

Instructions for the activity

This activity is designed in order to make visits to farms/gardens more participative.

The activity is designed for 4 teams.

Each participant chooses one paper from cut peppers – page 3 of the pdf. Make sure groups are more or less equal and that the language is not an obstacle.

The group will move alltogether. During the visit to the farm, there will be different stops – "Stations".

Each team should receive an envelope with assigned tasks and answer sheets. An animal on a top represents the team. The line ----- is where the papers should be cut.

Give instructions that at each station they will have time to work together on a question/task. They will have time to read an answer and then present a short explanation to other teams. The facilitator will also provide some clarifications when needed.

Welcome to Finca el Mato Tinto!

This is a special place where various ideas are used to work with nature, not against it. You're going to learn about two important things here: **permaculture** and **circular economy.** This isn't just theory; but a live demonstration of how ecological design can provide for human needs while regenerating natural ecosystems.

How does it sound to you?



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How many different kinds of animals can you spot? Try counting them and see if you know their names.

Number of species: Names of the species:

.....

What is their role at the farm?

Animals station



Close your eyes and take a deep breath, focusing on the inhale and exhale. **Can you detect any scents?** Share with your teammates what the smell is that you can sense.

Now, close your eyes once more. Think back to a conventional farm you've either visited or know about. Can you remember what it smelled like?

Why do you think the smell is different here compared to a conventional farm?



Having different animals means they can have many functions:

1. Turning waste into useful resource: Chickens eat food scraps from the kitchen and give eggs & good soil in return.

2. Improving the soil: The poop and pee from these animals makes the compost soil richer and diverse.

3. Getting rid of bugs and pests: A high diversity of animals means that they eat the bugs from each other, so they keep potential illnesses under control.

4. Teaching and learning: We can learn a lot from these animals about cooperation and solidarity. When basic needs are met, there are no conflicts (except during breeding season).

5. Therapeutic benefits: Being around animals can be really good for our mental health, making us feel more calm and connected.

Having these animals around makes the farm function better. It also helps people feel good and learn about how to live in a way that's good for the Earth.



In a well-managed permaculture garden with animals, there usually isn't a bad smell due to:

1. Balance: The number of animals is balanced with the size of the land, so waste doesn't build up in one place.

2. Natural waste management: Chickens are great for covering the animal waste with dry rest of plants. This way it can be quickly transformed by microorganisms and insects, minimizing smell..

3. Aeration: Good design in permaculture also allows for excellent airflow, which helps to disperse any odors that might otherwise accumulate.

4. Local adaptation: Animals and plants are often chosen because they are well-suited to the local environment, which means they are naturally healthier and less prone to creating bad smells.

A well-designed permaculture garden takes care of animal waste naturally, minimizing the need of manual maintanence needed.



How many different kinds of animals can you spot?

Try counting them and see if you know their names.

Number of species: Names of the species:

What is their role at the farm?





In conventional farming, animals are usually separated by species. Can you think of the reason why, on this farm, they keep different animals together?



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In conventional farming, animals are often separated by species because it is believed it is easier to manage them, do health protocols and give specialized feeding regimens. In the permaculture model, animals are kept together due to:

Self-regulation of illnesses: Different species offer complementary benefits & higher resilience. Hens control different pests than ducks, diversifying the pest control strategy naturally.

Less maintanence needed: Giving food in only one place reduces the workload. So does the natural waste management.

Efficient land use: Keeping different animals together can make better use of the available space, as they have different eating patterns.

Nutrient cycling: Diversity in animals leads to a more balanced nutrient mix and higher fertility. Ducks and hens aerate the soil and contribute with different kinds of manure that decompose at different rates.

Social enrichment: By immitating natural ecosystems, it can be argued that a mixed-species environment is more mentally stimulating and less stressful for animals.

Educational and therapeutic value: We can learn a lot from these animals about cooperation and solidarity. When basic needs are met, there are no conflicts (except during breeding season).



This garden has a lot of coffee in it, but it's not for drinking. Any idea how coffee rests can help the farm?



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Benefits of coffee rests

- Soil Improvement: Coffee grounds can enhance the aeration and fertility of soil with nitrogen.
- Pest Deterrent: Repel certain pests like slugs and snails, due to their abrasive texture and residual caffeine.
- Fungal Growth Promotion: They promote the growth of beneficial fungi in the soil, which can aid in the health and growth of plants.
- Attracting Earthworms: Earthworms are attracted to coffee rests as an afrodisiac.
- Water Retention: They can help the soil retain moisture, reducing the need for frequent watering.
- Weed Suppression: When used as a mulch, coffee grounds can help suppress weed growt.

However, it's important to use coffee grounds wisely. Too much can compact the soil and should be balanced with dry organic matter like leaves or straw.

Additionally, coffee grounds should be used as part of a balanced composting strategy rather than the sole composting material. (+ chicken like bathing in the coffee rests)

Soil improvement

Coffee rests are rich in nitrogen, a nutrient that plants need to grow. Nitrogen is a crucial part of the process of photosynthesis and helps plants make the proteins they need to produce new tissues.

Adding coffee rests also can improve soil structure, as they help creating better drainage and air circulation, which can be beneficial for many types of plants.

Water Retention

Coffee rests help the soil retain moisture, which means you don't need to water your plants as frequently. This is particularly useful in areas where water is scarce or expensive.

Pest Deterrence

Some pests don't like the smell or texture of coffee grounds. Sprinkling grounds around plants can act as a natural deterrent against certain insects like ants, snails and slugs.

pH Balance

Used coffee grounds are generally neutral to slightly acidic in pH, which can be beneficial for acid-loving plants like blueberries, azaleas, and rhododendrons.



Water Station



Since you arrived in Tenerife, have you noticed any rivers or wells? How much did it rain during your stay? Please brainstorm with your team **where water in Tenerife is coming from.**

Water Station



"Water is the new gold!". Can you think of why?



Where does water come from in Tenerife?

Tenerife is made of volcanic rocks.

1. Groundwater and galleries: When it snows on Teide mountain or it rains, the water travels through the porous volcanic layers until it reaches a waterproof layer and forms lakes inside the mountain. Private horizontal water galleries were build in the mountains and wells near the coast in order to extract groundwater, which is 84% of the water consumed.

2. Collected rainwater: Tenerife has a relatively low annual rainfall, so there are few reservoirs on the island. However, the rainwater is collected by the laurisilva forest through the condensation process.

3. Desalination plants: Due to the scarcity of freshwater, the hotels are required to do desalination of seawater.



Water Station

Here are some reasons why water is so precious:

1. Essential for Life: Water is a fundamental human need in order to survive. It's essential not only for drinking but for agriculture, sanitation and industry.

2. Scarcity: While 70% of the Earth's surface is covered by water, only 2.5% of it is fresh, and just a fraction of that is accessible.

3. No Substitute: Unlike other commodities, there is no substitute for water.

4. Investment in Infrastructure: The need for new technologies and infrastructure to access, purify, and distribute water leads to significant investment opportunities, similar to gold mining and refinement.

5. Economic Impact: As water becomes more scarce, the cost to access and use it increases.

6. Social and Political Power: Control over water resources can lead to significant political power. Regions or countries with ample water resources can influence those in need.

This is why initiatives focused on conservation, efficient usage, and technological innovations in water management are critical.

Do you have easy access to water in your home and home country? If yes, you can consider yourself rich!





Water Station

This farm is implementing a closed cycle of water. Look around the farm and try to identify the elements that allow for the collection, storage and recycling of water. Remember to look up and down. Also, try to imagine what's happening underground – consider how the soil retains water or if there might be hidden systems for water storage.

Discuss with your team how all these methods work together. How does the farm ensure that no water is wasted? How do these practices benefit both the farm and the environment?"

Food Station



How many monthly subscription services are you currently signed

up for? What if you could subscribe to a weekly fresh fruit and vegetable program?

El Mato Tinto farm uses a food box system (on average 6.5 kg per food box) and each family that subscribes to a food box can pick up fresh food once a week.

This system not only provides families with healthy food but also contributes to the farm's financial self-sufficiency!

How much does such a food box cost? Write down your guess and we'll reveal the actual price later!



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Do you know what the term 'food forest' stands for? Please brainstorm with you team.

Garden Station



Welcome to the food forest! It's designed to mimic the layers found in a natural forest, consisting of various levels of vegetation. With your team, please look around this garden and try to identify these different layers. **What are these layers?**



A food forest is an agroforestry system that mimics the structure and function of a natural forest ecosystem, but is designed to produce food, medicine, and other useful products for humans.

One of the key principles of a food forest is to create a self-sustaining and low-maintenance system that requires minimal inputs of water, fertilizer, and labor.



By mimicking the natural ecology of a forest, a food forest can help to conserve water, enhance soil health, reduce erosion, and promote biodiversity. It can also provide a range of ecosystem services, such as carbon sequestration, habitat for wildlife, and improved air and water quality.

Overall, a food forest is a holistic and regenerative approach to food production that can help to build resilient and sustainable food systems for the future.



1. Tall Trees Layer: This is the highest part with big trees like fruit and nut trees. They give shade and a place for birds to live.

2. Small Trees Layer: Here, you find smaller trees that can grow in a little bit of shade, like smaller fruit trees.

3. Bushes Layer: This part has berry bushes and other short plants that grow under the small trees.

4. Green Plants Layer: Close to the ground, this layer has plants like herbs and leafy vegetables.

5. Ground Layer: These are plants that spread out over the soil, like strawberries. They help keep the soil moist and stop it from washing away.

6. Underground Layer: This is where plants with edible roots, like carrots and potatoes, grow.

7. Climbing Plants Layer: Here, you'll find plants like grapevines that climb up trees or on supports.

In this garden, there is a practice called **mulching**. What do you think the term 'Mulching' refers to? If you don't know the term in English, you can translate it into your native language.

What could be the benefits of mulching for the garden?

Garden Station

One of basic principals of permaculture is diversity. For each letter in a word "diverse" try to find a name of plant that starts with that letter. You can use the Internet if that is necessary or write in your native languages.

D	
V	
E	
R	
S	
E	



Like in a natural forest where leaves fall from the trees and create a very rich layer on the soil, in permaculture, there is a similar practice known as 'mulching.' It refers to covering the soil surface around plants with a layer of dry organic material for various purposes:

Weed control: Mulch can suppress weed growth by blocking sunlight that weeds need to germinate and grow.

Soil moisture conservation: Mulch helps retain soil humidity by reducing evaporation, thus requiring less frequent watering.

Temperature regulation: It acts as an insulator, keeping the soil warmer in cold weather and cooler in hot weather.

Soil health improvement: Organic mulches break down over time, adding nutrients and improving soil structure.

Prevention of soil erosion: By reducing the impact of raindrops, water runoff and wind, the mulch can help prevent soil erosion.

Pest control: Some types of mulch can deter certain pests, although this depends on the material used.

There are many types of mulch, including organic options like leaves, straw, wood chips, and grass clippings etc.



The dry toilet is a key component of the farm's sustainable cycle. The human waste collected here is transformed into compost, which enriches the soil, providing essential nutrients for plant growth. These plants, once grown, become a source of nourishment for both people and animals. And then they get back to the toilet in a form of a. This process creates a self-sustaining cycle where waste is not wasted but becomes a valuable resource for the next cycle of growth.

Feel free to check the toilet for yourself. The basic rule: **pee to the right, poo to the left!** This separation is crucial as it greatly reduces odors and speeds up the composting process and prevents emission of CO2 by avoiding fermentation.

After each use, on top of the solid waste, a cover material such as sawdust, peat moss, or coconut coir should be added. This helps to soak up liquids, introduces carbon to the mixture (essential for composting), and helps control any smells.

Enjoy your visit! 👜

If you're interested in learning more about the composting toilet and its role in garden sustainability, please watch this video:





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Based on what you observed during your visit on the farm, what do you think could be **three main principles of permaculture**? The hint you can read from this image.



The 3 principles of permaculture

Permaculture is grounded on three core tenets or ethics that guide all its practices and design principles:

Care for the Earth: This principle emphasizes the importance of maintaining the health and stability of natural systems. It involves sustainable management of land and resources, promoting biodiversity, and regenerating damaged environments.

Care for People: Permaculture seeks to help people access the resources necessary for their existence without exploiting others or depleting natural resources. This ethic encourages community building, cooperation, and social and economic justice.



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How could the permaculture elements be applied a school garden / community garden?

- Immitation of natural ecosystems
- Food forest concept
- Diversity of plants and animals
- Different layers in the garden
- Use of mulching
- Use of coffee rests
- Natural pest and weed management
- Water management



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3. How does the farm approach pest and weed management? Did you see any examples of natural pest control?

4. Reflect on the diversity of plants you saw. How does this diversity help with the farm's resilience?

5. How might the methods and techniques you observed be applied in urban settings or in your own living/ school space?

6. What are some of the challenges you think a permaculture farm might face, and how could these be addressed?

7. What is one practice you observed on the farm that you could see yourself adopting? Why?

8. Were there any aspects of the farm's operations that you found particularly innovative or inspiring?

9. How might the principles of permaculture contribute to social and economic aspects of community development?





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COMO USAR EL BAÑO SECO HOW TO USE THE DRY TOILET

