

Reversal of rural abandonment

The Polyfarming system proposes reversing rural abandonment by making farms profitable based on the following principles: (i) **avoid dependence** on market inputs and heavy machinery for managing the system; (ii) **use technologies accessible** to all and applicable on different scales; (iii) **improve the economic profitability** of the farms based on the previous points; (iv) **promote job creation**, especially for young people; (v) **establish new ways of selling products**; and (vi) **recover food sovereignty**, which implies being able to produce quality food for the whole of society without being controlled by large external lobbies.



Figure 1. Garden without tillage of the Planeses farm (Girona), where no external agrochemicals or machinery are used to till the soil. Photo: MJ Broncano.

■ The Polyfarming system as a tool to reverse rural abandonment

The regenerative model must be **the future driving force in the Mediterranean basin**, since it responds to the main challenges that arise when it comes to recovering activity in rural areas. When the regenerative model is applied, as in the case of the Polyfarming system, it can reverse rural abandonment, making farms profitable, since **it allows you to produce while conserving the environment where the current model is not viable**. The Polyfarming system proposes the production of abandoned or unprofitable agricultural and livestock farms considering the following principles:

• Avoid dependence on external inputs and heavy machinery

The conventional production model depends on the large companies that manufacture the agrochemicals and machinery necessary for the system to function, as well as on oil to produce them and put them into operation. The costs of machinery and agrochemicals are the highest in the production system, which is why a dependence on external products (machinery, fertilisers, herbicides and insecticides) is created that causes producers to obtain higher and higher yields to be able to pay them, which is not possible for small farms.

In contrast, the **regenerative model** does not require tilling the soil and does not use agrochemicals (pesticides, fertilisers, etc.). With this model, **production costs related to external inputs are greatly reduced** and, in addition, dependence on both oil and large multinational agrochemical products is largely avoided (**Figure 1**). In this way, the profitability of small farms is recovered.

• Use technologies accessible to all and applicable at different scales

Polyfarming's proposal is that of a sustainable regenerative model, in which **different techniques are used in the forest, crops and animals** that allow efficient control of the return of organic materials to the soil and the mineralisation/humification balance. This **improves the production per unit area** of the fields without the need for external inputs or machinery. It is not a matter of re-implementing a system from the past, on the contrary, **the Polyfarming system is possible thanks to scientific progress** regarding knowledge of natural processes. This allows you to know how the natural nutrition of plants and animals works and its technical application in an integrated way, i.e., by exploiting the resources of the environment.

A particularly relevant aspect of this model is that it is **scalable**, i.e., it can adapt to any type of conditions. As it does not have large external expenses, **it does not have space limitations**, it can be applied on a small scale, but also on a large scale, for which machinery is needed for sowing or harvesting, but always respecting regenerative principles.

• Improve the economic profitability of farms

The economic profitability of farms based on the regenerative model is much higher than those using the conventional model. To begin with, the regenerative model proposed in Polyfarming has **much lower functioning costs than the conventional one**, due to everything that has been mentioned in the previous points: (i) it has a low dependency on oil and nothing on the large multinational agrochemical products; and (ii) it allows working on a small scale, in which the difference in costs can be absorbed, since it can be offset by direct sales strategies.

In addition, this system proposes optimising production by taking advantage of forest, livestock and crop resources through: (i) **a circular economy** in which there is a complementarity of products at farm level that saves costs, since anything left over from one use is applied to another, and (ii) **the complementarity of jobs and labour** between uses in space and time, which also contributes to lower costs.

• Promote job creation, especially for young people

The Polyfarming system facilitates the creation of continuous and quality employment, especially for young people and other disadvantaged groups. This is so for two basic reasons: (i) **it makes projects that were not profitable**, or did not even exist, profitable, especially in areas where opportunities to work in rural areas are limited; (ii) in addition, it achieves this because in projects that apply the Polyfarming system **the biggest expense is that of labour**, not infrastructure or machinery (see sheet "Balance of costs and income at the farm level of the Polyfarming system. I. Costs"). It also creates employment in regions with a high rate of rural abandonment, so that old, abandoned farms are recovered.

• Innovate to create new ways of selling products

The Polyfarming system considers that, along with production methods, **selling methods are also important**. Therefore, restoring relationships between people (consumer groups, local markets, direct producer-consumer relationship, etc.) is a basic principle that must be developed (Figure 2). The very **diversity of**



Figure 2. Store of the Planeses farm (Girona), where the food produced on the farm is sold directly. Photo: Ángela Justamante.

products promoted by the Polyfarming system favours the establishment of local markets with **a direct relationship between the producer and the consumer**. This allows both to move forward together to tackle challenges that arise in today's society: reuse of containers (**circular economy**), return and recycling of the organic fraction to the production system (i.e., all the organic waste involved in production and the transformation of food, kitchen scraps, cardboard, etc.), offer of fresh quality products and the possibility for the consumer to know and visit the farms where the products are produced.

• Recover food sovereignty

Food sovereignty is the right of each local community to decide on their own food and production system and to protect the local market from international markets. **The value of the regenerative model to regain food sovereignty** is based on several of the aspects that have been discussed in the previous points: (i) it allows the entire population to be fed affordably; (ii) it produces **safe and healthy food** through processes that also **sequester CO₂** and conserve natural resources and biodiversity; (iii) it does not depend on large external lobbies, producers of agrochemicals or machinery; (iv) it establishes a direct way of putting producers in touch with consumers, **promoting local, diversified markets** based on fair prices; (v) it proposes a different way of eating, based on a local diet adapted to the productive characteristics of each zone; and (vi) it proposes direct contact between consumers, administrations and farms, so that the knowledge behind the productive sector and its role in the **fight against climate change** and the conservation of biodiversity can be discovered and valued.