

# How can policy promote the uptake of agroforestry in Europe?

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# Aim and content



To provide an update on some of the policy recommendations from AGFORWARD for agroforestry in Europe.

- Report on extent of policy current measures
- Agroforestry and high-level goals
- Categories of agroforestry practice
- Agroforestry and Pillar I of the CAP
- Agroforestry and Pillar II of the CAP

# Extent of current measures



## Extent and Success of Current Policy Measures to Promote Agroforestry across Europe

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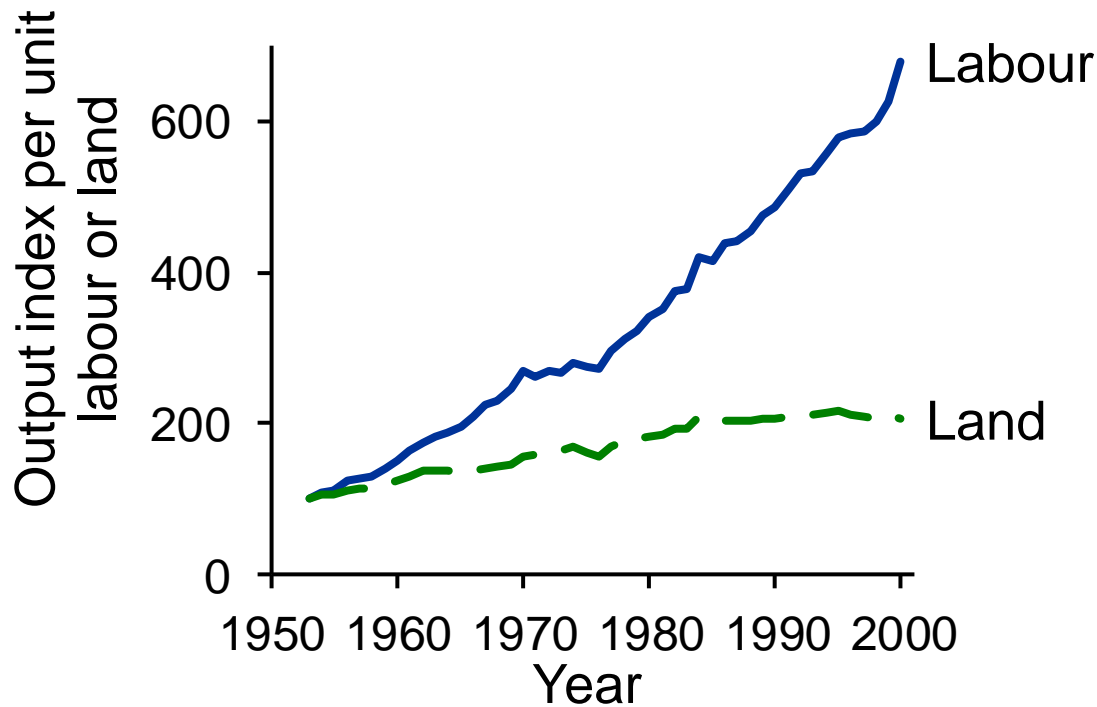
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- Report led by Rosa Mosquera-Losada with others from AGFORWARD (2016) on current policy measures, which is on-line
- This covered classifications, international and European policies, and agroforestry and CAP Pillar I and II

# Simplification of systems



Separation of arable, livestock, and tree-crop enterprises in Europe has provided production benefits per unit land and per unit labour.

Levels of output per unit of land (dashed line) and unit of labour (solid line) in the UK between 1953 and 2000 (1953=100) (Thirtle and Holding, 2003).

# Negative externalities



Value of provisioning and other ecosystem services of UK agricultural systems (after Chatterton et al 2015)

Agricultural system	Annual output (£ ha <sup>-1</sup> )	Annual ecosystem dis-services (£ ha <sup>-1</sup> )
Eggs	2114	-325
Pigs	1532	-375
Dairy and dairy beef	1479	-425
Chicken	1433	-277
Arable	634	-308
Suckler beef	422	-194
Sheep	247	25

Although agriculture monocultures results in positive outputs of goods, most systems result in ecosystem dis-services (such as greenhouse gas emissions and reduced water quality) which can be valued.

# Agroforestry and high-level societal goals



Sustainable development goals	Evidence that agroforestry can support
<b>2. Zero hunger</b>	Increasing food production whilst enhancing the environment
<b>3. Good health and well being</b>	Improved quality of drinking water and healthier food
<b>6. Clean water and sanitation</b>	Improved water quality due to tree uptake of pollutants
<b>7. Affordable and clean energy</b>	Woody vegetation in the farmed landscape used for bioenergy
<b>8. Decent work and economic growth</b>	Opportunities for added value
<b>11. Sustainable cities and communities</b>	Through the promotion of fruit trees in homegardens
<b>12. Responsible consumption and production</b>	Sustainable production systems
<b>13. Climate action</b>	Enhanced carbon storage on farm land
<b>14. Life below water</b>	Improved water quality
<b>15. Life on land</b>	Enhanced biodiversity

# Objectives of the CAP



The CAP is monitored in relation to three objectives:

- a) viable food production, with a focus on agricultural income, agricultural productivity and price stability;
- b) sustainable management of natural resources and climate action, with a focus on greenhouse gas emissions, biodiversity, soil and water, and
- c) balanced territorial development, with a focus on rural employment, growth and poverty in rural areas.

# Premise








- ▶ Agroforestry should be supported because it delivers goods and services that address societal goals.
- ▶ Many of these goods and services are not adequately valued in markets, and hence there is a role for government.
- ▶ A key constraint identified by farmers interested in agroforestry is that the administration associated with such systems can be complex. Hence governments need to develop policies that can achieve the desired outcomes whilst being as simple to implement and monitor as possible.



# Agroforestry practices









**Recommendation 2:** The CAP should identify, recognize and foster the use of the following five agroforestry practices across Europe: silvopasture; silvoarable; hedgerows, windbreaks and riparian buffer strips; forest farming and homegardens.

Silvopastoral	Silvoarable	Hedgerows, windbreaks and riparian buffer strips	Forest farming	Homegardens
				
Combining trees and shrubs with forage and animal production	Widely spaced trees and shrubs inter-cropped with annual or perennial crops	Lines of natural or planted trees/shrubs bordering croplands/pastures to protect livestock, crops, and/or soil and water quality	Forested areas used for production or harvest of natural standing speciality crops	Combining trees/shrubs with vegetable production in urban areas

# Agroforestry and land designation



**Recommendation 2:** it is useful to distinguish in the EU between “agroforestry practices on agricultural land”, and “agroforestry practices on forest land”.

Agroforestry on agricultural land			Agroforestry on forest land		Urban areas
Silvopastoral	Hedgerows, windbreaks and riparian buffer strips	Silvoarable	Silvopastoral	Forest farming	Homegardens
					
Wood pasture Meadow orchards Grazed orchards		Alley cropping	Forest grazing	Harvest of berries, mushrooms	Allotments, Gardens

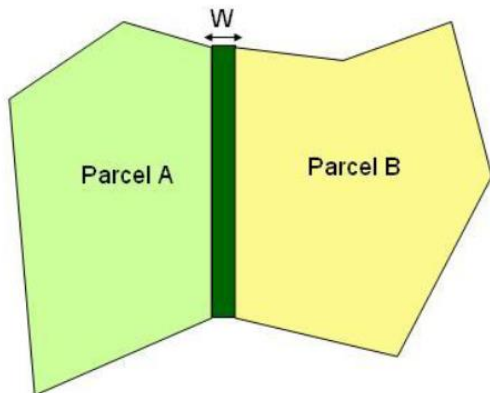
# Farmers want to ensure that maintain Pillar I payments in the Common Agricultural Policy



CAP	Agricultural land	Forest land	Urban area
Pillar I – direct payments	e.g. Basic and Greening Payments for farmers who maintain land in good agricultural and environmental condition (GAEC)	No payment	No payment
Pillar II – Rural Development	Up to 27 measures that can support agroforestry including one measured entitled “agroforestry”		

# Agroforestry and Pillar I

## Cross-compliance: landscape features



### Recommendation 3: Agroforestry and landscape features

Woody vegetation promotion and preservation linked to landscape features policies associated with Pillar I and Pillar II payments should be simplified and objectives should be clearly stated, and the administrative burden reduced.



### GAEC 7a: Boundaries

Protect boundary features, such as hedgerows (hedges), stone walls, earth banks and stone banks.

### GAEC 7c: Trees

Protect trees by meeting the conditions of any licence to cut down (fell) a tree or any Tree Preservation Order (TPO).

# Agroforestry and Pillar I

## Agroforestry on arable land



Agroforestry can increase arable crop and woody vegetation productivity and/or resilience and the delivery of regulating ecosystem services such as increased carbon storage, reduced runoff, and improved water quality.

**Recommendation 5:** Agroforestry (e.g. silvoarable agroforestry and hedgerow, windbreak and riparian buffer strips) should be promoted and be fully eligible for direct payments on arable land if a management plan is developed, where a minimum specification (selected by member states) and a maximum (100 mature trees per hectare) should be included.



# Agroforestry and Pillar I

## Agroforestry on permanent grassland



### **Recommendation 6:**

Permanent grassland areas where grasses and other herbaceous forage are traditionally not predominant should be fully eligible for direct payments if an agroforestry management plan is developed to increase the resilience of grazing systems (e.g. reducing external inputs dependence, reducing fire risk) from a productive point of view, while enhancing ecosystem services (e.g. promoting biodiversity).

The management plan will allow agroforestry on permanent grassland (silvopastoralism) to be fully eligible for direct payments between a minimum specification (selected by member states) and a maximum of 100 mature trees per hectare when the pro-rata system is not selected by the member state.

# Agroforestry and Pillar I

## Grazed/intercropped perennial crops



### **Recommendation 7:**

The grazing (silvopasture) and intercropping (silvoarable) of permanent crops are fully eligible under Pillar I and these practices should be further promoted. Integrating animals in permanent crops improves nutrient recycling and reduce inputs at plot level and some crops and varieties can benefit from the shade provided by woody vegetation whilst also increasing the sustainability of the permanent crop system.

In cases where farmers are seeking greening payments, they should be able to develop an agroforestry management plan indicating the agricultural use of the understorey compatible with the permanent crop.

# Agroforestry and Pillar I Greening payments



Greening workbook for the  
Basic Payment Scheme in England

2017

## Recommendation 8: Agroforestry and greening

In addition to the current three sections of “Greening” (crop diversification, the maintenance of permanent grassland, and the establishment of EFAs), a fourth section of Agroforestry should be included because agroforestry is one of the most powerful and effective tools to mitigate and adapt agriculture to climate change.

### What your EFA features / areas are worth for greening

Put the totals from the previous page into the 'Total size/length' column below, then work across each row (column by column) to see what your features/areas are worth for EFA in square-metres. For example, if you have 5 hectares of nitrogen-fixing crops, write '5' in the 'Total size/length' column, then multiply 5 by 10,000. Write the answer (50,000) in the 'Square-metres' column. Then multiply that figure by 0.7 ('what it is worth for EFA') to get the total square-metre area for EFA (35,000). Write the amount of square-metres in the final column. When you have worked out a total in square-metres for all your features/areas, add them all up and put the total in the 'Total in square-metres' box at the bottom corner of the table.

	Total size/length	Convert to square-metres	Square-metres	What it's worth for EFA	Total square-metres for EFA
Nitrogen-fixing crops		x 10,000		x 0.7	
EFA fallow land		x 10,000		x 1	
Buffer strips				x 9	
Hedges in an arable land parcel				x 5	
Adjacent hedges				x 5	
Catch crops		x 10,000		x 0.3	
Cover crops		x 10,000		x 0.3	

### Total EFA in hectares

Total in square-metres

Divided by

10,000

=

Total EFA in hectares

### Are you meeting the EFA rules?

To work out if you are meeting the rules, put your total EFA in hectares in the first box, then your total area of arable land in the box below. Divide your total EFA by your total arable land, then multiply that figure by 100 to get the equivalent percentage of EFA.

Total EFA (in hectares)

=

x 100 =

%

Equivalent percentage of arable land covered by EFA. Should be 5% or more to meet the rule.

Total eligible arable land (in hectares)

Ecological focus area rules - check you are meeting the rules



# Agroforestry and Pillar II

## Wide range of agroforestry



Table 14. Summary of selected measures to promote agroforestry by countries within the Rural Development Programme (2014-2020)

Measure code and name, and associated article	Name of sub-measure
1. Knowledge transfer and information actions	1.1 - Support for vocational training and skill acquisition actions 1.2 - Support for demonstration activities and information actions
2. Advisory services, farm management and farm relief services	2.1 - Support to help benefiting from the use of advisory services 2.3 - Support for training of advisors
4. Investment in physical assets	4.1 - Support for investments in agricultural holdings 4.2 - Support for investments in processing/marketing and/or development of agricultural products 4.3 - Support for investments in infrastructure related to development, modernisation or adaptation of agriculture and forestry 4.4 - Support for non-productive investments linked to the achievement of agri-environment-climate
5. Restoring agricultural production potential...and introduction of prevention actions	5.1 - Support for investments in preventive actions aimed at reducing the consequences of probable natural disasters, adverse climatic events and catastrophic events
6. Farm and business Development	6.1 - Business start-up aid for young farmers 6.3 - Business start-up aid for development of small farms
7. Basic services and village renewal in rural areas	7.4 - Support for investments in the setting-up, improvement or expansion of local basic services for the rural population including leisure and culture, and the related infrastructure 7.6 - Support for studies/investments associated with the maintenance, restoration and upgrading of the cultural and natural heritage of villages, rural landscapes and high nature value sites including related socio-economic aspects, as well as environmental awareness actions
8. Investments in forest area development and improvement of the viability of forests	8.1 - Support for afforestation/creation of woodland 8.2 - Support for establishment and maintenance of agroforestry systems 8.3 - Support for prevention of damage to forests from forest fires and natural disasters and catastrophic events 8.4 - Support for restoration of damage to forests from forest fires and natural disasters and catastrophic events 8.5 - Support for investments improving the resilience and environmental value of forest ecosystems 8.6 - Support for investments in forestry technologies and in processing, mobilising and marketing of forest products
9. Setting up of producer groups and organisations	9.1 - Setting up of producer groups and organisations in the agriculture and forestry sectors
10. Agri-environment-climate	10.1 - Payment for agri-environment-climate commitments
11. Organic farming	11.1 - Payment to convert to organic farming practices and methods 11.2 - Payment to maintain organic farming practices and methods
12. Natura 2000 and Water Framework Directive Payments	12.1 - Compensatory payments for the arable land in NATURA 2000
13. Payments to areas facing natural or other specific constraints	13.2 - Compensation payment for other areas facing significant constraints
15. Forest-environmental and climate services and forest conservation	15.1 - Payment for forest -environmental and climate commitments
16. Co-operation	16.5 - Support for joint action undertaken with a view to mitigating or adapting to climate change, and for joint approaches to environmental projects and ongoing environmental practices

### Recommendation 9:

There should be a single “agroforestry” measure, encompassing the five agroforestry practices (Table 1), that supports agroforestry and includes the different activities linked to the 27 measures currently supporting agroforestry in Pillar II.

Mosquera-Losada et al. (2016) recognised up to 27 measures that could be used to support agroforestry

# Pillar II: support for establishment and improved management



## **Recommendation 10: Support for agroforestry establishment and management on agricultural land**

Farmers should be given the option to undertake i) establishment of agroforestry on agricultural land including maintenance payments similar to that of afforested/reforested lands and ii) improved management and recovery of already existing agroforestry lands.

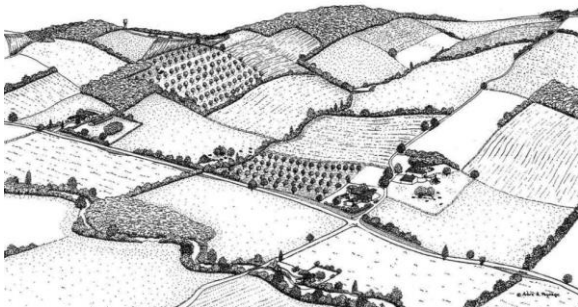


# Farm- and landscape level agroforestry



## **Recommendation 12. Agroforestry at a farm-level including climate change**

Result-based payments can be delivered if agroforestry is implemented at a farm-scale.... There should be opportunities for farms or groups of farmers to develop GHG and carbon accounting plans such as LCA and C footprints. A Pillar II scheme is needed to incentivise “climate-smart” farming which will in turn support agroforestry.



**Recommendation 13:** The European Union should support co-operation measures which allow the benefits of agroforestry to be recognised at landscape-level. This can be achieved by facilitating co-operation between farmers within a catchment including landscape linking biodiversity of habitats

# Recommendations



We have identified a series of recommendations

They include:

- a) fuller recognition of the wide range of existing agroforestry practices in Europe (silvopasture; silvoarable; riparian buffer strips, windbreaks and hedgerows; forest farming and homegardens),
- b) ensuring the agroforestry associated with arable lands, permanent grasslands, and permanent crops secure direct payments, through the use of management plans.
- c) measures to support agroforestry establishment and improved agroforestry management, and
- d) support for farm-scale carbon accounting and landscape-level initiatives.

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