



## **2. New perspectives for fiber animals and derived products**

### **h) The use of wool in/from Agroforestry systems**

**Civil Dialogue Group Animal Products - 'sheepmeat and goat' -  
November 22nd 2023**



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# What is Agroforestry? EU Member States now have own definitions of Agroforestry



- **ICRAF (1):** *“The deliberate growing of **woody perennials** on the same unit of land as agricultural crops and/or animals, either in some form of spatial mixture or sequence” (Lundgren 1982)*
- **ICRAF (2):** *“A dynamic, ecologically based, natural resource management system that, through the integration of **trees** in farm- and rangeland, diversifies and sustains smallholder production for increased social, economic and environmental benefits” (Leahey 1996)*
- **USDA:** *“The intentional growing of **trees and shrubs** in combination with crops or forage ... agroforestry is distinguished from traditional forestry by having the additional aspect of a closely associated agricultural or forage crop.” (USDA 2011)*
- NOW every **EU Member State** now has its own AF definition ([EURAF Policy Briefing #22](#))

## 22. Agroforestry definitions in the new CAP

EURAF Policy Briefing 22 v1, Feb 2023. Gerry Lawson ([policy@euraf.net](mailto:policy@euraf.net)). 10.5281/zenodo.7828435



The European Agroforestry Federation is an NGO (Transparency Register [913270437706-82](#)), which “promotes the adoption of agroforestry practices across Europe by supporting efforts to develop awareness, education, research, policy making and investments which foster the use of trees on farms”. It has a network of 31 affiliated entities in 23 countries.

EURAF has collated the definitions of agroforestry included by Member States in their CAP Strategic Plans. Some are detailed and include minimum and maximum numbers of trees per hectare, but usually without a definition of “tree”. Few of the definitions can lead to remotely-sensed identification of those parcels which are “agroforestry” and those which have too few trees to be considered as agroforestry. Nevertheless, Member States are progressively adding more detail to their identification of Landscape Features (including individual trees, hedges and trees in groups and lines) and Non Productive Areas (GAEC-8) in their CAP Land Parcel Identification Systems. This detail is also needed to measure compliance with the 10% target in the Biodiversity Strategy and Nature Restoration Law (see Briefings ##18 and #21). It should be possible for Member States to propose a % threshold tree-crown cover (actual or potential) which would be used to distinguish agroforestry parcels in the CAP and also in LULUCF accounting of GHG emissions. Several Member States have taken advantage of the flexibility offered in the Strategic Plan Regulation to define “permanent grassland” to include areas which are predominantly covered by shrubs which can be grazed or cut for fodder. These include areas which could also be considered as agroforestry.



The difference between “Forest Land” and “Agricultural Land” ...  
 .... is in EURAF Typology of Agroforestry Systems ... but CADASTRES need linking

Tree Location	AF System	Land Use Classification (e.g. LPIS)	
		Forest Land	Agricultural Land
Trees within parcels	Silvopastoral	Forest Grazing	Wood pasture Orchard grazing
	Silvoarable	Forest Farming	Alley Cropping Alley Coppice Orchard Intercropping
	Agrosilvopastoral	Sequential mixtures of silvoarable and silvopastoral systems	
Trees between parcels	Linear Agroforestry	Forest Strips	Shelterbelt Networks Wooded Hedges Riparian Tree Strips



# New Landscape Features - Biodiversity Strategy (>10%)



Country	AT	BEF	BEW	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	HR	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SK	SI	Sum
01 Buffer Strips	1	1	1	1				1								1	1			1	1	1			1		1	1	13
02 Cairns	1						1			1	1							1	1	1					1				8
03 Cultural Features	1		5					1	1	1	1			1		1							1						13
04 Ditches			1			1			1	1			1		1	1	1	1		1		3	1	1	1				16
05 Field Margins (# types)		1	3	1	2	7	1	1	1		1		1	2		7	1	1	4	1		4		1	1	2	1		44
06.1 Hedges or woody strips	1	1	1	1			1		1	1	1		1	1	1	1	1	1	1		1		1	1		1		20	
06.2 Trees in Line		1	1	1			1	1		1	1		1		1	1	1		1	1		1	2	1	1		1	1	21
06.3 Trees in Groups/ Copses	1	1	1	1		1	1	1	1	1	1		1	1	1		1	1	1	1		1	2	1	1		1	1	24
06.4 Isolated Trees			1	1	1	1	1			1	1		1	1	1		1	1	1	1		1		1	1		1	1	19
06.5 Forest Edge Strips - non prod		1	1	1					1		1				1	1												7	
07 Fallow Land	1	1	2	1	1	1	1	1	2	1	1	1	1	2	1	1	1			2		2	1	2		3			30
07.1 Cover or catch crops (7% option)		-	-			1		-	-	-	-		1	1				-				-		-					3
07.2 N-Fixing Crops (7% option)		-	-			1			1	-	-		1	1				-				-	-	-		-			4
08 Others			1			2	1	1			2						1	1				4	1	1			-		15
09 Small Ponds	1	1	1							1	1		1	1		1	1	1	1		1	1		1				1	15
10 Small Wetlands						1	1			1									1	1	1	1	1						8
11 Traditional Stone Walls	1						1		1	1	1		1		1	1	1			1	1		1				1		13
12 Streams										1											1	1							3
13 Terraces						1	1			1	1			1			1				1							y	7
Total elements / sub-elements active	8	8	19	8	4	18	11	6	11	13	14	1	11	12	8	16	12	8	11	11	6	21	10	10	8	5	6	7	283
4% Option	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	28
3% Option	y		y	y				y	y	y	y		y		y			y	y			y		y					13
7% Option		y	y	y		y			y	y	y		y	y				y				y	y	y	y		y		15
LULUCF Regulation - threshold of "forest land" (ha)	0.05	0.5	0.5	0.1	0.3	0.05	0.1	0.5	0.5	0.3	1	0.5	0.5	0.5	0.1	0.1	0.5	0.1	0.5	0.1	1	0.5	0.1	1	0.25	0.5	0.3	0.25	
Strategic Plan - max LF copse/grove size (ha)	0.1	0.3	0.3	0.3	-	?	0.2	?	?	?	0.3	-	0.5	0.5	?	-	0.3		0.3	0.5	-	1.5	0.5	0.5	0.9	-	?	0.5	
Details of hedge width and permitted gaps?	y	y	y	y			y		y		y		y	y	y		y	y	y			y			y				15
Details of permitted crown size of trees in line?		y	y	y			y		y				y		y		y		y			y	y	y	y			y	14
Details of crown size of isolated trees?			y	y										y	y		y					y	y					y	8

RED shows where the definition of "copse/grove" on agricultural land differs from the national definition the minimum size threshold for a forest block. In many countries the size threshold is not given or copses/groves are not recognised as Landscape Features

In many countries no information is given on the types of n-fixing crop or catch/cover crop, even when the 7% option is selected (shown with a dash)

# About EURAF



- Established in 2012, EURAF is an organisation dedicated to ***promoting the use of trees on farms and silvopastoralism*** throughout Europe;
- We represent 31 affiliated entities from ***23 countries*** - bringing together more than 600 individual members active in research, farming, forestry, advisory services, etc.
- EURAF is committed to advancing ***agroforestry as one of the key solutions*** for addressing environmental, social, and economic challenges in Europe's agricultural sector.
- Our mission is '***10% tree cover on all agricultural land in Europe by 2040***'.



# About sheep and wool in Europe

59.010,25 millions sheep in EU-27

## Eurostat (2022)

Spain	14.452,59	24.5 %
Romania	10.247,40	17.4 %
Greece	7.378,40	12.5 %
France	6.597,52	11.8 %
Italy	6.568,00	11.1 %
Ireland	4.018,03	6.8 %

88.500 tons sheep wool  
produced/year (estimated)



About one-fifth of agricultural land in the EU is devoted to **extensive livestock breeding**; these are mostly concentrated in southern **Mediterranean Europe**, including the **Balkans**, but significant portions exist as well in the UK and **Ireland**, in the **Carpathians**. (Michele Nori, Assessing the policy frame in pastoral areas of Europe, European University Institute, RSC Working Paper 2022/03)

The land under grazing management covers several tens of million hectares. In central and eastern Europe, nearly **seven million hectares** of the Carpathian Mountains are covered by open **seminatural grassland habitats**; in the Iberian Peninsula, there are over **three million hectares of wood pasture**, whereas France alone counts about **ten million ha of grazing lands** (Oreka Mendian, 2021; FAO, 2021).

Without small ruminants, huge disadvantaged rural settings in Europe would be abandoned with significant ecological consequences (Michele Nori, 2022)





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Agrosilvocultural systems represent an important social, economic, cultural and environmental heritage to support the protection and development of marginal rural areas.

Such systems can be the model by which to manage bioresources more efficiently and implement circular bioeconomy actions.





- Sheared wool is a by-product of sheep breeding (category 3 waste) which needs to be disposed in landfill as a special waste (COMMISSION REGULATION (EU) N. 142/2011 implementing Regulation (EC) N. 1069/2009)
- Primary role of sheep breeding in Europe is primarily for meat and for milk to a smaller extent. Average quality of European wools is considered as not suitable for the textile supply chain (clothing and furnishing).
- How can European wool be utilised in order to avoid waste production and improve circular bioeconomy?
- Wool can be utilised as a soil mulching, fertilizer, conditioner.

In each of such cases, wool needs to be scoured following the above mentioned regulation, in order to decrease the wool bacterial load and limit/avoid the possible spread of pathogens.





## 2. Case studies from across Europe

*The use of wool in/from Agroforestry systems*





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dell'Università  
e della Ricerca



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PIANO NAZIONALE  
DI RIPARAZIONE E RESILIENZA



Consiglio Nazionale  
delle Ricerche



In Italy, within the AGRITECH project funded by PNRR (National Recovery and Resilience Plan):

- tests have been made to produce pellets made of wool. The high temperature gained during the pelletizing phase lowers the bacterial load.
- different tests have been performed using mixtures of wool and wood residues.
- tests in pots are being performed to measure soil physical-chemical parameters following wool pellets application. Field tests on horticultural cultivations will be also implemented.





**Sheep agroforestry in an Irish context - need to inject innovation into the supply chain to offer options to deal with current challenges.**



**30 YR-OLD SILVOPASTURE, AFBI, LOUGHGALL, CO.ARMAGH**



# Ireland's afforestation programme 2023-2027

## agroforestry supports

- Silvopasture Systems (FT 8)
- Establishment grant - €8555/ha - year 1
- Premium €975/ha/year for 10 years
- Silvoarable Systems (Pilots)
- Forest Gardening (Pilots)

## Benefits for sheep farms

- Carbon sequestration
- Biodiversity
- Improved livestock welfare
- Water, soil health and permeability
- Extended grazing (less poaching - cleaner fleece)
- Shade and shelter for livestock
- Tree fodder (natural medicine and natural anthelmintics - cleaner fleece)
- Reduced livestock mortality
- Improved weight gain in low input systems when combined with multi-species sward
- Improved image - increased consumer demand

## Skibbereen, West Cork, Ireland

- 20 ha farm with agroforestry (silvopasture sheep and silvoarable-aronia berries.
- An organic system.
- Producing quality breeding stock and lamb for local supply.
- 1.2 ha 8 years old 4 broadleaf species.
- Silvopasture with shropshire sheep. 6m alleys in 5m grids with 1.5m between trees.
- Hay has been harvested from the alleys.



SEAMUS AND SEAN'S FARM, KILNACLASHA, SKIBBEREEN



## Silvopasture lamb and wool.

- The system can successfully deliver ecosystem services with minimum impact on overall farm productivity.
- Silvopasture can support the production of quality lamb and wool which can be marketed, processed and sold in a shortened local supply chain.
- Wool can be used as mulch and slow release fertiliser for trees.

## FARMER-LED WOOL COMPOST OR MULCH TRIALS

- A source of slow-release nitrogen ( up to 12%) and other elements
- Increased moisture retention
- Insulate and improve temperature regulation for trees.
- Weed control

BIRCH WHIP APRIL 2023  
(PLANTED SPRING 2022 )  
NO WOOL, 70 CM, POOR  
BRANCH DEVELOPMENT  
WITH 6MM TRUNK  
DIAMETER



45 CM BIRCH WHIP  
(PLANTED SPRING 2022)  
APRIL 2023 120CM WITH  
12MM TRUNK  
DIAMETER.



Lleyn sheep  
wool

# Innovative wool tree guards (NEXGEN)



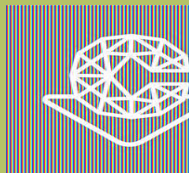
- a biodegradable polyol made from ethically sourced cashew nutshell liquid and castor oil
- an innovative biodegradable custom polymer
- long-term resistance to water and premature microbial degradation
- starts to break down after five years, depending on location, tree canopy, soil type and microbe content



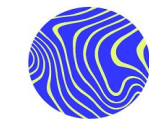




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