FICHE – AGROFORESTRY CASE
"SHEEP AS LANDSCAPE AND FOREST MANAGERS IN FINLAND"

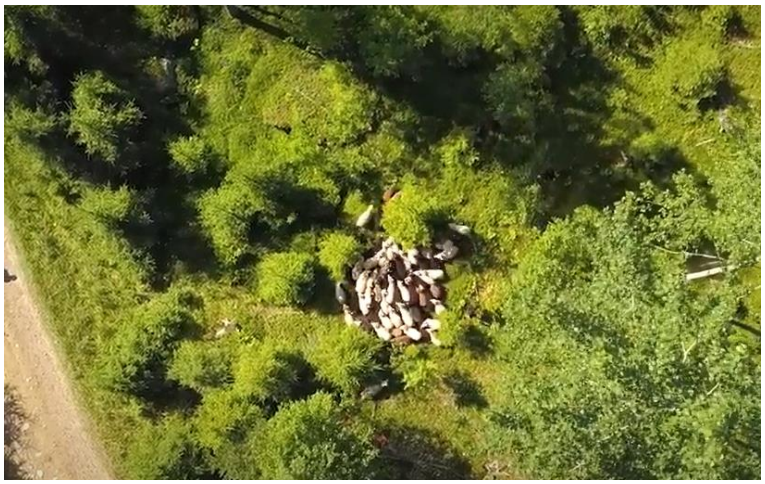
Data extracted in May 2021

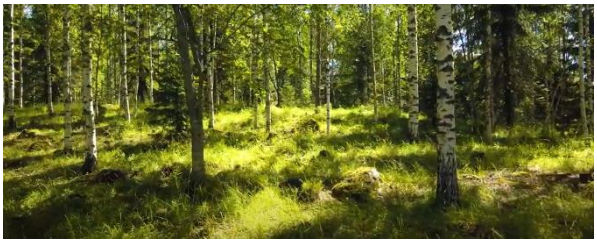
Note to the reader: This set of *fiches - agroforestry case* is offering additional information to the meta analysis literature review summarised in *general fiche* and set of fiches of the environmental aspects of AGROFORESTRY. Each individual case describes an agroforestry system within the European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

1. DESCRIPTION OF THE AGROFORESTRY SYSTEM

Geographical location	Finland
Climate zone	Boreal
Geographical level	Farm
Description	In this forestry farm, sheeps are kept to support pine and spruce regeneration. Sheep effectively keep the ground layer vegetation and naturally regenerating deciduous trees low, which saves costs for forest tending.
Key descriptors	• Risk reduction and stable fooder production • Animal welfare (animals graze freely) • Increase biodiversity • Forest regeneration • Carbon sequestration • Natural forest tending • Sustainable resource management • Climate change adaptation
Agroforestry system	Silvopasture: sheep in pine, spruce, birch forests since 1988
Production system	150 ha forest (pine, spruce, birch) and 30 ha arable field (fodder production)
Actors involved	5th generation family farm
Project type	Identified within AFINET, a project in European Union's Horizon 2020 research and innovation programme under grant agreement No 727872.
Project status/ date of report	December 2020

2. LAYOUT OF THE AGROFORESTRY SYSTEM





3. AGROFORESTRY PRACTICES AND THEIR SUSTAINABILITY TRADE-OFFS

Sheeps in wood pastures	
Sustainability trade-off	The sheep graze in all forest development phases from seedling to mature forests. In mature forests, forage might not be a enough, but the trees provide shelter during harsh weather.
Key barriers	Finding the adequate grazing pressure can be difficult. Too many sheep can damage trees and tree seedling. Similarly, if animals lack minerals, they start stripping the bark of the trees, which can lead to severe damage. Finding the right grazing pressure requires increased initial management.
Success factors	1) Grazing in spring is particularly beneficial in young stands, as the sheep decrease competition of ground layer vegetation. This also reduces the need for mechanical management and human labour. 2) In matures forests sheep enhance carbon sequestration, as grazing promotes continuous grass growth and inhibits decomposition of hay. 3) Sheep do not browse spruce and through this contribute to forest regentation, because it is more problematic than birch regeneration. 4) Sheeps enrich the ecosystem by producing manure, which is beneficial for microbes and insects in the ground layer. This in turn promotes species richness of insects, birds, and small predators species in the area. 5) The division of forest pasture in large blocks (each grazing area is around 30-40 ha) allows to move animals several times a year. Rotational grazing decreases the rate of parasitig infestations, which increases animal health. 6) Areas grazed by sheep grow very well and some even better than other commercial forests. 7) Risk reduction and climate change adaptation due to stable fodder production and continuous food growth in shaded forested areas.

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

Lammaslomat – Vaahermäen tila (vaahermaki.com)
Sheep as landscape and forest managers | AFINET (utl.pt)
Sheep as landscape and forest managers | European Forest Institute (efi.int)