

# THE HISTORICAL CONTEXT OF AGROFORESTRY SYSTEMS

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MODULE 4



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*Nonprofit Korlátolt Felelőséű Társaság*



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## AIM OF THE MODULE



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- Agroforestry as a traditional land use system in the past
- The main historical types of agroforestry
- The role of agroforestry in the past and reason for reduction of agroforestry
- Significance of agroforestry in the context of modern agriculture and forestry



# AGROFORESTRY AS A TRADITIONAL LAND USE SYSTEM IN THE PAST



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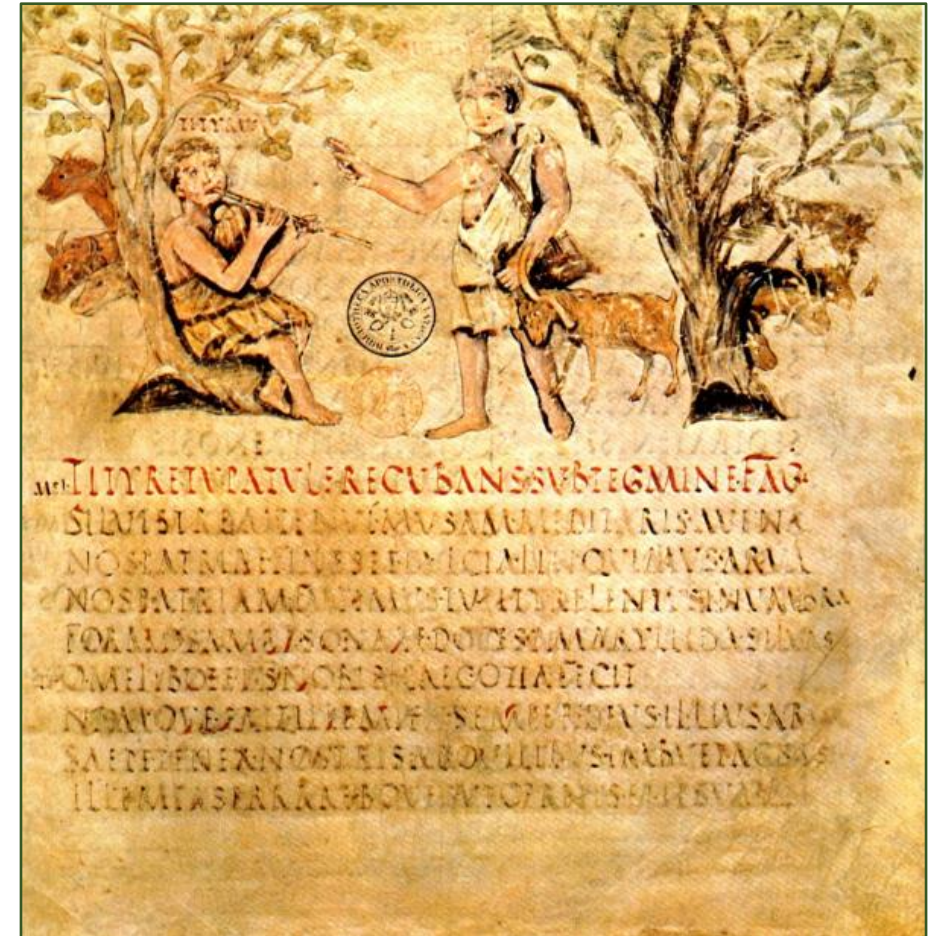
Agroforestry is a millennial old practice -> traditional element of the agricultural landscape



Up to the Middle Ages

Agriculture and forestry were closely linked:

- Shifting cultivation (alternating farming: forest -> agriculture -> forest)
- Grazing wooded areas and fertilizing adjacent agricultural lands with manure





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Up to the Middle Ages

- Use of tree fodder (in Europe: mainly ash, elm, beech and poplar) for feeding animals and the residues of tree fodder, wood ash and charcoal for soil fertilisation
- Leaving high-value tree species during deforestation: fruit trees, oak and beech - acorns, ash - fodder



November - a man knocking acorns out of oak-trees  
(Source: - miniature from folio 098r from the Book of Hours of Simon de Varie)



Grazing pigs on beeches and acorns in autumn  
(Source: Grimani Breviary: The Month of November. 1510s. Manuscript (Ms. lat. 199), Biblioteca Nazionale Marciana, Venice)



# AGROFORESTRY AS A TRADITIONAL LAND USE SYSTEM IN THE PAST

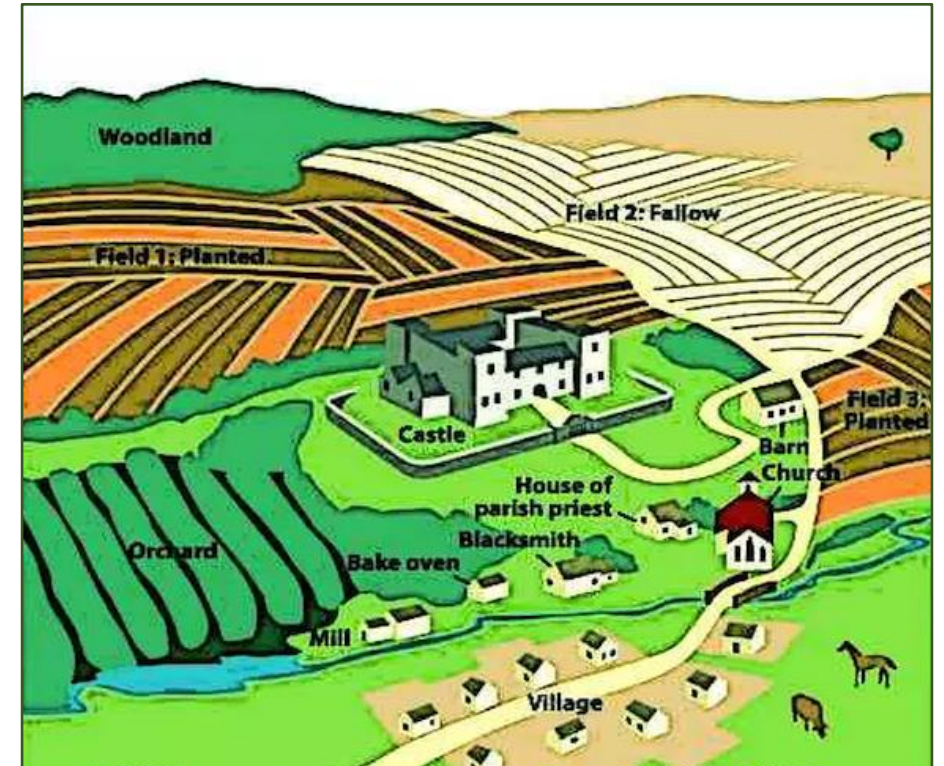


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From the Middle Ages

- From the Middle Ages forests and agricultural areas (cultivated in crop rotation) began to separate, and this process was further strengthened by the application of chemical fertilizers in the 19th century
- This separation has remained typical so far, nonetheless traditional agroforestry systems are still found in Europe and have significant natural and cultural value.



A typical medieval farming with a 3 field crop rotation system – wooded areas are separated from the agricultural lands

(Source: J. McKay et al (2010): *The History of western Society*. Tenth edition. Chapter 10. pp 276. Copyright © Bedford/St. Martin's)



# THE MAIN HISTORICAL TYPES OF AGROFORESTRY IN EUROPE



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## ORCHARDS (INCLUDING NUTS)

Fruit tree systems grazed or without grazing, sometimes intercropped, named differently by regions (eg. pré-verger, boguards, pomeradas, streuobst)



Boguards (The Netherlands)  
(Source: Smith, 2010)



Pré-verger (France)  
(Source: Coulon and Pointereau, 2017; photo by Éric Péro)



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## OLIVES

Cereals, vegetables and fodder crops cultivated between olive tree rows or scattered olive trees



Olives and asparagus (Italy, Veneto Agricola)  
*(Source: Rosati 2017, photo by A. Rosati)*



Olives intercropped with chickpeas (Greece)  
*(Source: Pantera, 2017; photo by A. Pantera)*



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## WOODLAND GRAZING

One of the oldest farming practices, it plays an important role in enhancing biodiversity and preserving historical and cultural values. Trees provide shelter, shade and feed for animals.



Pigs grazing in the New Forest (Hampshire, UK)  
*(Source: Pinterest)*



Shepherd with his flock on the wood pasture (Hungary)  
*(Source: Vityi and Varga, 2014; photo by Varga A.)*



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## WOODLAND GRAZING

In the wooded pastures of the Mediterranean Dehesa (Spain) and Montado (Portugal), sheep, goats, pigs and cattle are grazed under a wide network of scattered oak trees. Trees provide acorns, timber, charcoal and cork. Grazed woodlands plays an important role in forest fire prevention in the Mediterranean countryside.



Dehesa (Extremadura, Spain)  
*(Source: [www.jamonibericonline.com/](http://www.jamonibericonline.com/))*



Montado (SouthEast Portugal)  
*(Source: flickr AGFORWARD\_project. Photo by João HN Palma)*



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## PROTECTED FORESTS (HUNTING FORESTS) AND PARKLANDS

Originally established for hunting or aesthetic purposes (18th century), but later also provided timber for shipbuilding.



Parkland (New Forest, UK)

(Source: Geograph® Britain and Ireland project, photo by David Martin)



Native ponies in New Forest (Hampshire, UK)

(Source: BBC - New Forest pony listed as rare breed)



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## HEDGEROWS AND SHELTERBELTS

Their role is to prevent erosion, provide wind protection, protection, shelter and feed for animals, wood, food and medicine. They serve as historic and contemporary boundary lines as well as a haven for biodiversity and green corridor for wilds in agricultural regions.



Bocage agroforestry (Brittany, France)

*(Source: Thenail et al., 2014)*



Hedgerow system (Somerset, UK)

*(Photograph by Sam Abell, National Geographic)*



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## GRAZED OR INTERCROPPED TIMBER TREE SYSTEMS

Timber plantation of poplar intercropped or grazed is an old practice from the 18th century. Today, quality timber trees such as cherry and walnuts on agricultural land are developing. Integrating grazing and intercropping in such systems results in economic and environmental benefits



Grazed walnut plantation (Spain)  
(Source: Moreno et al., 2015)



Trial with different cultivars of cereal in a walnut plantation for timber (Bosques Naturales, Spain)  
(Source: Moreno- and Arenas, 2017)



# HISTORICAL PRACTICES OF AGROFORESTRY IN EUROPE



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## PANNAGE

Since Roman times, pigs have been periodically allowed into beech and oak forests to feed on acorns and beech masts, and into orchards to feed fallen fruit.



Pigs in fruit fall season foraging for chestnuts and other feed  
(Spain)

(Source: Mosquera-Losada et al., 2017)



Modern-day pannage, or common of mast (New Forest, UK)

(Source: <https://en.wikipedia.org>, photograph by By JimChampion)



# HISTORICAL PRACTICES OF AGROFORESTRY IN EUROPE



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## POLLARDING

Thousands of years of farming practice applied across Europe, especially common in northern Europe and mountainous areas. Regular pruning of branches to the base, usually at a height of 2-3 m, with the aim of producing fodder and firewood or wood for other purposes.



Pollarded trees in Northern France  
(Source: <http://www.tdtreecare.co.uk/tree-pollarding.html>)



200-400 year old pollarded beech trees in Epping Forest (UK)  
(Photo by Godfrey B. )



# THE REASONS FOR REDUCTION OF AGROFORESTRY



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Over the past decades, the following reasons have led to the decline of agroforestry:

- Intensification of agriculture, mechanization, aerial chemical protection -> trees form barriers and take place from agricultural crops
- Relegation of attention to the protective roles of woodlands and neglect of necessary maintenance and restoration tasks
- Unregulated land ownership
- Legal and illegal logging
- Short-term thinking and cost reduction as a primary objective
- Forgotten benefits



Trees removed from an aging windbreaks (Eastern Dakota, USA)  
(Source: Dakotafire Media, Photo by the LaMoure Chronicle)





# SUMMARY OF THE MODULE



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## LESSON LEARNED

- **AGROFORESTRY** is a **thousand-year-old practice** that has always been part of the rural landscape
- **Traditional agroforestry systems** and practices are **still alive** today throughout Europe
- From the 18th century onwards, the revolution and **intensification of agriculture** (use of machinery and then chemicals) and **large-scale agriculture** resulted in the **decline of agroforestry**, among many other reasons
- Today, **agroforestry systems** are **re-emerging** due to their many **ecosystem services** and thus their increasing role in **sustainability, product safety** and **climate adaptation**



## REFERENCES



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