

# Deliverable 2.2

Catalogue and assessment of designs for mixed agroforestry systems

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Deliverable 2.2	Catalogue and assessment of designs for mixed agroforestry
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<sup>&</sup>lt;sup>1</sup> **R**=Document, report; **DEM**=Demonstrator, pilot, prototype; **DEC**=website, patent fillings, videos, etc.; **OTHER**=other <sup>2</sup> **PU**=Public, **CO**=Confidential, only for members of the consortium (including the Commission Services), **CI**=Classified



## **1** Executive Summary

The AGROMIX project aims to drive the transition towards resilient farming, efficient land use management, and more sustainable agricultural value chains in Europe. Mixed and agroforestry systems show considerable potential to fulfil these aims. However, in order to achieve the widescale implementation of viable mixed farming and agroforestry (MF/AF) systems, we require new agricultural systems to be designed and existing systems to be further developed and go through a transformation process towards increased "mixedness". We define an agricultural system broadly as: a system that produces livestock and/or crops (food, feed, fibre and energy), including the social, political and economic components of that system (Drinkwater et. al. 2016, FAO). A shift towards more resilient, sustainable and mixed systems, requires smaller or bigger system changes at all levels and in all of these components. This involves a learning curve and is a knowledge-intensive process.

In that context, within AGROMIX Work Package (WP) 2, we developed a six step participative co-design approach to support twelve pilots in this process. This was further supported with knowledge and tools from other work packages, but also vice-versa: the experiences within and the needs from the twelve pilots fed the other project activities. The twelve co-design pilots are located in regions with different agroclimatic conditions, land use, management, socio-economic contexts, size, type of production system and are representative of a wide range of farming systems in Europe.

#### They are:

- 1. Stadtbauernhof Saarbrücken (German pilot facilitated by IfaS),
- 2. Blue Pig Farm (French pilot facilitated by ITAB),
- 3. PHAE (Belgian pilot facilitated by ILVO),
- 4. Swiss Agroforestry Network (Swiss pilot facilitated by ZHAW),
- 5. Dairy Pecorino Cheese (Italian dry Mediterranean pilot facilitated by SSSA),
- 6. Winthagen (Dutch pilot facilitated by WR) (7),
- 7. Tamiso Cooperative (Italian pilot facilitated by VENAG),
- 8. Association of Rudno Households (Serbian pilot facilitated by NRDS),
- 9. La Barrosa (Spanish pilot facilitated by UEX),
- 10. Oikos Farm (Polish pilot facilitated by OSA),
- 11. Marston Vale (UK pilot facilitated by CRAN),
- 12. Curralões (Portuguese pilot facilitated by MVarc).

This report provides an overall performance assessment of the designs (chapter 4) based on the learning histories of each pilot (Annex A) and a catalogue of the twelve co-design processes (Annex B). The assessment reviews the process and solutions, and it examines what type of co-designs were developed, the main outcomes and the experiences with co-design approach. The catalogue offers a visual attractive factsheet for each of the twelve co-design pilots. It contains a description of I) their starting point and II) their learning history.



#### Assessment of the co-design pilots

The transition towards resilient and efficient land use through agroforestry and mixed farming systems involves not only structurally explicit changes but also less explicit social changes (e.g. changing norms and values, building trust etc.).

The pilots highlight efforts for making such changes at four levels: policy level, regional level, farm level and product level.

- Policy level: In Serbia, the focus was on the legal recognition and support of agroforestry, while in Switzerland networks were formed to lobby for political support resulting in the submission of an "Agroforestry Manifesto."
- 2. Landscape level: The Netherlands implemented a regional multi-stakeholder process to address climate change and flooding in the region of Winthagen and ended up with four solutions that included crop diversification at regional level and innovative water management systems.
- 3. **Farm Level**: The focus of the pilots varied by region, they addressed business models, technical solutions, and monitoring tools. For example, in the UK, farmers explored tools to measure and monitor emissions of greenhouse gases at farm and regional level while in Spain there was a focus on biosafety, the French pilots focused on pasture management for pig management and the German and Belgium pilot on integrating livestock, though labour shortages emerged as a challenge.
- 4. **Product Level**: Finally, several pilots also explored improving marketing strategies and creating new revenue streams. Italy's project focused on rebranding Pecorino Toscano cheese, while the Polish pilot worked on developing the Carpathian Pasture Beef Quality System, and in Portugal a by-product from a new product development (essential oil from wild shrub, *Cistus ladanifer* L.) has a value in its own right, opening up new revenue opportunities.

#### What are the main outcomes of the co-design approach?

In the co-design approach, the design phase aims to deliver two key outcomes: a set of desirable designs developed by a group of people ready to implement them. In AGROMIX the design approach pushed groups to explore opportunities and engage new people in their innovation process. Most pilots in the AGROMIX project did not develop a singular design or concrete action plans but, despite the limited time of four years, they successfully facilitated changes in agricultural innovation.

The co-design approach differs from traditional agricultural research by being demand-driven, starting from the stakeholders' needs, and empowering them to make decisions. The project is rather to be seen as a temporary 'travel companion'. This method increased intrinsic motivation and led to diverse outcomes, such as new products (e.g., essential oils), strategies (e.g., agroforestry education) and stronger lobbying efforts (e.g., Swiss manifesto). Economic improvement was a major driver for about 40% of system changes implemented. The approach also fostered out-of-the-box thinking, leading to unexpected outcomes like the rebranding of Pecorino Toscano cheese in Italy and access to international markets in France. Supporting change in some cases required political rather than farm-level changes, as seen in Serbia and Switzerland. Additionally, the approach stimulated social changes, creating new collaborations among farmers, policy groups, and other stakeholders, which promoted social learning and trust.

Challenges arose in some pilots, including labour shortages (Germany); lack of long term commitment to cooperate (Belgium); and economic hurdles (Italy). Sustaining collaboration and ensuring profitability were key solutions. Despite these limitations, the pilots contributed to strategic and social changes, advancing resilient farming, efficient land use, and sustainable agricultural value chains across Europe. Furthermore, these challenges highlight areas of interest for improving the effectiveness and success of future co-design projects.



Based on the experiences of the twelve pilots, in this report we also identify and describe the strengths of the design approach and the challenges that were experienced when implementing the co-design approach. We conclude that the co-design approach is effective in fostering collaboration and innovation, however it requires dedicated stakeholder and expectation management, sufficient resources (both time and financially), and flexibility to adapt the approach when challenges or new ideas are raised by the actors involved.

In summary, the strengths of the co-design approach are as follows:

- i. It helped initiate change processes by fostering a deeper understanding of the entire system.
- ii. It encouraged **"out of the box" thinking.**
- iii. It involved diverse stakeholders early in the process helping to **develop a common vision.**
- iv. It supported relationship building and maintaining balance and commitment within the stakeholder group.

To be successful the co-design approach needs:

- Secure and adequate funding with broad farmer engagement is critical for sustaining the process.
- Inspiring examples or "lighthouses" to convince stakeholders about new solutions.
- Projects suitable for multi-stakeholder processes with shared challenges and multiple interests
- Preferably more than one **local facilitator familiar with the local context** to fostering trust and engagement throughout the design process.



## 2 Expected impact

To support the development of mixed and agroforestry (MF and AF) farming systems in Europe, within the AGROMIX WP2 "Systems design and synergies" we developed a six-step participatory design approach (6D) based on Reflexive Interactive Design (RID). RID aims to interactively design system innovations in complex and controversial contexts and to reform existing 'mainstream' agricultural systems (Bos & Groot Koerkamp, 2009). Innovations generated by this co-design approach are not necessarily technical 'fixes' to unsustainable practices. Rather, RID aims at redesigning to reduce the number of trade-offs between conflicting needs and to circumvent social and technical constraints for sustainable development (Bos, 2010; Bos et al., 2009).

The six step (6D) participatory design approach, developed under Task 2.1 Participative design platform took inspiration from the RID approach and adapted the approach for use by practitioners.

This 6D approach was implemented in 12 co-design pilots and supported by the knowledge and tools provided by other WPs. The implementation of the co-design approach was carried out in Task 2.2 Participative design pilots. Experiences from the pilots supported the further development of the co-design approach meaning that tasks 2.1 and 2.2 are highly interrelated and continuously provide feedback to each other. In addition, this work and the effect of the co-design pilots contribute to a wide range of the AGROMIX Expected Outcomes (EO) and Expected Impacts (EI) (see Table 1).



Expected Outcomes	Work done in the co-design pilots (related to EI from call)
1. Harmonise existing knowledge and understanding of environmental and socio-economic synergies in MF/AF systems to achieve greater climate resilience of the farming sector.	System and stakeholder analysis with stakeholders in the co- design pilots. Exchange of experiences and information between different co-design pilots. Literature reviews conducted by some pilots (EI1, EI2)
4. Maximise synergies between actors within and outside the Consortium by engaging with networks and initiatives across Europe.	The co-design pilots have connected actors with a focus on local and regional actors. Most pilots are part of a bigger network and/or organised open field days for networking and knowledge sharing. Some pilots have joined the Tree files app developed in WP4. (EI2,E I5)
8. Increase knowledge among farmers of key aspects of MF/AF systems.	In the redesign, farmers are included in the process as stakeholders. Tools provided by WP4, such as the sustainability and resilience analysis provided clear insights into the impact of certain measures on the whole. Next to the select group included here, a broader group is reached through knowledge exchange via open field days and network activities. (EI1,E I2, EI3, EI4,E I5)
9. Spread the adoption of sustainable practices for the transition to more resilient mixed and agroforestry systems.	The first-round pilots contributed with and EIP Practice Abstract. In addition, several pilots have presented their experiences at the EURAF conference in Brno. The lessons learned by the pilots will be published on the AGROMIX website as addition to the factsheet. Most pilots have organised and/or contributed to open field days and demo- events, offering tools for the adoption of sustainable agricultural practices (EI2,E I5)
11. Improve knowledge of existing business models and governance arrangements.	Part of the system analysis and re-design process of some pilot teams contribute to this. (EI2)
15. Identify potential for transition to foster the adoption of more diversified farming and engage with local stakeholders to draft action plans.	Core of the work in the co-design pilots (EI1, EI2, EI5)
16. Empower farmers and stakeholders to innovate, taking different knowledge to evaluate and develop new practices.	Core of the work in the co-design pilots (EI1, EI2, EI5)

Table 1. Expected Outcomes (EO) linked to co-design pilots' contributions and their Expected Impacts (EI).

Index of expected impacts (EI)- defined in the project proposal of AGROMIX

EI1. Deliver effective solutions for ensuring the highest level of implementation [...] in heterogeneous landscapes.

EI2. Unlock and improve viability and replicability [...] and propose different transition scenarios [...].

EI3. Reduce the environmental impact of farming and contribute towards mitigation and adaptation to climate change.

EI4. Provide ecosystem services through integrated and small-scale land management.

EI5. Foster synergies between agricultural production, climate change mitigation and adaptation.



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## **4** Introduction

The AGROMIX project aims to drive the transition towards resilient farming, efficient land use management, and more sustainable agricultural value chains in Europe. In order to achieve the wide-scale implementation of viable mixed farming and agroforestry (MF/AF) systems, we require new agricultural systems to be designed and existing systems to be further developed and go through a transformation process towards increased "mixedness". We define an agricultural system broadly as: a system that produces livestock and/or crops (food, feed, fibre and energy), including the social, political and economic components of that system (Drinkwater et al 2016, FAO). A shift towards more resilient, sustainable and mixed systems, requires smaller or bigger system changes at all levels and in all of these components. This involves a learning curve and is a knowledge-intensive process. To contribute to this transition, AGROMIX aimed to support farmers and other stakeholders in developing climate-smart systems (aiming for mitigation and adaptation), by combining animal, plant and woody production (mixed and agroforestry systems). To support the stakeholders in this transition 12 pilots applied a co-design approach.

This report provides an overall performance assessment of the approach (Chapter 4) and a catalogue of the twelve codesign pilots (Annex B). Chapter 4 discusses what type of co-designs were developed, the main outcomes and the experiences of applying the co-design approach. This assessment supports future users of Deliverable 2.1 'Handbook of collaborative design to solve sticky problems in agriculture' because it describes what this approach can lead to and what are points of attention when applying the approach.

Second, the catalogue aims to inspire farmers, researchers and policy makers and offers a brief but concise description of each of the twelve co-design processes. It contains a) a description of their starting point and b) their learning history. The starting point (a) includes a description of the pilot, the stakeholders involved and expectations of the process within AGROMIX. The summary of the learning history (b) captures on a timeline the most important events that had a significant impact on the outcome. Furthermore, the design solutions, being the adaptations or changes resulting from the process are described in addition to the main lessons learned. The catalogue of the twelve codesign processes will be separately available on the AGROMIX website (www.agromixproject.eu/in-the-field/pilot-projects).



## 5 Assessment of designs for mixed and agroforestry systems

Twelve pilot projects have implemented the co-design approach, over the four-year course of the project. This chapter starts with the methodology covering key questions such as; how and why was the co-design approach developed? How was it applied? How did we assess the results? Furthermore the chapter explores the experiences and outcomes of the twelve pilots in the light of future use of this approach. Hereafter we explore what type of co-designs were developed? Who was involved and what were the main challenges they came across? Finally, we address how to use the co-design in the future?

## 5.1 Methodology

To support the stakeholders in this transition, a six-step collaborative-design approach (hereafter called codesign approach or 6D) was developed based on the Reflexive Interactive Design (RID) approach of Bos et al. (2009). Innovations generated by the Reflexive Interactive Design approach are not necessarily technical 'fixes' to unsustainable practices. Rather, co-design aims at redesigning to reduce the number of trade-offs between conflicting needs and to circumvent social and technical constraints for sustainable development (Bos, 2010; Bos et al., 2009). The co-design approach is recognised as a valuable approach to achieve change because it embraces a systemic approach to facilitate this change.

The RID has been adapted in response to the needs and experiences of pilots within AGROMIX. This adapted co-design approach passes through 6 steps (see figure 1). Each step is carried out using participatory methods and tools (e.g. system analysis, stakeholder analysis, a function design etc.). They are described in "the Handbook of collaborative design to solve sticky problems in agriculture" (Dawson et al 2024).



Figure 1: 6 steps of the 6D co-design approach

By participating in three workshop sessions and a yearly feedback session twelve pilot facilitators have received support and guidance to implement the co-design approach during the four-year course of the project. The pilots' facilitators have facilitated the implementation of the co-design approach, adapted to suit the specific context of the involved stakeholders. As is depicted in the catalogue (Annex B) the pilots are located in regions with different agro-climatic conditions, land use, management and socio-economic contexts. Hence, they have involved different types of actors, developed different types of system changes at different levels, national, regional or farm level.

To assess the design process and its outcomes, each pilot has developed a Learning History at the end of their trajectory with all the stakeholders that were involved in the co-design process. A Learning History is an action research practice that was first developed by George Roth and Hilary Bradbury (2007). It is a historical timeline of, in our case, the pilots co-design process. This timeline indicates important events during the process and highlights results in terms of decisions, changes in the network, new opportunities etc. It is a



method that supports participants in a trajectory to understand how activities have resulted in effects that supported the goal of the trajectory. In other words, it is a method of reflecting on past experiences to facilitate organisational learning and transformation. Developing a learning history has two complementary outcomes. It supports a reflection process among the participants, and it creates a report of the process and the impact. It is important to explore the process explaining how the results were obtained during the change process. That is why the histories do not only focus on the tangible outcomes but also on other outcomes such as changes in mindset and new cooperations. These were perceived as equally important in the facilitation and achievement of the transition process. The full learning histories developed by each pilot are attached in Annex A. The performance assessment is carried out using the grounded theory methodology developed by Strauss and Corbin (1998) out through open coding of the full learning histories (ANNEX A) and notes from the feedback sessions using NVIVO software.

## 5.2 Results and conclusion of the performance assessment

## 5.2.1 What type of co-designs were developed?

In this section we structure and describe the designs that were developed in the different pilots. All the pilots shared a common overarching goal, namely: to drive the transition to a resilient and efficient land-use. A transition means that one changes from one situation to a new situation. According to William Bridges (2016) the complexity and intensity of a transition are responses to change - with the process becoming more complex as the magnitude of change increases. From a personal perspective change is external and situational, while transition is part of an internal, psychological process. It's not just the external events that create the transition, but also the inner adjustment and redefinition of meaning people undergo to adapt to those changes. Change encompasses both structural explicit changes such as new policies, techniques and practices, and less explicit changes that are often more hidden, like relationships, power dynamics, and underlying mental models (e.g. critical eyes from peers). The latter are crucial but harder to identify and change. Changemakers need to focus on both, thus also less explicit factors as they have a significant impact on systems change.

Hence, a transition should be handled carefully. It will come about through many small steps, small changes, at different levels and with involvement of different actors. This can also be seen in the co-design processes that took place within the pilots of AGROMIX.

All have taken a system perspective but took different entry-points to support this transition. Most pilots focused on structural changes. They contain efforts in three main areas:

- 1. Changes at policy level
- 2. Change at regional/landscape level
- 3. Change at farm level
- 4. Change at product level

### 5.2.1.1 Changes at policy level

**Switzerland (CH) and Serbia (RS)** have each worked to develop adapted policies as a function of agroforestry development in their respective countries. In **Serbia (RS)** agroforestry is not yet recognised by the government and in the legislation. There is no clear boundary between forestry, protective tree rows and agroforestry. Through the organisation of several stakeholder meetings, the participants determined the possibilities for changes in legal regulations that could stimulate agroecological practices such as



agroforestry. They involved different stakeholders such as NGO's, the forestry organisation, farmers, policy agencies for nature and environmental protection, and farm experts. Interestingly, the outcomes did not only involve suggestions for changing regulations, but also changing relationships and cultural norms were suggested During the discussions, different approaches of younger and older farmers were heard. Young people appeared to be more clearly oriented towards economic indicators and practices that facilitate their work, while older farmers seemed to be very often oriented towards traditional approaches, which in the case of Rudno, are very close to agroforestry and mixed farming. For example, the older generation prefers a combination of orchards with a part of the plot that is used for arable and vegetable growing, while the younger generation prefers "clean" plots due to easier cultivation. They concluded that, in addition to making subsidies available, it will be important to inform and involve young farmers in projects that illustrate the advantages of agroforestry and mixed farming.

In **Switzerland (CH)** agroforestry was perceived as a very important topic in the context of the agroecological transformation of agriculture. Hence, one of the objectives was to build networks of regenerative agriculture to pool forces and interests to lobby for political change. This network included farmers, farm advisors and the pilot team of IG Agroforst. The system analysis- part of the co-design process- resulted in the identification of key fields of action. The main action concerned the organisation of Policy workshops. They were organised in response to the rejection of the Swiss parliament to include a subsidy for agroforestry in their new agricultural policy launched in 2022. The aim of these workshops was to discuss possible perspectives with the political decision-maker and resulted in an "Agroforestry Manifesto" which was submitted to the Federal Office for Agriculture.

#### 5.2.1.2 Change at regional/landscape level

In Winthagen (NL), the pilot participants considered a regional scale to address multiple challenges such as climate change and flooding through a multi-stakeholder approach. They involved landowners, agricultural entrepreneurs, nature organisations, the municipality, the province, the water board, a water company and two other governmental organisations. Together they looked for solutions that aimed for a robust and climate adaptive region (Winthagen). In this region the 6 steps have been followed resulting in four innovative design proposals that could, if implemented on a regional scale, address climate change and flooding. They include: 1) a joint crop plan that guarantees the spatial distribution of different crops in the area, and 2) diverting water to verges and overflow plots via the construction of small bumps in the road to increase water infiltration from and along roads. A third practice was 3) developing multifunctional swales that can be diversely planted for flowering, fruit, nuts, or biomass for energy and building materials, which can both support biodiversity and provide local self-harvesting opportunities. A fourth practice 4) was creating mini stone quarries through the landscape for temporary water storage during flood events. The first practice was considered the most feasible because its implementation requires the least investment structurally. At the same time the implementation will need facilitation of less explicit changes such as changes in norms and beliefs, relationships and power dynamics. The project did not have the budget to implement this design. However, the stakeholders did express their interest to further develop the ideas.

#### 5.2.1.3 Change at farm level

Several pilots began the design process, starting with farmers' needs. Solutions varied and did not only cover technical issues but focused on strategic changes to strengthen the business model. *New monitoring tool* 



In **Marston Vale (UK)**, there was considerable interest from the farmers to understand the current net levels of greenhouse gas (GHG) emissions from their farms. They recognised that this was an issue that was gaining importance and traction in the UK and that at some point in the future, there could be regulatory pressure for farmers to respond to the challenge. To address this challenge Cranfield University staff and students worked with five farmers and two GHG modelling organisations to estimate the net level of GHG emissions from five farms. Estimates were also made of the level of additional tree cover needed to enable each farm to achieve net zero GHG emissions. Although not initially or directly focused on agroforestry, working with the immediate challenges identified by farmers has led to conversations about the increased integration of trees on farms. This case also highlights how the aim of developing climate-smart systems goes beyond farm techniques, it is also about having the right tools to monitor change.

#### Changing farm-management strategies

The economic and technical aspects of successful climate- smart systems are interconnected. In **Spain (ES)** the pilot team that supported one farmer has worked on biosafety and pasture management. As a result of the co-design process the farmer decided to install new watering points to avoid *E. coli* and to make adjustments in the pasture management related to the rental policy of the farmer. For further management-changes the farmer wanted more good examples in a comparable context.

The need for good examples, or rather the lack of lighthouse farms to inspire and convince farmers was also considered a bottleneck in the **Italian pilot** located in **Veneto (IT\_V)**. Farmers in this region expressed the need to improve the sustainability of their products through addressing issues of soil fertility and improving biodiversity. In this context agroforestry was introduced by the pilot facilitators as possible solutions to the farmers. Together the group discussed the challenges and opportunities of agroforestry. They explored the inclusion of poultry production (laying hens for eggs, mainly) to better use the agroforestry area, the limitations and critical points (for instance the avian influenza veterinarian safety policy, possible damage from wild animal and finding an efficient mobile chicken house, etc.). An alternative option was the introduction of ruminants for a better use of the grass in the agroforestry area; even though this seems an interesting opportunity, the limited experiences of farm staff on managing bovine or sheep prevented farmers from implementing this strategy. Finally, one farmer implemented a small innovative agroforestry system with fruit trees mixed with vegetable production. For the mixed farming (keep animal production together with vegetables/crops) they suggested that they underestimated the obstacles created by national/EU veterinarian safety policy (i.e. restriction for outdoor poultry system in the area with high risk of avian influenza, or similar) in order to develop a small-scale unit within the farms.

In the **Belgium (BE)** pilot, one of the main objectives was to expand agroforestry on a farm and to support the integration of animals (such as poultry, dairy goats) to increase the mixedness. As the farmer wanted to increase mixedness on the farm, but has no specific interest in keeping animals himself, he searched for other farmers with an agroecological state of mind that were looking for land. Additionally, a cooperation was developed with neighbouring farmers who purchase grass-clover from his fields and come to mow it themselves. In return they deposit their animal's stable manure on the farmers' fields. As a result of the workshop, the farmer also began collaborating with a sheep farmer, whose flock grazes on the 'living mulch' of white micro clover before the next crop is sown.



#### 5.2.1.4 Change at product level

Finally several pilots focused on improving marketing strategies and creating new revenue opportunities for agroforestry and mixed farming systems

In **Italy (IT\_M)** different actors in the value chain joined the design process. Farmers of Caseificio Sociale di Manciano, retailers, members of the Consortium for the protection of Pecorino Toscano PDO cheese, agronomists, veterinarians and researchers joint to find new strategies for the sustainable development of mixed and agroforestry farming systems. The working group demonstrated remarkable cohesion and willingness to cooperate. This engagement facilitated an expansion and deepening of the stakeholders' understanding of the whole supply chain, while also fostering new connections conducive to constructive dialogue. Interestingly, the group concluded that rebranding is essential for effectively communicating the added value of this product to consumers and is a valuable tool to enhance knowledge of the territory and its distinctive products. Hence, they developed a new modernised label for the Pecorino Toscano PDO cheese.

In **Poland (P)** a small group of actors were involved in the process of creating and developing the idea of the Carpathian Pasture Beef Quality System.

The main aim is to improve product quality and the sale of local organic grass-fed beef products. The system is based on regenerative agriculture and includes silvo-pastoral management of grasslands. During the process they learned that setting up a quality label was too ambitious. They agreed that the first step should be the inclusion of Polish Carpathian Beef in the EU regional food systems/schemes (Protected Designations of Origin, Protected Geographical Indications). In other words, similar to the Italian pilot, the stimulation of the transition to a resilient and efficient land-use focused not so much about changing farm-practices but on improving the economics of an existing system.

In **France**, the farmer is experimenting with pig-grazing and planting trees for fodder. The farmer aims to achieve greater feed autonomy by producing pig feed on-site, while also prioritising animal welfare and improving meat quality. At some point the farmer wanted to highlight the quality of the of graze-fed Saddleback x Duroc carcasses. Due to the involvement of the retailer in the co-design process they successfully developed a micro-supply chain. Soon after that the farmer established a collaboration with companies that serve the international market. This necessitated an evolution in the marketing system and, importantly required the development of a new market for BioDirect, which had to create a new export channel. This pilot shows how developing a climate smart farming system requires a systems approach. If you make changes in one part of the system (fodder for pigs) this impacts other parts of the system (sales).

A similar dynamic was observed in **Portugal (PT).** Here the aim was to promote resilient and diverse farming systems. Local stakeholders were brought together to discuss challenges of water-shortage and farm diversification in their region. Staff shortages were also identified as a key challenge in this region. They came up with different solutions to these challenges. The management of shrub for essential oil distillation, became part of their resilience strategy. It turned out that the by-product from a new product development (essential oil from wild shrub, Cistus ladanifer) has a value in its own right, therefore opening up new revenue opportunities. Yet the idea on its own was not sufficient; in order to convince the local stakeholders, it was crucial to visit inspiring farms to show what is possible to achieve.

In **Germany (DE)** the aim was among others to set up a food production system that respects the environment and natural life cycles as well as ensuring high-quality products. Throughout the design process members of the farm community realised that there is potential for more (other) products than vegetables. The silvopastoral system of 100 laying hens with fruit production was explored as an opportunity to achieve this.



This extra activity demanded extra labour. Unfortunately, despite having the intention to realise this idea, they did not find the necessary staff needed to manage the work. This was an unexpected bottleneck that hindered the development of this design. Instead, they are now establishing a regional network of farmers that are interested in, or have experience with, free-range poultry in a silvo-pastoral system. To conclude, in contrast to the French, Italian pilot, the market access and revenues of the new farm practices were achieved because of the CSA-business model. However, partly because of the small scale and intensive nature of the system, labour turned out to be a limiting bottleneck.

	Pilo	t										
System Changes	UK	PL	PT	ES	RS	СН	IT_V	IT_M	BE	NL	DE	FR
Policy and regulatory changes					х	х						
Change: landscape approach to										х		
tackle multiple challenges												
New measuring and possible	х											
monitoring tool												
Changing farm-management			х	х			х	х	х			Х
strategies												
Improve marketing and creating		х	х				х				х	х
new revenue opportunities												

### 5.2.2 What are the main outcomes?

In the ideal scenario the design phase should have delivered two important results, firstly a number of promising designs and secondly a group of people who support these designs and would like to put them into practice. Supporting the realisation of these designs in practice is the next step. Key outcomes of the development phase may include: 1) a technical design proposal, 2) an implementation plan, 3) anchoring of the idea in practice. A 'design' here refers to an innovation, or change. In most cases within the AGROMIX project, pilot teams serve as temporary companions supporting stakeholders through processes of change and adaptation. In other words: the AGROMIX 'team' and capacities have been supportive of a process that to some extend had already started and will continue after the project live time. Hence, the result is often not explicitly 'measurable' and not so straight forward in terms of developing one design or solution. Likewise, the pilot processes often did not (yet) arrive at the phase of developing a concrete action plan. They often still need more 'anchoring'... which is also not surprising given the limited time within AGROMIX. Nonetheless, the pilot teams did successfully facilitate change processes.

Whereas traditionally agricultural research often looks for solutions, and farmers are supported to implement these solutions, the co-design approach starts from the needs of the involved stakeholders and involves them in all stages. Offering individuals the chance to make decisions and take responsibility for their actions can boost intrinsic motivation. The latter is known to significantly influence behaviour change (Lauwere et al., 2022).

This demand driven approach has resulted in farmers that have embarked on new practices with the support of relevant actors. It has led to new products (e.g. essential oil from wild shrubs) new strategies (e.g.



education young farmers about agroforestry, selling products on the international market, using sheep to 'mow' cover crops, stronger lobbying (for example the Swiss manifesto). In other words, we see an immense diversity of trajectories. This conforms that there are several system requirements for a change to succeed and good marketing, availability of tools, a successful economic model, a supportive policy and socio-cultural environment are for example also part of it. In light of the discussion of intrinsic motivation it is interesting to observe that within AGROMIX about 40% of the system changes were driven by the goal to improve and secure economic revenues.

Although the co-design approach is demand driven and therefore flexible in its outcomes, it is structural in the sense that it stimulates out of the box thinking from a system perspective. It encouraged opportunities for new cooperations and new activities. For example, one could not foresee that the new branding of Pecorino Toscano PDO cheese in Italy, or the access to the international market of the French pilot would be the outcome to support a climate-smart system. Simultaneously, the Serbian, and Swiss pilots show that supporting change does not always need changes at the farm-system level, but also the facilitation of change at the political level.

In addition to the explicit structural changes, less explicit social changes have occurred. In the majority of the pilots, new collaborations have been set up or are emerging. Collaborations between farmers, between policy and interest groups, between retailers and producers. Such collaborations support social learning and build trust needed for farmers and other stakeholders to effectively change behaviour.

Some pilots faced serious limitations during the process. In Germany for example, they could not implement the new design because they did not find a person to manage the farm. The lack of available labour is an issue that is increasingly a problem in the agricultural sector. Cooperation offers opportunities to resolve this but is can also be challenging in terms of long-term sustainability. For example, in Belgium the cooperation with the sheep farmer did not last, because the sheep farmer got a more interesting opportunity offered elsewhere. Indeed, as was concluded by the French pilot: "These collective moments have challenged conventional thinking, sparking innovative ideas that make our overall system move forward. However, sustaining such collaborations requires external support and organisation, a critical consideration for future endeavours".

Also, the lack of economic profitability and good examples hampered the process as was stated by the Italian pilot: "The complexity and the underestimated economic aspects (from managing costs of the system, to the uncertainty on public subsidies, or fluctuation of market prizes) slowed down the decision process of farmers." Despites these limitations, we can conclude that all pilots have facilitated strategic and social changes, and in that way contributed to the transition towards resilient farming, efficient land use management, and more sustainable agricultural value chains in Europe.

### 5.2.3 How to use the co-design approach in the future ?

In this section we discuss the advantages and the challenges of the co-design approach, based on the assessment of the results of the design processes and the personal reflections of the pilots' facilitators.

The German pilot wrote:" As planning processes on farms sometimes follow spontaneous ideas, it is supportive to structure the process". Also, several other pilots recognised the design approach, with its different tools such as the stakeholder mapping, system analysis and function-based design successfully initiated change processes. Especially the system analysis carried out with a group of stakeholders was valued because it **stimulated a better understanding of the whole system**. As was mentioned by an Italian pilot:



"The event was valuable and interactive, providing an excellent opportunity for stakeholders from diverse professional backgrounds to exchange thoughts and ideas. The working group demonstrated remarkable cohesion and willingness to cooperate. This engagement facilitated an expansion and deepening of the stakeholders' understanding of the whole supply chain, while also fostering new connections conducive to constructive dialogue." In other words, the approach supports the sharing and understanding of different perspectives.

In addition, the approach allowed **for out of the box thinking**. In Italy "The co-design process was very useful for stimulating farmers to study alternative ways of finding technical solutions, and to build a large network with the aim of bringing these problems to the public/policy maker attention". Hence the aim was not only to focus on technical solutions, but also important for lobbying. This dual-purpose approach was similar in Switzerland.

The involvement of different stakeholders at the start of the process was appreciated and created opportunities. It supported the development of a common vision as was mentioned by the Polish pilot: "Involving stakeholders in the process of editing and creating the idea of the Carpathian Pasture Beef Quality System allowed us to create a "common vision of the project." It was however not always easy to involve different stakeholders. The Spanish pilot experienced that it was not always feasible to join all stakeholders in one process, since it requires the participation of many people to be together at the same time. The Portuguese pilot emphasised the need for building relationships: "Before even contacting potential members, it is important to attend other relevant events to start networking and building relationships. This is essential as people are more likely to respond to invitations from people they know." The Dutch pilot suggested that it is important to have a balance of different opinions within the group and have participants who are invested in the outcomes of the project.

Finally, the French pilot observed that meeting stakeholder expectations has emerged as a dynamic process. While initial expectations may not always be fully met, ongoing dialogue and responsiveness to evolving needs are essential. Regular engagement, knowledge sharing, and securing funding are pivotal for maintaining stakeholders' involvement.

We can conclude that stakeholder involvement and management is a crucial and sensitive process that should be carried out with care. Therefore, several pilots emphasised **the importance of having a local facilitator** to facilitate the design-process. This facilitator is familiar with the local context and has existing relationships with different types of actors in the region. This ensures trust, understanding and engagement, to make sure all stakeholders remain motivated to achieve something in the project. In addition, this local area manager should have **access to the required human resources** to facilitate the process and make sure that plans are followed-up after design process is finished.

Some pilots also faced significant challenges that should be addressed in future when applying the approach. To start with, it is important to **secure sufficient**, and the right **financing** of the design process. "Navigating pioneering initiatives, such as our micro-supply chain, requires perseverance amid challenges. Securing adequate funding and fostering broader farmer engagement are critical to scaling our innovations effectively." (French Pilot). The UK pilot mentioned it may be appropriate and necessary for farmers to receive some form of payment to support their proper participation in the process." The Dutch pilot mentioned: "A design process without the certainty of commitment and financial measures to actually implement the outcomes can reduce the amount of energy from some of the stakeholders".

Another challenge with developing new designs is that often the solutions are innovative and good inspiring examples are lacking. In the words of the Swiss pilot case: "Successful practical examples and committed agroforestry pioneers are simply the most convincing" yet several pilots mentioned **there are still very few** 



**good examples (lighthouses) available**. This is however crucial to convince stakeholders and to move from the design to the implementation phase.

The scale of the project also influences the process. Within AGROMIX we have seen different levels of interaction; national, regional, farm level and product level. The Portuguese pilot concluded that it is important that pilot members feel that their input is valuable and somehow integrated. They suggest that this approach may be better for the landscape or network scale projects where the balance of decision making is more even. Indeed, also other pilots addressed the need for a balanced decision making and questioned if the design approach was suitable if one just focuses on changing management techniques involving one farmer, as was the case in Spain for example. In some cases, the participatory tools proved to be too complex because too few people were involved. The tools aim to get different stakeholders facing the same direction. When this is not the challenge, another approach might be more appropriate.

Finally, **dependency on one person** also proved to be a risk. In Poland the illness of the initiator- and main decision maker- of the process has delayed the development of the process significantly. Also, in Germany the absence of a manager delayed the development of a new system at the farm.

In conclusion, the co-design approach is effective in fostering collaboration and innovation for various goals and diverse contexts, however it requires dedicated stakeholder management, sufficient resources, and adaptability to overcome challenges.

The advantages of the co-design approach are:

- v. The co-design approach **helped initiate change processes** by fostering a deeper understanding of the entire system.
- vi. The approach encouraged "out of the box" thinking.
- vii. Involving diverse stakeholders early in the process helped **develop a common vision.**
- viii. It supports building relationships and maintaining balance and commitment within the stakeholder group.

To be successful the approach needs:

- Secure and adequate funding and broader farmer engagement is critical for sustaining the process.
- Inspiring examples or "lighthouses" to convince stakeholders about new solutions.
- The co-design approach is most **suitable for multi-stakeholder** projects and challenges with multiple interests.
- ix. Preferably (more than one) **local facilitators familiar with the local context** to fostering trust and engagement throughout the design process.



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## Annex A The pilots' full learning histories

## I Learning History Swiss Agroforestry Network – Switzerland



Picture of result learning history workshop

## Time line and description of the selected scenes

Date/or period	Description of important moment/ period in time/event	<i>Perceptions and reflections</i> : What was the effect of this on the developments within the pilot and why did they happen?
February 21	Carrying out the system analysis, developing interim and main objectives in the co-design process	<ul> <li>P: Very important for the pilot team, but external impact on the network itself rather low. Identification of key fields of action for agroforestry development.</li> <li>R: Key success factor for reflection loops. A reconsideration of the original objective</li> <li>Why: Marked the start in co-design Pilot</li> </ul>
March/April 21	Expansion of activities	<ul> <li>P: Appeal to a larger interest group by expanding the range of activities</li> <li>R: The topic is becoming better known and is being viewed in an increasingly differentiated way</li> <li>Why: More financial opportunities to expand the range of activities within the Agromix project</li> </ul>



2022 - 2023	New Research Projects	P: Stronger presence in research. Better understanding of key functions as a climate adaptation and mitigation strategy R: Better funding opportunities for research projects due to the increased relevance of the topic Why: During the co-design pilot period, we took the opportunity to successfully submit 3 research projects. The participating farms of IG Agroforst act as a peer group for participatory field trials within the research activities. The topics of the research projects are in the field of <u>agroforestry biodiversity research</u> , <u>water management</u> and <u>new business models for carbon farming</u> <u>initiatives</u> .
September 2022	Network meeting for regenerative agriculture in Switzerland	<ul> <li>P: Agroforestry is a very important topic in the context of the agroecological transformation of agriculture.</li> <li>Building networks of regenerative agriculture to pool forces and interests.</li> <li>R: A common umbrella organisation is missing. Partly competition for funding.</li> <li>Why: There had been a desire for the networks to exchange information on the topics of agroecology and regenerative agriculture. The aim was to join forces and gain a general understanding of the need for an agroecological transition in swiss agriculture.</li> </ul>



Between	A total of 4	
Spring 2022	policy	P: The importance of agroforestry systems in times of climate
and Autumn	workshops	change is recognised, but not taken seriously by high-ranking
2023	were	political decision-makers.
	organised.	R: The willingness to promote agroforestry is increasing, at least at the middle level in the cantons and the relevant agricultural offices. Agroforestry is largely mentioned as a measure in new climate protection strategies.
		the fact that the new agricultural policy, which would have included a subsidy for agroforestry, was rejected by the Swiss parliament in 2022. Although agroforestry promotion was not the reason for the rejection, this has severely set back the further expansion of agroforestry in Switzerland. IG Agroforst wanted to discuss possible perspectives with the political decision-makers. As a result of the workshops, an "Agroforestry Manifesto" was
		submitted to the Federal Office for Agriculture.
		Fight Team Member Sonja Kay presents the Agroforestry Manifesto to the teateral Office for Agriculture
March 2023	Start of the	
	Agroforestry Podcast	<ul> <li>P: A new innovative format with a wide reach beyond national borders to reach an increasingly young audience and a new generation of farmers and other interested parties.</li> <li>R: The agroforestry podcast has been a great success with lots of positive feedback. However, it also requires a lot of effort. Why:</li> </ul>
		The 'Agroforst Podcast', hosted by the Swiss Agroforestry Network (IG Agroforst), released its first episode on March 27, 2023. It offers a captivating exploration of the dynamic and intricate realm of agroforestry systems in Switzerland and neighbouring regions. The podcast series is designed to be accessible to a diverse audience, including practitioners, researchers, policymakers, and enthusiasts interested in the synergies of trees or shrubs and



plants and/or animals. Each episode delves into different facets of agroforestry, featuring expert interviews, case studies, and practical tips.
As of December 11, 2023, the 'Agroforst Podcast' has garnered 5699 downloads with a total of 19 episodes, published bi-weekly. The continuous upward trajectory of download numbers over time is noteworthy, with early episodes experiencing the highest download rates. The inaugural episode, released 563 times, peaked at 90 downloads in April and sustained a robust engagement, with over 60 downloads even in November. Notably, 79% of our listeners opt for mobile devices, with 42% using Spotify, 23% tuning in via Apple Podcasts, and a modest 9% utilising the Buzzsprout Embedded Player on our dedicated platform (agroforest.ch/podcast).
On Spotify, a preferred platform for the majority of our listeners, 215 dedicated followers have joined the 'Agroforst Podcast' community, extending across 16 countries. Sharing dynamics reveal that 51% prefer WhatsApp, 26% utilise direct links, and an additional 19% leverage other methods. Smaller percentages involve text messages (2%) and Instagram (2%). Episode 7 (Hazelburger) emerges as the most shared, a testament to its resonance with our audience. In podcast rankings, the 'Agroforst Podcast' secured a position in the top 10 for 218 fans, within the top 5 for 152 fans, and reigning supreme as the top-listened podcast for 36 ardent fans.
The 'Agroforst Podcast' has been advertised on multiple platforms, from LinkedIn posts of the ZHAW, Agridea, AGROMIX and private parties, to Newsletters (DeFAF, IG Agroforst), to Website entries ( <u>AGROMIX</u> , <u>Biovision</u> ) to an Instagram post.
first released on March 27, 2023
ofirst 3 episodes reached most downloads79% use their mobile phonecountries: 44% in Switzerland 43% in Germanyof listeners are in Zurich, Bern, Hamburglisteners use Spotify; 23% Apple
215 followers on Spotify13'679 impressions past monthshared via WhatsApp (51%) and direct link (26%)62% male; 28% female listeners40% between the age 28 and 34
Episodes
#00 Agroforst Podcast Info
#01 Agroforestry in Switzerland – a dialogue with IG Agroforst
#02 Fodder hedges on the Adlerzart farm
#03 The 6 most common agroforestry myths
#04 Diversity in agrotorestry – Strauss Bioagrikultur



		<ul> <li>#05 Sustainable Agroforestry thanks to genetic diversity</li> <li>#06 Agroforestry before it was called agroforestry – Eulenhof</li> <li>Möhlin with Edi Hilpert</li> <li>#07 Hazelburger – Leander Dalbert talks about Ecosystems</li> <li>and true cost</li> <li>#08 Conflict: agroforestry and breeding birds</li> <li>#09 What should be considered before planting trees</li> <li>#10 The forest edge pasture</li> <li>#11 Successfully plant trees – 9 important tips</li> <li>#12 In the chestnut grove with Urs Nüesch</li> </ul>
		<ul> <li>#15 Pruning techniques in agroforestry</li> <li>#14 Agroforestry and consultancy</li> <li>#15 Agroforestry in Agricultural Policy</li> <li>#16 In the Salicetum: Sonja Zèllig-Morf talks about willows</li> <li>#17 Vitiforestry – Agroforestry in vineyards with Linnéa</li> </ul>
		<ul> <li>Hauenstein</li> <li>#18 A funding program for agroforestry from myclimate and</li> <li>SilcoCultura</li> <li>#19 Keyline-Design – a strategy to efficiently use water</li> <li>resources: Link to the Podcast</li> </ul>
September 2023	Field Day: Agroforestry on higher altitude	P: Agroforestry is presented as an option for higher altitudes around 1000 metres above sea level. There are still many new people interested in the topic from the practical side. R: Successful practical examples and committed agroforestry pioneers are simply the most convincing.
		Why: So far, agroforestry in Switzerland has only been discussed for lower altitudes and primarily in arable farming areas. This field day aimed to show that agroforestry also works at higher altitudes.



### Lessons learned about the design process and solutions

- As noted earlier in this task, it is difficult for a network with a changing group of
  participants to always follow the co-design process and reflect on where it currently
  stands. The aim was to improve agroforestry development at national level. The
  evaluation team considered this to be successful. The political workshops, the many
  events that took place and the podcast were particularly emphasised.
- It was emphasised that it is particularly important to have good practical examples as flagship
- projects.
- The co-design pilot was considered to be very valuable in providing important ideas and impetus

for the development of agroforestry in Switzerland.

### Additional reflection from the pilot team

The pilot aimed to develop agroforestry at different levels and different scales at the national level. Numerous events and network meetings took place. In the process, we tried to orient ourselves very strongly on the system analysis that we had prepared at the beginning. Visualising these basic processes and objectives at the very beginning of the project phase was very useful. However, it is also clear that a pilot on a national level and within the framework of a network functions very differently than an individual farm or a trial site. A big challenge is that one always must deal with new constellations of actors and the development process does not evolve with a fixed peer group.

Another challenge is the realisation that we are not alone. More and more institutions, farmers, extension services and research institutions are involved in agroforestry activities. The steps described under point 7 are a logical consequence of this development and also offer great opportunities for new partnerships and more power for the agroecological transformation of Swiss agriculture as a whole.

- Our objectives were to improve the quality of agroforestry systems and the monetary valorisation of these systems. We believe we have made significant progress in achieving these objectives.
- We underestimated that our pilot project is a network and that agroforestry development has to be considered on a national level consisting of many individual sub-projects and activities with changing stakeholders. This makes it sometimes difficult to follow the logical flow of the methodological design approach.
- The exchange with the other pilot teams, the mutual feedback and the reflection rounds were always very enriching.
- The cooperation with other work packages was very important, especially with regard to the organisation of the political workshops (in collaboration with WP6).



## II Learning History Stadtbauernhof Saarbrücken – Germany

## Pilot learning history

Date/or	Description of	Perceptions and reflections: What was the effect of this on the
period	important	developments within the pilot and why did they happen?
	moment/ period	
	in time/event	
2019-	Planting the first	Members of the farm community realising that there is a potentiality for
2020	trees	more (other) products than vegetables. Creating a first moment of co-
		design by simply doing it – planting trees.
		On top, the concept of "tree partnerships" with companies was tested
		for the first time – companies paid the trees and came to the farm with
		their employees to plant these. This activity had two effects: 1. Cost-
		savings in the implementation of AF, 2. Involvement and extension of the
		learning-process beyond the farm community.
2021/05	Survey on desired	A survey amongst the members of the farm community was conducted
	products with the	to estimate the real interest in additional products. The survey revealed
	farming	that a major part of the members is interested in fruit products. Second,
	community	a smaller proportion, but still many of the members liked the idea of
		having eggs and honey as a produce. In addition to the general interest,
		the potential marketing channels were investigated. The members were
		in favour of the idea of integrating fruit products in the normal "harvest
		share" (pre-booked arrangement on an annual basis). For eggs and
		honey the members liked the concept of selling these products
		separately best.
2021/06	Interviews with	Based on the feedback from the survey, questions on the opportunities
	selected members	for implementation were discussed with selected members – partly from
	of the farm	the consumer side and partly from the farming team itself. The
	community	interviews showed that most of the interviewees liked the idea of
		integrated chicken farming with fruit growing. The interviewees see one
		of the main challenges in integrating chicken farming and fruit growing
		into the farm in terms of labour management.
2022/02	Restoration of the	As a first step in the establishment of new chicken stables the roof of the
	building (roof) for	main stable building (currently mainly used for storage purposes) was
	the chicken coop	renovated a wild bee-friendly green roof was installed. Bringing the
		substrate on top of the new roof construction was the biggest
		collaborative event in the history of the farm with more than 30
		members working almost the whole day.



2022/07	1 <sup>st</sup> Co-Design	The 1 <sup>st</sup> Co-Design Workshop brought together interested members /
	Workshop	consumers of the farm community with the farm management team.
		Together, we worked on the expectations, challenges and steps towards
		implementation. However, the workshop showed once again that there
		is a great deal of resentment partly towards animal husbandry in general
		and also towards the amount of work involved in the farm team.
2022-	Detailed planning	As a result of the challenges identified in the 1 <sup>st</sup> Co-Design Workshop, the
present	of the chicken	farm management decided that additional staff is necessary to follow up
	соор	and proceed with the concrete planning and installation of stables, the
		economic planning and the management. Thus, several activities (project
		announcements, job advertisements, approach via personal contacts)
		were launched, to find a suitable person for the further planning,
		coordination and management of the project. At the same time, several
		planners and craftsmen were approached to drive forward the planning
		for the barn extension. Unfortunately, both activities were unsuccessful.
		A coordinating person has still not been found, and the project, with a
		barn for around 100 laying hens, is apparently too small for the
		companies and tradesmen to even arrange a planning meeting on site.
		Part of this story may also have been the Covid pandemic, which was very
		present at the beginning of these activities.
2024	Dianning the	The lock of a suitable person was subsequently period in order to
2024	Planning the	The lack of a suitable person was subsequently neglected in order to
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was considered to organise the 2nd co-design workshop with external experts for the planning of both orchards and chicken coops as well as
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was considered to organise the 2nd co-design workshop with external experts for the planning of both orchards and chicken coops as well as for the combination of both. At present we decided to organise the
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was considered to organise the 2nd co-design workshop with external experts for the planning of both orchards and chicken coops as well as for the combination of both. At present we decided to organise the workshop anyway in 2024. Both the networks of the German
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was considered to organise the 2nd co-design workshop with external experts for the planning of both orchards and chicken coops as well as for the combination of both. At present we decided to organise the workshop anyway in 2024. Both the networks of the German Agroforestry Association (DeFAF) and the German CSA network were
2024	Planning the second Co-Design Workshop	The lack of a suitable person was subsequently neglected in order to make any progress at all with the planning. For this reason, it was considered to organise the 2nd co-design workshop with external experts for the planning of both orchards and chicken coops as well as for the combination of both. At present we decided to organise the workshop anyway in 2024. Both the networks of the German Agroforestry Association (DeFAF) and the German CSA network were used to find farmers who are also interested in the topic. These people
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## Lessons learned about the design process and solutions

- Products from agroforestry are popular with consumers who already know something about this system. Many consumers, however, do not know anything about agroforestry. Thus, "products from agroforestry" is no reliable marketing argument (yet).
- Creating motivation in the community is not sufficient, a manager has to be found first. The involvement of a key actor, who will manage the new system(s) in future, is vital for the project implementation. The implementation of practical projects cannot be enforced if there is a lack of human resources.
- If the size of the project is too small to ensure profitability, implementation is also difficult or even impossible. Agroforestry is often characterised in the scientific community as an extensive system. The agroforestry system planned here, on the other hand, is a highly (labour) intensive system.

### Additional reflection from the pilot team

- *i.* What would you do differently if you started the process over? What would you recommend to people who want to start a similar process?
  - a. Maybe start with the expert round first, so that technical-economic bottlenecks are already known before.
  - b. Have a stronger focus on cooperation with other farms instead of trying to implement a higher complexity on our farm.
  - c. Simply write a business plan first, not discuss so much about do's and don't's.
- *ii.* Did you find the RID (Reflexive Interactive Design) a useful guideline to initiate a change process change?
  - a. In our experience, the RID can mainly be a guideline, or rather an inspiration for the own planning process. As the situation in every farm is different, it does not make sense to 100% stick to the prescribed procedure. The planning process has to be adapted to the respective situation on the farm, the object of planning and the group involved. However, the RID offers good ideas to improve planning processes on farms. Especially the initial steps of context analysis help, to find out more about the setting, stakeholders and their respective objectives. As planning processes on farms sometimes follow spontaneous ideas, it is supportive to structure the process.
- *iii.* Do you feel that the expectations of all actors in the pilot have been met and how did you approach this?
  - a. No, we saw that some actors were somehow against the idea of animal keeping and this in fact took a lot of energy from the process. At the same time, the foreseen main actor a future manager for the integrated fruit and chicken system –could not be found throughout the whole planning process.
- *iv.* Which of the discussed innovations around MF and AF was picked up easily/difficultly in the pilot?
  - a. All participants easily understood that there are synergies between fruit farming and chicken keeping. It was not the missing positive effects of agroforestry that slowed down the planning process but rather the missing new manager and in combination with that supposedly also the missing economic perspective.
- v. To what extent were you able to link and/or use input from the other AGROMIX WPs in the pilot? How could that be improved?
  - a. At present, we are trying to set up a LandFiles group on integrated fruit and chicken farming. The LandFiles platform, a kind of social media platform for farmers exchange



on innovative topics, was tested and improved as tool for the promotion of agroforestry in WP4. IfaS was also involved in this process and we decided to test the current improved version under "real life conditions" instead of testing it in a theoretical set up. Thus, we think, a test run with practical farmers, which might last beyond the project duration of AGROMIX, is a good idea.

- vi. To what extent was the interaction with the other pilots crucial/added value?
  - a. In the project wide WP2/4 workshops an intensive dialogue and exchange with the other pilot facilitators and ambassadors took place. This exchange, together with the excursions integrated in the workshops, was quite beneficial and helpful.
  - b. Even better would have been to immediately bring together (some of) the various farmers involved in each of the pilot projects.
- vii. What other lessons have you learned that you would like to share with others?
  - a. The participation of farmers in scientific projects can be very time consuming. We (as scientists) have to be aware of this and try to focus on supportive ways of working together with the farms.



## III Learning History Blue Pig Farm – France

### Pilot learning history



All events have been recorded as major in the learning history. The events detailed below are the most significant ones that have contributed to learning, decision-making, or subsequent actions. Other events not detailed are still present on the chronological timeline above.

#### A. Exploratory and Creative Incubation - Before Agromix Started

- Text: Although this period is not an event per se and occurred before the project's launch, all stakeholders referred to it as a crucial period without which the farm wouldn't be where it is today. Several historical actors are involved besides the farmer; some of these actors still support the farm today. This period was an intense and preparatory learning phase on previously less explored topics.
- Changes: This stage sparked the farmer's desire to acquire skills in pig grazing and the role of agroforestry in his system. Consequently, he made two major decisions. In 2018, he began planting trees with a focus on timber agroforestry. Then, in 2020, following insights from the Ok-Net Ecofeed project, he decided to shift his system from annual forages (e.g., corn, sorghum, beans) to perennial or multi-annual forages (e.g., meadow under cereal cover).

Note that during this period, a new stakeholder, BioDirect, entered the scene, a group that markets pork, after internal deliberation on the commercial potential of local pig breeds.

#### B. Agromix Collective Meeting #2 - October 2021

- Text: This collective meeting aimed to immerse the group in the farm's reality, aiding better understanding of the farmer's pig grazing system. The morning session covered meadow management: variety selection, harvesting methods, and logistical aspects of pig grazing. In the afternoon, participants engaged in workshops on fodder crop utilisation, promoting pasture-raised pork, and incorporating trees into the farm's system.
- Changes: This meeting occurred amid economic turmoil in the organic channel. While appreciated with enriching exchanges, motivation declined among other farmers. Subsequently, fewer farmers attended subsequent meetings. Post-meeting, the farmer implemented stricter rules for pig grazing based on insights from the Casdar VALORAGE project.





Figure 2 Pictures from the Workshop on Carl's farm

#### C. Collective Meetings #3 and #4 Agromix - February and March 2022

- Text: A two-day workshop was held with a focus on designing a foraging system for organic, agroforestry pig production. Day 1 at Blue Pig Farm involved a diverse group of 10 people from across the value chain (farmers, retailers, technicians, advisors) identifying goals, bottlenecks, and levers for the system. Day 2, localised in Angers, included a smaller group of 7 people exploring three main areas: data for pig grazing, farm optimisation for efficiency, and creating a small value chain for this type of production. Both days were enriching with valuable discussions.
- Changes: These two meetings brought forth a key idea for Carl's future: the micro-supply chain. The method used, notably graphic facilitation, allowed for a comprehensive review and the emergence of scenarios to guide the system forward. Following these meetings, a comprehensive reflection on crop rotation and the integration of forage crops was developed by the farmer and his team of advisors. Additionally, discussions around the micro-supply chain concept prompted BioDirect, a stakeholder responsible for marketing Carl's meat, to take actions to highlight the quality of meat from locally raised pigs in free- range agroforestry systems. BioDirect conducted a carcass cutting test on Carl's pure Saddleback breed, noting particularly high-quality meat and the clear interest in developing a specific market for this type of product. However, the carcass also exhibited a significant fat content that may deter traditional customers.





Figure 3 Pictures from the co-conception workshop on Carl's farm with graphic facilitator

#### D. Open Farm and Technical Day - October 2022

- Text: This event marked a period of high activity for the farm and the team (Carl and the Agromix team). An open field day near the pilot farm on October 28th attracted a diverse audience interested in pig foraging. Farmers, researchers, and technicians from pig and agroforestry fields gathered to view results from the farm's two relevant projects (VALORAGE & AGROMIX); observe a pig grazing trial conducted during spring/summer 2022; visit the Blue Pig Farm; and discuss co-designed scenarios and the pilot's long-term sustainability.
- Changes: The start of this busy period began in early autumn with successive plantings of copses in the sows' run, followed by mulberries in agroforestry lines in the pigs' run, and then with hedge plantings in the southern plots. Furthermore, preparing this technical day necessitated significant retrospective work and evaluation of all previous efforts. This period marked the culmination of the learning and initial uncertainties surrounding pig grazing. From this point, the team progressed with defined technical markers, signalling the start of a new phase for the farm's history. They entered a development phase with changes in pig management practices and the realisation of initial attempts to commercialise Saddleback x Duroc carcasses beginning in early 2023.



Figure 4 Open-field and technical day



#### E. Launch of Carl's Carcass Sales on Micro-Supply Chain - February 2023

- Text: This event signifies Carl's desire to highlight the specificity and quality of carcasses from his animals.
- Changes: While this event primarily involved Carl, BioDirect, and a new client, all stakeholders
  agree that this marks the beginning of something significant for the farm's future, potentially a
  major change in the marketing system. From this point, Carl refocused on creating this microsupply chain and highlighting the values behind it: local breeds, ree- range raising, and foragebased feeding.

#### F. Decision to Pursue Food Autonomy - October 2023

- Text: This decision was made amidst a very delicate economic context for the organic pork channel in France. Consequently, Carl and his accompanying team focused on optimising crop rotation to achieve feed autonomy and reduce costs.
- Changes: This decision did not yield instant results. Indeed, work on crop rotation lasted from October 2023 to April 2024. Concurrently, Carl reinforced the benefits of agroforestry for animals on these parcels by sowing seeds to establish groves in the post-weaning pig run.



Figure 5 Alfalfa and fescue in a meadow for grazing pigs

#### G. Meeting with a Potential New Client - Micro-Supply Chain - December 2023

- Text: A meeting with this potential new foreign client was held at Carl's farm to present the systems, the farmer's convictions, and the product quality. This meeting included Carl, BioDirect, and the client.
- Changes: This event marked the beginning of collaboration with prestigious international consumers. This necessitated an evolution in the marketing system and, importantly, implied a new market for BioDirect, which had to create a new export channel.

#### H. Learning History Meeting - April 2024

• Text: This meeting allowed for a comprehensive review with all stakeholders heavily involved in the farm's learning history since the beginning. One partner was unable to attend but



continues to be present. This meeting focused on constructing the collective learning history around Blue Pig Farm.

• Changes: While this event did not directly cause changes, it facilitated the establishment of the collective history of the various stakeholders around the farm. It also allowed for a thorough review of achievements, remaining tasks, and encountered limitations and obstacles along the way.

### Lessons learned & future steps

Reflecting on our journey thus far provides valuable insights for shaping our future steps. Our experiences have highlighted several key lessons that can guide our approach moving forward.

Firstly, the technical aspects of grazing and tree planting have proven instrumental in evolving farm practices. The integration of agroforestry has shifted from a timber-focused approach to a holistic understanding, aligning with our goals of animal welfare and sustainable land management. This underscores the importance of continuous learning and adaptation in agricultural innovation.

Additionally, our collaborative efforts with AGROMIX groups have been pivotal. These collective moments have challenged conventional thinking, sparking innovative ideas that advance our overall system. However, sustaining such collaborations requires external support and organisation, a critical consideration for future endeavours.

A crucial lesson has been the necessity of building credibility around our economic model. Convincing stakeholders to engage during challenging economic times demands a robust demonstration of the economic viability enabled by our system. This involves continuous refinement and articulation of our value proposition. Moreover, meeting stakeholder expectations has emerged as a dynamic process. While initial expectations may not always be fully met, ongoing dialogue and responsiveness to evolving needs are essential. Regular engagement, knowledge sharing, and securing funding are pivotal for maintaining stakeholders' involvement. Looking ahead, we recognise the need for continuity beyond specific projects like AGROMIX. Our actions must be designed to endure, ensuring sustained progress even as external circumstances evolve. This calls for a strategic approach that emphasises long-term impact and scalability.

In charting our future steps, a key focus will be on guiding the agroecological transition effectively. Empowering pilots like ourselves to lead this transition requires robust support structures and partnerships. Our team's role in asking the right questions and facilitating meaningful change remains central to our success.

Finally, navigating pioneering initiatives, such as our micro-supply chain, requires perseverance amid challenges. Securing adequate funding and fostering broader farmer engagement are critical to scaling our innovations effectively. In conclusion, our common history thus far has underscored the importance of adaptive learning, collaborative innovation, and sustained stakeholder engagement. These lessons will inform our strategic direction, ensuring that we continue to drive positive change in agroecology and sustainable farming practices.



## VI Learning History La Barrosa – Spain

### Pilot learning history

- 1 Start (January 2022)
- 2 Pilot team meeting (March 2022)
- 3 Focus group (October 2022)
- 4 Participatory mapping assessment in situ (February 2023)
- 5 Water biosafety discussion in situ (September 2023)
- 6 Pastures rental discussion in situ (December 2023)

7 – End (March 2024)



Date/or period	Description of important moment/ period in time/event	<b>Perceptions and reflections</b> : What was the effect of this on the developments within the pilot and why did they happen?
09/2023	Drinking points	From the learning history diagram developed in Angers (June 2023) we have started to discuss about the Moments 5 and 6, drinking points and rental pastures. The farmer has mentioned that he has closed a watering pond to distribute water in three fences and he has installed watering points throughout the farm supplied by water from boreholes. He thinks that water quality has improved a lot because E. choli was not found in the last analyses. He also thinks some economic investment in maintenance is still needed in spite of the low price of some technologies. He considers this initiatives proposed by AGROMIX has been benefit to reduce external dependence and being less worried about water consumption in summer. He recommends this practice and in fact the farm of his aunt has replicated the same with good results (fewer animals affected by tuberculosis). He also considers collaborating with AGROMIX researcher after the project life because he likes closing every pond of the farm.


02/2024	Rental of pastures	The montanera (acorns supply) of 2023 was at risk because the owners did not find any convincing agreement with any external producer of pigs. So, their first decision was feeding their cattle with acorns. Finally, they found a company that put a good price and it accepted two conditions: a limit of animal stocking rate and livestock management must be made by farmers. The initial conditions of pigs was very bad but the farmers achieved improved their weight and also to put nose rings to avoid any type of land degradation, particularly soil erosion. This practice is being good because the financial risk is lower, although not zero, because the farmers do not need to buy livestock, that it is scarce nowadays. In addition, they can obtain money reducing considerably the risk of land degradation because they are also in charge of livestock management. This practice is quite exclusive because many farms rent their montanera but livestock management depends on company and not in the farmers. La Barrosa farmers are worried because pig market is quite changing but they insist that in the future they should close the cycle until they can sell their pigs with a
		future they should close the cycle until they can sell their pigs with a label that certifies this pretty original and eco-friendly livestock management.

- Even semi-natural and traditional farming systems can be redesigned (Angers #1)
- Many things can be done but we must be pragmatic and patient (Angers #2)
- We must find comparable farms to compare our results (Angers #3)
- We must encourage the participation of many farmers since the functional diversity of dehesas is too high
- Soil conservation is crucial

## Additional reflection from the pilot team

What would you do differently if you started the process over? What would you recommend to people who want to start a similar process?

*i.* Did you find the RID (Reflexive Interactive Design) a useful guideline to initiate a change process change?

We should look for money to implement co-design and to compensate farmers for their participation. Perhaps some of them should be partners of the project.

*ii.* Do you feel that the expectations of all actors in the pilot have been met and how did you approach this?
 It is useful but sometimes it is not feasible since it requires the participation of many people to

be together at the same time



- Which of the discussed innovations around MF and AF was picked up easily/difficultly in the pilot?
   Our expectations have been reached. We have missed a more enthusiastic participation of policy makers.
- iv. To what extent were you able to link and/or use input from the other AGROMIX WPs in the pilot? How could that be improved?
   We have discussed a lot but few were implemented due to economic constraints.
- v. To what extent was the interaction with the other pilots' crucial/added value? Unfortunately, we have had no useful links to other WPs.
- *vi.* What other lessons have you learned that you would like to share with others? The visits of other pilots were quite useful: Tenuta di Paganico, Cochon Bleu in France, etc.



# V Learning History Caseificio di Manciano – Italy



Date/or	Description of	Perceptions and reflections: What was the effect of this on the
period	important moment/	developments within the pilot and why did they happen?
	period in	
	time/event	
June 2021	System analysis	The pilot project effectively tackled the implementation of agroforestry and mixed farming systems within the supply chain. Nevertheless, it is recommended to broaden participation in future projects. Specifically, there is a suggestion to engage a greater number of intermediary actors, such as the ones in dairy production value chains.
June 2021	Stakeholder analysis	The majority of stakeholders within the supply chain were included, and their requests were duly acknowledged, which is commendable. However, for future projects, it is advisable to involve a broader array of organisations.
February 2022	Networking	The event was valuable and interactive, providing an excellent opportunity for stakeholders from diverse professional backgrounds to exchange thoughts and ideas. The working group demonstrated remarkable cohesion and willingness to cooperate. This engagement facilitated an expansion and deepening of the stakeholders' understanding of the whole supply chain, while also fostering new connections conducive to constructive dialogue. Regrettably, the event appeared somewhat isolated from subsequent activities, raising concerns about potential disconnection from other project initiatives. Furthermore, the absence of key institutional entities at the event, despite extending invitations, was noted.



February	SWOT analysis	The discussions yielded a multitude of interesting and enriching
2022		viewpoints. Leveraging the ideas garnered to fortify the supply chain
		would be advantageous.
February	Participatory	The event proved to be both enjoyable and engaging, fostering lively
2022	mapping	discussions and productive exchanges. The information-sharing
		method, akin to speed dating, was well-received. Moreover, the
		participant mapping effectively illustrated the interrelations and
		potential connections among various stakeholders. It also
		underscored the necessity for enhanced collaboration among
		stakeholders who may not possess an in-depth understanding of each
		other's roles within the supply chain.
		Furthermore, there was a notable consensus on the need to expand
		collaborations to encompass a broader territorial scope, potentially
		through the implementation of training activities. However, it is worth
		noting that to date, the comparative analysis conducted has not
		vielded significant tangible outcomes.
March	On farm	The experimental trials played a pivetal role in the preject proving to
2021 -	evnerimental trials	he both cantivating and professionally executed. The emerging results
lune	experimental trials	are promising However due to project constraints there were
2022		limitations in scaling up the number of farms and animals involved in
		the experimentation. Moving forward, it would be advisable to
		expand these parameters and standardize the selection of the animal
		samples. Additionally, implementing a Life Cycle Assessment (LCA)
		analysis would be beneficial.
October	Re-branding of the	Rebranding is essential for effectively communicating the added value
2023	cheese product	of this product to consumers and is a valuable tool to enhance
		knowledge of the territory and its distinctive products. Labels are an
		excellent opportunity to communicate sustainability claims to
		consumers, although further elaboration using additional tools is
		necessary to provide deeper understanding. Avoiding
		oversimplification of concepts and delivering reliable information are
		crucial aspects. The notion of engaging experts in the rebranding
		process was well-received.



- While the project topics remain captivating, certain producers and farmer consortia expressed concerns regarding the extended timelines.
- The project has proven to be interesting and useful for the stakeholders actively involved. However, there are still limitations in applying these techniques on a large scale. To achieve this, the support of institutions would be needed. Unfortunately, so far institutions have shown little inclination to collaborate actively. In the future, it is necessary to find ways to encourage such collaboration.

#### Additional reflection from the pilot team

The Reflexive Interactive Design could serve as a useful guideline for certain groups, but in this instance, the team opted to provide feedback spontaneously and seemed to prefer the moment when we engaged in a discussion rather than writing on sticky notes. Non-academic partners engaged in several research projects with the same research centres found it slightly challenging to consolidate the lessons learned from individual projects, as their focus was primarily on the reference partner rather than on a specific project. The pilot team generally agreed that increasing the diversity and number of actors involved would enhance the quality of the results obtained. Overall, the expectations of the involved actors were fulfilled. In-person meetings and events are highly valued aspects of the projects, as they enhance collaboration and exchange.



## VI Learning History VenetoMix – Italy



Date/or period	Description of important moment/ period in time/event	<b>Perceptions and reflections</b> : What was the effect of this on the developments within the pilot and why did they happen?
29 Oct 2021	Launch and presentation of the Agromix Project and acquaintance between potential participants in the pilot group at by <i>Al Confin</i> <i>farm</i>	They shared a general feeling of a new on-coming experience to discover and to interpret as a very bio- diverse group of farmers
28 Apr_2022	Pilot group formation (VenetoMix) and visit to Veneto Agricoltura, Sasse Rami pilot farm (with agroforestry research site)	It was inspiring for the group the intervention of an AF expert (G. Mezzalira) and the visit to agroforestry experimental fields, including Poplar clones comparative test (MSA varieties of disease resistant poplar - compared with the most common clones used in intensive poplar production) and Paulownia, that making the pilot group feel part of a new perspective for a more sustainable and innovative agriculture
May_Jul 2022	Visit and interviews to each farm/farmer	The comment was that the visit was enriching by sharing opinions on your own farm because one was 'forced' to focus on the status quo, the medium term objectives and the margins of farms' further improvement
19-28 Sep_2022	Seminar Soil fertility experiences and soil analysis (Al Confin farm, VA 'Po di Tramontana' Experimental Center)	It was interesting both to observe the work carried out in Veneto with soil mapping and to be involved in the practical activity to see how to sample soil in your farm with the analysis of soil profiles and how to conduct yourself a visual assessment.



19/12/22	First Co-design meeting (Barduca farm) experts present: Andrea Rizzi, Roberto Fiorentin	For the most it was an interesting moment of training and knowledge about other projects in progress; it was particularly appreciated the speech of Veneto Agricoltura expert of tree species, which was later on contacted for some advice by pilot memebers. The co- design was useful for sharing information and looking with 'other eyes' from an external point of view your own farm.
13/02/23	Second Co-design meeting ( M. Giovannini, F. San Bonifacio farms) expert/professionals from AF consultancy, and Regional Officer of RDP_AF measures	It was sharing opinions and knowledge outdoor (by the fields) as well as indoor within groups (the co-design was made by mapping and SWOT analysis, divided in three groups); it was appreciated that every group could give his version of their 'solution' for each farm, and each group was in turn acting as actor or spectator. It was considered as an important event for expanding the network of contacts and consolidating existing contacts.
27/03/23 27/04 and 11- 17/05/2023	Third Co-design meeting (Al Confin, A Roda dea sega, farms ) M.Giannini fruit- trees, expert from Arpav (Regional environmental protection agency-Soil Lab) Open Day and seminar on soil fertility and cover crops techniques (different sites, experimental and private farms)	It was appreciated to have on a single occasion the possibility of receiving different feedback on the farm from people with completely different farm realities and therefore without a pre-set mentality. This is not a secondary aspect when hyper-specialisation in cultivation now leads companies to be interested only in very specific aspects. Open day and two days seminar were able to improve knowledge on important issue of soil fertility and organic system, the pilot participants say.
07-20/06/23	Field sampling days by Arpav (soil quality indexes) comparing: grazing and permanent grassland 'Al confin' farm, arable field and hedge area AF , San Bonifacio farm.	The participants comment was that this was responding to their demand to discover the fertility of the soil not only as a function of the nutritional elements, but of its biology. With ever greater evidence, systems for diagnosing the biological fertility of the soil are becoming widespread. New analysis techniques and systems are welcome.
23/10/23	Technical visit to "Iside Farm" organic and regenerative, and AF/MF	Farmers returned home very stimulated, as they felt this farm not as a simple agricultural farm but as an agricultural ecosystem, within which different systems coexist, from agroforestry to horticultural ones, from the



	agriculture (M. Mazzola	small production of mushrooms to small sheep flock;
	farm)	recycling material, invest in new activities (small fish
		production) and getting less dependent on every
		external input are the biggest challenges for the
		manager, which were appreciated also by the pilot
		group.
25/03/24	2 <sup>nd</sup> Co-design and visit to	The visit was appreciated, in particular for the part of
	new project (fruit trees and	sharing the design and technical choices on the plant
	horticulture" at farm 'A roda	species to be included in the row, together with
	dea sega' (discussion on	horticultural consociated species.
	'Lesson learned') within the	The discussion was probably limited by the small number
	pilot group	of participants, but the period is to be considered when
		you program meetings with farmers, as the season
		begins. A new opportunity to discuss within the pilot
		participants will be planed (before summer 2024)

- Comparison with other companies is always positive and necessary to avoid locking yourself within your own backyard.
- Agriculture has the fundamental role of an operational arm for the transition towards a more sustainable economy compatible with human development.
- The farmers that participated in this project are certainly not representative of the national scenario but at least they demonstrate that there are virtuous farmers who do not act only for mere profit but who have a broader and more responsible vision of the particular work they do.
- Most of the participants positively evaluated the opportunity to come into contact with other farmers/professionals/researchers with interests in the same topics (agroecology, agroforestry, etc.), with a view on sharing experiences. Some suggested to preferably aggregate micro-groups of 4-5 people with similar farm cultivation management, to maximise the benefits and exchange of knowledge and to keep the participants' interest alive during subsequent aggregation/exchange meetings. Even the long lasting period of the project (more than three years) was appreciated by some, since 'it allows you to sediment the inputs and new ideas that came along'.
- It is important to cultivate human relationships, design a mixed agroforestry system in the context, with an accurate analysis of the stakeholders, costs/benefits, ecological dynamics and social and economic sustainability of the intervention.



#### Additional reflection from the pilot team

Some participants to discussion expressed difficulty in giving advice, for agriculture is so variable and full of unexpected events that every planning, even though moved by the best interests and goals clashes with the reality of the facts. The factor that was appreciated most was being able to visit other farms and consequently being able to compare between them. Therefore the advice was to go on with what has already done, that is, 'to promote company visits to those interesting places in order to be a continuous stimulus to our work'.

Co-design was found difficult for some farmers to put into practice. It is probably necessary to re-think the motivations and involvement model of the different participants. In particular, the co-design format was considered useful but sometimes distracting; the focus on one farm in particular brings into play very specific cultural, social as well as agronomic dynamics, and it is felt as a delicate process because it brings into play factors and limits of the company itself, which not everyone is ready to put into play; one suggestion of a different way would be to consider a specific issue (mixed hedges with horticulture; free range poultry in AF; etc..) and make a specific group interested in each issue to discuss together about possible solutions. It was argued that sometimes the calendar of meetings is difficult to reconcile with the needs of work and the budget in the countryside, and to evaluate the possibility of considering a 'fixed' calendar of meetings already at the beginning of the year. The demand from many was what element/s could contribute to maintaining a greater continuity of meetings with the same participants, from which it could then be easier to trigger a co-creation process, which undoubtedly requires time, perseverance and patience to develop the human relationship first and foremost.

From the discussed MF innovations the most appreciated one and easily picked up was the intercropping of different species (vegetables, fruits, forest species) along the rows of hedges and orchard/vineyard, and more in general enhancing number of species within the farm. From the AF innovation systems it was argued that there were few examples to be seen, it would be much appreciated to have visited other AF regional or extra-regional virtuous site examples.



## **VII** Learning History Winthagen - Netherlands



Date/or	Description of	<b>Perceptions and reflections</b> : What was the effect of this on the
period	important moment/	developments within the pilot and why did they happen?
	period in time/event	
Spring '21	One-on-one meetings	This resulted in a good overview of the needs and challenges of
	with different	the different participants.
	stakeholders and	
	partners	
Summer '21	First systems analysis	This helped to show the key system components together with
	by project team	the relationships each other and key goals. This helped to show
		how different stakeholders could influence the desired result
		and also the importance of the each in achieving the desired
		result. It also helped to show how the greatest benefits would
		not always be obtained by the stakeholders implementing a
		change. That there was likely to be a mis match between the
		participants making changes and the ones receiving the
		benefits.
Spring '22	Co-design workshop 1	Important to have a balance of different opinions within the
	Introduction to each	group and have participants who are invested in the outcomes
	other, defining mission	of the project.
	statement	
Summer '22	Co-design workshop 2	We came to collaborative goals and collaborative solutions.
	Agreement of goals and	Appreciated the added value of developing the goals and
	pilot area, discussing	solutions together.
	challenges and possible	
	conflicts, identifying	
	and clustering possible	
	solutions	



Autumn '22	Sustainability and	This helped to show where improvements could be expected
	resilience assessment	and also where we could do more to achieve our desired
	by project team ?	outcomes. Sometimes we were surprised by the results which
		helped to stimulate discussion and new ideas. Largely because
		In some cases the new design scored less than we had expected
		because the assessment didn't capture all the factors that
		influenced the core indicators. Despite this, it served to focus
		attention on what we were doing and what we expected to
		achieve.
Autumn '22	Co-design workshop 3	The workshops ensured ownership and interest in the further
	Co-developing and	development of the project.
	specifying solutions	
Winter '23	Co-design workshop 4	
	Finalising solutions and	
	discuss their suitability	
	within pilot area	
Summer '23	Field visit – tailoring	Uncertainty about actual implementation. Good discussions,
Summer '23	Field visit – tailoring design	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is
Summer '23	Field visit – tailoring design Discovery walk through	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this?
Summer '23	Field visit – tailoring design Discovery walk through pilot area to identify	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this?
Summer '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this?
Summer '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this?
Summer '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this?
Summer '23 November	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on measures, hydrology, models, landscape. Best to appoint a local
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on measures, hydrology, models, landscape. Best to appoint a local area manager who makes sure that plans are followed-up after
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on measures, hydrology, models, landscape. Best to appoint a local area manager who makes sure that plans are followed-up after project.
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on measures, hydrology, models, landscape. Best to appoint a local area manager who makes sure that plans are followed-up after project. Good approach to jointly tackle regional problems with multiple
Summer '23 November '23	Field visit – tailoring design Discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs Evaluation per e-mail	Uncertainty about actual implementation. Good discussions, but leading to what? Will it actually be implemented and who is going to 'pay' for this? A successful co-creation process has some requirements: good process facilitator, support by available knowledge on measures, hydrology, models, landscape. Best to appoint a local area manager who makes sure that plans are followed-up after project. Good approach to jointly tackle regional problems with multiple actors. Should happen in more regional processes.

- All stakeholders should be motivated to achieve something in the project. With reasonable opportunities to achieve this. They don't need to have the same goal, but it should be possible within the broader scope.
- The RIO design process takes time. To initiate, develop a committed group, design, and further develop. This time is well spent as it allows the development of ideas that the group wants to implement, and that also take into account considerations from other stakeholders that otherwise may be overlooked.
- To speed things up it would be valuable to have a more intensive start in the winter period when farmers are more available.



- It is valuable to have a local who facilitates the connection to the group and acts as a facilitator. This has worked well to ensure trust and understanding. It has also been valuable to bring in guest speakers and expertise for inspiration.
- The facilitation and use of different techniques to encourage participation has also been very valuable to ensure that all the stakeholders take part and are heard. The use of group discussions, small group discussions, drawing sessions, post its, maps and other media has been valuable for this.
- A design process without the certainty of commitment and financial measures to actually implement the outcomes can reduce the amount of energy from some of the stakeholders.
- Process is best supported by a good local process facilitator and sufficient knowledge and experience to support decision-making.

#### Additional reflection from the pilot team

- Expectation management is an important element that requires attention when engaging stakeholders.
   In addition, it is valuable to also discuss expectations during the process for stakeholders who missed workshops/sessions, or appear to want to achieve something else.
- Reflection moments are very valuable in the process. To pause and ask the question "Is this the result we really want?". In the further development of ideas into a final design, this is also advisable and to evaluate whether we are on the right course and keep everyone involved.
  - Scheduling more reflection moments to review the process and hear recommendations from the group would also be valuable. At the beginning of the process, the question was raised, "Can't you just come up with a proposal for the area and we'll indicate whether we think it's good or bad?". In retrospect, it has nevertheless become clear how important cooperation is to understanding each other and reaching supported solutions.
- Establishing a local project owner (problem owner) is recommended. This can enthuse participants and focus on local ownership. The local project owner is then also tasked with taking steps towards implementation. Within this pilot, there was consultation with the municipality at the start to free up capacity for this. This was insufficiently realised due to capacity problems.
- Different interests and ideas emerged during the walk through the area (when the proposal became concrete). This generated many valuable conversations and is very useful for refining ideas and working them out. When working further into a final design, several sessions would be valuable to discuss solutions and how best to arrange this in the area. In addition, attention should be paid to how the design of ideas affects the achievement of other goals.
- The aspect of non-commitment and voluntariness is complex. Voluntariness is very important for participants, but there was also a clear desire for follow-up and implementation. In this pilot, we did not have a mandate to test the extent to which implementation could be voluntary and what is needed to make this interesting and feasible for landowners.
- In this pilot project, we had no budget and mandate to proceed to a final design and implementation.
   For follow-up, there are two possible approaches: develop a proposal and see if it can be funded, or start with a budget and develop a proposal based on that. The pros and cons of these options were not explored in this project. Clarity on the resources available to implement the project, both budget and land availability, would help smooth the process.



- The co-design process was developed to come up with new ideas for complex issues enabled by multiple parties. In the process, it is important to create enough space and apply methods to come from the here and now and come up with creative solutions together.
- A facilitator is essential to the co-design process who guides the whole process and arranges the deployment of support in the form of knowledge in terms of measures, hydrology and models, landscape and imagination.
- Many of the solutions focused on the primary goal. Apart from this, there is plenty of room to contribute to further goals in the further elaboration of the design into a final design. In this, attention can be paid to additions that strengthen the ecological connections, recreation and liveability of the area. This was not possible within the scope of the project, but is essential in realising various goals in the area.
- In the case of the Dutch pilot the focus has been on the process and not necessarily the development of MF or AF per se. Many different ideas were proposed to achieve the regional goals. Consequently the exchange with other pilots was more at the level of process instead of the technical development of agroforestry or mixed farming.



## **VIII Learning History Oikos farm - Poland**



Date/or period	Description of important moment/ period in time/event	<i>Perceptions and reflections</i> : What was the effect of this on the developments within the pilot and why did they happen?
17 th August 2022	1st Polish pilot workshop	The meeting was a key point in the whole activity. It confirmed our belief in the need for action. At the same time, the formula in which it was held allowed us to listen carefully to stakeholders from different backgrounds. Involving them in the process of editing and creating the idea of the Carpathian Pasture Beef Quality System allowed us to create a "common vision" of the project. Summing up, the meeting had the intended effect.
24 th April 2023	2nd Polish pilot workshop	<ul> <li>This meeting, in a small group, allowed to outline a map for action.</li> <li>Breaking the big plan into smaller actions was to help launch the project.</li> <li>Priorities using backcasting excersise were set (see below, for more details see the Initial Report from 1st Pilot Workshop in Poland). More people were added to the working group, which was expected to intensify activities. However, the support of the leader of the activities (Marcin Wójcik) still remained scarce. No new leader or even deputy leader emerged. This reflected very negatively on the rest of the project, as the protracted illness (burn out) of the leader did not allow for smooth operations.</li> <li>A. Initial stage.</li> <li>B. Building the foundations of the system</li> </ul>



		C. Secondary market analysis and educational and information
		campaign
		D. Launching products on the market
		<b>F</b> Detains be and building a family second to
		E. Raising knowledge and building a farming community
		E Establishing international collaboration
01.03.2024	3rd Polish pilot	This meeting, in the context of project implementation, was extremely
	workshop -	important and fruitful. It finally also included the umbrella organisation –
	Kick of	Polish Ecology (association of organic food producers and processors) -
	monting	which has the human recourses to implement the project. All the invited
	meeting	which has the human resources to implement the project. All the invited
		people arrived. During the meeting, the project concept was discussed
		once again. During the discussion, the final outcome of the project was
		discussed and amended. It was agreed that the first step should be the
		inclusion of Polish Carpathian Beef in the UE regional food
		systems/schemes (Protected Designations of Origin, Protected
		Geographical Indications), and the next step, much more difficult.
		chould be the creation of a quality system
		should be the creation of a quality system.
		During the meeting, key points were established and responsibilities
		were distributed. The team was expanded to 8 people. The leader of the
		activities was relieved by creating a 2-person coordination group, which
		activities was relieved by creating a s-person coordination group, which
		ne neaded. Specific activities were established with the assignment of
		people and the division of responsibilities.

- The creation of a recognised Quality System is a long-term process. A better solution would be to define Polish Carpathian Beef as a regional product in the EU
- Creation of a coordination group and a concrete division of tasks with a timeframe allowing to accelerate the activities.
- Defining opportunities and barriers (details in the report of the 3rd meeting), allowing to bounce back from opportunities and skip some of the barriers. Defining barriers that cannot be avoided/skipped, allows to start dismantling them in the initial stage of activities.

#### Additional reflection from the pilot team

What would you do differently if you started the process over? What would you recommend to people who want to start a similar process?

Starting from scratch, I would set up a coordination group right away, so as to ease the burden on the leader. I would also create a broader team right away with the inclusion of human resources from the umbrella organisation right from the start.

Did you find the RID (Reflexive Interactive Design) a useful guideline to initiate a change process change?



Those starting from scratch, looking back at our actions and experiences, should pay special attention to:

1) Creating a shared vision - in our case this worked perfectly. Stakeholders who feel they have an impact on the project are much more likely to join in.

2) Create a good team. Don't be afraid of blockers, no less, in case they appear, act immediately.

3) Provide HR facilities so that key people are relieved of bureaucratic work

4) Define at the outset the project's strengths, weaknesses, opportunities and barriers. This will allow you to bounce back from opportunities and skip some of the barriers. By defining the inescapable barriers, you can start dismantling them at the initial stage of activities

#### Do you feel that the expectations of all actors in the pilot have been met and how did you approach this?

Although perception towards tree planting on fields in not very positive across countryside inhabitants, agroforestry is not a controversial topic among farmers and decision-makers. This makes it easier to act. Convincing stakeholders to make changes in farming practices is most easily done by showing specific cases and linking this to the market. Certainly the lack of knowledge and awareness is a barrier, further action is needed, and in particular the creation of an agroforestry advisory service.

#### Which of the discussed innovations around MF and AF was picked up easily/difficultly in the pilot?

Incorporation of agroforestry alone to pastoral practices is challenging and difficult to perform by farmers, however adding AF as the element of the overall quality system is acceptable.

# To what extent were you able to link and/or use input from the other AGROMIX WPs in the pilot? How could that be improved?

The difficulty of communication in the context of the exchange of knowledge lies in the language barrier of the farmers and the time constraint of the project ambassador. Information provided by project leaders were not convincing enough. Besides, there are significant differences in topics between WP. In fact only silvopastoral practices from Portugal, Spain and Italy seem similar, however their conditions and problems are very different from Polish one. Compared to many western/south EU countries, this is not just a problem of increasing demand for value-added products. The most important factor of innovativeness in Polish agriculture seems institutional inefficiency, that reduces the efficiency of management by the farmers and discourages them. Poorly developed regional food market is even more prone to the changes, where frequent changes in regulations increase uncertainty and destabilise conditions for the operation of farms in the social context. Moreover the openness to cooperation among Polish producers and a transparent flow of information between practitioners and agricultural policy-are very weak, causing conflicts. How to improve social innovation under conditions of legal instability and lack of social trust?



## IX Learning History Curralões – Portugal

Date/or	Description of	Perceptions and reflections: What was the effect of this on the
period	important	developments within the pilot and why did they happen?
	moment/ period	
	in time/event	
February	Pilot team	Useful exercise to focus the team and farmer on a specific vision and goal
2022	planning	for the farm, and how existing ideas may fit within that overall vision and
	workshop –	what would be the enabling factors needed to realise change. Helped to
	discussing goal,	identify different pathways to meet that vision, as well as potential
	key challenges	barriers to change. Stakeholder analysis more challenging as limited
	and stakeholder	involvement in local networks at the time.
	analysis	
February	Pilot team –	Excellent opportunity for carrying out audit of available resources on farm,
-July	system analysis,	including trees and soil, plus recognise the interactions between different
2022	data collection	components.
	and boundaries	
May	Pastagens	First networking event that initiated wider stakeholder contacts and
2022	Regenerativas	relationship development.
	(regenerative	
	grasslands)	
	external meeting.	
11-15	Pastagens	Inspiration visit with local farmers and other stakeholders to landscape-
Jan 2023	Regenerativa	scale project in Andalucía where farmers are cooperating to promote
	(regenerative	sustainable agriculture in a region with even more climatic challenges than
	grasslands) visit	Mértola. Excellent opportunity for building network.
	to Alvelal.	
6 Feb	Keyline field	Farm demonstration of water-management approach 'keyline' – informal
2023	demonstration	atmosphere for discussing farming challenges and different approaches to
		water management.
0.4St	ast I I	
31"	1 <sup>st</sup> workshop –	There was some scepticism regarding the Vision developed by the pilot
March	presented and	team, but general feedback was that it was a good vision to aim for.
2023	discussed goal,	Good identification of challenges – water shortage and staff shortage
	challenges,	identified as two key challenges.
	system analysis,	How do we know if a solution is more resilient? The need for indicators
	included farm	Some potential alternative solutions already emerged during the
	VISIT	aiscussion.
oth Mari	2 <sup>nd</sup> workshap	The session generated so many great ideas and by weaking through the
	z workshop –	Wey Hey New' framework it was passible to parrow down the forward
2023	reviewed	two main areas of addressing water charteres and form diversification
	resilience	two main areas of addressing water shortages and tarm diversification.



1		T
	concept and	Interesting discussions about whether farming in this area is even the most
	indicators,	appropriate land use, or whether we should steer towards other 'easier'
	identified and	land uses such as solar energy production, tourism, hunting and
	classified	conservation.
	solutions	
5-7 <sup>th</sup> Dec	Jornadas Mundo	The presentation raised interesting discussions, especially around the
2023	Rural. Pilot	management of shrub for essential oil distillation, as part of the resiliency
	farmer presented	strategy of the case study.
	the co-design	
	pilot at local	
	symposium of	
	around 100	
	participants	
20 <sup>th</sup> Dec	Pilot team visit to	Following the Jornadas event, the pilot team was invited to visit a local
2023	established	essential oils producer who has built his enterprise over 30 years. He
	essential oil	shared his experiences and gave valuable insight and advice to the
	producer	essential oils world.
15 <sup>th</sup> May	Co-design	Documented and completed
2024	workshop with	
	Terra Sintropica	
	to design	
	scenarios for	
	diversification of	
	pine system on	
	farm	

- Pilot farmer learnt that the by-product from new product development (essential oil from wild shrub, Cistus ladanifer) has a value in its own right, therefore opening up new revenue opportunities.
- Challenges of climate change (water shortages) and social barriers (availability of staff) recognised as key barriers needing to be addressed.
- Farmers have an appetite for measuring the impacts of management/system changes on resilience of their farms.
- Diversification into non-farming activities, such as tourism, solar energy, hunting viewed as essential to support farming activities in this region.
- Visits to other inspiring farms was crucial for showing what is possible to achieve peer to peer knowledge exchange, including learning about what can go wrong.

## Additional reflection from the pilot team

If we were to start the process again, we would involve/employ a local 'professional' facilitator or networker as these are not skills or contact that we had in our team, and I think we were limited by this. Especially as



we were having to build the group from zero, while local networkers already have a good knowledge of who to contact and who would be interested.

For others wishing to start the process, it is important to think carefully about if a co-design approach is appropriate, especially for farm-scale projects – ultimately, the farmer makes the decisions regarding development of the pilot farm, but it is important that pilot members feel that their input is valuable and somehow integrated. Maybe, therefore, this approach is better for the landscape or network scale projects where the balance of decision making is more even.

Before even contacting potential members, it is important to attend other relevant events to start networking and building relationships. This is essential as people are more likely to respond to invitations from people they know.

The use of the RID methodology in the co-design process was positive, especially to guide logical steps through the process, although the terminology sometimes was difficult to understand (e.g. 'brief of requirements', 'morphological function chart'). It would be useful to develop a more user-friendly interpretation of this for facilitators of similar initiatives going forward. In the context of the AGROMIX project, we should have spent more time in the initial workshop, explaining what we meant by resilience, and we had to go back to this in our second workshop.

Although we presented the other pilots briefly in our workshops, I don't think we really took advantage of the experiences from them - I'm not sure what format this could have taken, perhaps a combined workshop with members from each pilot (i.e. not just the pilot team), although this obviously would be a challenge to organise and fund within the project budget.

Our pilot members were interested in really understanding what we meant by 'resilience' and how we could measure the impact of changes on the resilience of a farm. So, we used the work done in WP1, specifically deliverables D1.1 which defined resilience, and D1.3 which identified farm-level indicators, and in the second workshop, we presented and discussed these concepts with participants.

The Sustainability and Resilience Assessment from WP4 was really useful as a framework to review the various solutions put forward by the pilot members, considering the wider impacts and potential trade-offs of implementing changes.

In WP4 although we didn't carry out the co-mapping exercise with the group, we think it will be a useful tool going forward to plan, spatially, implementation of the solutions put forward.

Although it wasn't foreseen in the project description, it would have been useful to have had more interaction with the policy and value chain work packages as these elements came up in discussions.



## X Learning History Association of Rudno Households – Serbia

Date/or	Description of	Perceptions and reflections: What was the effect of this on the
period	important moment/	developments within the pilot and why did they happen?
	period in time/event	
25.10.2022	Definition of	The legislation of our country does not recognise Agroforestry.
15.11.2022	agroforestry	There is no clear boundary between forestry, protective tree rows
		and agroforestry.
		Agroecological measures have small support from the national and
		local budgets.
		In the IPARD III program financed by the EU, there is a plan for pilot
		areas with agroecological measures, so it could be NP "Golija".
		Clear support for agroecological measures through support
		measures from public funds is needed.
24.10.2022	Farming in protected	Environmental and economic interaction of various components
7.12.2022	area and	(productivity, profitability, sustainability) is ensured.
	Agroforestry system	Agricultural practice in the Golija Nature Park farms is very close to
		agroforestry.
		It's necessary to research possibility to plants autochthonous species
		of trees on farm's plots in coordination with Serbia forest.
		Pastures and meadows are increasingly endangered, due to the
		reduction in the number of livestock and less grazing.
22.2.2022	NAived formation on	Deduction of recetive trends in the dealine of seil quality
22.2.2023		Reduction of negative trends in the decline of solid quality.
	agroiorestry	Support is pooled to preserve animal huchandry, which is in decline
		Improving the diversification of economic activities
		In proving the diversification of economic activities.
		field grazing in bachila (concerned temporary bourse in the mountains
		with stables)
6 3 2023	Measures to improve	Measures of protection, arrangement and conservation of soil and
24 11 2023	soil quality	water
24.11.2025		Permanent analysis of soil as preconditions for soil management
		A significant part of the plots on Rudno are exposed to the winds and
		it is necessary to plant trees around the perimeter of the plots as
		defence against the wind.
		There are good practices on farms in the rotation of plant crops and
		grasses in order to preserve the quality of the soil.
		Permanent education and advisory support is essential.



6.4.2023	Diversification of	It's necessary to improve sales and promotion channels for main
10.7.2023	farm economic	products of area.
	activities	The development of tourist services in the last 10 years helps to
		diversify income and product placement.
		Sustainable agriculture support good reputation of area as
		protected area.
		Young farmers are the agents of change.
18.12.2023	Impact of the model	Contribution to soil quality.
	on improvement and	Reduction of greenhouse emissions.
	sustainability	Pressure on energy conservation.
		Waste reduction.
		Sustainable agricultural systems could be presented to tourist of
		area and value of this production.
		Agroforestry and mix agriculture have positive impact on protected
		area as NP "Golija".

- Development of new models and approaches in agroforestry is very important for area, because preservation existed practice, biodiversity and sustainability of production.
- Determination of possibilities for changes in legal regulations.
- Agroforestry and mixed farming provide advantages for establishing sustainable agriculture and a positive impact on the ecosystem and the concept of protected area as NP "Golija".
- New sustainable agriculture system could help income diversification and product placement.
- Young farmers should be permanently supported by education and advisory services.
- PE "Serbia forests" as manager of the Naturpark "Golija" should strongly support implementation of good practice including Agroforestry and mix farming.

## Additional reflection from the pilot team

The process is quite complex in the area of Rudna (and even more widely, in the area of Serbia), because in Serbia there are no clear regulations, as well as support measures, so often the Agroforestry and mix farming approach itself does not give clear guidelines to farmers, although the analysis shows that their practice on the farm is largely based on those principles. More work is needed with farmers to encourage them. In addition, further dialogue is needed with decision-makers at the local and national level, to more courageously plan and finance agroecological measures, including agroforestry and mix farming.

We have previous experience with implementing different guidelines. Based on previous experience and experience with implementation of Reflexive Interactive Design we have positive experience, especially with new practice to initiate a change process.

During the discussions, different approaches of young and older members of the farms were observed. Young people are more clearly oriented towards economic indicators and practices that facilitate their work, while older people are very often oriented towards traditional approaches, which in the case of Rudno, are very



close to agroforestry and mix farming. For example: the elderly prefer a combination of orchards on a part of the plot that is used for arable and vegetable growing, while the young prefer "clean" plots due to easier cultivation. The above indicates the need for additional work with young farmers and analysis of the advantages of Agroforestry and micro farming:

Opsti je utisak da su ocekivanja vecine stakeholders i ucesnika ispunjena, jer je sam proces ukljucio sirok krug stakeholders i radilo se na konkretnim primerima, kao i u podrucju koje poseduje znacajan potencijal za razvoj zajednice i poljoprivrede na principima odrzivog razvoja koje je na kraju krajeva i definisano zastitom podrucja u okviru UNESCO programa "Man and Biosphere".

The general impression is that the expectations of the majority of stakeholders and participants have been met, because the process involved a wide range of stakeholders and worked on specific examples, as well as in an area that has significant potential for the development of the community and agriculture based on the principles of sustainable development, which is ultimately defined by protecting the area within the UNESCO program "Man and Biosphere".

As Agroforestry with defined principles is a relatively new approach in Serbia, although it is significantly represented in practice, the exchange of experiences with other pilot initiatives meant that in the segments concerning:

- Experiences of working with stakeholders;
- Ways to define possible solutions;
- Methods of coordination with the multisectoral group of stakeholders;
- Involvement of researchers in defining pilot solutions and their multi-year follow-up (i.e. University of Pisa).



## XI Learning History Marston Vale - United Kingdom

Date/or	Description of	<b>Perceptions and reflections</b> : What was the effect of this on the
period	important	developments within the pilot and why did they happen?
	moment/ period in	
	time/event	
July 2021	Connecting with Forest of Marston Vale Trust	Cranfield University has close links with the Forest of Marston Vale Trust. The Trust over the previous years has been involved in the "Trees for Climate" programme. This is a woodland creation programme and part of the national government-led Nature for Climate Fund. Contacting the Trust was crucial. Farmers in the UK can be difficult to engage. However, through its work, the Trust had an established and on-going relationship with farmers, and identified a list of farmers from its database, that it felt it might be interested in participating in the project. The Trust established initial contact with the farmers, and invited potential participating farmers to the first meeting, also providing the venue and organising the logistics for the session.
Nov 2021	Initial workshop with farmers	In the first meeting hosted by the Forest of Marston Vale Trust, the background and objectives of the AGROMIX project were explained to the farmers. The farmers were then asked to brainstorm and feedback on the key challenges, opportunities, and risks that they faced as farmers.
Dec 2021	Follow-up workshop with farmers; participatory identification of research challenge; and identification of five participating farmers	In the second meeting with farmers, also hosted by the Forest of Marston Vale Trust, there was considerable interest from the farmers to understand the current net levels of greenhouse gas (GHG) emissions from their farms. They recognised that this was an issue that was gaining importance and traction in the UK and that at some point in the future, there could be regulatory pressure for farmers to respond to the challenge. They identified an interest in the role that tree planting might play in supporting a move to be carbon neutral (or even carbon positive) farming, but were also aware that other options could be used to achieve this. During the meeting, five farmers agreed to participate in a study to determine what the net greenhouse gas balance of their farms would be. Of particular importance was the fact that they agreed to make their farms and farm data available for the study.



February-	Research to	Detailed and intensive research was carried out on the five
May	determine the GHG	case study farms between February and May 2022. This
2022	emissions of the	included a focus on the potential role of the integration of
	five case study	trees. To achieve net zero GHG emissions, it was essential to
	farms;	understand and evaluate the baseline or current GHG
	identification of	emissions per farm. This was achieved through farm-level
	carbon calculators;	audits which were conducted through a carbon calculator.
	engagement and	There is a range of "carbon calculators" that have been
	co-research with	developed for quantifying the GHG emissions from
	farmers	agricultural production. Two farm-based carbon calculators
		(Farm Carbon Calculator and Agrecalc) were used. For the
		purpose of this study, the system boundary chosen for the
		GHG emissions inventory was from cradle to gate which meant
		that the GHG analysis was undertaken on production activities
		up to the farm gate.
June	Study results	The GHG analysis was developed in the form of a report which
2022	shared with the five	was shared electronically with the participating farmers. The
	participating	document was organised into the following:
	farmers	• Brief review of existing frameworks and models to
		provide farm-level carbon inventories and to
		calculate greenhouse gas emissions
		<ul> <li>Development of carbon inventory for the five case</li> </ul>
		study farms
		• Application of two farm carbon calculators (Carbon Calculator and Agrecalc) to determine the
		greenhouse gas balance on each of the five farms
		• Evaluation of the potential role of trees and other
		management practices in enabling each farm to
		become carbon neutral
Feb-May	Upscaling study of	Following up on the previous study which focused on five case
2023	to achieve net zero	study farms and their GHG emissions, a modelling analysis was
	GHG emission	also undertaken to determine what the result would be if the
	across the whole	whole Marston Vale area was to become net zero. The study
	Marston Vale area	opted to assume two types of scenarios for this, one where
		every farm across Marston Vale achieved net zero, and
		another where net zero was achieved at a Marston Vale scale.
		The two scenarios were then compared.
Dec 2023	Results shared with	In December 2023, a meeting took place in the Forest of
	farmer groups	Marston Vale Centre. An open invitation to landowners in the
		Marston Vale and surrounding areas was sent. The meeting
		was organised by the Forest of Marston Vale Trust. It was kept
		informal and took place in the form of a discussion, while
		tarmers and landowners had breakfast. Cranfield University
		presented the results for the five case study farmers and the
		findings from the upscaling study. Participants were also
		briefed on the Trees for Climate project, being run by Forest



	of Marston V	ale Tr	ust, and	d a general up	date on C	ountr	yside
	Stewardship	and	other	government	support	was	also
	provided.						

- Cranfield University links with the Forest of Marston Vale Trust were of pivotal importance in identifying farmers who would be willing to participate in the AGROMIX study. However, we found that farmer participation for the entire duration of the study was difficult to achieve. During the first phase of the pilot, five farmers spent substantial time working with the project team to develop greenhouse gas balances for five individual farms. However, beyond this initial activity and the dissemination of the results, it was difficult to coordinate subsequent events. This is understandable, as most of the activities require a time commitment from farmers' side, which is not always given, because they are very busy with the day to day management of their farms.
- We compared two farm-based carbon calculators (the Farm Carbon Toolkit and AgreCalc) across five pilot farms. The two calculators gave broadly consistent results for the arable farms and arable farms with limited livestock, but the results for an intensive poultry farm varied primarily because of different assumptions concerning the greenhouse gas emissions associated with purchased poultry feed. Subsequent to our study, work on other research projects and the implementation of new algorithms have sought to converge the results from different greenhouse gas calculators. This has implications for any kind of regulatory framework for the achievement of net zero emissions on farms, since a calculation tool and protocol will need to be agreed to the satisfaction of all the different stakeholders, if incentives or penalties are be used in the process of achieving net zero on farms.
- In the second year of the pilot, we undertook a study to compare the effect of applying net zero
  greenhouse gas emission targets at farm and at landscape levels. Applying net zero targets was
  associated with a decline in food production and a decline in farm profitability. The reductions in
  food production and profitability were greater when targets were set at a farm rather than a
  landscape level. This has implications for the choice of strategies that might be deployed to achieve
  net zero.

## Additional reflection from the pilot team

# What would you do differently if you started the process over? What would you recommend to people who want to start a similar process?

Farmers are often very busy and it is important to clearly explain to interested farmers that in a process of co-produced research, they will need to be willing to participate in an on-going basis in several activities. Farmers are very busy individuals, and as the requirements for time inputs in participative research increases, it may be appropriate and necessary for farmers to receive some form of payment to support their proper participation in the process. An approach needs to be found to build this into the project budget that is acceptable to the funding agency.

We also think that it may be useful to consider diversifying participatory methods. Relying solely on research surveys and workshops is not sufficient to ensure genuine participatory planning. It may be that other tools, possibly remote information technology tools could be used, or on the other hand, that individual meetings



with farmers on their own farms should be taken. Given that participatory and co-designed research of this nature is very time intensive, the time and budget need to be properly built into the process during the development of the project.

A further suggestion would be to ensure that the research is undertaken with organisations that have a role that brings them into frequent contact and collaboration with farmers, so that information flow between researchers and farmers can be achieved on an ad hoc, informal, and individual basis as well as through larger more formal events such as workshops.

#### Did you find the RID (Reflexive Interactive Design) a useful guideline to initiate a process change?

The general process of starting with a relatively open canvas was useful and a coherent focus for the pilot, based on the needs of the participants, quickly developed. However, in this case the focus was more on approaches to quantify and support a reduction in net greenhouse gas emissions on farms rather than to support mixed farming and agroforestry per se. However, increasing tree cover on farm is a major way that farms can move towards net zero, and conversations were opened though the process between the farmers and the Marston Vale Trust which supports tree planting and management in the area.

We feel that some of the potential challenges of RID are its interdisciplinary nature, and the complexity of redefining problems and solutions. These may not encourage adoption of proposed solutions and may discourage participants to follow certain new paths and can lead to scepticism. Additionally, the methods of participatory practice are still unfamiliar to many, making it difficult to implement effectively.

#### Do you feel that the expectations of all actors in the pilot have been met and how did you approach this?

During the last meeting with farmer groups, the incentives and the new planned governmental support for integrating trees were presented. The Forest of Marston Vale Trust aims to raise the tree canopy coverage from 3% to 30% by 2031, creating about 4,000 hectares of new woodland. After 21 years of operation, the tree cover has increased from 3.6% to 10.6%, equivalent to the planting of approximately 1,141 hectares of new trees (personal communication with James Russell; Central Bedfordshire Council 2021; Bedford Borough Council, 2022).

We believe that we have achieved the original objectives as requested by the farmer for an analysis of the current GHG emissions from their farms have been met. However, as noted, we have not been able to engage them for further follow-up to determine their experience of the process nor to determine whether this will encourage them to plant trees or take other measures to reduce GHG emissions.

#### Which of the discussed innovations around MF and AF was picked up easily/difficultly in the pilot?

As indicated, the focus of the pilot and the farmers interests were primarily on net GHG emissions rather than mixed farming and agroforestry directly. The farmers were interested in the potential application of tree planting in this context and were not specifically interested in MF or AF.

# To what extent were you able to link and/or use input from the other AGROMIX WPs in the pilot? How could that be improved?

The work in the UK pilot fed directly into analyses completed in work-package 5 and the work benefited from life cycle assessment support from Wageningen.



#### To what extent was the interaction with the other pilots crucial/added value?

Prior to identifying and interacting with the UK pilot farmers, useful discussions with other pilots clarified the process to be followed and explained how they approached the RID, how they were in connection with interested farmers and how workshops were organised and run.

Cranfield was omitted from some of the planning activities and interactions with other pilots primarily due to a misunderstanding during proposal development which meant that Cranfield was not initially included. However, finding out and discussing the activities and approaches with other pilot colleagues during project workshops was very important. As noted above, a key challenge and need is to ensure that there is proper resourcing of the approach.

#### What other lessons have you learned that you would like to share with others?

Utilising existing greenhouse gas (GHG) calculators can be useful in determining the GHG balance of a farm. There is no one-size-fits-all solution and hence careful consideration must be put into the selection of the appropriate calculator to be used within a particular farming environment. By doing so, farmers will be aware of their baseline situation, whilst annual monitoring can record the progress of their farms. This can perhaps act as a motivating switch, in the light of the recently updated UK governmental support to include grants for subsidising such adoptions.

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## XII Learning history PHAE – Belgium

#### Pilot learning history

Date/or period	Description of important moment/ period in time/event
November 2020	<b>Kick-off</b> informal field tour with participating farmer, farm advisor and involved researchers. The informal context laid the foundation for a smooth and open collaboration.
January 2021	<b>Exploratory meetings to establish cooperation</b> . The farmer wants to increase mixedness on the farm, but does not want to keep animals himself, he searches for other agroecology farmers that are looking for land
February 2021	<b>System analysis</b> made it possible to present the pilot to others, to work on manageable parts of the system and to see at a glance what can be affected by a particular change.
March 2021	<b>New research opportunities:</b> ILVO agreed with PHAE and RHEA to establish an <b>Experimental Platform for Agroecology - PPAE Hansbeke</b> .
August 2021 and July 2022	Open field days: Despite strict covid-19 restrictions, 200 interested parties came to hear about the experiences of the farmers, contractors and researchers involved. In 2022 agriculture Minister Hilde Crevits joined the open day
April 2022	Two Co-design workshops on agroecological viticulture and optimisation of nutrient flows at PHAE
February 2024	Participatory mapping workshop to identify contributions of the farm to the challenges in the region.

#### Lessons learned about the design process and solutions

- The system analysis was very enlightening. By visualising the different processes and relating them to each other, the whole became clear. It is still regularly consulted and updated.
- The first idea that was explored: agroecological viticulture including a potential new collaboration between PHAE and a local caterer willing to grow an agroecological vineyard on PHAE. is still young, but both parties are interested in working it out together.
- The cooperation between farmers who purchase grass-clover from PHAE and come to mow it themselves and in return sell their manure to PHAE will continue. Correct pricing is important here, but also a good balance between input and export of nutrients.



## Additional reflection from the pilot team

- Looking at the amount of visiting farmers a the open field days, PHAE is indeed becoming a lighthouse farm for agroecological practices.
- Not all the ideas have been implemented yet. Change takes time; to established trust and structural cooperation's. The vineyard idea has become more concrete and it is also the ambition to help shape the agroecological interpretation.
- The cooperation with neighbouring farmers who buy grass clover and in exchange deposit their slurry on the plots increased the mixedness at regional level. As a follow-up, PHAE and ILVO continue to guide the neighbouring livestock farmers with their manure disposal and monitor the soil status.



# ANNEX B Catalogue of the twelve co-design pilots





# Participatory Design Pilots Winthagen



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 862993.



# Winthagen



#### Winthagen



## Stakeholders involved

- Farmers (LLTB)
- Local government
- Research institutes
- Utility companies (water)
- Nature organisations



## Broader network

IKL keeping landscape elements Friesland Campina (milk)

Supply chain

Processors

Local market

Retailers

**Recreation sector** 

Banking sector



Current activities and type of production

- Arable farming
- Dairy farms
- Fruit growing

#### Winthagen



Size and scale

500 hectares



60% hectares Arable use

40% hectares Dairy cows

0.5% hectares Food production



## Participation in other projects

"Water in Balans" 7 Prevent erosion and manage water **"Propositie Heuvelland"** Sustainability water and soil management

帶 蹐 agromix Main motivation for participating as Pilot in AGROMIX

Water management: water storage for dry periods, water infiltration in wet periods, erosion prevention and reducing flooding in the local villages.

Find a good balance between agriculture, nature and recreation.

Create a climate-robust area with room for biodiversity. Main expectations from AGROMIX

Stakeholders want to improve water management and reduce flooding in the area. They also wish to reduce soil erosion in the arable fields and farmers are looking for a viable way to do this.

# Milestones

Spring 2021One-on-one meetings with different stakeholders and partners that resulted in a good overview of the needs and challenges of the different participants.Summer 2021First systems analysis: Showed that there was likely to be a mismatch between the participants making changes and the ones receiving the benefits.Spring 2022Co-design workshop 1 Defining mission statement. It was important to have participants who are truly interested in the outcomes of the project.Summer 2022Co-design workshop 2 Agreement of goals and pilot area, discussing challenges and possible conflicts, identifying and clustering possible solutions.Autumn 2022Sustainability and resilience assessment helped to show where improvements could be done to achieve the desired outcomes.Autumn 2022Co-design workshop 3 Co-developing and specifying solutions, thereby aiming to ensure ownership and interest in the further development of the project.Winter 2023Co-design workshop 4: finalising solution-designs and discuss their suitability within pilot area.Nov 2023Evaluation: collecting feedback on the design process per e-mail.		
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Nov 2023 Evaluation: collecting feedback on the design process per e-mail.	Summer 2023	Field visit with discovery walk through pilot area to identify suitable locations for solutions and discuss trade-offs.
	Nov 2023	<b>Evaluation:</b> collecting feedback on the design process per e-mail.

## **Design Solutions**

The co-design process led to numerous ideas that were further developed and fine-tuned by the group. At the end of the trajectory, four main solutions were developed:

- **O.** Cultivation and rotation, a joint cropping plan
- Landscape infrastructure, improvement of road and roadside infrastructure
- C. Water infiltration through grafts
- d. Water storage through existing and future mini quarries. It is now up to the local stakeholders to continue to further develop and implement the designs



## **Lessons Learned**

All stakeholders should be motivated to achieve something in the project. They don't need to have the same goal, but it should be possible within the broader scope.

It is valuable to have a local who facilitates the connection to the group and acts as a facilitator of the co-design process. This has worked well to ensure trust and understanding. It has also been valuable to bring in guest speakers and expertise for inspiration.

The design process takes time. To initiate, develop a committed group, design, and further develop. This time is however well spent as it allows the development of ideas that the group wants to implement, and that also take into account considerations from other stakeholders that otherwise may be overlooked.
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# Winthagen

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# Participatory Design Pilots Veneto Mix



### **Pilot Project**

### Veneto Mix







### Stakeholders involved

- Farmers
- Arable agroforestry researchers from University of Padua
- Agroforestry design studio Landes Group
- Grain mills (Antico Molino Rosso VR, Cuore di Macina VI)



### **Broader network**

- Many farmers take part in a regional Organic farmer's Association of Veneto (Aveprobi) and the Italian Organic Association (Aiab)
- Members of Veneto Agricoltura staff are also involved in Agroforestry Association (AIAF)

Veneto Mix



Size and scale

Farms range from **2-30** hectares



### Participation in other projects

Two of Veneto Agricoltura pilot farms are also involved in agroforestry practices projects together with University of Padua researchers.



### Main expectations from AGROMiX

- Extend agroforestry techniques and use of hedgerows.
- Expand or begin animal husbandry in rotation with main crops.
- Introduce livestock into already existing woods and design new agroforestry areas in combination with horticulture and arable crops.
- Open up to provide spaces for education, programs to include disadvantaged workers and the creation of housefarms.

### Design Process Milestones

Oct 2021	Launch and presentation of the AGROMIX Project and local the pilot group meeting at AI Confin farm.	
Apr 2022	<b>Pilot group formation</b> during a visit to agroforestry experimental farm of Veneto Agricoltura.	
May-Jul 2022	<b>System analysis</b> developed through visits and interviews at each participating farm. It prompted farmers to reflect on the status quo, and the medium- and long-term objectives.	
Sep 2022	<b>Seminars</b> on soil fertility, on farm experiences and soil analysis (Al Confin farm and Veneto Agricoltura `Po di Tramontana´ Experimental Center).	
Dec 2022	<b>First Co-design meeting</b> including sharing information with AF experts and new exercise to look at your own farm in new perspective.	
Feb 2023	Second Co-design meeting Discussions in groups facilitated by SWOT analysis and mapping focused on different possibilities for future designs.	
Mar 2023	Third Co-design meeting Feedback on the farm analysed with external perspective.	
Apr & May 2023	Open Day and Seminar 200 people participated to open day dedicated to comparison of different mixed species for winter cover crops at Veneto Agricoltura, <i>Vallevecchia pilot farm</i> (Caorle, Venice).	
Jun 2023	Field sampling days organised on demand of the farmers to compare grazing versus permanent grassland and arable fields versus hedge area with AF.	
Oct 2023	Inspirational Technical visit to an organic-regenerative AF/MF farm.	
Mar 2024	4th Co-design meeting including a field visit, sharing design and technical choices on the tree and horticultural.	

### **Design Solutions**

One of the farmers implemented a small innovative agroforestry system with fruit trees mixed with vegetable production, which became a pilot site to be visited by the stakeholder community.

In terms of mixed farming, we probably underestimated the obstacles posed by national/EU veterinarian safety policy (i.e. restriction for outdoor poultry system in the area with high risk of avian influenza, or similar, such as African fever for pigs) in order to develop a smallscale unit within the farms.

Generally the co-design process was very useful for stimulating farmers to study alternative ways of finding technical solutions, and to build a larger network with the aim of bringing these problems to the public/policy-maker attention.

### **Lessons Learned**

Most participants positively evaluated the opportunity to come in touch with other farmers/professionals/ researchers with interests in the same topics (agroecology, agroforestry, mixed farming etc.), and were eager to share experiences.

Some suggested to preferably focus on micro-groups with similar farm cultivation systems, to maximize the benefits and exchange of knowledge.

The long-lasting period of the project was widely appreciated.

# agromix



### Veneto Mix

Contact



Paolo Marostegan Main promoter of Agromix in the Veneto-Mix Participatory Design Pilot



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Participatory Design Pilots Stadtbauernhof Saarbrücken



**Pilot Project** 

### Stadtbauernhof Saarbrücken



#### Stadtbauernhof Saarbrücken



### Stakeholders involved

A non-profit organisation takes care of the infrastructure and uses the farm for educational work with around 1,000 visitors a year.

A CSA farm produces vegetables for 110 households and 3 restaurants.

Workshops on agroforestry, innovative pruning methods and integrated fruit- & chicken-farming have been held



### **Broader network**

Member of "Netzwerk Solidarische Landwirtschaft", an association, which represents the interests of over 300 community supported agriculture farms in Germany.

As a part of this, the farm is also involved in a regional group of farmers within the network."

IfaS is member of the German Agroforestry Association (DeFAF) that connects 400 farmers, researchers and other stakeholders

#### Stadtbauernhof Saarbrücken



Size and scale

2 hectares

The farm is run as a family farm supported by a staff of 4 employees.

0.6 hectares Bio-intensive vegetable production

0.5 hectares Fruit and poultry farming

110 hr/week Working hours

144,000 € Annual financial turnover



### Participation in other projects

Stadtbauernhof is conducting "climate tree planting events"

- Vegetable production
- Soil and nutrient parameters
- Exchange of experiences between practitioners
- New insights from research activities
- Opportunities to share the gathered knowledge



### Main expectations from AGROMiX

- Exchange of experiences between practitioners
- New insights from research activities
- Opportunities to share the gathered knowledge

### Milestones

	2019-2020	The <b>concept of "tree partnerships"</b> with companies <b>was tested</b> – companies paid for the trees and came to the farm with their employees to plant these.
	May 2021	A survey amongst the members of the farm community was conducted to estimate the real interest in additional products such as fruit, eggs and honey.
	Jun 2021	Interviews with members of the farm community showed that most members liked the idea of integrated chicken farming with fruit growing.
-	Feb 2022	<b>The roof</b> of the main stable building (where the chickens will be hosted) <b>was renovated</b> and a wild bee-friendly green roof was installed.
	Jul 2022	The 1st Co-Design Workshop brought together farm community members with the farm management team to discuss expectations, challenges and steps towards implementation.
	2022- present	Additional staff is necessary to follow up and proceed with the concrete planning and installation of stables. Despite various efforts extra staff was not found.



### **Design Solutions**

Besides continuing to look for new employees, a LandFiles group on the topic of integrated chicken farming with fruit growing is to be set up for the further exchange of experience among interested farmers that are member of the German Agroforestry Association (DeFAF) and the German CSA network.

### **Lessons Learned**

- Many consumers know little about agroforestry. Thus "products from agroforestry" is not yet reliable marketing argument.
- Creating motivation in the community is not sufficient. Someone will need to manage and carry out the new system(s) in future. Hence, the implementation of practical projects cannot be enforced if there is a lack of paid staff.
- If the size of the agroforestry system is small and a highly (labour) intensive system it will be difficult to ensure profitability.

Stadtbauernhof Saarbrücken

# agromix



# Stadtbauernhof Saarbrücken

Contact



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# Participatory Design Pilots The Association of Rudno Households



**Pilot Project** 

### The Association of Rudno Households



The Association of Rudno Households



### Stakeholders involved

- Farmers
- A local association
- Network for Rural Development of Serbia



### Broader network

- Conservationists
- Tourism sector
- Supply chain
- Local market

The Association of Rudno Households



Size and scale

24 hectares



### Main motivation for participating as Pilot in AGROMIX

- Improving agriculture practice and land management to reduce the negative impact on nature
- Diversification of economic activities to make small mountain farms more sustainable
- Improve position in market, boosting image of local area and produce
- Encourage young farmers in area that is depopulating

### Milestones

	Oct-Nov 2022	Inventory of needs to support agroforestry at national level. It became clear that public funding is essential to support agroecological measures effectively.
	Oct-Dec 2022	<b>Exploring possibilities to plant trees</b> <b>on farm's plots</b> , current agricultural practices in the Golija Natural Park farms are very close to agroforestry.
	Feb 2023	Exploring how to support the preservation of seasonal field grazing in bachija (seasonal temporary house in the mountains with stables) as animal husbandry is in decline in this area.
		Evalaring magauros for parmanant
	WGF-NOV 2023	education and advisory support to enhance planning of trees around the perimeter of the plots as defence against wind erosion in Rudno.
	Apr-Jul 2023	<ul> <li>Exploring measures for permanent education and advisory support to enhance planning of trees around the perimeter of the plots as defence against wind erosion in Rudno.</li> <li>Exploring how to support diversification of farm economic activities especially for young farmers as they are the agents of change.</li> </ul>
	Apr-Jul 2023 Dec 2023	<ul> <li>Exploring measures for permanent education and advisory support to enhance planning of trees around the perimeter of the plots as defence against wind erosion in Rudno.</li> <li>Exploring how to support diversification of farm economic activities especially for young farmers as they are the agents of change.</li> <li>Develop research to illustrate the impact of agroforestry and mixed agriculture on sustainability and its positive impact on protected area as the Golija Natural Park.</li> </ul>

### **Design Solutions**

Agroforestry and mixed farming provide advantages for establishing sustainable agriculture and a positive impact on the ecosystem. Therefore, PE "Serbia Forests" as manager of the Golija Nature Park should strongly support implementation of good practices including agroforestry and mixed farming.

### **Lessons Learned**

The development of new models and approaches in agroforestry is very important for the area of Rudno, especially because pastures and meadows are increasingly endangered due to the reduction in the number of livestock and less grazing.

New sustainable agricultural systems, such as agroforestry and mixed farming, support income diversification and should be backed by strategic product placement.

Finally, further work is needed on changing legal regulations and support measures.

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## The Association of Rudno Households

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### Participatory Design Pilots

# Project Hansbeke Agro-Ecologie - PHAE



**Pilot Project** 

### Project Hansbeke Agro-Ecologie - PHAE



#### Project Hansbeke Agro-Ecologie - PHAE





### Stakeholders involved

- Collaborative farmers
- Collaboration agreement agro-ecological research platform/ living lab
- Farming for climate
- Contractors for specialized machinery
- Natural reserve
- Local community
- Animal fodder company
- Mills
- Flower shops



### Activities

- Conduct research on agroecological techniques in a farm context.
- Monitor the effect of agroecological techniques on soil fertility and crop yield without losing sight of the revenue model.
- Contribute to the development and dissemination of new and existing knowledge on agroecological applications



Project Hansbeke Agro-Ecologie - PHAE



### Size and scale

60 hectares

45 hectares arable land

# 15 hectares permanent grassland



### Main expectations from AGROMiX

- How to expand the agroforestry?
- How to integrate mobile poultry unit and dairy goats?
- Nutrient flows and fertilization strategy, inclusive of: use of wood chip produced on farm from tree component either composted or as ramial chipped wood.
- On farm composting practice.
- Experimenting with micro-organisms.
- Seed-coating and compost tea.

### Milestones

Nov 2020	<b>Kick-off:</b> Informal field tour with participating farmer, farm advisor and involved researchers, laying foundation for a smooth and open collaboration.
Jan 2021	Exploratory meetings to establish cooperation. The farmer wanted to increase mixedness on the farm, but did not want to keep animals, thus searches for other agroecology farmers that are looking for land.
Feb 2021	System analysis made it possible to present the pilot to others, to work on manageable parts of the system and to see at a glance what can be affected by a particular change.
Mar 2021	New research opportunities: ILVO agreed with PHAE and RHEA to establish an Experimental Platform for Agroecology - PPAE Hansbeke.
Aug 2021 & Jul 2022	<b>Open field days:</b> Despite strict Covid-19 restrictions, 200 interested parties came to hear about the experiences of the farmers, contractors and researchers involved. In 2022, Agriculture Minister Hilde Crevits joined the open day.
Apr 2022	<b>Two Co-design workshops</b> on agro- ecological viticulture and optimisation of nutrient flows at PHAE.
Feb 2024	<b>Participatory mapping workshop</b> to identify contributions of the farm to the challenges in the region.

### **Design Solutions**

The system analysis was very enlightening. By visualising the different processes and relating them to each other, the whole became clear. It is still regularly consulted and updated.

The first idea that was explored was agro-ecological viticulture including a potential new collaboration between PHAE and a local caterer willing to grow an agroecological vineyard on PHAE. Both parties are interested in working it out together.

The cooperation between farmers who purchase grass-clover from PHAE and come to mow it themselves and in return sell their manure to PHAE will continue. Correct pricing is important here, but also a good balance between input and export of nutrients.



### Lessons Learned

Looking at the number of visiting farmers at the open field days, PHAE is indeed becoming a lighthouse farm for agroecological practices.

Not all the ideas have been implemented yet. Changes take time, as does establishing trust and structural cooperation. The vineyard idea has become more concrete, and it is also the ambition to help shape the agroecological interpretation.

The cooperation with neighbouring farmers who buy grass clover and in exchange deposit their slurry on the plots, increased the mixedness at regional level. As a followup, PHAE and ILVO continue to guide the neighbouring livestock farmers with their manure disposal and monitor the soil status.

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# Project Hansbeke Agro-Ecologie

Contact



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Experimental Platform for Agroecology in Hansbeke, Belgium



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Stadtbauernhof Saarbrücken





Participatory Design Pilots OIKOS Farm





### **OIKOS Farm**



#### **OIKOS Farm**





### Stakeholders involved

- Network of local farmers, associations of local and regional beef producers
- Strong links with supply chain actors

   restaurants, Community Supported
   Agriculture (CSA) cooperatives, biomarkets



### **Broader network**

- Polish Agroforestry Association (OSA) member farmers, researchers and organic farming and forestry experts
- Organic Agriculture Forum
- Public research institutes including Institute of Soil Science and Plant Cultivation (IUNG-PIB)
- The network of public agricultural advisors (ODR), Warsaw University of Life Sciences, Rzeszów University, and many more.

### **OIKOS Farm**



### Size and scale

### 274 hectares

- Two-thirds used for roughly 200 cows
- 72 hectares covered by trees
- 5% used as silvopastoral system



### Participation in other projects

- The pilot ambassador has been involved in SustainFARM (ERANET) and AFINET (H2020) projects (collaboration with IUNG).
- Attended training for leaders of agroecology (Agro-Perma-Lab project).
- Collaborating with Rzeszów University as well (statutory project on the topic of pastures biodiversity and productivity).
- The farm is Polish case study in SF-CO FOODLEVERS project (IUNG as a partner).



Main motivation for participating as Pilot in AGROMIX

- Farmers in the local network would like to achieve the best quality for their livestock products following nature-based solutions and improve farm profitability.
- Due to unfavourable farming conditions (hilly terrain, lack of capital and human resources, increasing unemployment) both farmers and decision makers need bring innovative initiatives that can boost added value in rural areas and attract investors and tourists.
- The AGROMIX pilot study could help to facilitate sustainable transformation of the commune and neighbouring areas or at least to realise the potential and direction of changes among involved stakeholders.

### Milestones

Aug 2022	<b>1st Pilot Workshop:</b> Listening to stakeholders from different backgrounds and involving them in developing the Carpathian Pasture Beef Quality System created a "common vision".
Apr 2023	<b>2nd Pilot Workshop:</b> Developing an action plan, establishing priorities, adding people to work group.
Mar 2024	<b>3rd Pilot Workshop</b> : Final outcomes of the project discussed and amended, actions defined, and responsibilities were assigned to people.

### **Design Solutions**

- It was agreed that the first step should be the inclusion of Polish Carpathian Beef in the EU regional food systems/ schemes (Protected Designations of Origin, Protected Geographical Indications...), and the next step, much more difficult, should be the creation of a quality system.
- It proved crucial to involve the umbrella organization Polish Ecology (association of organic food producers and processors) which has the human resources to implement the project.

### **Lessons Learned**

- The creation of a recognized Quality System is a long-term process. A better solution would be to define Polish Carpathian Beef as a regional product in the EU.
- Defining opportunities and barriers, allowing to bounce back from opportunities and skip some of the barriers. Defining barriers that cannot be avoided/skipped, allows us to start dismantling them in the initial stage of activities.

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# **OIKOS Farm**

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### Participatory Design Pilots Curralões











Stakeholders involved

Owner/manager

Neighbouring farmers and local farmers with interest in agroecology

Local syntropic agriculture group



#### **Broader network**

ESDIME: - Agency for Local Development in Alentejo Sudoeste.

AEVG - Associação de Empresários do Vale do Guadiana - Local association that represents and supports local entrepreneurs, with a view to their technical, economic and social progress.



Size and scale 240 hectares



### Data already available

Basic farm data on plot sizes and tree operations — thinning and puning

Biodiversity — permanent sampling plots for plants, birds, bats, invertebrates and contributing to the Global Biodiversity Information Facility (https://www. inaturalist.org/projects/mvarc)

High precision altimetry and GIS derivatives (slope, exposition, topographic wetness index, watershed, flow directions, tree height and coordinates)



#### Main expectations from AGROMiX

To provide networking and co-design techniques that enable collaboration with local stakeholders so that we can work together to create a resilient future.

To link with other farmers across Europe facing similar challenges so we can learn from each other.

To promote resilient and diverse farming systems within the CAP framework.

### Milestones

Feb 2022	<b>Planning workshop</b> – discussing the overall vision. It helped to identify different pathways to meet that vision, as well as potential barriers to change key challenges.
Feb- Jul 2022	<b>System analysis</b> , carrying out an audit of available resources on the farm, including trees, shrubs and soil quality (nutrients, organic matter), plus analyzing the interactions between the different components.
May 2022	<b>Networking</b> with Pastagens Regenerativas (regenerative grasslands) group. First networking event that initiated wider stakeholder contacts and relationship development.
11-15 Jan 2023	Field visit with stakeholders (including farmers) to project in Andalucia where farmers are cooperating to promote sustainable agriculture in a region with significant climatic challenges.
6 Feb 2023	Farm demonstration of `keyline' water-management approach in an informal setting. Farm challenges and different approaches to water management were discussed.
31 Mar 023	<b>1st Design Workshop</b> – Goals and challenges were presented and discussed, and a system analysis was carried out. Some potential alternative solutions already emerged during the discussion.
9t May 2023	<b>2nd Design Workshop</b> . With the `Wow, How, Now' framework two main areas that needed to be addressed were identified: water shortages and farm diversification.
5-7 Dec 2023	Pilot farmer <b>presented the co-design pilot</b> at local symposium with around 100 participants.
20 Dec 2023	<b>Pilot team visited an established essential oil producer</b> to learn from his experience and explore opportunities to initiate essential oils production from the Cistus ladanifer shrub.
15 May 2024	<b>Co-design workshop</b> with Terra Sintropica to design scenarios for diversification of pine system on the pilot farm.

### **Design Solutions**

- The pilot team learnt that the by-product from new product development (essential oil from wild shrub, Cistus ladanifer) has a value in its own right, therefore opening up new revenue opportunities.
- A plan to diversify the tree component of the farm is being developed in cooperation with the local syntropic group and another local farmer.
- Challenges of climate change (water shortages) and social barriers (availability of staff) are recognized as key barriers needing to be addressed. While water storage and management practices can be improved at a farm-scale, the issue of staff availability needs to be addressed in collaboration with local, regional and national governments.



### **Lessons Learned**

To unlock the potential of Cistus ladanifer as a resilient and adapted crop to this environment, there is an urgent need to make the case to the European Commission that actively managed Cistus ladanifer shrubland should be classified as an aromatic crop (similarly to rosemary or lavender).

A distinction should be made as to when rockrose is kept between 50-100 cm (coppicing to harvest leaves every two years) and abandoned land (i.e. noneligible for CAP payments) where the shrub is more than 100cm high. In this way coppicing would avoid harrowing, with all associated ecosystem benefits.

## agromix



### Curralões

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# Participatory Design Pilots

Marston Vale



**Pilot Project** 

### Marston Vale



#### Marston Vale



### Stakeholders involved

- Farmers
- Marston Vale Trust
- Cranfield University



### Activities

- Livestock
- Arable
- Mixed
- Trees
- Crops
- Animals





### Size and scale

16,000 hectares, covering a range of farming types

Marston Vale Trust supports tree planting and management



### Main expectations from AGROMiX

- Boost tree coverage in Marston Vale
- Using carbon and greenhouse gas calculators to measure actions in bringing industry toward net zero by 2050

### Milestones

Jul 2021	Connecting with Forest of Marston Vale Trust, which has been involved in the "Trees for Climate" programme and has established and ongoing relationship with farmers.
Nov 2021	Initial workshop with farmers to brainstorm and collect feedback on the key challenges, opportunities, and risks that they faced as farmers.
Dec 2021	Workshop with farmers; identification of research challenge: to understand the current net levels of greenhouse gas (GHG) emissions from their farms.
Feb-May 2022	Research to determine the GHG emissions of the five case study farms; identification of carbon calculators; engagement and co- research with farmers.
Jun 2022	Sharing of study results with the five participating farmers including evaluation of the potential role of trees and other management practices in enabling each farm to become carbon neutral.
Feb-May 2023	<b>Modelling analysis</b> to determine what the result would be if the whole Marston Vale area was to become net zero.
Dec 2023	<b>Breakfast session</b> in which results were shared and discussed with a group of farmers, including the five participating farmers.

### **Design Solutions**

The study compared the effect of applying net zero greenhouse gas emission targets at farm and at landscape levels. Applying net zero targets was associated with a decline in food production and a decline in farm profitability. The reductions in food production and profitability were greater when targets were set at a farm rather than a landscape level. This has implications for the choice of strategies that might be deployed to achieve net zero.

However, increasing tree cover on farm is a major way that farms can move towards net zero, and conversations were opened though the process between the farmers and the Marston Vale Trust which supports tree planting and management in the area.

### **Lessons Learned**

- Two farm-based carbon calculators (the Farm Carbon Toolkit and AgreCalc) across five pilot farms were compared. The two calculators gave broadly consistent results for the arable farms and arable farms with limited livestock, but the results for an intensive poultry farm varied primarily because of different assumptions concerning the greenhouse gas emissions associated with purchased poultry feed.
- This has implications for any kind of regulatory framework for the achievement of net zero emissions on farms, since a calculation tool and protocol will need to be agreed to the satisfaction of all the different stakeholders, if incentives or penalties are to be used in the process of achieving net zero on farms.

## agromix



### Marston Vale

Contact



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### Participatory Design Pilots La Barrosa





### La Barrosa



Spain

Agroclimatic zone





Partner Universidad de Extremadura (UNEX)



Pilot Ambassador Manuel Pulido Fernández (UNEX)

Pilot Facilitator Paula Gaspar García

Farming System

La Barrosa



Conventional, traditional Spanish 'dehesa' Scale



205 hectares

Components





Trees

Animals





#### **Broader network**

The farm is a partner of two local cooperatives for the purchase of feed and commercialization of cattle. The cattle breed is included in the national association of Retinta breeders.



### Activities

A traditional Spanish 'dehesa' farm, which blends livestock like Iberian pigs and cattle with agroforestry in the form of trees, particularly holm oak.

#### La Barrosa



Size and scale

### 205 hectares

#### Participation in other projects



ADAPT-TGA, founded by Ministry of Science and Innovation of Spain

SINERGEX, founded by CICYTEX (Regional Research Body)

GANAWA, founded by Junta de Extremadura (Regional Research Plan)



## Main expectations from AGROMiX

To gain knowledge on sustainable farming

Improve water and soil management, including naturebased solutions

Increase biosafety on the farm

Explore diversification of production, including horses and bees

### Milestones

	Jan 2022	Data collection – All the information about the farm (livestock, trees, watering ponds, soil quality, land management, etc.) was gathered.
-	Mar 2022	Identification of needs – The farm's main strengths and weaknesses were identified by the pilot team.
	Jun 2022	<b>Training for workshop</b> – The pilot team was trained to design and perform a workshop in the form of focus group with farmers, advisors and stakeholders.
	Oct 2022	<b>1st design workshop</b> (focus group) – A set of improvements for the farm focused on water biosafety and provision of pastures were proposed and discussed.
	Feb 2023	<b>Participatory mapping assessment</b> – The improvements proposed during the workshop were assessed on site to verify their usefulness.
	Jun 2023	Training for co-design – Exchanges of knowledge and experiences with other pilot teams hosted by the French partner (Blue Pig Farm).
	Sep 2023	Discussion on water biosafety – Water quality has improved a lot (no E. coli) due to the installation of watering points, but soil compaction increased.
	Feb 2024	<b>Discussion on pasture rental</b> – The profitability of the farm was ensured while soil quality was not affected by the
		introduction of pigs from other farms.

### **Design Solutions**

Enlargement of small watering ponds.

Improvement of pastures in strategic fences.

Installation of GPS collars in some individuals to know flock movements.

Organization of some tourism activities to increase farm visibility.

### **Lessons Learned**

Traditional and semi-natural land systems can be also redesigned.

Soil and water quality can be improved while keeping the same grazing intensity.

New streams of incomes must be explored to keep the sustainability of the farms.



## agromix



### La Barrosa

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Photos by Valentín Maya





### Participatory Design Pilots Cheese Valley

Millar





### Cheese Valley



#### **Cheese Valley**



#### Stakeholders involved

Farmers, local advisors, dairy technicians, researchers, policy-makers, retailers, and local NGOs.



#### Broader network

Regional Operational Group "Precision sheep" and with the Regional Operational Group "Agroforestry network in Tuscany (NEWTON)

All the other farmers of the cooperative, local retailers, advisors, citizens.



Activities

Dairy sheep farms and a cheese factory for the production of the Pecorino Toscano DOP.



#### **Cheese Valley**



Size and scale

30 hectares per farm

around 250 sheep



Participation in other projects

<u>Regional Operational Group "Precision sheep</u>". The pilot is part of the OG.

<u>Regional Operational Group</u> "Agroforestry network in Tuscany - NEWTON



During 2018-2019, a wide survey was conducted with all the farmers of the cooperative to collect data about farm management with a focus on animal health and cropping systems.



#### Main expectations from AGROMiX

More efficient livestock management to increase the environmental sustainability of dairy productions while ensuring an adequate income for rural farmers.

Co-design tailored activities aimed at finding new strategies for the sustainable development of mixed and agroforestry farming systems and to generate new knowledge through on-farm trials.



### Milestones

Jun 2021	Development of system analysis and stakeholder analysis. The limits present in the visualised relationships and the opportunities that can arise from them were analysed.
Feb 2022	<b>Networking:</b> Stakeholders from diverse professional backgrounds exchange thoughts and ideas and fostering new connections which proved to be conducive to constructive dialogue.
Feb 2022	<b>SWOT</b> analysis and identification of common scenarios for transitioning to sustainable mixed-farming and agroforestry systems yielded multitude of interesting and enriching viewpoints.
Feb 2022	Participatory mapping underscored the necessity for enhanced collaboration among stakeholders who may not possess an in-depth understanding of each other's roles within the supply chain.
Mar 2021 – Jun 2022	On-farm experimental trials: The emerging results are promising. However, there were limitations in scaling up the number of farms and animals involved in the experimentation.
Oct 2023	To bolster the identity of Pecorino Toscano DOP from the Manciano dairy, a study focused on rebranding the product was undertaken.

### **Design Solutions**

Poplar trees were planted in 2021 to enhance the availability of forage for lactating sheep during early summer. The feeding experiment, which included offering poplar stems and leaves to lactating ewes, produced encouraging outcomes in 2022-2023. There was no notable difference in the daily milk production among the groups of sheep that were fed with and without poplar in their diet during both years of the investigation.

Furthermore, a project aimed at elevating the recognition of Pecorino Toscano DOP from the Manciano dairy involved a study focused on revitalizing the product's image. This initiative encompassed strategies associated with brand management and corporate identity, developed in partnership with a design institute.

### **Lessons Learned**

The project has proven to be interesting and useful for the stakeholders actively involved. However, there are still limitations in applying these techniques on a large scale. To achieve this, the support of institutions would be needed. Unfortunately, so far institutions have shown little inclination to collaborate actively.

In the future, it is necessary to find ways to encourage such collaboration. Hence it is important to rebuild trust among stakeholders. Future steps encompass extending successful field trials to other farms and addressing the aging farmer population through the training of new farmers.



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### **Cheese Valley**

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### Participatory Design Pilots Blue Pig Farm





### Blue Pig Farm



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#### Blue Pig Farm



### Stakeholders involved

Chambre d'Agriculture des Pays de la Loire INRAE Initiative Bio Bretagne BioDirect



### **Broader network**

Several pig farms on the region showed their interest to be involve in the project.

### **Activities**

Agroforestry field for crops and pasturing sows, piglets, and weaners.

#### Blue Pig Farm



- 9 hectares of outdoor area for sows with agroforestry (copses)
- 33 hectares for crops, with 18.5 hectares of agroforestry
- 12 hectares of meadow for forage
- 2 hectares for pig pasture

### Size and scale

42 hectares24 sows and400 pigs raised per year

- 2 hectares of beetroots to feed pigs and sows
- 7 hectares of cereal-grain legume mixtures to feed pigs and sows
- 6 hectares of cereals to sell

### Participation in other projects

H2020 ECOFEED Project

<u>Valorage Project</u>

### Data already available

Select of tree species adapted to pig grazing.





# Main expectations from AGROMiX

Explore solutions to optimise outdoor area for pig's utilisation.

Produce outdoor breeding and organic farming quality meat.

Enhance comprehension of the agroforestry systems implemented and guide his evolution: related to climate, environment enrichment, grazing management and pig welfare.

### Milestones

Before project	Exploratory and creative incubation period, emergence of new stakeholder BioDirect, a company specialized in pork marketing		
Oct 2021	Meeting with different farmers to better understand farmer's pig grazing system including variety selection, harvesting methods, and logistical aspects of pig grazing.		
Mar 2022	A two-day workshop with farmers, retailers, technicians and advisors, to discuss and design a foraging system for organic, agroforestry pig production.		
Oct 2022	<b>Open field day:</b> Farmers, researchers, and technicians from pig and agroforestry fields gathered to view results from different studies and discuss co-designed scenarios and the pilot's long-term sustainability.		
Feb 2023	Launch of sales on micro-supply chain that highlight the values of the product: local breeds, free-range grazing, and forage-based feeding.		
Oct 2023	<b>Research:</b> Farmer and his accompanying team focused on optimizing crop rotation to achieve feed autonomy and reduce costs		
Dece 2023	The beginning of collaboration with international consumers. This, meant a new market for the farmer and BioDirect, which had to create a new export channel.		

### Changes from design process

Between 2021 and 2023, French organic pig production suffered of an economic crisis with a considerable drop in the demand of organic products. This crisis threatened the economic viability of the farm and its economic viability, leading the farmer to diversify its commercial outlets.

A micro-supply chain concept in which BioDirect, a stakeholder responsible for marketing farmers' meat, undertook actions to highlight the quality of meat from locally reared pigs in free-range agroforestry systems.

BioDirect conducted carcass cuts to test the farmer's pure Saddleback breed, noting that the meat presented a particularly high quality but a lack of homogeneity between different carcasses. This led to a decision to crossbreed Saddleback and Duroc, which brought very good results in terms of carcasses quality.

Then there was clear interest in developing a specific market for this type of product. A link to the international market was then also established.

### Lessons Learned

The importance of building credibility around economic models.

Convincing stakeholders of value despite economic challenges.

### Future steps

Empowering pilot farms to lead this transition requires robust support structures and partnership to boost agroecological transition.

Secure funding and boost farmer engagement in order to scale innovations effectively.

## agromix



### Blue Pig Farm

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Photos by Stanislas Lubac





Participatory Design Pilots Representative farms of the Agroforestry Network Switzerland


**Pilot Project** 

## IG Agroforst Network



9

Agroclimatic zone





Partner

ZHAW AGROSCOPE



#### IG Agroforst Network



### Stakeholders involved

Four farmers associated to the Swiss Agroforestry network (Agroforst)



### **Broader network**

All the members of the Swiss Agroforestry Network (Agroforst)



### Data already available

Multi-year monitoring programme for tree measurements (carbon storage), partly humus development and soil development (structure).

#### **IG Agroforst Network**

### Size and scale

Field level

**1.5 - 4.8** hectares with different soil and microclimatic conditions

Participation in other projects



Coop support programme Agroforestry <u>7</u>

### Main motivation for participating as Pilot in AGROMIX

To improve the quality of tree and subculture management on farms and integrate arboricultural measures to improve management in complex systems with multiple uses (wood, fruit, subcultures, biodiversity promotion area).

# Current activities and type of production

Four farms representing the main areas of use for tree cultivation in Swiss alley-cropping systems: fruit intensive, fruit extensive, dual use of wood/fruit and pure valuable wood.

Farms are both organic and nonorganic farms with agroforestry systems from 1 to 10 years old.

# Main expectations from AGROMIX

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Introduction of hedge-like agroforestry systems that could be used as fodder or as energy wood

Develop systems that could have an even greater influence on the internal recycling management, e.g. through the energetic use of wood and the recycling of residual materials such as pyrolysis coal. Establish a closer integration with more experimented pilots and gain knowledge about the economic evaluation of multiple land use systems.

#### Other relevant references

Country report Switzerland, General assembly EURAF 7

### Milestones

Feb 2021	Carrying out a system analysis and developing interim and main objectives in the co-design process to identify key fields of action for agroforestry development.
April 2021	Expansion of activities to appeal to a <b>wider</b> audience.
2022-2023	Successfully submitted <b>3 research projects.</b> The participating farms of IG Agroforst act as a peer group for participatory field trials within the research activities.
Sep 2022	<b>Network meeting:</b> to exchange information. The aim was to join forces and gain a general understanding of the need for an agroecological transition in Swiss agriculture.
Spring 2022 - Autumn 2023	<b>4 Policy workshops</b> to discuss possible perspectives with the political decision-makers. Preparation of the "Agroforestry Manifesto", a political position paper and submission to the relevant decision-makers.
Mar 2023	Start of the Agroforestry Podcast. The 10 episodes have a wide reach beyond national borders to reach an increasingly young audience and a new generation of farmers and other interested parties.
Sep2023	Field Day: Agroforestry on higher altitude, because, so far, agroforestry in Switzerland had only been discussed for lower altitudes and primarily in arable farming areas.
May 2024	<b>Presentations from co-design activities</b> and important results within AGROMIX Project on the European agroforestry conference in Brno.
September 2024	National agroforestry day of the IG-Agroforst , presenting key-results from the agromix project and Co-Degn-activities.

### **Design Solutions**

As a result of the workshops, an "Agroforestry Manifesto" was submitted to the Federal Office for Agriculture.

Ten well-streamed podcast episodes on agroforestry were developed and launched.

The co-design pilot was considered to be very valuable in providing important ideas and impetus for the development of agroforestry in Switzerland.

Opportunities arrived for establishing new partnerships, carry out research and general support for the agroecological transformation of Swiss agriculture as a whole.

### Lessons Learned

Visualising the basic processes and objectives as part of the system analysis at the very beginning of the project phase was very useful.

It remains particularly important to have good practical examples as flagship projects.

Another challenge is the realisation that IG Agroforst as national organisation is not alone. More and more institutions, farmers, extension services and research institutions are involved in agroforestry activities. This offers great opportunities to further contribute to the agroecological transformation of Swiss agriculture as a whole.



# agromix



## IG Agroforst Network



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