farmers by buying seasonal products to preserve, we help to re-localize our diet and reduce our dependencies on factory food. When we grow our own food or support local farmers, we vote on what we want more of in our lives with our money or with our time; supporting People Care, Earth Care and Fair Share in our local communities.

No matter if you start with a few jars of jam to enjoy or gift, or envision a stocked root cellar brimming with canned, dried, smoked and salted goods as well as hardy vegetables, I wish you the best in your food preservation adventures and hope that these short overviews can serve as a starting point for a new or expanded journey into your permaculture diet!

### Teaser activity

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.

<sup>1</sup> Source: Seth Wynes and Kimberly A Nicholas 2017 Environ. Res. Lett. 12 074024

The climate mitigation gap: education and government recommendations miss the most effective individual actions

Note: The data is based on the analysis of 148 scenarios from 39 scientific sources.

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, butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT).

- 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. 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.

## Competences addressed

### Ecological competences:

- Development of documentation skills
- Demonstrating an understanding of the consequences of one’s behavior in relation to the environment and their health
- Demonstrating an ecological way of thinking in making decisions
- Understanding the importance of natural food preservation.
- knowledge about food preservation techniques and their advantages.

### Social competences:

- Ability to collaborate with other adults
- Developing interpersonal relationships and strengthening the skills needed for teamwork.
- Ability to appreciate diversity and multiculturalism



- Stimulating creativity and developing a competitive and innovative spirit, as well as teamwork.

### Learning objectives

- Training and cultivating adults' interest and responsibility for healthy food preservation
- Empowering adults to engage in healthy food preservation.
- Provide adults with knowledge about healthy preservation techniques.
- Stimulating the critical and self-critical spirit regarding interpretation of food labels

### Group characteristics

Can be used with any group of adults. In the game you choose the preservation method, you will split participants in groups of maximum 5.

### Preparation for the activity

Prepare cards with food examples (20) and cards with methods of preservation (photo and description of method on the back) – 1 set for every group.

### The activity / the content

Participants share labels of food and present the unhealthy ingredients. If we have different opinions, we debate to find the scientific truth.

We split the group in 4-5 smaller groups of maximum 5 participants.

Every group will draw 5 food cards and will receive a set of preservation techniques.

They have to read about the preservation techniques and match the food with the appropriate techniques.

After the participants share their results and debate if there are differences.

Every group will choose a preservation technique and will design a short video add to present the technique and its advantages compared to mass production preservation techniques. The trainers help them define the message.

They film and share the ads.

### Questions for reflection, self-assessment and conclusions

- What did today's activity consist of?
- What natural preservation method have you used before?
- What natural spices/ herbs do you use to improve the taste, nutritional value and preservation time?

How can we apply what we have learned in our daily lives?

### Recommendations on how to adapt to different target groups

If there is no access to a kitchen, the tool can be used without the second part.

### References

<https://www.permaculturedesign.ca/>

## 1.10 Micro-Training 10: Waste Management

### Description

Europe still generates large amounts of waste: construction and demolition waste, food and gardening waste, mining waste, sludge, industrial waste, old cars, batteries, old TVs, plastic bags, paper, sanitary waste, old furniture, old clothes ... and the list goes on.

There is still the unpleasant and harmful habit of people to throw waste on the ground or in the water. It is important to talk to adults in non-formal activities so that they know: to classify waste; to identify ways to stop this phenomenon based on their own knowledge; be aware that waste is harmful to the environment; to selectively collect waste; to notice the need for waste recycling.

## Teaser activity

Ask the participants to read the text:

*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;*
- *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.*
- *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.*
- *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*

## Competences addressed

### Ecological competences:

- Development of documentation and communication skills
- Demonstrating an understanding of the consequences of one's behaviour in relation to the environment
- Demonstrating an ecological way of thinking in making decisions
- Understanding the importance of using waste as a raw material to obtain other goods.
- Developing a proactive attitude towards identifying simple solutions for waste recycling at home.

### Social competences:

- Ability to collaborate with specialists in other fields.
- Developing interpersonal relationships and strengthening the skills needed for teamwork.

- Ability to appreciate diversity and multiculturalism
- Stimulating creativity and developing a competitive and innovative spirit, as well as teamwork.

### Learning objectives

- Training and cultivating adults' interest and responsibility for waste.
- Promoting and stimulating healthy behaviours towards the elements of the environment.
- Training and consolidation of selective waste collection and recycling skills.
- Training and cultivating adults' interest and responsibility for waste.
- Development of the skill of selective waste collection in the community.
- Empowering adults to keep their community spaces clean, selectively collecting waste.
- Stimulating the critical and self-critical spirit regarding the attitude towards waste collection and recycling.
- Creating the necessary premises for adults to be able to consider waste a resource.

### Group characteristics

Activity to be done in groups of 4 to 6 trainees.

### Preparation for the activity

Prepare a box in which you put different cardboard and plastic packaging, papers, food scraps, plastic bags and bottles, metal objects, textiles, bottles.  
Prepare gloves for trainees, scarves to blindfold them.  
You need to give paper and pen to the groups of trainees you train.

### The activity / the content

#### Ice-breaker: The price is right

- Divide the trainees into four groups.
- Ask each group to choose a representative.
- Cover the eyes of the four representatives with scarves. Each one, in turn, will take out of the box, touching the objects, which they will recognize. They will name the package, describe it, then take it out of the bag and show it to colleagues. The others from the group must write down the duration of their decomposition and the effects on the environment, as well as the methods of reduction and the ways of recycling them. Is this package nature friendly?
- Compare the results they found with those provided on the internet.

**Group reflection:** Highlighting the most common types of waste in the environment

- The most common wastes will be written on the board and on white sheets, in random order: papers, food scraps, plastic bags and bottles, metal objects, textiles, glass etc.
- The trainer lists the waste that can be collected selectively: glass, paper, plastic and specifies the color of the container for selective storage.
- The trainees are divided into groups and are asked to sort the waste in 3 baskets (paper/ glass/ plastic-metal – depending on the country, there might be more baskets necessary).
- They are also invited to write in teams messages to encourage recycling (messages for each type of waste: paper/ glass/ metal). They will do advertising about recycling.

### Group research: What the science says

- The group discusses the negative effects of hard degradable waste on the health of the environment during the period until it is completely degraded.
- Trainees list some of their ideas on stopping this phenomenon: selective waste collection for recycling, fines, more garbage cans, reducing the amount of waste through lower consumption, more posters with environmental urges, the power of personal example.
- The purpose of waste recycling is established together with the trainees:
  - protecting the environment.
  - protecting people's health.
  - reducing the costs of obtaining new products.
  - maintaining public cleanliness.
  - conservation of the natural resources from which the products are obtained.

### Conclusion

To reduce means to diminish, to decrease. When we talk about reducing our waste, it means producing less garbage. Purchasing products with less packaging helps us reduce the amount of waste we generate. We could turn organic materials into compost instead of throwing them in the trash. We should also rethink more carefully if we need everything we intend to buy.

We often use certain objects only once and then get rid of them. But if we intend to reuse them, it means that we have identified certain ideas and ways to reuse them. Older clothes, books, toys could be given to friends or second-hand shops. Some people can get work done this way, and others can benefit from goods they cannot afford to buy. Instead of throwing things away, we can find ways to have fun, be creative, generous, or use them again.

Recycling is only a small part of rethinking the way we use our natural resources. Almost half of the things we throw away could be recycled. Recycling involves transforming old objects into new ones. Materials such as paper, aluminium, glass, plastic, etc. can be transformed into new products. Some of them can be recycled in the same material (glass can only be turned into glass), while others can result in new products (PET plastic can be turned into mats or synthetic yarns!). Recycling consumes less energy or less natural resources to obtain the new product, pollutes less air or water than if we manufacture goods from scratch.

### Questions for reflection, self-assessment and conclusions

- What did today's activity consist of?
- How did you feel when you were confronted with scientific information?
- What information was the most surprising?
- How can we apply what we have learned in our daily lives?

## Recommendations on how to adapt to different target groups

If the group doesn't have a lot of time available, only one of the steps of the tool can be performed.

## References

<https://www.tetrapak.com/content/dam/tetrapak/publicweb/ro/en/sustainability/Brochure-Environment-Project.pdf>