

Agroforestry in the European Union

SUMMARY

Agroforestry is a very ancient agricultural practice that is still widely implemented in certain EU countries, and is gaining renewed interest due to its many economic and environmental benefits. It is a dynamic system combining trees, crops and/or livestock on the same area of land in some form of spatial arrangement or temporal sequence. Prominent examples are the *dehesa* in Spain (oak trees with livestock grazing underneath) and the Fennoscandian area (covering Finland, Norway, and Sweden in their entirety, and a part of Russia), where reindeer husbandry is practised.

The main types of agroforestry include the silvopastoral and silvoarable systems, forest farming, hedgerows, riparian buffer strips and kitchen gardens. A number of studies have attempted to classify the existing systems, a task made difficult by the number of possible combinations of woody components/crops/livestock and the variety of criteria to consider. A comprehensive European project on agroforestry suggests that it covers a total area of more than 15 million hectares in the EU, or 52 million hectares if reindeer husbandry is included.

Agroforestry systems, which are sustainable and multifunctional, provide many environmental benefits. They contribute to climate change adaptation and mitigation, protect the soil, enhance biodiversity and improve the overall condition of the landscapes. That way, they are also beneficial to the local rural economy, as those improved landscapes offer cultural and recreational opportunities. Moreover, agroforestry farmers can diversify their production, reduce some costs and achieve better productivity. However agroforestry is usually more complex and knowledge-intensive than conventional agriculture and may involve a greater administrative burden.

Agroforestry enjoys EU-level recognition and support from the common agricultural policy (CAP). Farmers can receive direct payments per hectare of land under agroforestry, as well as support for the establishment or maintenance of agroforestry systems under the rural development strand of the CAP. Innovation and research in this field may also be supported. The European Parliament has recognised the benefits of agroforestry in several resolutions, and called for more effective support for a range of sustainable production methods, including agroforestry.



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Agroforestry: Overview and definitions

A worldwide traditional practice

Agroforestry, or the practice of combining trees with agriculture or livestock, has existed since ancient times on all continents. According to the UN Food and Agriculture Organization (FAO), it is practised by more than [1.2 billion people](#), on around 1 billion hectares (ha) of land worldwide. Prominent examples are the cocoa agroforestry systems across the world, in which cocoa grows under tree canopies covering 7.8 million ha, or the Central American silvopastoral system, in which livestock and trees thrive together on 9.2 million ha.

Agroforestry in the European Union

In the EU, agroforestry is also a very ancient traditional practice that is still widely implemented in some EU countries and is now gaining increasing popularity across the continent in view of its ecological and economic benefits.

It mainly involves the presence of [two production systems](#) on the same area of land, with trees above or alongside pastures or arable crops. A specific feature of agroforestry is the very wide range of possible tree, crop and livestock arrangements. Examples are sheep grazing beneath cork oaks (in *montados* and *dehesas* found in certain parts of Portugal and Spain), or tall fruit trees under which crops are grown or livestock grazed (*Streuobst*¹ in central Europe), or reindeer husbandry in the boreal forest. The possible products for sale are also [diverse](#): olives, fruits, nuts, berries, seeds, leaves, tubers, edible flowers, biomass, wood chips, timber, firewood, meats, eggs, milk, honey, etc. Systems including apple orchards, olive groves, chestnut woodlands or walnut plantations are considered high-value-tree systems.

With the modernisation and intensification of EU agricultural production and forestry in the 1960s, many traditional agroforestry systems practiced until then have since disappeared. For example, *bocages* (pastureland featuring a network of hedgerows) created over the centuries have given way to large fields as hedgerows were pulled out. Today, the multifunctional role of hedgerows and their value as providers of environmental benefits are better understood: biodiversity protection, better soil quality, regulation of run-off and erosion, etc. There is now renewed interest in integrating trees with agriculture.

Definitions of agroforestry at institutional level

According to the [FAO](#), 'Agroforestry is a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence. [...] Agroforestry can also be defined as a dynamic, ecologically based, natural resource management system that, through the integration of trees on farms and in the agricultural landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels.'

For the purpose of granting support to European farmers practicing agroforestry, the European Commission gives a precise definition in its explanatory fiche on the rural development sub-measure 'Establishment of agroforestry systems': ['Agroforestry means land-use systems and practices](#) where woody perennials are deliberately integrated with crops and/or animals on the same

Agroforestry synergies

A specific feature of agroforestry is its **synergy effect** – the combination of several components and their dynamic interaction – which increases the overall productivity of the system. [INRA researchers](#) have showed that the production from one hectare of a walnut/wheat mix is the same as for 1.4 hectares with trees and crops separated. One way to measure the productivity of an agroforestry system is by using the [Land Equivalent Ratio](#) (LER), which compares the yields from growing two or more components (e.g. crops, trees, animals) together with yields from growing the same components individually.

parcel or land management unit without the intention to establish a remaining forest stand. The trees may be arranged as single stems, in rows or in groups, while grazing may also take place inside parcels (silvoarable agroforestry, silvopastoralism, grazed or intercropped orchards) or on the limits between parcels (hedges, tree lines).'

Finally, in the recent comprehensive [AgForward](#) research project² on agroforestry in the EU, agroforestry was defined as 'the practice of deliberately integrating woody vegetation (trees or shrubs) with crop and/or livestock production systems to benefit from the resulting ecological and economic interactions'.

All above definitions include the word 'deliberately' to stress that agroforestry is not a system occurring naturally but involves human intervention – 'people' are an integrated part of the system.

EU agroforestry practices and systems, and their classification

Many classification possibilities

A number of criteria can be considered for the purposes of establishing a [classification](#) of agroforestry systems:

- components: crops, trees, shrubs, pasture, animals, aquaculture, etc.;
- dominant land use: primarily agriculture or primarily forestry;
- spatial organisation: on boundaries, in strips, densely mixed (home gardens), sparsely mixed (most systems of trees with pasture);
- temporal arrangements: overlapping, separate;
- agro-ecological environment: tropical, boreal, humid, high land/low land, etc.;
- socio-economical management level (amounts of technological input and degree of commercialisation);
- function: productive (food, fodder, fuel wood), habitat (supporting biodiversity), regulating (climate, flood and drought prevention), cultural (recreation and landscape).

The [FAO](#) considers three main types of agroforestry: silvopastoral, silvoarable and agrosilvopastoral (the combination of animals, trees and crops).

A 2018 [study](#) examining what role agroforestry plays in the fight against climate change and how it is promoted within the CAP, identifies five basic spatial agroforestry practices: silvopastoral, silvoarable, forest farming, hedgerows, windbreaks and riparian buffer strips, as well as home gardens/kitchen gardens:

- silvopastoral: combination of trees and shrubs with forage and animal production;
- silvoarable: trees and shrubs intercropped with annual or perennial crops;
- forest farming: forested areas used for production or harvest of natural-standing specialty crops for medicinal, ornamental or culinary uses;
- hedgerows, windbreaks and riparian buffer strips: lines of natural or planted perennial vegetation (tree/shrub) bordering croplands/pastures and water sources to protect livestock, crops, and/or soil and water quality;
- home gardens or kitchen gardens: combining trees/shrubs with vegetable production.

Extent of agroforestry in the EU

According to the Agforward project, the total area under agroforestry in the EU-27 is around [15.4 million ha](#),³ equivalent to almost 9 % of the utilised agricultural area (or 3.6 % of the territorial area). If reindeer husbandry is included in it, agroforestry covers 52 million ha – almost the size of mainland France.

These [15.4 million ha](#) are under different forms of livestock agroforestry (by far the dominant type of agroforestry in Europe, accounting for 15.1 million ha), and a smaller portion – 358 000 ha – under arable agroforestry.

Table 1 – Key agroforestry practices in some European countries, by system, country and area covered

System	Country	Extent (hectares)
Mediterranean oak tree agroforestry	<i>Dehesa</i> in Spain	3 606 151
	<i>Montado</i> in Portugal	1 059 000
	Grazed woodlands and oak and other agroforestry on agricultural land in Greece	1 895 583
	Pyrenean oak (<i>Quercus pyrenaica</i>) in Spain and Portugal	122 000
	Grazed oak woodlands in Italy	279 263
	Sub-total	6 961 997
Other wood pastures and meadows	<i>Larix decidua</i> (European larch) in Italy	102 319
	Lövängar, hagmarker in Sweden	100 000
	Other parkland, woodland, wood-pasture, <i>Hudewald</i> , <i>Haka</i> and <i>metsälaidun</i> in the UK, Germany, Austria, Switzerland, Hungary, Finland	200 320
	Sub-total	402 639
Reindeer husbandry	Finland, Sweden, Norway	41 400 000
Hedges and scattered trees	France and parts of the UK and Belgium	472 074
Agroforestry with fruit trees	Germany, Switzerland, Austria, Romania, Croatia, Czechia, France, the UK, Denmark, Italy, Greece, Poland, Portugal	1 226 867
with olives	Portugal, Greece, France, Italy and Spain	538 865
with pine-trees	Italy and Portugal	535 842
with vines	Italy, Spain and Portugal	275 635
with chestnuts	Portugal, France, Italy, Greece, Hungary, Romania, Slovakia, Slovenia, Spain and Switzerland	111 083
with carob trees	Italy, Portugal, Spain and Greece	92 200
	Sub-total	2 780 492
Shelterbelts (windbreaks)	Hungary	16 415
Alley cropping	France	6 300
Trees with livestock	Netherlands	3 000
Total		52 042 917
Total (excluding reindeer)		10 642 917

Source: [Agforward](#) project, Stratification of agroforestry.

Contrasting examples of agroforestry in the EU

Reindeer husbandry

The most prominent agroforestry system in the EU in terms of territory covered is reindeer husbandry. Within the EU and the rest of Europe, it is practised in the northern parts of Sweden, Norway and Finland, covering respectively 14, 16 and 11 million ha of land. It is a silvopastoral system, whereby large herds of semi-domesticated reindeer are kept for meat production. In the boreal forest, the reindeer graze freely the forest floor vegetation, especially the terricolous (ground) [lichen](#) forming a large part of their diet in the winter. In the Fennoscandian area,

Reindeer husbandry

This is an age-old practice in the boreal forest and subarctic tundra zone. It provides meat, reindeer hides and wood products for local consumption and export. Reindeer husbandry is of great economic and cultural importance for many indigenous peoples, in particular the Sami, who have been engaged in traditional reindeer herding in the Fennoscandian area for centuries. The number of reindeer in Norway, Sweden and Finland started increasing in the 1970s and peaked in the 1990s, before declining again.

reindeer husbandry and forestry are the two main land uses of boreal forests. [Conflicts](#) can arise between the two activities, as modern forestry can have a negative impact on the availability of lichen pastures.

The *dehesa/montado* agroforestry system

At the southern end of the EU, in the Mediterranean climate, **oak tree agroforestry** is practised on an area of close to 7 million ha in Spain, Portugal and Greece, and to a lesser extent in Italy. Prominent examples are the *dehesa*, covering [3.6 million ha in Spain](#) and 1.1 million ha in Portugal (where they are called *montado*), grazed oak woodlands in Sardinia (*sugherete*) and the Valonia oak systems in Greece.

The Portuguese *montado* is a traditional **agrosilvopastoral** system found mainly in the south-eastern region of Alentejo. In this emblematic historical and cultural landscape, livestock grazes between loosely planted evergreen oak trees (mainly [cork oaks](#) and holm oaks). Cows, sheep, pigs or goats are reared extensively and feed on the grass and surrounding vegetation. Trees, undercover and livestock interact positively under human management. The main products obtained from tree management are acorns and cork, which is extracted at intervals of at least nine-years (as defined by the national legislation). Portugal is the [largest global producer of cork](#), accounting for some 50 % of world cork production. Other products from the *montado* include cereals, fodder/forage, meat, cheese, hunting, fuelwood, charcoal, mushrooms, honey, and medicinal plants.

The *montado* system provides many ecological services such as water retention, soil conservation and carbon storage. It is characterised by high levels of biodiversity, providing habitat and resources for many species. Shrub control by the livestock contributes to preventing the spreading of fires. It also contributes to the local rural economy.

Benefits and constraints of agroforestry

Environmental and socio-economic benefits

Conventional intensive agriculture tends to put a strain on the resources it uses and can have detrimental effects on the environment. Agroforestry systems, thanks to the synergies created by the right combination of woody elements, crops and/or animals, are sustainable multifunctional systems that can provide a wide range of economic, sociocultural, and environmental benefits.

The **environmental benefits of agroforestry** are already widely recognised in tropical parts of the world. Research work conducted in Europe also shows potential benefits:

- Agroforestry can contribute to climate change **mitigation**; as it involves more biomass than conventional agriculture, it can store more carbon in plants and soils. By avoiding tillage, it prevents soil erosion and the subsequent release of CO₂ into the atmosphere.
- Agroforestry can contribute to climate change **adaptation**: the shade provided by trees helps keeping the local microclimate in check by retaining water in the soil, keeping temperatures lower and preserving humidity; agroforestry systems are very robust and can withstand extreme weather events.
- It [supports biodiversity](#) by providing food, shelter and habitat for birds and insects; moreover, pesticide applications that harm insect populations are reduced or abolished.
- As agroforestry systems contain more plant and animal species than conventional agriculture, they are more effective in controlling pests and harmful weeds.
- Trees and plants (forest canopy, roots and leaf litter) prevent soil erosion or loss due to the action of wind and water.
- Agroforestry maintains and restores the topsoil with its organisms (earthworms, insects) and nutrients; the soil is protected by a layer of dead organic materials (leaves, pruned

branches, etc.) that keeps water from evaporating and feeds the organisms living in the soil.

- The fact that crops can push trees to send roots deeper into the soil can improve nutrient cycling and the storage and retention of rainwater.

Economic benefits for the farmer and the whole rural area

- Agroforestry systems can lead to increased agricultural productivity as the combination of tree and crop systems can lead to a more efficient capture of resources, such as solar radiation or water, than separated tree or crop systems. However, this is not always the case in temperate zones.
- The need for external inputs, such as fertilisers or pesticides, is diminished, as soil fertility is improved and pest infestation can be combatted more naturally.
- It can provide for [diversification](#) of farm products obtained in an integrated way, which can increase economic profits by providing annual and periodic revenues from multiple outputs; it also reduces the risks associated with producing a single commodity: the system is more resilient in the event of shortage periods or catastrophic climatic events; the outputs include food, fuel, fodder and forage, fibre, timber, gums and resins, thatching and hedging materials, medicinal products and craft products.
- Diversification of the local production can benefit the whole rural community by stimulating the local economy, including by creating jobs.
- Agroforestry can provide recreational opportunities – such as hunting, fishing, horse-riding, mountain biking, wildlife watching and rural tourism – that benefit the general public and provide landowners with income diversification. It also enhances the diversity and attractiveness of the landscape, lending it a visual impact that is more appealing to people than monocultures.
- Landscapes, such as the cork oak systems of Spain and Portugal or the wood pastures of the Alps, which have value as cultural heritage, can boost eco-tourism and create financial opportunities.

Last but not least, trees and thickets used in agroforestry are beneficial to [animal welfare](#). They provide shelter from wind, cold and rain, and shade from the sun. They offer protection from predators and encourage natural behaviour such as foraging and scratching. It has been shown that laying hens bred in a woodland environment are less prone to feather-pecking,⁴ and that the proportion of eggs with poor-quality shells is lowered.

Constraints to the implementation of agroforestry in Europe

[Studies](#) on how farmers perceive agroforestry show that **mechanisation** is an issue in silvoarable systems, as farm machinery dimensions may not be adapted to the width of intercrops (the space between tree alleys). Agroforestry is often described as more labour-intensive than conventional agriculture due to tree management operations and difficulties in the use of machines.

Agroforestry farmers have pointed to the **administrative burden** as a constraint: there are many different CAP rules (see section 'EU support for agroforestry farmers'), with different sets of rules under both pillars of the CAP and/or individual national interpretations of the CAP. For example, [farmers in Spain](#) have mentioned that the management of the *dehesa* wood pastures require more administrative work than conventional arable agriculture. Furthermore, they have claimed that they are facing difficulties in getting permission to prune trees, that permissions for transhumance are handed out excessively, and that there is lack of efficient green accounting systems for multipurpose systems.

An agroforestry system is usually more [complex](#) and knowledge-intensive to manage than conventional agriculture due to the wider range of variables and the complex interactions between dynamic elements. Complexity arises from the management of systems as different as trees, crops and livestock, as the farmer is required to have skills in several areas of work, and to know exactly

how the different components interact in the course of their respective cycles. Moreover, all types of agroforestry systems require careful design and a high level of initial planning and monitoring. Also, there is much less information on agroforestry than on other agricultural approaches.

From a financial point of view, establishing a new agroforestry system may involve a high investment at the initial stage, with only long-term returns from the tree plantations.

EU support for agroforestry farmers

Agroforestry is mainly supported through the CAP. The high ecological and social value of agroforestry was only recognised at EU level in 2005. Council [Regulation](#) (EC) No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) provided the first grant support for the creation of agroforestry systems, which were to be encouraged due to their 'high ecological and social value'.

In the 2007-2013 programming period, agroforestry was included among the forestry measures (measure 222) to be supported in the Member States' rural development plans. However, the measure did not consider [agroforestry as a system of diverse practices](#) and only addressed the new planting. In the first pillar (direct payments to farmers), admissibility of land was limited due to a restrictive definition of agroforestry – only tree alignments were considered.

In the 2014-2020 programming period, agroforestry farmers and foresters still receive support from both pillars of the current CAP (see section below). As a sustainable practice delivering many eco-services, agroforestry can contribute to achieving the current CAP's [three objectives](#): viable food production, sustainable management of natural resources and climate action, and balanced territorial development.

First pillar of the CAP – direct payments

Farmers managing agricultural land are entitled to a basic payment per hectare. The three [eligible types of land](#) are: arable land, permanent grassland (or permanent pasture) and permanent crops. The integration of woody perennials on such land does not change its eligibility to payments. However, the eligibility of arable land is limited to lands with a tree density below 100 trees per hectare ([Delegate Act 640/2014](#)). Agroforestry is also linked to the [cross-compliance](#) requirements and the [greening payments](#) under the CAP. The inherent ecological value of agroforestry can be an asset for farmers in this regard. For example, Member States can decide that hectares of agroforestry receiving support under agroforestry measures (CAP second pillar) can be considered an [ecological focus area](#), one of the three practices⁵ with which farmers have to comply to receive the [green direct payments](#). However the rules governing agroforestry and cross-compliance/greening are quite complex.

Second pillar of the CAP – rural development support

Unlike the first pillar, EU support for rural development (second pillar) is co-funded by EU countries or regions. These can choose to fund specific measures through their national rural development programmes. Among the 20 measures proposed in [Regulation 1305/2013](#) on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), some are dedicated to forests and forestry. In particular, measure 8.2⁶ supports the establishment and maintenance of agroforestry systems, covering the establishment costs (up to 80 %) and the maintenance costs with an annual premium for a period of five years. The regulation defines agroforestry as 'land-use systems in which trees are grown in combination with agriculture on the same land'.

Other measures that support agroforestry more indirectly are measures 4.4 (support for non-productive investments linked to the achievement of agri-environment-climate objectives), 10 (payment for agri-environment-climate commitments), and 4.3 (support for investments in infrastructure related to development, modernisation or adaptation of agriculture and forestry).

The Omnibus Regulation

In 2017, Regulation 2017/2393 (the [Omnibus Regulation](#)) contributed to improving the eligibility of agroforestry within the CAP by modifying the title and paragraph 1 of measure 8.2 so as to also allow support for regenerating or renovating existing agroforestry systems. Concerning direct support, in the first pillar, the Omnibus Regulation provided a [new definition](#) of permanent grassland that was more in line with agroforestry implementation and could result in larger areas receiving support through direct payments.

Assessment of policy measures

In its [report](#) on progress in the implementation of the EU forest strategy, published in December 2018, the European Commission indicated that the uptake of agroforestry measures, in particular, had so far not achieved the expected results. Potential limiting factors included the administrative burden and the forest ownership structure, which could be addressed with additional exchange and promotion of good practices across and within Member States.

The study launched as part of the [Agforward project](#) points to the complexity of CAP rules for agroforestry implementation, although there is a clear recognition of both the positive role of woody vegetation in delivering ecosystem services and the relative lack of consistency between Pillar I and Pillar II support for agroforestry. Within the CAP, more than [25 measures](#) are designed to enhance five agroforestry practices (silvopasture, silvoarable, riparian buffer strips, forest farming and home gardens). The study underlines the need for simplification between cross-compliance and Pillar I and Pillar II activities with a view to promoting agroforestry. It makes recommendations for more effective CAP support to encourage the uptake of agroforestry in Europe. In particular, the study stresses that many farmers lack knowledge about agroforestry and that **education** is needed to promote this approach through the CAP. Farmers should be supported by well-trained and independent extension service providers. The integration of agroforestry within school and college education is considered essential to making future farmers and end-users aware of the many benefits of this practice.

Agroforestry policy framework for the 2021-2027 period

The CAP post 2020

A key feature of the [proposed regulation](#) for the CAP post 2020 is the requirement for EU Member States to propose [interventions](#) to achieve the [nine specific CAP objectives](#) in the form of a [CAP strategic plan](#). The new delivery model of the CAP shifts the policy focus from compliance to performance, and gives Member States more flexibility in designing their strategic plans.

Agroforestry is mentioned [eight times](#) in the proposed regulation and annexes to it. It will be eligible for both first and second pillar support focusing on environmental and climate services. Basically it is up to Member States to decide how and to what extent they want to support agroforestry through their strategic plans. Agroforestry will have a role to play in the [green architecture](#) of the future CAP. In particular, the interventions under the Agri-environment-climate measures (AECM, second pillar), which are designed to ensure best environmental and climate practices, may include agroforestry.

Considering all its environmental benefits, agroforestry has the potential to further several of the nine objectives, by

- contributing to climate change mitigation and adaptation, as well as to sustainable energy;
- fostering sustainable development and efficient management of natural resources such as water, soil and air;
- contributing to the protection of biodiversity, enhancing ecosystem services and preserving habitats and landscapes;

- promoting employment, growth, social inclusion and local development in rural areas, including the bio-economy and sustainable forestry.

As a source of diversification, agroforestry can also contribute to other specific objectives linked to farm income and the farmers' position in the food supply chain.

The proposed regulation on CAP strategic plans provides for eight types of interventions for rural development; three of them are more particularly adapted to support agroforestry: 'Environmental, climate and other management commitments' (Article 65); 'Area-specific disadvantages resulting from certain mandatory requirements' (Article 67); and 'Investments' (Article 68).

Article 72 ('Knowledge exchange and information') provides that Member States may grant support for agricultural, forestry and rural business knowledge exchange and information as specified in their CAP strategic plans.

EIP-AGRI

The European Innovation Partnership 'Agricultural Productivity and Sustainability' (**EIP-AGRI**) aims to catalyse innovation in the agricultural and forestry sectors by bringing research and practice closer together. Research and innovation projects bring together farmers, researchers, advisors, NGOs and other stakeholders. EIP-Agri pools funding from the EAFRD and, for multinational innovation projects, from Horizon 2020, the EU research and innovation programme.

In 2016, an [EIP-Agri focus group](#) entitled 'Agroforestry: introducing woody vegetation into specialised crop and livestock systems' was constituted, gathering 20 experts from across the EU to examine existing practices, list challenges and opportunities and provide practical indications for the further development of economically profitable, sustainable agroforestry systems in Europe.

On 2 April 2019, the European Parliament Committee on Agriculture and Rural Development (AGRI) adopted a [report](#) on the proposed regulation on CAP strategic plans. This report was not voted upon in plenary, because of the European elections taking place soon afterwards. On 21 October 2019, the report was referred back to the AGRI committee in its new composition. As regards agroforestry, the amendments drafted under the previous Parliament term tended to reinforce support for that practice. However, it is yet to be seen how the new AGRI committee will take this forward. Negotiations on the new CAP are ongoing.

Agroforestry as part of the wider EU policy framework

The communication on [The European Green Deal](#), published in December 2019 by the newly constituted European Commission, is a response to the current challenges of climate change and environmental degradation. It is an integral part of the Commission's strategy to implement the United Nations' 2030 Agenda and sustainable development goals. It specifically states that within the new CAP, the Member States' strategic plans should lead to the use of sustainable practices such as, among others, agro-forestry.

One of the building blocks of the European Green Deal is the ['Farm to fork' strategy](#) for a fair, healthy and environmentally-friendly food system, published on 20 May 2020. In particular, the strategy aims to help farmers to strengthen their efforts to tackle climate change, protect the environment and preserve biodiversity. It underlines that the new 'eco-schemes' of the CAP will offer 'a major stream of funding' to boost sustainable practices, such as precision agriculture, agro-ecology (including organic farming), carbon farming and agro-forestry.

Another building block of the European Green Deal is the [EU Biodiversity strategy for 2030](#), also published on 20 May 2020, which should work 'in tandem' with the 'Farm to fork' strategy and the new CAP. According to the Biodiversity strategy, 'the uptake of agroforestry support measures under rural development should be increased as it has great potential to provide multiple benefits for biodiversity, people and climate'.

As already discussed, agroforestry contributes to climate change mitigation and adaptation, is beneficial to biodiversity and to the soil, and offers natural alternatives to chemical inputs. It is a

sustainable system providing economic benefits for both farmers and rural areas, and can play an important role in the circular bio economy and other key EU policies and strategies.

With all its benefits, agroforestry is one of a number of sustainable agricultural practices that can be implemented within the green architecture of the future CAP, where farmers would be rewarded for improved environmental and climate performance.

Parliament's position

In its [resolution](#) of 30 May 2018 on The future of food and farming (2018/2037(INI)), Parliament underlines that 'more must be done to develop the research capacity and infrastructure necessary to translate the results of research into food and farming and sustainable **agro-forestry** practice ...' It also stresses that 'both forest management and **agroforestry** comprising an upper storey of woody vegetation over pasture or an agricultural crop, can contribute to resilience at farm and landscape level and to required environmental and climate change mitigation actions ...' It therefore 'calls on the Commission to foster innovation, research and modernisation in farming, **agro-forestry** and the food sector by supporting a strong advisory system and training that is better adapted to the needs of CAP beneficiaries'.

Parliament's [resolution](#) of 27 October 2016 on How the CAP can improve job creation in rural areas (2015/2226(INI)) emphasises that 'the CAP should provide more support for the positive effects that agriculture brings in terms of jobs and the environment, and that it should provide more effective support for organic and biodynamic farming and all other sustainable production methods, including integrated farming and **agroforestry** in the context of agro-ecology, which will entail simplifying the current regulations and adopting regulations which can be implemented in a simple, comprehensible and problem-free way'.

In its [resolution](#) of 28 April 2015 on A new EU Forest Strategy: for forests and the forest-based sector (2014/2223(INI)), Parliament notes that forest owners are key actors in rural areas, and welcomes in this connection the recognition of the role of forestry and **agro-forestry** in the Rural Development Programme of the 2014-2020 CAP. It stresses the opportunity for Member States and regions to make use of the available funding under their respective rural development programmes, to support sustainable forest management and boost **agro-forestry** and to deliver public environmental goods such as producing oxygen, sinking carbon and protecting crops against climate effects, as well as stimulating local economies and creating green jobs.

Committee of the Regions' position

In its [opinion](#) on the mid-term review of the EU Forest Strategy (NAT-VI-027) May 2018, the European Committee of the Regions stresses that 'in the reform of the common agricultural policy, it is important to include tools that support the forest sector in rural areas, such as those for the prevention of deforestation, for reforestation and for forest conversion, the planning and management of forests, support for forestation of marginal agricultural areas and for the **introduction and renewal of agroforestry systems**, the conservation of forests as an integral part of extensive livestock production systems as well as the promotion of entrepreneurship and training in the sector'.

Stakeholders

The European Agroforestry Federation ([EURAF](#)) counts around 280 members from 20 European countries. It promotes the adoption of agroforestry practices throughout Europe and manages a dedicated website to share information, scientific results and policy issues on agroforestry. It organises a biannual conference and participates in major research projects on the subject.

The European Council of Young farmers ([CEJA](#)) has recently published a [paper](#) entitled 'Young farmers' call for climate action', in which the council recognises agroforestry as a practice that can encourage the increase of carbon sequestration in permanent and annual crop production.

The World Wildlife Fund ([WWF](#)) also suggests agroforestry can help combat climate change by contributing to an increase of carbon storage in soils and landscapes. A [report](#) commissioned by WWF Scotland identifies agroforestry as a practice with the highest potential for reducing agricultural greenhouse gas emissions in Scotland.

MAIN REFERENCES

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Mosquera-Losada, M. et al., *Agroforestry in Europe? A land management policy tool to combat climate change*, August 2018.

ENDNOTES

- ¹ '[Tall trees](#) of different types and varieties of fruit, belonging to different age groups, which are dispersed on cropland, meadows and pastures in a rather irregular pattern.'
- ² AGFORWARD (AGroFORestry that Will Advance Rural Development) was a research project funded by the EU's Seventh Framework Programme for Research and Technological Development (FP7). It ran from January 2014 to December 2017.
- ³ Estimation using the LUCAS (Land Use and Land Cover date) database. It is higher than the literature review in Table 1, which can be partly explained by the inclusion of Bulgaria and higher estimates for Spain, France, Romania, Italy and the UK.
- ⁴ Feather-pecking is the pecking at or the removal of feathers from one bird by another, and is a problem in the poultry industry.
- ⁵ The two others are crop diversification and maintenance of permanent grassland.
- ⁶ The Omnibus Regulation changed the title of measure 8.2 to 'Establishment, regeneration or renovation of agroforestry systems' in Regulation (EU) No 1305/2013 (the Rural Development Regulation).

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