

FICHE – AGROFORESTRY CASE

“WINDPROTECTION THROUGH MULTIFUNCTIONAL AGROFORESTRY FARM IN HUNGARY”

Data extracted in May 2021

Note to the reader: This set of *fiches - agroforestry case* is offering additional information to the meta analysis literature review summarised in *general fiche* and set of *fiches* of the environmental aspects of AGROFORESTRY. Each individual case describes an agroforestry system within the European Union, delivering more detailed information on application and management practices.

1. DESCRIPTION OF THE AGROFORESTRY SYSTEM

Geographical location	Hungary
Climate zone	Pannonian
Geographical level	Farm
Description	The farm is situated in a windy and hilly area predominantly used for agricultural monocropping. To reduce wind pressure and increase biodiversity, boundary hedgerows act as a protective barrier. The farm has a very diverse production system and multiple income channels.
Key descriptors	<ul style="list-style-type: none"> • Mixed farming practices • Ecosystem restauration (soil erosion control, moisture control) • Windbreak through protective hedgerows (also on arable land) • Carbon sequestration (permanent hedgerows) • High agrobiodiversity, pollinator strips and boundary hedgerows • Direct sales and on farm value creation
Agroforestry system	Silvoarable (orchards/protective hedgerow and arable land), wood pastures
Production system	Main production line fruit syrup production, diversified income through: permanent crops (apples, plums, apricots, roses), livestock farming ((goats, cattle for milk production, horses, donkeys and poultry), arable crops (oats, radish, fodder rape, green fodder mixture), horticultural production (mushrooms, berries, honey, vegetables and herbs). Hedgerows cover fuel demand (rotational pollarding, summer pruning of hedges and orchard, multipurpose confier plantation). Additional: Christmas tree production.
Actors involved	12 ha Hungarian organic family farm.
Project type	AFINET has received funding from the European Union’s Horizon 2020 research and innovation programme (No 727872).
Project status/ end date	December 2019

2. LAYOUT OF THE AGROFORESTRY SYSTEM



3. AGROFORESTRY PRACTICES AND THEIR SUSTAINABILITY TRADE-OFFS

Protective hedgerows	
Key barrier	<ol style="list-style-type: none"> 1) Dry climate prone to wind erosion. 2) Planting structure and crop combination of the system are not common in conventional agriculture and machinery required some special solutions. The machinery used consists of a tractor, seed drill (ripper), disc harrow, cultivator, manure spreader, front mower, windrower and baler. Small and medium sized tools suitable for cultivating in the alleys are difficult to find.
Success factors	<ol style="list-style-type: none"> 1) The hedge was key to establish the farm (within 4 years there has been a significant decrease in wind pressure). Furthermore, the area was divided into sections perpendicular to the prevailing wind direction. 2) Rotational pollarding of every second tree ensures ecological functionality of the hedge row, while allowing its use. 3) Structuring the field in individual blocks to provide constant feed quantity, continuous green cover in the orchard and prevent overgrazing. With this method, reseeding is required on ~ 10% of the area per year. 4) Mixed fodder is sown between the tree rows at a 6 m spacing. As long as the trees are not mature, the forage is providing additional value.
Orchard fodder production and wood pasture	
Sustainability trade-off	Limited possibility of grazing in the orchard area due to damaged trees (mainly debarking by goats). Tree protectors were required, despite the disadvantage of increased voles, who use it as shelter from predators. Additionally, an experienced sheepdog can keep the animals moving according to the farmer's instructions, so goats do not have time to rub the trunks and chew the bark. After the second half of autumn, grazing is simpler, as animals will only have grass-grazing. The wood pasture is further increasing biodiversity through forage areas, as well as the mixed-species multi-purposes pine plantation.
Key barrier	Lacking information and knowledge was available when founding the farm. Creating and operating the farm from their own resources, they needed to accumulate hands-on experience and find solutions on trial and error basis.
Success factors	<ol style="list-style-type: none"> 1) Wood pastures were planted to decrease tree damages in orchard areas. 2) Each fruit trees species was planted in a row or block to facilitate pollination. This structure also facilitates the management of the farm. In each block, animals are fed for short periods after mowing, until the ripening of the fruits.

4. SOURCES, PROJECT WEBSITE OR DATA COLLECTION ON THE CASE STUDY

[afnewsletter4_valaha-tanya_a_multifunctional_agroforestry_organic_farm_in_hungary_en.pdf\(utl.pt\)](#)

[Valaha-tanya: a multifunctional agroforestry organic farm in Hungary | Afinet \(agroforestry.net.eu\)](#)