



Transforming European Food Systems with Agroforestry

Photo: Valentín Maya

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This 'draft' proposal for a White Paper is the final public deliverable of the AGROMIX policy work package, it is therefore formally 'draft' until it is approved by the internal project reviewers. The discussions around a White Paper and the steps to foster the implementation of agroforestry in the European food system is of critical importance and will continue after the official AGROMIX project comes to an end on 31 October 2024. This deliverable is a contribution to these discussions.

Foreword

As a farmer who practices mixed farming and agroforestry, it was a pleasure to be part of the AGROMIX research project. I was invited to present my experiences and participate in the first policy workshop in Brussels in February 2023, and subsequently, in April 2024, hosted delegates to the AGROMIX Policy Summit on our farm near Gent, Belgium. I am pleased to be asked to contribute with a foreword to this agroforestry policy document.

Agriculture and our farming practices must radically transform if we are to change our current course toward climate change, biodiversity loss and growing inequality. My farming community and I are convinced that farming alongside nature, based on natural ecological dynamics is fundamental to achieving a sustainable and resilient food system. Approaches such as agroforestry and agroecology are key in this ambition. This belief is supported by an increasing body of scientific research.

However, farmers are faced with various challenges that prevent the uptake and integration of agroforestry into their farming systems. To identify and propose policy solutions that work for all, the AGROMIX research project conducted 14 co-design policy workshops, where farmers, land managers and others were invited to the table. The resulting themes and ideas were then workshopped at the AGROMIX summit in 2024, which has ultimately led to the development of this White Paper and the policy recommendations therein.

It is my hope that this White Paper gets the deserved attention and contributes to a lively discussion with various engaged stakeholders. The voices of all farmers, from small family farms to larger ones as well as from agroforestry supply chains actors are important to be heard. I know that agroforestry can ‘transform landscapes’ and the food system. The backing of European policy makers to support this urgent transformation is indispensable.



Elise van Broeckhoven

Farmer at Plukboerderij Grondig, Gent, Belgium

Endorsers



Acronyms

AECC:	Agri-Environmental Climate Commitments
AF:	Agroforestry
Agri-ETS:	Agricultural Emission Trading System
AKIS:	the European Agriculture Knowledge and Innovation System
CAP:	(European) Common Agriculture Policy
EAGF:	European Agriculture Guarantee Funds
EAFRD:	European Agriculture Funds for Rural Development
EIP-AGRI:	the European Innovation Partnership for Agricultural Productivity and Sustainability
ELO:	European Landowners Organization
EU:	European Union
EURAF:	European Agroforestry Federation
FAS:	Farm Advisory Service
FAO:	Food and Agriculture Organization
FLEGT:	Forest Law Enforcement, Governance and Trade
GAEC:	Good Agricultural and Environmental Conditions
HLPE:	The High Level Panel of Experts on Food Security and Nutrition
IFAD:	International Fund for Agricultural Development
LER:	Land Equivalent Ratio
PGS:	Participatory Guarantee System
SAFER:	Société d'Aménagement Foncier et d'Etablissement Rural

Executive Summary

The European Union is at a critical juncture in its pursuit of sustainable development and climate resilience. As global challenges such as climate change, biodiversity loss, water management and food insecurity intensify, innovative and holistic approaches to food and farming are essential. There is growing recognition of the need for a significant transformation in the agricultural sector to enhance its sustainability, resilience, and responsiveness to societal and policy demands. This is highlighted in numerous policy documents and initiatives as expressed in the Strategic Dialogue of the Future of EU Agriculture (EU Commission, 2024).

Agroforestry, a set of agroecological⁴ management practices that integrates trees and shrubs with agricultural land, emerges as a transformative solution that aligns with the EU's strategic goals for a resilient and sustainable food system.

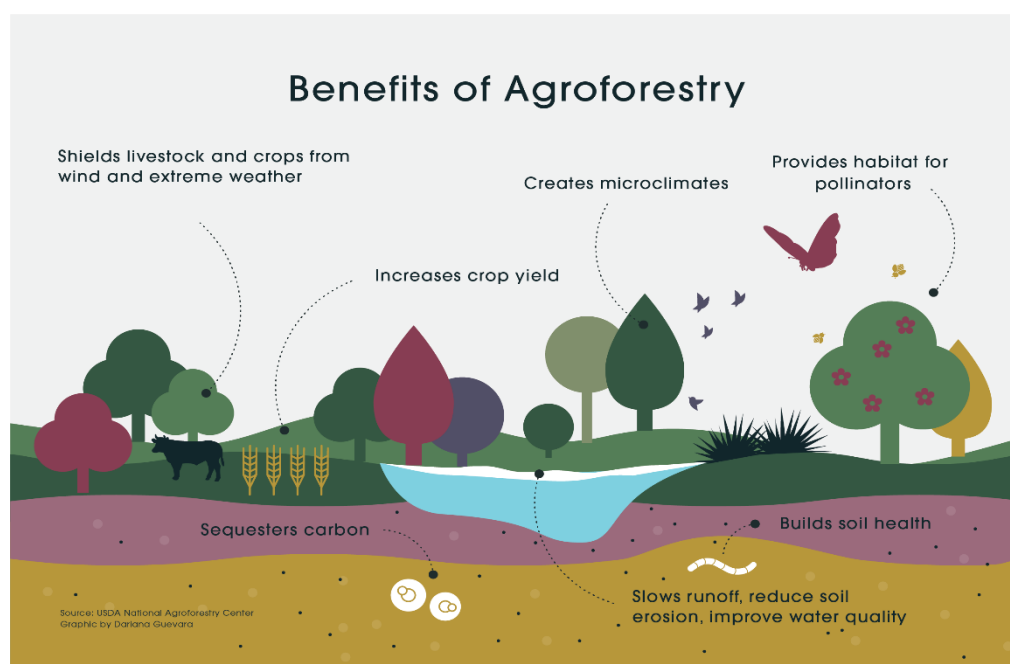


Figure 1. The Benefits of Agroforestry. Source: REVOLVE, AGROMIX

⁴ The High Level Panel of Experts on Food Security and Nutrition (HLPE) (2019) defines agroecology as approaches that “favour the use of natural processes, limit the use of purchased inputs, promote closed cycles with minimal negative externalities and stress the importance of local knowledge and participatory processes that develop knowledge and practice through experience, as well as more conventional scientific methods, and address social inequalities. Agroecological approaches recognize that agrifood systems are coupled social–ecological systems from food production to consumption and involve science, practice and a social movement, as well as their holistic integration, to address food security and nutrition”. To go further, see appendix 1.

We consider agroforestry as a set of practices that are agroecological as it fulfils principles of agroecology and presents promising practices for farmers in their agroecological transition. To go further, see appendix 1 and 2.

Agroforestry purposefully integrates trees and shrubs with crop and/or animal systems to benefit from the resulting ecological and economic interactions. This approach reduces reliance on off-farm inputs, improves soil health, promotes biodiversity, and supports animal welfare while contributing to sustainable food systems and economic diversification.

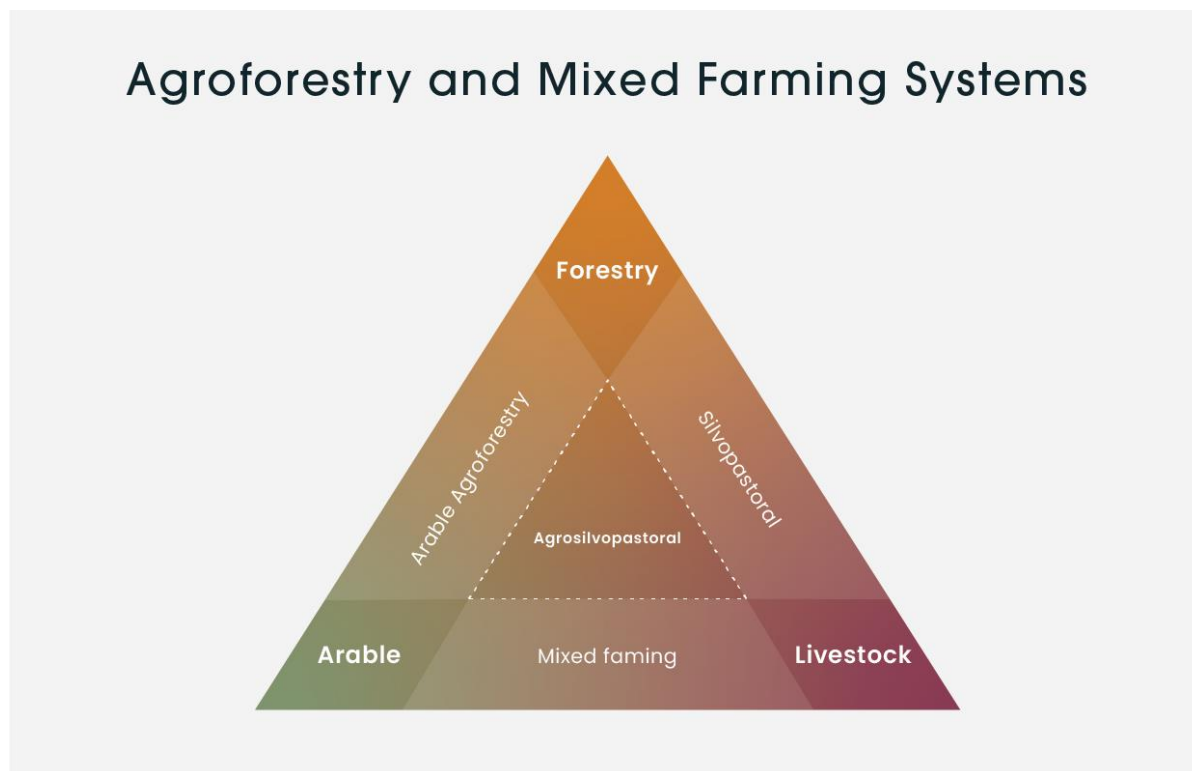


Figure 2. Conceptual representation of agroforestry and mixed farming systems (Püttsepp et al., 2022)

In the EU, policy support for agroforestry has been growing incrementally over the last decade. Agroforestry was first included in the CAP in 2005, under Pillar II. This allowed Member States to support agroforestry systems through rural development programmes. Within the 2007-2013 periods, only five EU member states (Belgium, France, Hungary, Italy and Portugal) chose to implement these policies. With the 2014-2020 CAP reform, agroforestry continued to be supported under Pillar II, with specific measures inserted for establishing agroforestry systems. Uptake was again limited, in part due to the lack of awareness and inherent complexity of implementing these systems.

With the 2023-2027 CAP reform, agroforestry received further attention, particularly through the introduction of Eco-Schemes under Pillar I; a new mechanism that provides direct payments to farmers who adopt certain environmental practices, such as agroforestry. Uptake continues to remain low however, owing to the limited available finance mechanisms and the challenges farmers face in implementing new systems. However, the rationale for creating more mixed, resilient systems such as agroforestry remains, and there is significant scope to address multiple policy objectives at the EU level through agroforestry.

This White Paper therefore explores the potential of agroforestry to foster transformational change in the EU's food system. It outlines the key barriers to uptake and provides policy recommendations developed among a diverse group of stakeholders⁵ as part of the EU AGROMIX research and innovation project. We provide possible next steps to facilitate the adoption and scaling of agroforestry across member states.

To harness the full potential of agroforestry, the EU must implement supportive policies and initiatives which remove key barriers to the adoption of agroforestry practices. Based on the evidence, the following outcomes are called for:

- a. Land that is classed as 'agroforestry' is identified in a consistent way across Europe using a common set of criteria and verifiable through available databases. Agroforestry is defined flexibly at the EU level, with a set of characteristics that promote food system change.
 - i) The EU Commission and Member States must collaborate **to develop shared mechanisms to identify agroforestry parcels**. Land that is classified as agroforestry must be verifiable through an available EU wide database.
 - ii) The EU should confirm **a common set of criteria** to characterise transformative agroforestry.

- b. Transformative agroforestry is firmly embedded within a reformed CAP and mainstreamed across relevant European policies; providing incentives and instruments to enable investments along the agroforestry value chain. This is including but not limited to policies addressing: agriculture; horticulture; forestry; soil health; land use; commons; climate change mitigation; carbon farming; biodiversity; water; livelihoods and societal wellbeing.
 - i) The EU Commission should propose a specific **EU Agroforestry Strategy** to support a policy framework for the development of agroforestry in Europe. The various forms of agroforestry include mixed farming - both silvoarable and/or silvopasture. This White Paper provides a rationale and key elements for an EU Agroforestry Strategy.
 - ii) The EU Commission should address land issues at the European level proposing to develop a separate **EU Agricultural Land Strategy**. This is to create the adequate policy framework for ensuring that enough land is dedicated to sustainable agriculture and nature restoration.
 - iii) The EU Commission should propose the increased uptake and maintenance of agroforestry in any future **reform of the Common Agricultural Policy (CAP)**.
 - iv) The EU Commission and in addition, the Member States should engage in processes to **alleviate the administrative burden** in order to facilitate the uptake of agroforestry practices by farmers.

⁵ As part of the AGROMIX project, 14 co-design policy workshops were held during 2023. More than 300 stakeholders participated, from farmers, landowners, NGOs, national agricultural representatives and policy makers. The workshops were held in France, Germany (Brandenburg and Rhineland Palatinate), Switzerland, Hungary, England and Belgium (which focused EU wide).

- c. Robust financial support is readily available for the planning, implementation and maintenance of diverse agroforestry systems. Farmers are able to blend public and private finance, without an administrative overload.
 - i) Amongst the current EU finance mechanisms, the EU Commission should create an **investment scheme based on transition funds** that would support the first stages of implementing agroforestry (minimum of 5, better 10 years).
 - ii) The EU Commission should **develop and use finance mechanisms** (both public and private) (e.g. carbon credits, ecosystem service financial rewards, certification and labelling of multiple agroforestry products and services) to facilitate the development and implementation of agroforestry.

- d. Tree products and services from agroforestry systems are firmly embedded within numerous value chains within and outside of Europe with appropriate and accessible processing facilities that add value for farmers. Agroforestry products and services are recognised and valued by consumers, producers and retailers. Farmers in Europe earn a fair and reliable income with trees and shrubs on their farms.
 - i) Value chains for tree products and agroforestry systems must be based on **circular economics** using relevant and pertinent policy texts such as the EU's circular economy action plan.
 - ii) Member States should support **the multistakeholder co-development of territorial markets**, food hubs, food belts and promote local regulation that could support consumers and public entities to buy agroforestry products.
 - iii) Member States should consider developing **means to identify agroforestry products**. This could be accomplished through labels or through support for Participatory Guarantee Systems (PGS) and food networks.
 - iv) Member States should encourage the development of agroforestry by facilitating farmers to work together (on knowledge exchange, postharvest activities, collective selling, and other kinds of support) and **provide adequate infrastructures and services**.
 - v) The EU to **embed timber derived from agroforestry systems within the EU Timber Regulation (2013) and the Forest Law Enforcement, Governance and Trade Action Plan (FLEGT) (2003)**, working with businesses to improve local timber value chains.

- e. Farmers, landowners and relevant decision makers are familiar with transformative agroforestry as a land use option and readily include agroforestry systems to meet diverse objectives across food and farming, nature recovery and climate mitigation and adaptation sectors.
 - i) Member States **to promote and support the implementation of agroforestry**, through the European Agriculture Knowledge and Innovation System (AKIS) system and their respective **Farm Advisory System (FAS)** in addition to recognising and supporting existing national agroforestry associations.
 - ii) Coupling with experts and advisory services, **farmer-to-farmer learning processes** have demonstrated positive results in promoting and facilitating the implementation of agroforestry (Rosset, 2011; Martini et al., 2016; Kansanga,

2021), therefore, the European Commission and the Member States should support the creation of mechanisms that facilitate this learning approach.

- iii) The EU Commission should **strategise and orient research projects to ensure they are aligned, and support and reinforce each other**. They need to deliver for achieving the main goal (see above). To do so as well as to facilitate knowledge sharing and dissemination, farmer participatory research approaches are advantageous.

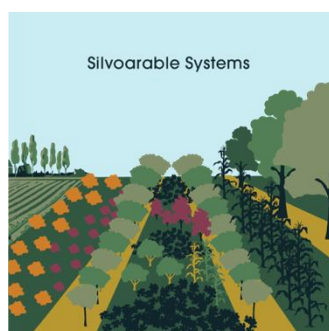
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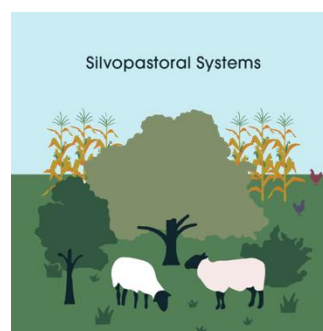
1. Introduction

Current mainstream agricultural systems are characterised by high inputs and high outputs. But this high productivity comes at significant cost to people and planet: soil that is depleted or eroded, watercourses that are polluted or drying up, flooding that is caused by agricultural expansion into uplands and a food system that produces 20–40% of greenhouse-gas emissions. There is increasing agreement that we urgently need to transform the food system. Agroforestry, the deliberate integration of trees on farms, play an important role in this transformation.

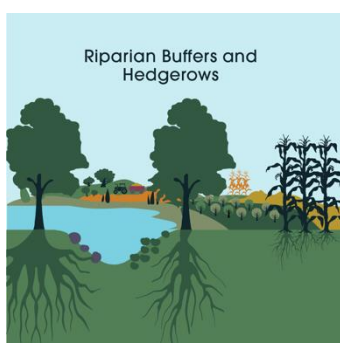
Agroforestry systems are circular, regenerative, land-use systems that combine a diversity of crops, animals and trees with varying spatial and seasonal arrangements across scales. They mimic natural water and nutrient-flow processes, with less need for artificial inputs like fertilisers, herbicides, and pesticides, thus directly supporting the ambition of the EU Green Deal. The environmental benefits of agroforestry systems have been widely recognised (FAO, 2019).



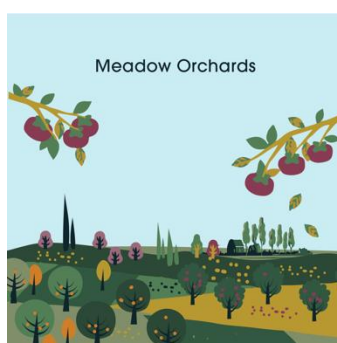
The integration of trees and shrubs with crops, often in alleys



The integration of trees and shrubs with livestock



Planting trees and shrubs along waterways or field edges to enhance microclimate, water quality, biodiversity and soil health, in addition to browse



The combination of fruit and nut trees with meadows and or livestock grazing



Cultivating crops and or grazing livestock under the protection of an existing forest canopy

Figure 3. Five typical agroforestry systems. Source: AGROMIX

Trees that are purposefully integrated into farms contribute to farm level productivity and efficiency by improving the Land Equivalent Ratio⁶ (LER). AGROMIX research showed improvements of the LER from 1 LER (same as monoculture) up to 1.20 LER (agroforestry produces up to 20% more combined crop and tree yield). Higher LER's vary widely depending on climate and crops and can be further improved with targeted research. Trees improve total productivity by maintaining soil fertility and health; reducing the risk of crop failures during droughts (by regulating water and temperature); diversifying income streams and value addition of tree products; and reducing the need for off-farm inputs. In addition, a number of Member States across Europe have introduced payment schemes for the ecosystem services provided by trees, further adding to farm income⁷.

Despite the widely documented benefits of agroforestry and successful pilots and demonstration projects globally, its general uptake at landscape or value chain level remains limited. The reasons for this are manifold, often context specific, and go beyond technical agronomic challenges and available expertise. Commonly cited constraints of agroforestry at farm level relate to higher labour demands and early investment requirements (e.g. for seedlings and tree planting, livestock management) exacerbated by a delayed harvest and therefore income given the long maturation periods before harvest. Other constraints comprise poorly structured value chains to absorb tree products that are often produced at low quantity.

The objective of this White Paper is to provide policy pathways to the European Commission and other stakeholders in order to create the enabling conditions for adoption of transformative agroforestry at scale.

⁶ Land Equivalent Ratio (LER) is a productivity indicator that compares the yields of crops and trees grown together to the yields of monocultures over the same period. It can also refer to the ratio of the yield of each crop and tree species in agroforestry compared to the yield in a monoculture system.

⁷ For instance, see the Afforestation Scheme 2023-2027 of the Irish Government - [gov - Afforestation Scheme \(www.gov.ie\)](https://www.gov.ie/en/publications-and-resources/publication/afforestation-scheme-2023-2027/)

2. European agroforestry: current trends

Despite a growing interest in diverse, multifunctional farming systems, uptake of agroforestry remains low (Donham-Burrati et al., 2023). This is principally due to four main barriers: unclear and deficient land tenure and land access rights, a lack of knowledge and capacities, a lack of support (both financial and political), and limited available processing infrastructure for tree products and limited plant materials (including young trees and seedlings) (Buttoud, 2013, Tosh, 2021).

Within the EU, agroforestry currently represents 6.4% of total utilised agricultural area. The majority is based in the Mediterranean basin. Silvopastoral systems make up 81% of the total agroforestry area and 5% of utilised agricultural area (Delgado et al., 2023). Despite CAP provisioning since 2007, a 47% decline in land under agroforestry systems in Europe between 2009 and 2018 has been estimated by Delgado et al. (2023), whereas large leftover budgets could have been allocated to developing and mainstreaming agroforestry (Mosquera Losada et al., 2016).

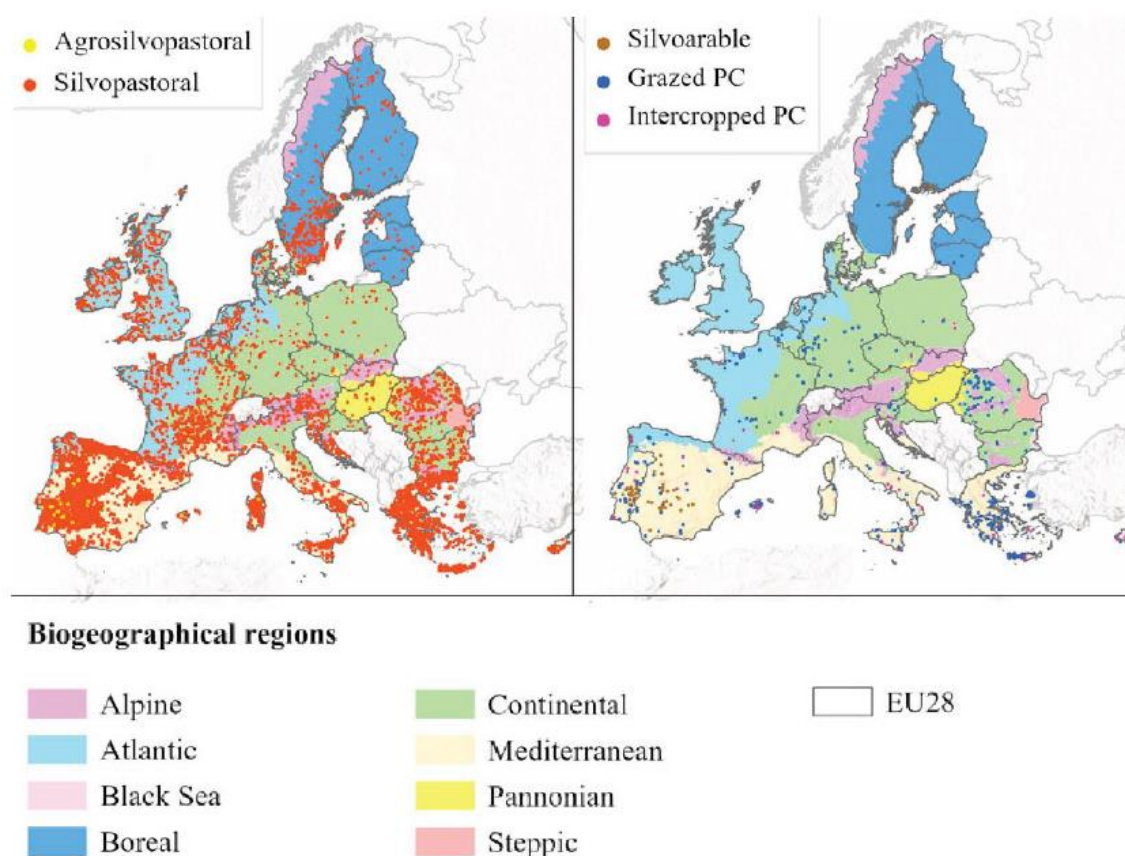



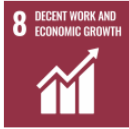


















Figure 4. The different agroforestry systems in Europe. Source: inspired from Delgado et al, 2023.





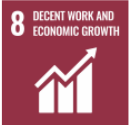


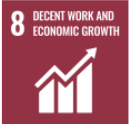



3. The transformative potential of agroforestry in the EU Food System

Agroforestry systems provide a diverse array of benefits across multiple policy domains and objectives and offer considerable opportunities for synergies. Some key benefits as seen in the European context are listed in Table 1.

Table 1. Description of benefits of agroforestry with references to scientific evidence and their contribution to the United Nations Sustainable Development Goals (SDGs).

BENEFIT	DESCRIPTION	AVAILABLE EVIDENCE	CONTRIBUTION TO SDG(S)
<p>Production of goods:</p> <ul style="list-style-type: none"> • timber, • fodder, • food crop, • textiles, • medicines, • biomass, fuels 	A wide variety of products for human and animal consumption can be provided for on the same parcel of land, increasing the LER	<p>Jose (2009);</p> <p>Lehmann et al. (2020)</p>	  
Diversified income stream	Maximising the vertical space of the farm can provide an additional revenue stream, diversifying farmer income and adding economic resilience	Thiesmeier & Zander (2023)	
Improved animal welfare and reduced methane emissions	All livestock systems benefit from trees on farms both for shade and shelter from extreme weather, additional feed source that can limit need for veterinary inputs (e.g. antibiotics, worming) and reduce methane emissions in ruminants	<p>Sullivan et al. (2011); Mancera et al. (2018); Camarero et al. (2023)</p>	  
Improved soil structure, health and fertility	Increase soil organic matter, improve leaf litter, improve structure, water retention, fertility and limit soil erosion	<p>Jose (2009);</p> <p>Dollinger & Jose (2018)</p>	 

BENEFIT	DESCRIPTION	AVAILABLE EVIDENCE	CONTRIBUTION TO SDG(S)
Improved crop health	Tree rows can act as pest and disease breaks as well as protection from extreme weather	Sollen-Norrlin et al. (2020); Pumariño et al. (2015)	
Integrated pest management	Increase habitat for predatory insects and birds as an effective pest management tool leading to reduced pesticide usage	Jose (2009); Boinot et al. (2020)	
Localised micro-climate	Reduce wind speed, reduce evapotranspiration rates, act as windbreaks and shelterbelts, provide shade and shelter	Sanchez et al. (2010); Sanchez & McCollin (2015); Kanzler et al. (2019)	
Nutrient cycling	Woody perennials have more extensive and deeper root systems, enabling greater potential to capture and recycle nutrients	Nair et al., (2021)	  
Carbon cycling	Above and below ground carbon sequestration	Pardon et al. (2017)	
Water management	Increase soil absorption rates, reducing risk of floods. Improved slope stability and controlling sediment load of streams and rivers	Anderson et al. (2009); Zhu et al. (2020); Udawatta & Gantzer (2022)	 
Support biodiversity	Increase and improve habitat for a wide variety of biodiversity, encouraging healthy ecosystem functionality and improving landscape connectivity by functionally linking habitats	Torralba et al. (2016); Mupepele et al. (2021); Edo et al. (2024)	 

BENEFIT	DESCRIPTION	AVAILABLE EVIDENCE	CONTRIBUTION TO SDG(S)
Landscape management and fire prevention	Grazing livestock through wooded areas can reduce fuel load, mitigating wildfire damage	Damianidis et al. (2020); Rouet-Leduc et al. (2021);	 
Provision of rural jobs	Diversifying income streams on farm or stacking enterprises can lead to increased jobs on farms, providing meaningful rural employment	Mukhlis et al. (2022)	  
Societal well-being	Trees benefit human well-being and their presence in the landscape are appreciated	Franco et al. (2003);	
Recreation & tourism	Agroforestry systems offer unique possibilities for people to spend time on farms for recreation and tourism	Elbakidze et al. (2021)	 
Cultural heritage	Re-integrating trees into farming systems connects people and communities to their cultural heritage and traditional food cultures	Elbakidze et al. (2021)	
Education	Enhanced landscape aesthetics provide opportunities for health, learning, and education, which can appeal to urban residents	Elbakidze et al. (2021)	 

4. Policy recommendations – 5 key themes

The EU and every Member State are called to foster the implementation and development of transformative agroforestry by generating an enabling policy landscape and reconciling financial barriers.

As highlighted during the AGROMIX Policy Summit (17 April 2024, Brussels, Belgium), the EU has already made positive steps in developing agroforestry and integrating mixed farming⁸ in the EU (Szedlak, 2024). However, there are still significant barriers to the uptake of these systems and thus to realising a sustainable food system.

Five emergent and interlinked policy themes are identified which are based on 14 multi-stakeholder policy workshops held across the EU in 2023 as part of the AGROMIX project, as well as from novel research and empirically-based scientific literature.



1. Definition and interpretation of agroforestry practices



2. Mainstreaming transformative agroforestry across EU policies, national and regional policies



3. Finance and support for on-farm innovations



4. Value chain development



5. Research, knowledge transfer, and education

⁸ Mixed farming is “the practice of deliberately integrating crop and livestock production to benefit from the resulting ecological and economic interactions” (Püttsepp et al., 2022).



4.1 Definition and interpretation of agroforestry practices

4.1 Definition and interpretation of agroforestry practices

Main goal: Land that is classed as ‘agroforestry’ is identified in a consistent way across Europe using a common set of criteria and verifiable through available databases. Agroforestry is defined flexibly at the EU level, with a set of characteristics that promote food system change.

Identified barrier: Agroforestry is practised in multiple ways. This raises challenges for issues around land classification and what constitutes agroforestry for CAP payments which act as barriers to uptake.

Despite the fact that agroforestry may be as simple as ‘*agriculture activities with trees*’ (Migliorini et al., 2024), defining what constitutes agroforestry systems and therefore what is eligible for payments is currently not clear within the CAP. This in part leads to low-uptake: only 9 European countries have implemented dedicated agroforestry measures in their National Strategic Plans (EURAF, 2024).

The EU Commission (2013) provides its own definition: “*Agroforestry means land-use systems and practices where woody perennials are deliberately integrated with crops and/or animal on the same parcel or land management unit without the intention to establish a remaining forest stand*”. Within the current CAP, each Member State can use its own agroforestry definition that would suit its own context (Lawson, 2023). But this approach can have setbacks such as difficulties in identifying agroforestry parcels, in accessing subsidies, in assessing practices, and in influencing the value of land in Member States.

At the same time, a common definition of agroforestry for all Member States should remain general, in order to allow the Member States to develop tailor-made rules for their respective local conditions. The EU thrives on diversity, and this means having the option for member states to adopt specific funding related definitions of agroforestry (number of trees per hectare, type of tree, canopy cover etc.) which fit their specific regional needs.

Key recommendations:

1. The EU Commission and Member States must collaborate **to develop shared mechanisms to identify agroforestry parcels**. Land that is classified as agroforestry must be verifiable through an available EU wide database.
2. The EU should confirm **a common set of criteria** to characterise transformative agroforestry.

4.1.1 Agroforestry identification

Every Member State has its own definition of agroforestry in their respective CAP Strategic Plans, but few definitions allow for the clear identification of agroforestry parcels (Lawson, 2023). For example, in France, agroforestry is defined as “land use systems and practices in which woody perennials are deliberately integrated with crops and/or grazed areas on the same management unit. Trees can be isolated, in rows or in groups within crop plots (intra plot agroforestry) or meadows (*parcours arboré*) or on the boundaries between plots (hedges, rows of trees)”. No indication is given of tree number thresholds. Whereas in Malta, agroforestry is defined as “Land use systems where trees are grown in combination with agriculture on the same land. Parcels under agroforestry should not be smaller than 0.1124 ha on which agroforestry actions provided in this scheme shall take place with planting density of at least 400 trees per ha, with a view of having the whole parcel planted with trees. Tree species planted must be those in an approved list”.

Another example of this identification issue is the way in which agroforestry is categorised in the landscape features⁹ of the CAP. Based on research undertaken by the European Agroforestry Federation (EURAF) and the European Landowners Organisation (ELO), “*all Member States except Finland and Sweden implement at least one of the options for hedges, trees in groups, trees in line, isolated trees and forest margins, but the rules for tree crown size and block size differ considerably, and are often not clearly specified*” (Lawson & de Boeck, 2023).

Moreover, CAP analysis has demonstrated that, “*although there are many schemes within the CAP which are built to support sustainable and ecological practices, the many inconsistencies and lack of continuity that exist¹⁰, continue to encourage farmers to remove AF systems and woody vegetation from farmland*” (Donham-Burrati et al, 2022).

We then recommend for Member States to improve the identification of parcels under agroforestry with a standardised and consistent methodology that is made available through an online database¹¹. Not only will this improve the monitoring of the evolution of agroforestry in the EU, but it will also facilitate funding and payments for agroforestry projects and reduce ambiguities around land classification and valuation.

⁹ “(...) the Biodiversity Strategy 2030 set a target for 10% of agricultural land to incorporate landscape features or non-productive areas. Under the proposed Nature Restoration Regulation, landscape features include ‘buffer strips, rotational or non-rotational fallow land, hedgerows, individual or groups of trees, tree rows, field margins, patches, ditches, streams, small wetlands, terraces, cairns, stonewalls, small ponds and cultural features’ (EU CAP Network, no date.)”

¹⁰ As an example of ensuring continuity, there have been cases in Ireland where farmers received payments over 5 years to plant hedgerows, only for the hedgerows to be removed when the grant scheme concluded. Nowadays, farmers can get 20 years of annual premium payments for planting forest. They can get 10 years of annual premium payments for planting agroforestry (Forestry Division - Department of Agriculture, Food and Marine, 2024). This kind of strategy is adequate for agroforestry as any approaches that involve trees need to be long-term thinking and cognisant of farm successors.

¹¹ We encourage Member States to include agroforestry in their annual farm surveys in order to identify land under agroforestry systems using the characteristics set out in this paper.

4.1.2 Guidelines for Transformative Agroforestry

The transformation of food systems towards sustainability, resilience and fairness requires a systems approach, and in this context the holistic framework of agroecology is strongly recommended (see appendix 1 and 2). We therefore call on the EU Commission and Member States to develop a shared framework within the CAP to assess agroforestry based on its transformative characteristics as inspired by the principles of agroecology, as outlined below. These demonstrate the positive role agroforestry can play in food system transformation.

The characteristics listed are not prescriptive, rather they are intended to inspire and allow farmers and land managers to select elements, as opposed to strict guidelines.

1. Trees are purposefully integrated within the farm system, meeting multiple objectives and enhancing ecological interaction;
2. Trees provide, or will provide, an income for the farm, providing economic diversification including through ecosystem services;
3. Trees provide direct and indirect agronomic benefits to the farm;
4. Trees reduce the need for off-farm inputs (e.g. pesticides, fossil-fuel based fertilisers);
5. The understory of trees is managed through grazing, cultivation or enhanced biodiversity, (e.g. with agri-environmental schemes, wildflower mixes, beetle banks etc.);
6. Increasing crop diversity through trees can create more jobs and employment opportunities on farm;
7. Trees on farm improve landscape connectivity and diversity;
8. Species selection is appropriate to landscape, region, and climatic conditions;
9. Trees on farms improve animal health and welfare. Through active integration they provide services like shade, fodder, safety and even reduce the need for additional animal inputs (e.g. antibiotic and anthelmintic veterinary treatments, feed supplements), providing a more natural environment for livestock and pollution-free food;
10. Trees on farm improve connectivity between producers and consumers through the promotion of short and fair distribution networks;
11. Trees on farm provide nutrient dense food and alternative protein sources from perennial cropping systems contributing to food system and diet transformation;
12. Trees on farms improve soil health and structure, sequestering carbon and enhancing water retention;
13. Trees on farms encourage farmers and land managers to think holistically and creatively, acting as a catalyst for further agroecological approaches to food and farming.

Consequently, we strongly encourage the EU and its Member States to establish framework conditions that allow for a high variety of agroforestry measures ranging from very simple systems (such as windbreaks or shelterbelts) up to highly complex, diversified systems that integrate dedicated biodiversity measures.



4.2. Mainstreaming transformative agroforestry across EU policies, national policies and guidelines

4.2 Mainstreaming transformative agroforestry across EU policies, national policies and guidelines

Main goal: Transformative agroforestry¹² is firmly embedded within a reformed CAP and mainstreamed across relevant European policies; providing incentives and instruments to enable investments along the agroforestry value chain¹³. This is including but not limited to policies addressing: agriculture; horticulture; forestry; soil health; land use; commons; climate change mitigation; carbon farming; biodiversity; water; livelihoods and societal wellbeing.

Identified barrier: Policies and related support mechanisms for agroforestry are spread across multiple policy documents in an incoherent and inconsistent manner.

Agroforestry is recognised in various European legislations such as the CAP, the EU Biodiversity Strategy and the EU Forestry Strategy. (Mosquera-Losada et al., 2016; Augère-Granier, 2020; Donham-Buratti et al., 2022; EU CAP Network, 2023). However, there remain concerns regarding the best ways to implement agroforestry (Maddinson et al., 2023) and the multiple benefits of agroforestry across diverse policy domains are not duly represented or valued. Various stakeholders believe that a dedicated policy framework should be developed to facilitate the development of agroforestry (Maddinson et al., 2023).

Key recommendations:

1. The EU Commission should propose a specific **EU Agroforestry Strategy** to support a policy framework for the development of agroforestry in Europe. The various forms of agroforestry include mixed farming - both silvoarable and/or silvopasture. This White Paper provides a rationale and key elements for an EU Agroforestry Strategy.
2. The EU Commission should address land issues at the European level proposing to develop a separate **EU Agricultural Land Strategy**. This is to create the adequate policy framework for ensuring that enough land is dedicated to sustainable agriculture and nature restoration.
3. The EU Commission should propose the increased uptake and maintenance of agroforestry in any future **reform of the Common Agricultural Policy (CAP)**.

¹² For the purpose of this paper, we define Transformative Agroforestry as the purposeful integration of trees on farms to enhance and restore ecological functioning of agricultural land, whilst diversifying farm income, encouraging short supply chains and encouraging an agroecological transition.

¹³ Agroforestry value chains encompass all commercial products from agroforestry systems (crops, timber, fibre, etc.).

4. The EU Commission and in addition, the Member States should engage in processes to **alleviate the administrative burden** in order to facilitate the uptake of agroforestry practices by farmers¹⁴.

4.2.1 EU Agroforestry Strategy

The basis of the EU 'Green Deal' was the recognition that climate and biodiversity crises are both existential threats to Europe and the world (EU Commission, 2024). This recognition remains the reality that EU institutions have to consider in any policy created and implemented (Migliorini et al., 2024).

The EU Commission could take stock from the various strategies that emerged from the Green Deal to develop a dedicated Agroforestry strategy that sets quantified goals for the EU in terms of land under different types of agroforestry systems (silvoarable, silvopasture etc). It could analyse and take advantage of the various key EU legislations to promote and implement agroforestry.

We call for the integration of family farmers (inclusive from small-scale to larger family farms) at the centre of the design of this strategy, to answer their needs and facilitate the implementation of agroforestry. Other key stakeholders must also be engaged, such as farm advisory services, land managers, civil society organisations involved in promoting agroforestry, and local policy representatives.

4.2.2 EU Agricultural Land Strategy

Land is a key issue for the EU and its agriculture. The total area under agricultural management¹⁵ has not radically changed, but the number of farms has drastically reduced by 37% between 2005 and 2020, mainly small-scale farms up to 5 ha. In fact, the EU lost 4.6 million small scale farms between 2005 and 2020 (Eurostat, 2023).

Agroforestry covers only 6.5% of the utilised agriculture area in Europe (EU CAP Network, 2023) while mixed farming covers twice as much at 14% (EIP-AGRI, 2017). Those numbers need to increase with more land under agroforestry and any agricultural land, currently without trees be incentive to add agroforestry into the arable/livestock mixture. However, there are three main challenges related to land and agroforestry as highlighted in the 14 AGROMIX policy workshops: access to land, land tenancy issues and farm succession.

Despite the fact that land issues (access and tenure) are dealt with at the national level, the EU nonetheless needs to address these barriers to uptake. Therefore, the EU Commission could propose an EU Agricultural Land Strategy that would present and suggest policy approaches to ensure that agricultural lands remain for agricultural purposes, while promoting

¹⁴ We recognize that the EU Commission started this process in the beginning of 2024, (DG AGRI, 2024).

¹⁵ "EU farms used 157 million hectares of land for agricultural production in 2020, 38% of the total land area of the EU (Eurostat, 2023)".

the implementation of sustainable agriculture practices such as agroforestry and agroecological farming¹⁶.

Based on the results of the upcoming publication of a study on European land use linked to sustainable farming commissioned by the European Commission¹⁷, this strategy should prevent land concentration and land financialisation, while facilitating access for the young generation and all genders, and improving/prioritising access to land for sustainable agriculture projects. Especially for agroforestry, the EU Commission could stress that Member States' policies should ensure that agricultural land with agroforestry practices remains considered as agricultural land.

We call for this strategy to put family farmers' needs at the centre and to be co-designed and co-developed with farmers and other key stakeholders, so as to facilitate the endorsement of sustainable agroecological practices. While all type of farms can be integrated in the design, due to the power-imbalances in the food system (Omar & Hvarregaard Thorsoe, 2023), special emphasis could be given to small-scale farmers and small-scale processing structures and how to link them together to increase social capital in rural and peri-urban areas.

4.2.3 Agroforestry within the CAP

The main European policy that could support agroforestry is the CAP. While there are some measures and mechanisms within the CAP to facilitate the implementation of agroforestry (Lawson, 2022), it is not widely adopted.

In the current CAP, agroforestry is mentioned as a practice that can fulfil the set objective of agriculture contributing to climate change mitigation and adaptation by creating afforested land (European Parliament, 2021). Agroforestry is thus promoted as a practice that farmers could implement for carbon sequestration.

¹⁶ We recommend to investigate mechanisms such as the Société d'Aménagement Foncier et d'Etablissement Rural (SAFER) ([Safer | Sociétés d'aménagement foncier et d'établissement rural](#)) and to take into consideration the Voluntary Guidelines on Land Tenure of the Committee on World Food Security ([CFS: Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security \(fao.org\)](#)).

¹⁷ One of the planned actions within the '*The long-term vision for the EU's Rural areas*' was to develop a study on land use linked to sustainable farming. This study started in July 2023 and should be completed by the end of 2024. See: eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52024SC0451

(Tranchina et al., 2024). This can be linked to issues related to coherence between various legislations (e.g. conservation, agriculture, land access), lack of knowledge regarding agroforestry by policymakers, and policies that are not well tailored for specific contexts (Tranchina et al., 2024).

More agency, trust and freedom should be given to farmers to adapt their practices to their context and to market their products accordingly (EURAF, 2024). As reported above, heavy bureaucracy is an important constraint to farmers, and agroforestry is highly dependent on the context.

Furthermore, we encourage policymakers to consider the recommendations in the Strategic Dialogue for the Future of EU Agriculture (EU Commission, 2024) that *“recommends that the European Commission and Member States conduct a comprehensive analysis of all administrative, regulatory and reporting requirements faced by the agri-food sector and identify opportunities for simplification and the reduction of compliance costs²¹”*.

As shown previously, agroforestry can deliver positive effects for climate adaptation and mitigation, for the circular economy, for water retention as well as for biodiversity, (see Table 1), and therefore, policymakers must consider coherence between the various EU policies (e.g. on climate, biodiversity, forest, agriculture) to ensure that policies are tailored to facilitate the adoption of agroforestry rather than limit it. The various services of the European Commission must work more coherently together to achieve a mission of agroforestry land use change on a large scale in Europe, including the establishment of an interservice group on agroforestry.

²¹ It encompasses reducing and harmonising, as much as possible, reporting requirements; streamlining reporting templates to minimize complexity; creating a unified digital portal for all EU and national regulatory and reporting requirements, and ensuring a one-stop-shop for farmers and agri-food actors (EU Commission, 2024).



4.3. Finance and investments for on-farm agroforestry innovations

4.3 Finance and investments for on-farm agroforestry innovations

Main goal: Robust financial support is readily available for the planning, implementation and maintenance of diverse agroforestry systems. Farmers are able to blend public and private finance, without an administrative overload.

Identified barrier: Implementing transformative agroforestry systems is perceived as risky and can be prohibitively costly given high establishment costs and slow return on investment.

While there are some finance measures and mechanisms within the CAP to facilitate the implementation of agroforestry (see section 'Agroforestry within the CAP'), it is necessary to provide more robust financial support to achieve widespread adoption.

Supportive financing in agriculture is complicated and often contested "*In most European countries, financing of agriculture is subject to higher interest rates and unfavourable conditions when compared to other sectors of the economy* (DG AGRI, 2020)".

For agroforestry, integrating trees in crops represents an investment with additional costs and therefore it is perceived as a risky decision for farmers (Burgess, et al., 2024) who then need to be supported in their risk management. Moreover, these kinds of practices need to be maintained and supported for a long time before seeing a return on investment. This is especially the case if farmers need to first establish a market for their agroforestry products. As the various definitions of agroforestry and the complexity of agroforestry systems complicate the development of the best adequate finance mechanisms (Migliorini et al., 2024), the access to funds poses a major challenge for farmers who want to engage in, or who are already practising agroforestry.

Key recommendations:

1. Amongst the current EU finance mechanisms, the EU Commission should create an **investment scheme based on transition funds** that would support the first stages of implementing agroforestry (minimum of 5, better 10 years).
2. The EU Commission should **develop and use finance mechanisms** (both public and private) (e.g. carbon credits, ecosystem service financial rewards, certification and labelling of multiple agroforestry products and services) to facilitate the development and implementation of agroforestry.

4.3.1 Investment schemes

One way to help farmers implement agroforestry practices is to progressively alleviate their level of risk by reducing, first, the financial risk related to changes in practice. Introducing new policy measures that reimburse farmers for these costs (e.g. agro-climatic and environmental schemes) may have a limited impact on changing farmer behaviour if they do not sufficiently address the risks and are not properly designed.

Studies demonstrate that public funding in infrastructure²², blended finance and green insurance mechanisms can contribute to the adoption of environmentally friendly (Lefebvre et al., 2024), agroecological practices, amongst which is agroforestry (Raina, 2024). In fact, Lefebvre et al. (2024) demonstrate that not only is green insurance more cost-effective than subsidies, but also that farmers tend to be more willing to engage in such contracts. The EU Commission could therefore create a dedicated **'Agricultural transition fund'** that it could use to develop adapted finance mechanisms and investments to support farmers in adopting agroforestry practices²³.

In particular, in parallel with current mechanisms, the EU Commission could work with private funders to develop green insurance where the private insurer covers the basic coverage rate while the public institution increases (i.e. double) the coverage rate.

The mechanisms could work at cooperative level, and we encourage the EU to design financial mechanisms with the farmers and use this approach as a way to facilitate collective work and support amongst farmers.

4.3.2 Finance mechanisms

When farmers implement agroforestry practices, they engage in a costly transformation to make their system more sustainable and resilient. Currently the majority of products from agroforestry systems are not clearly identified and have to compete with other 'standard' products in the market. This means farmers commonly do not receive a premium for these products, unlike certified organic, for example.

The EU Commission, in its Farm-2-Fork strategy, calls for the use of adapted labels to *"empower consumers to make informed, healthy and sustainable food choices"* and makes a *"proposal for a sustainable food labelling framework to empower consumers to make sustainable food choices"* (EU Commission, 2020). Labelling has an impact on consumers' choice (Barreiro-Hurle et al., 2010; Asioli et al., 2020; Potter et al., 2021)²⁴, therefore agroforestry value chain actors, supported by the EU Commission, and the Member States, should consider developing ways in which the consumer can readily identify products from

²² Infrastructures are also needed for the well development of dedicated agroforestry value-chains.

²³ Note that the Strategic Dialogue on the Future of EU Agriculture also calls for the creation of a transition funds (EU Commission, 2024).

²⁴ Nevertheless, there is still a need for further research to create the best tailored label, as labels compete with each other, and the information provided to consumers are sometimes ineffective or not sufficient (Asioli, et al, 2020).

agroforestry systems in markets, and are cognisant of the multiple ecological benefits. This is expanded in the following section (see section 'Identification of agroforestry products').

Given the EU's possible Agricultural Emission Trading Scheme (Agri-ETS²⁵), agroforestry systems, recognised as a carbon farming practice, could be eligible for payments. This could represent an alternative way for farmers to diversify their revenue streams. In addition to improved soil health and increased carbon sequestration (de Stefano & Jacobson, 2017; Lawson et al., 2024), agroforestry delivers many other ecosystem services which could also be valorised through payments for ecosystem services or natural capital. However, valuing ecosystem services is complex and still academically debated (e.g. Matthies et al., 2015; Vysna et al., 2021; Tordjam, 2022) and needs to be approached with caution²⁶.

Evidently, the ways in which farmers can be remunerated for implementing agroforestry systems is varied and context dependent. We therefore suggest that the EU Commission creates an online web platform that would clearly and simply present to farmers and land managers the various ways and distinct opportunities to receive payments and funds for agroforestry practices. This platform could be a 'one-stop-shop' that would also help in accessing funds by, for example, providing easy-to-use administrative guidelines²⁷.

²⁵ An Agricultural Emission Trading System (Agri-ETS) is a market-based mechanism where agricultural entities (farm, etc) are allowed to buy and sell emissions allowances (Bognar et al., 2023).

²⁶ Carbon farming and the use of carbon credit within a (voluntary or regulated) market is a sensitive topic for the farming community (Tordjman, 2022; Donham-Buratti, 2023). It should only be an alternative, or a parallel way for farmers to get some revenues. Farmers should first be rewarded for their agriculture production through fair prices. Moreover, carbon farming and the Agri-ETS could influence land valorisation, reinforcing the difficulties for young farmers' access to land.

²⁷ This should not jeopardise the above recommendations on coherence and administrative adjustment. The online web platform might be a way to facilitate access to various finance mechanisms in an easy and friendly way for farmers. This is coherent with a recommendation from the Strategic Dialogue on the Future of EU Agriculture that suggests the creation of "a dedicated pan-EU financing platform, backed by EU and national authorities, banks and insurance companies, which facilitates credit protection, risk-sharing loans and guarantees mechanisms and would alleviate capital costs for private banks and help decrease risks for farmers and agri-food businesses" (EU Commission, 2024).



4.4 Value chain development

Photo: Valentin Maya

4.4 Value chain development

Main goal: Tree products and services from agroforestry systems are firmly embedded within numerous value chains within and outside of Europe with appropriate and accessible processing facilities that add value for farmers. Agroforestry products and services are recognised and valued by consumers, producers and retailers. Farmers in Europe earn a fair and reliable income with trees and shrubs on their farms.

Identified barrier: Supportive frameworks (in terms of policy and infrastructure) for the development of agroforestry value chains are not sufficient, and products are not easily processed or integrated. This leads to limited consumer knowledge and inhibits valuation of tree products from agroforestry systems.

Agroforestry systems must become economically sustainable, given their many benefits afforded to farmers and society. To enable their economic sustainability, supportive value chains must evolve to support these multi-functional benefits (Williams et al., 2024).

Agroforestry engages more with diverse market channels than conventional farms. It often utilises collective sales channels, such as cooperatives and geographical indications, to market its products. This diversification in marketing strategies allows agroforestry to access higher unitary prices and reduce dependency on single buyers (Vergamini et al., 2023).

Key recommendations:

1. Value chains for tree products and agroforestry systems must be based on **circular economics** using relevant and pertinent policy texts such as the EU's circular economy action plan²⁸.
2. Member States should support **the multistakeholder co-development of territorial markets**, food hubs, food belts and promote local regulation that could support consumers and public entities to buy agroforestry products²⁹.

²⁸ In addition to the circular economy action plan, there are diverse EU policy texts that could be considered to promote and develop agroforestry. Amongst other, we can cite the new EU certification scheme for carbon removals, adopted by the EU Parliament in April 2024, which could pave the way for the promotion of agroforestry products as they demonstrated, in general, their capacity to improve carbon soil fixation (De Stefano & Jacobson, 2017). The directive on unfair trading practices in the agriculture and food supply chain (Council of the European Union & EU Parliament, 2019) could also facilitate the uptake of agroforestry practices by ensuring that dedicated and fair value chains exist and function. The EU Commission also published a series of important strategies that also pave the way for transitioning towards a sustainable and resilient EU food system. Member States, as any agroforestry stakeholders, should take advantage of those documents to promote and pave the way for the development of agroforestry value chains.

²⁹ For instance, the support for the creation of food belts or regulations that promote the consumption of organic food in public entities.

3. Member States should consider developing **means to identify agroforestry products**. This could be accomplished through labels or through support for Participatory Guarantee Systems (PGS)³⁰ and food networks.
4. Member States should encourage the development of agroforestry by facilitating farmers to work together (on knowledge exchange, postharvest activities, collective selling, and other kinds of support) and **provide adequate infrastructures and services**.
5. The EU to **embed timber derived from agroforestry systems within the EU Timber Regulation (2013) and the Forest Law Enforcement, Governance and Trade Action Plan (FLEGT) (2003)**, working with businesses to improve local timber value chains.

4.4.1 Agroforestry and circular economy

In its communication named *A new Circular Economy Action - For a cleaner and more competitive Europe*, the EU Commission (2020) states that: “*The circular economy can significantly reduce the negative impacts of resource extraction and use on the environment and contribute to restoring biodiversity and natural capital in Europe. Biological resources are key input to the economy of the EU and will play an even more important role in the future*”. We call on agroforestry interested stakeholders to take advantage of this document to develop dedicated value-chains for agroforestry. This document reinforces already expressed recommendations such as funding for developing internal value chains for raw materials, rewarding produce based on their sustainability performance, carbon removals and carbon certification.

4.4.2 Territorial approach³¹

It's agreed that locally sourced products are essential to sustainable food systems (FAO, 2022). Therefore, we call on the EU Commission and the Member States to consider further development support for territorial markets. The Food and Agriculture Organisation of the United Nations (FAO) (2022) defines this kind of market as ‘*local or national food markets that are embedded in territorial food systems, in which the majority of products sold are produced within the same territory*’. This type of market has various advantages such as robustness and resilience in face of shocks, improving producers' livelihoods through fair prices and steady incomes and increased sustainability by limiting the distance between producers and consumers (FAO & INRA, 2016; Fakhri, 2021; IPES-Food, 2024; Kay, no date.). IPES-Food (2024) provides a series of characteristics of territorial markets: shorter food chains, spaces

³⁰ Participatory Guarantee Systems: [Participatory Guarantee Systems | IFOAM](#)

³¹ Note that considering territorial approaches is promoted in the Strategic Dialogue for the Future of EU Agriculture (EU Commission, 2024).

where producers and consumers can meet, more autonomy for small-scale actors, and multifunctionality³².

To develop territorial markets, (local, regional and national) public authorities must work with various stakeholders (farmers and farmers' association, consumers, distributors, civil society, finance providers) to ensure the proper development of territorial markets: trust³³, price-setting mechanisms³⁴ that reflect the cost of implementing sustainable agriculture practices (agroforestry), logistics, and certification mechanisms (FAO and INRA, 2016). Nevertheless, without public support, territorial markets cannot fully develop. Based on IPES-Food's report (2024) and other resources, we call on Member States to consider investing in infrastructures and logistics, to ensure the centrality of farmers and an equal and horizontal governance of such markets, to support and facilitate the development of related initiatives such as food hubs³⁵, to use public procurement to buy local and healthy food.

4.4.3 Identification of agroforestry products

As stated above, rigorous labelling can help to promote and support the value chain of specific products, but too many labels without legally protected third-party certification can also confuse consumers, contribute to 'greenwashing' and create competition between products to eventually lower standards. Nevertheless, we call on the stakeholders of the agroforestry value chain, supported by their Member States, to explore developing tailored labels, or other alternatives, to identify products from agroforestry production.

Amongst alternatives, we encourage the European Commission to consider Participatory Guarantee Systems (PGS) as a way to identify products³⁶. May (2019) defines PGS as "(...) *locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks, and knowledge exchange*". Through PGS, farmers work with their peers and with their consumers to assess quality. Quality is assessed through the presentation of the practices and discussions with PGS participants. In addition to quality assessment, it facilitates social connections between consumers and farmers, which can improve the development of local value chains and food networks (Cuéllar-Padilla et al., 2022).

Moreover, PGS can facilitate the recognition and certification of agroforestry products from small scale and mixed farming farms, as it is better suited for these types of farms (Home et

³² Not simply limited to economic exchange but also cultural and social interactions.

³³ Trust can be built by facilitating exchange between stakeholders and by promoting approaches that strengthen the relation between consumers and producers, such as Community-Supported Agriculture or Participatory Guarantee Systems.

³⁴ The use of the directive on Unfair trading practices in the agriculture and food supply chain can deliver on that issue: see ECVC. (2024). *An adequate answer to the farmer's protest: fair prices through strengthening the UTP directive*.

³⁵ A food hub is a "business or organisation that actively manages the aggregation, distribution, and marketing of course-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand (Barham et al., 2012)".

³⁶ Note that PGS are presented in the Strategic Dialogue on the Future of EU Agriculture (EU Commission, 2024).

al., 2017; Cuéllar-Padilla et al., 2022). Still, further research is needed to explore how different certification schemes can promote agroforestry especially in the European context.

This system could work in parallel with third-party public-law based certification approaches³⁷. The EU latest regulation on organic includes group certification mechanisms for smaller farms as a legal option (Publication Office of the European Union, 2023). This system could be considered and extended to legally recognise PGS. Therefore, we encourage the EU Commission to consider PGS as a further addition to third-party certification and group certification.

4.4.4 Rural infrastructure for agroforestry

To ensure dedicated value chains and the overall development of agroforestry, it is critical to provide rural areas with adequate infrastructure and to facilitate communication, connection and exchanges between farmers and between farmers and consumers. The importance of rural areas for the future of Europe is demonstrated by the EU Commission Communication of 30 June 2021 entitled 'A long-term vision for the EU's rural areas – Towards stronger, connected, resilient and prosperous rural areas by 2040 (EU Commission, 2021). Both the EU Parliament (2022) and the EU Council (2023) reacted to this communication and recognised the importance of rural areas and the need for strengthening them.

We support the EU Council suggestion (2023) to the EU Commission to develop a EU Rural Strategy, coherent with other EU Strategies and that would set the stages for providing rural areas with the infrastructures and services needed for the development of agroecological territories (e.g. facilitating local value-chains through the support for local retailers, local food hubs, local slaughterhouses and other transformation infrastructure, supporting initiatives that improve connection between people living in rural areas). Adding facilities to process agroforestry supply chain products supports agroecological territorial development.

We also encourage the EU Commission to assess the EAFRD budget and adapt, if necessary, programmes in order to deliver infrastructures and services that would support the creation and development of adapted value chains for agroforestry. Member States should also ensure that interested stakeholders have access to the right information about funding opportunities.

4.4.5 Timber

Agroforestry for high-value timber production must also be considered and recognised. The EU is one of the largest consumers of timber products in the world and consequently one of the largest importers of timber (Donham-Buratti et al., 2022). The EU therefore has a responsibility to ensure that the procurement of timber products is legal and not contributing to illegal logging or deforestation. Incorporating timber production into agroforestry systems would bolster European production and work towards a number of initiatives such as the EU

³⁷ Third-party certification against a legal public standard and private PGS can work both in parallel as they have pros and cons, and are best suited for different approaches. Plus, ensuring a better dialogue between the two systems might help them improve.

Timber Regulation (adopted March 2013) and the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan (established in 2003).



4.5. Knowledge exchange, education and research

Photo: Jake Threadgould

4.5 Knowledge exchange, education and research

Main goal: Farmers, landowners and relevant decision makers are familiar with transformative agroforestry as a land use option and readily include agroforestry systems to meet diverse objectives across food and farming, nature recovery and climate mitigation and adaptation sectors.

Identified barrier: Farmers, advisors and the broader agricultural sector have been encouraged to simplify production methods over previous decades. This has led to a decline in knowledge with regards the economics, agronomic interactions and system design of agroforestry and more mixed farming systems.

The reintroduction of mixed systems and agroforestry requires an emphasis on training for farmers and farm advisers, as well as awareness raising for stakeholders involved in the food and farming system and greater economic understanding. Training, knowledge sharing and online tools must be made available to enable greater uptake as well as increased data on the economic impacts (such as the LER).

Key recommendations:

1. Member States **to promote and support the implementation of agroforestry**, through the European Agriculture Knowledge and Innovation System (AKIS) system and their respective **Farm Advisory System (FAS)** in addition to recognising and supporting existing national agroforestry associations.
2. Coupling with experts and advisory services, **farmer-to-farmer³⁸ learning processes** have demonstrated positive results in promoting and facilitating the implementation of agroforestry (Rosset, 2011; Martini et al., 2016; Kansanga, 2021), therefore, the European Commission and the Member States should support the creation of mechanisms that facilitate this learning approach.
3. The EU Commission should **strategise and orient research projects to ensure they are aligned, and support and reinforce each other**. They need to deliver for achieving the main goal (see above). To do so as well as to facilitate knowledge sharing and dissemination, farmer participatory research approaches are advantageous.

³⁸ This could be extended to dynamics such as farmers-to-advisors, farmers-to-policymakers, etc.

4.5.1 Agroforestry within Farm Advisory Services

The EU Agriculture Knowledge and Innovation System (AKIS)³⁹ and the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI)⁴⁰ must play a central role to connect advisors and provide them with up-to-date and tailored tools and knowledge. Each Member State must have a Farm Advisory Service, by law⁴¹. An agroforestry programme could be developed in each National Farm Advisory System and connected through the European AKIS⁴². Along with their other monitoring processes, Member States should monitor and report back on the number of farmers that are engaging with agroforestry, and monitor the evolution of agroforestry practices. In other words, we suggest, for the next CAP reform, making mandatory for Member States to inform about agroforestry within their respective FAS.

We also encourage Member States to improve funding for farm advisory services, and to prioritise programmes that support sustainable agriculture practices, such as agroforestry. Member States are also invited to consider financially supporting farmers who participate in training in agroforestry.

4.5.2 Farmer-to-farmer mechanisms

Through farmer participatory research and farmer-to-farmer mechanisms, farmers can learn from researchers and peers (farmer experts), and can be supported in their implementation of new practices (Martini et al., 2016). As stated by Magruder et al. (2023): “*Farmer social networks can help drive the diffusion of new technologies by lending credibility to extension programs and encouraging information to pass from neighbour to neighbour, while information and communication technologies (ICTs) are effective in tailoring information to farmers’ needs and enabling the comprehension of complex technologies*”. This can also have a positive impact on the farmer’s understanding of her/his role and work for society, becoming a key actor in the transition (Hauser et al., 2016).

We invite the EU Commission to encourage Member States to consider alternative ways of teaching as learning practices are embedded in specific socio-economic contexts and territories (McCune & Sanchez, 2018). Top-down approaches might not be sufficient or adequate. Farmers engaged in transition towards sustainable practices, such as agroecology and agroforestry, should be put at the centre of the learning process and should participate in its design (La Via Campesina, 2015).

³⁹ [AKIS in the EIP-AGRI spotlight | EIP-AGRI \(europa.eu\)](#)

⁴⁰ [About EIP-AGRI | EIP-AGRI \(europa.eu\)](#)

⁴¹ [FAS - European Commission \(europa.eu\)](#)

⁴² We recall that, in the European Regulation 2021/2115, it’s recommended that farm advisory services provide appropriate assistance to farmers, along the cycle of the farm development, and, in particular, for “conversion of production patterns towards consumer demand, innovative practices, agricultural techniques for resilience to climate change, including agroforestry and agroecology (...) (European Parliament, 2021)”.

4.5. 3 Aligning research programmes

There are opportunities in current EU funded Horizon 2020 research programmes oriented towards agroecology and agroforestry (Goanna-Saez, 2024). In addition to Horizon 2020, there are various EU missions (such as the Soil Mission, the Forest Mission) that are opportunities to promote agroforestry and there is now a specific EU partnership on agroecology⁴³.

We then call for an alignment of EU research programmes towards transformative agroforestry, this would enable stakeholders across programmes to mutually reinforce and further knowledge around agroforestry. Farmers should be put at the centre of those projects, and funding related to those projects could help them develop, test and implement agroforestry practices.

⁴³ <https://www.agroecologypartnership.eu/>

Conclusion

The ecological and economic benefits of more mixed farming systems, such as mixed farming and agroforestry should not be ignored. Building resilience into farming systems, now, is of critical importance to sustain food production in Europe for the coming decades.

Transformative agroforestry holds significant potential to address key challenges within the European Union, and should be fully integrated into EU policies on climate change mitigation, biodiversity enhancement, soil health improvement, and agriculture and rural development. The recommendations outlined in this White Paper build on existing EU regulatory frameworks, notably the Common Agricultural Policy (CAP), which already provide avenues for the support and promotion of agroforestry practices. EU policy should direct regulation and public funding to drive the adoption of 'transformative agroforestry' with the aim that the utilised agricultural area with 'transformative agroforestry' must exceed 20% by 2040.

By the EU creating an enabling policy environment and offering financial and technical support to encourage the uptake of agroforestry across Europe, the effectiveness of these efforts then hinges on the commitment and strategic choices of Member States. A decentralised decision-making process underscores the importance of Member States adopting best practices and aligning national strategies with EU objectives to fully leverage the potential of agroforestry and mixed farming systems.

The EU's must therefore focus on facilitating knowledge exchange, providing guidance, and setting incentives that encourage Member States to prioritise agroforestry within their agricultural and environmental policies. Additionally, the EU should strengthen monitoring and evaluation mechanisms to ensure that agroforestry measures are effectively implemented and achieving the desired outcomes.

By embracing agroforestry, the EU can lead the way towards a sustainable, resilient, and equitable food system that meets the needs of present and future generations.

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Appendices

Appendix 1: Agroecology and the consolidated set of 13 agroecological principles

The HLPE (2019) defines agroecology as approaches that “*favour the use of natural processes, limit the use of purchased inputs, promote closed cycles with minimal negative externalities and stress the importance of local knowledge and participatory processes that develop knowledge and practice through experience, as well as more conventional scientific methods, and address social inequalities. Agroecological approaches recognize that agrifood systems are coupled social–ecological systems from food production to consumption and involve science, practice and a social movement, as well as their holistic integration, to address food security and nutrition*”.

Agroecology can be viewed as a transitional process. Farms and farmers must adapt their practices to make them resilient (environmentally as economically). Agroecology delivers a series of principles that present the aims that a transitional farm should follow. Specific agroecological approaches and practices, such as agroforestry, can be then applied to deliver on the principles. It always depends on the context, the reality and the possibilities of the farm. Tailored policies, infrastructures and services must exist to facilitate this transition.

Agroecology principles as a framework for the EU food system transformation and use those principles as guidelines and basis for assessment of farms and other agriculture business activities⁴⁴

⁴⁴ There are already various tools that assess agroecological performances (Geck et al, 2023) and many important organisations are relying on them to monitor farm activities (e.g. the Agroecology Coalition, the International Fund for Agricultural Development (IFAD), the Agroecology Funds, ...)

*Scale application: FI = Field; FA = Farm, agroecosystem; FO = Food System.

PRINCIPLE	FAO'S TEN ELEMENTS	SCALE APPLICATION
1. Recycling. Preferentially use local renewable resources and close as far as possible resource cycles of nutrients and biomass.	Recycling	FI, FA
2. Input reduction. Reduce or eliminate dependency on purchased inputs and increase self-sufficiency	Efficiency	FA, FO
STRENGTHEN RESILIENCE		
3. Soil health. Secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and enhancing soil biological activity.		FI
4. Animal health. Ensure animal health and welfare.		FI, FA
5. Biodiversity. Maintain and enhance diversity of species, functional diversity and genetic resources and thereby maintain overall agroecosystem biodiversity in time and space at field, farm and landscape scales.	Part of diversity	FI, FA
6. Synergy. Enhance positive ecological interaction, synergy, integration and complementarity among the elements of agroecosystems (animals, crops, trees, soil and water).	Synergy	FI, FA
7. Economic diversification. Diversify on-farm incomes by ensuring that small-scale farmers have greater financial independence and value addition opportunities while enabling them to respond to demand from consumers.	Part of diversity	FA, FO
SECURE SOCIAL EQUITY/RESPONSIBILITY		
8. Co-creation of knowledge. Enhance co-creation and horizontal sharing of knowledge including local and scientific innovation, especially through farmer-to-farmer exchange.	Co-creation and sharing of knowledge	FA, FO
9. Social values and diets. Build food systems based on the culture, identity, tradition, social and gender equity of local communities that provide healthy, diversified, seasonally and culturally appropriate diets.	Parts of human and social values and culture and food traditions	FA, FO
10. Fairness. Support dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, fair employment and fair treatment of intellectual property rights.		FA, FO
11. Connectivity. Ensure proximity and confidence between producers and consumers through promotion of fair and short distribution networks and by re-embedding food systems into local economies.	Circular and solidarity economy	FA
12. Land and natural resource governance. Strengthen institutional arrangements to improve, including the recognition and support of family farmers, smallholders, and peasant food producers as sustainable managers of natural and genetic resources.	Responsible governance	FA, FO
13. Participation. Encourage social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems.		FO

Figure 5. Source: HLPE. (2019). Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. Rome: The Committee on World Food Security.

Principles have the advantage to apply to different type of farming system and practices. It also allows for diversity and flexibility. Moreover, Gliessman (2016) paved the way for a process approach towards agroecology transition, defining 5 steps of transformation that a farm can follow to achieve a complete agroecological transition.

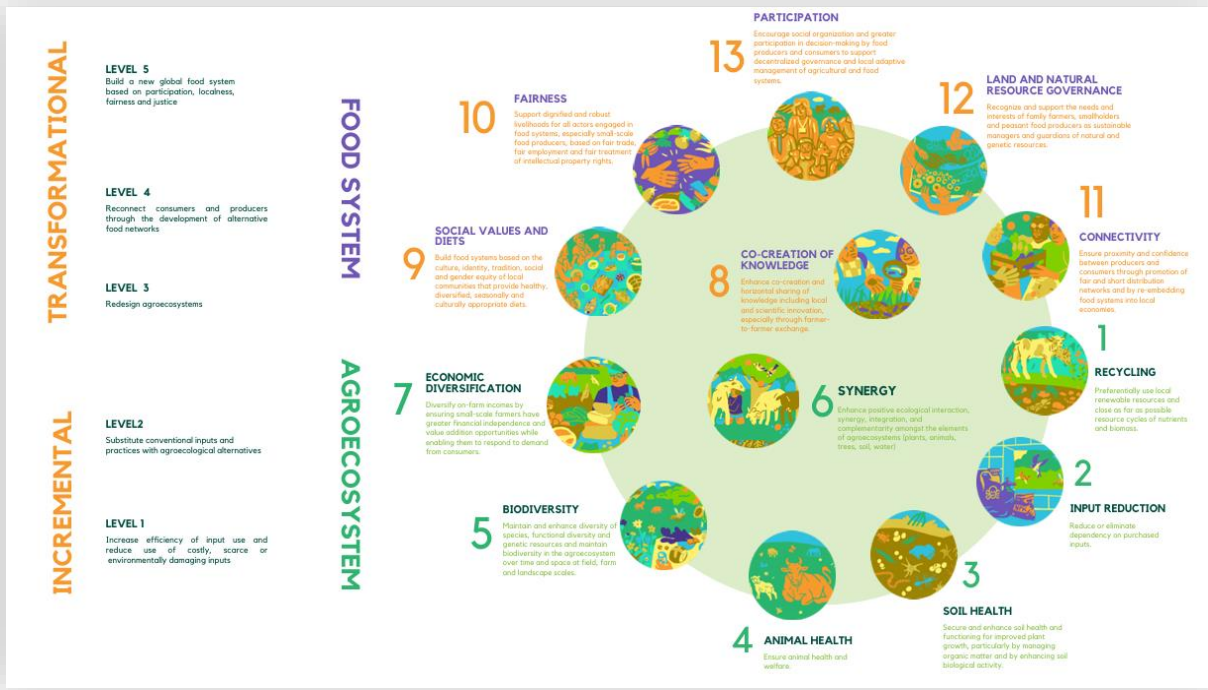


Figure 6. Source: Agroecology Europe. (no date.) Principles of agroecology - Definition of agroecology in United Nations documents. Retrieved from [Principles of agroecology • Agroecology Europe \(agroecology-europe.org\)](https://www.agroecology-europe.org/).

Appendix 2: Transformative agroforestry’s characteristics and agroecology principles

AGROECOLOGY PRINCIPLES	TRANSFORMATIVE AGROFORESTRY CHARACTERISTICS
Recycling: Preferentially use local renewable resource and close as far as possible resource cycle of nutrients and biomass.	Species selection is appropriate to landscape, region
Inputs reduction: Reduce or eliminate dependency on purchased inputs.	Trees reduces the need for off-farm inputs;
Soil health: Secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and by enhancing soil biological activity.	Trees on farms improve soil health and structure, sequestering carbon and enhancing water retention;
Animal health: Ensure animal health and welfare.	Trees on farm improve animal health and welfare. Through active integration they can provide services like shade, fodder, safety and even reduce the need for additional animal inputs (e.g. medical treatments, supplements, etc.) provide shelter for livestock and improve animal health and welfare;
Biodiversity: Maintain and enhance diversity of species, functional diversity and genetic resources and maintain biodiversity in the agroecosystem over time and space at field, farm and landscape scales.	The understory of trees can be managed through grazing, cultivation, enhanced biodiversity, wildflowers (e.g. with agri-environmental schemes);
Synergy: Enhance positive ecological interaction, synergy, integration, and complementarity amongst the elements of agroecosystems (plants, animals, trees, soil, water).	Trees are purposefully integrated within the farm system, meeting multiple objectives and enhancing ecological interaction;
Economic diversification: Diversify on-farm incomes by ensuring small-scale farmers have greater financial independence and value addition opportunities while enabling them to respond to demand from consumers.	Trees provide, or will provide, an income for the farm, providing economic diversification including through ecosystem services;
Co-creation of knowledge: Enhance co-creation and horizontal sharing of knowledge including local and scientific innovation, especially through farmer-to-farmer exchange.	The practice of integrating trees into the farming system requires a sharing of knowledge and re-learning of traditional practices
Social values and diets: Build food systems based on the culture, identity, tradition, social and gender equity of local communities that provide healthy, diversified, seasonally and culturally appropriate diets.	Trees on farm provide nutrient dense food and alternative protein sources from perennial cropping systems;

AGROECOLOGY PRINCIPLES	TRANSFORMATIVE AGROFORESTRY CHARACTERISTICS
<p>Fairness: Support dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, fair employment and fair treatment of intellectual property rights.</p>	<p>Increasing crop diversity through trees can create more jobs and employment opportunities on farm;</p>
<p>Connectivity: Ensure proximity and confidence between producers and consumers through promotion of fair and short distribution networks and by re-embedding food systems into local economies.</p>	<p>Trees on farm improve connectivity between producers and consumers through the promotion of short and fair distribution networks;</p>
<p>Land and natural resource governance: Recognize and support the needs and interests of family farmers, smallholders and peasant food producers as sustainable managers and guardians of natural and genetic resources.</p>	<p>Trees on farm improve landscape connectivity and diversity;</p>
<p>Participation: Encourage social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems.</p>	<p>Trees on farms provide opportunities for communities to interact with and support local farmers through e.g apple days</p>



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