

## Ecotourism & Agriculture

Ecotourism and cultivation of cherries, olives and almonds is the main practice in Laguar. Sustainable practices are not famous in the local community. Key factors that hinder sustainability are local people's actions on how they go about their agricultural practices; rural abandonment and developing urban and industrial actions which results to loss of biodiversity, desertification and soil loss, loss of cultural heritage, pollution and climate change; the Mediterranean factors that makes the ecosystems within the area so difficult to recover (such as climatology, soils and orography).

The Job Shadowing in Spain group visited Lamac Permacultura in Laguar which acts as a small scale model of socio-economic and ecological regenerative management of the Mediterranean rural environment. Starting with family sustainability, the best example of sustainability happening in the center is the innovation services such as multifunctional organic landscaping and waste management, bio-construction, agriculture and regenerative forest management.

### Activity 5.11 Permaculture and Natural Farming

**Goals:** Raise awareness among participants regarding deforestation and soil fertility; familiarize participants with the concept of sustainability; promote ecological regenerative forest management through innovation services; and actively engage participants in the aforementioned topics through non-formal education methods (role-playing, brainstorming etc).

**Method(s):** Group work, learning by doing, demonstration

**Materials:** Soil, water, seeds, basin (plastic bucket), metal screen mesh.

**Estimated Time:** 3 h 45 mins

**Level:** 3+

**Description:** The implementation of this activity requires a park or field/free space that can be divided into three places i.e. place for soil, place for water and place for seeds (3 groups each consisting of 4-7 people).

The activity also requires 3-plastic buckets for making the mixtures for the seed balls, 1-Metal screen mesh to sieve the soil, 2- big tables for making the seed balls and mixture, clay soil (not bentonite), water, seeds (trees and shrubs preferably local and seasonal plants commonly used for nutrition (grain, vegetables, legumes); additionally wild herbs seeds, compost and zeolite (not necessary). 3-Speakers and music could also prove very useful.

Facilitators must ensure that they sieve the soil before starting the activity. They should also make sure that the needed materials for "cooking a perfect soil" is correctly written on a paper as provided in (Table 1).

This activity consists of two main stages. In the first stage , participants will collect through a treasure hunt the materials they need to prepare the seedballs. In the second stage , they will elaborate the seedballs themselves following the guidelines of the facilitators.

After a quick energizer, the treasure hunt will begin, having participants separated in 3 groups.

There will be 3 different stations through which groups will rotate, spending 10 minutes in each. The stations will represent Seeds, Water and Soil, and will pose a challenge for them to acquire these materials they will later need to prepare the seed balls.

- The Seeds Station will consist of a classification game in which participants have to identify a different set of seeds (grains, legumes, vegetables, trees – local ones preferably) and connect them with an image of the plant they become when grown. After they discuss in group the role each of these plants play in their ecosystems; the participants will also receive a set of seeds as a prize for completing the challenge.

- The Water Station will consist of a challenge in which participants will have to transport the water from one full bucket to an empty one (10 meters away from each other) without moving the buckets and with the only help of a cup. Participants cannot move their feet while holding the cup, so they will have to cooperate in order to transport the water and will have only 4 minutes to do so.

After they will discuss the importance of water in all ecosystems and the local challenges they are facing in regards to it. As a prize for overcoming this challenge they will take the same bucket of water they've filled in.

- The Soil Station challenge will be “cooking a perfect soil”. The group will have 5 minutes to sort out together beneficial ingredients/components of the soil from harmful ones (see Table 1) and add them to a ‘shopping cart’, reasoning among themselves why they're positive or negative to the soil. The ingredients are written on the outside of a closed envelope, and when those 5 minutes have passed they get to open the envelopes and read a short description of each component, finding out which ingredients/components are essential/damaging to the soil and also how important soil fertility is to the environment. Prize: a bucket full with soil (clay).

- For the second part of the activity (45 minutes), all 3 groups will gather and start preparing the seed balls following the guidelines of the facilitators. First they will mix the soil with the seeds they've got, making sure the seeds are evenly distributed and easily visible within the mixture. If not more seeds must be added. Then water is added in bits while the mixture is molded by the participants forming one compact mass. This mass will be distributed among participants (approximately a handful), to be knead by them into seed balls the size of a nut. If they're crumbly add more water. Once the seed balls are ready participants can take them to their homes and let them dry 24 to 48 hours.

Depending on the local circumstances and needs, these seed balls can be used in gardens, fields or in whichever way the participants consider.

Table 1. Cooking the perfect soil

Beneficial	Harmful
water air minerals worms fungi bacteria protozoa nematodes insects and arthropods hummus dead animal, leaves, plants moles sand clay charcoal excrement	plastic herbicide pesticide synthetic fertilizer non decomposable organic waste oil fuels chemical waste plutonium cooking oil chlorine toilet paper batteries soap heavy metals concrete glass

In order to get participants to share and reflect on their experiences/feelings/impressions during the activity and to get feedback from them, it should be done a 25 minutes debriefing for which they will all sit together in a circle.

First they will be asked to describe in ONE WORD their mood/impression at the moment. Then a group conversation starts, for which participants will be asked to raise their hands before talking, to respect each other's turn and to keep their answers as short as possible in order to give everyone the chance to share.

After setting those rules, the facilitator asks participants about their most valuable learning of the activity. Then asks about whether the activity is going to have an impact in their attitudes towards the environment and even on their daily lives.

Lastly, as a closure for the activity, the participants will engage in a group dynamic session consisting of sharing a wool thread among themselves; one person at a time in order to create a web that symbolizes the connection among them and among all living things.

For implementing this activity, facilitators are recommended to read about **permaculture and natural farming**, in order to have a general idea about how it works and how to conduct a good

non formal education activity. The additional resources provided may complement the contents of the activity.

During the first part of the activity (the treasure hunt), throwing specific facts and examples can contribute to the understanding of the issues at stake. It's recommended that in each stage of the game two of the following "**fact resources**" are presented in order to raise the awareness of the participants.

**Fact resources:**

- [Protection against deforestation](#)
- [How trees secretly talk to each other in the forest](#)
- [How modern intensive agriculture depletes the soil](#)
- [Indian Forest Man – How a whole forest can grow from a mere human](#)
- [Microplastics pollution in the ocean](#)
- [21 year old inventor willing on cleaning the ocean from plastics](#)

We propose as **accompanying educational material** the following links:

- <https://en.wikipedia.org/wiki/Naturalfarming>
- <https://en.wikipedia.org/wiki/Permaculture>
- <https://en.wikipedia.org/wiki/Regenerative-agriculture>
- <https://en.wikipedia.org/wiki/Seedball>

*The activity was designed during the Job Shadowing in Spain by Panagiotis Axelis (Greece), Ion Lera Sanchez (Spain), Enrique Carlos Sanchez Ochoa (Spain), Maria Konstantinidou (Greece), Ines Garcia Montero (Spain), Betsabe Torres (Peru), Peter Kosgey Okeyo (Kenya).*