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MULTIPLE- CROPPING PATTERNS AND AGROFORESTRY SYSTEMS

CORRESPONDING MODULE 2



Introduction

Through agroforestry we can obtain many benefits: fruit, biomass in the form of firewood, for sawmills and woodchips, herbs and mushrooms, fodder for animals. In addition, we protect waters and soils, maintain the stability of ecosystems, mitigate climate change, increase soil fertility, support biodiversity in rural areas, improve microclimate and animal welfare, and increase the attractiveness of the countryside for tourism.



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Description

General description of the CASE STUDY with information related to the questions already mentioned in section 3 of this document.

Background, types, basic information

Best practices

AFINET (AgroForestry Innovation NETworks)

In order to enhance the competitiveness of agriculture and the vitality of rural areas, AFINET (AgroForestry Innovation NETworks) is setting up a thematic network to gather knowledge and share experience on agroforestry best practices.

As part of the project, the Instytut Uprawy Nawożenia i Gleboznawstwa - Państwowy Instytut Badawstwa w Puławach (IUNG-PIB) together with 13 partners from 9 European regions (Spain, the UK, Belgium, Portugal, France, Hungary, Italy and Finland) will present the results of their research, which can be applied to agricultural and forestry practice, as well as innovative ideas for the use of afforestation in agricultural production to achieve economic, environmental and social benefits.

Agroforestry as an opportunity for on-farm diversification - experience from the AGFORWAR 3 HORIZON project CDR No. 2/2021

The overall objective of this project was to promote agro-forestry practices in Europe, accelerating rural development through improved competitiveness and social and environmental enhancement. The project was based on agroforestry experiments carried out on participating farms and used the results of previous research projects, viz: "Agroforestry forestry for Europe (SAFE)". Two international institutions participated in



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the project: European Agroforestry Federation - EURAF and European Forest Institute - EFI and more than 20 universities and research and agricultural organisations from across Europe.

Oikos farm of Marcin Wójcik

Of the 274 hectares the family farm occupies, around 70 hectares is forest and shrubland. Each year, several thousand more trees are planted. Important to note: on agricultural land, not forest land. Because agroforestry is such a system of agricultural land use, where farming and woodland management are carried out simultaneously. It's not farming in the forest, it's not trees that just randomly grow somewhere. It is a conscious system. Access to light plays a key role in it. On the one hand, the shade from the trees must not be allowed to block crop development and agricultural production; on the other hand, if there are too few trees, the desired effect will not be achieved. Some of the farm's bushland and wasteland was converted into wooded pastures - single trees that provided the most shade and did not prognosticate very well were cut down. Then cows were introduced, which transformed the species-poor herbage and blackberries into beautiful multi-species meadows.

Cows, reared in **an agroforestry** system (multi-species grassland with woodland), are not fed high-protein feeds and therefore produce much less methane.

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Main objective of the institution implementing the case study and main achievements.

Good to remember information, practical information, links to other CSs.....

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Photo: Oikos Farm, source: <https://gospodarstwademonstracyjne.cdr.gov.pl/gospodarstwo/ekologiczne-gospodarstwo-rolne-oikos-marcin-wojcik/>

Advantages and challenges

Holistic grazing systems are used on the farm. This is a method that Allan Savory invented. This method is based on the growth curve of the grass and managing at the time of intensive growth, when the most carbon sequestration occurs and there is the most assimilation apparatus. From an economic point of view, this is the best model for grass management.

Putting the method into practice involves dividing the pasture into more (smaller) plots. If the animals have large plots, they eat the best parts of the pasture first and leave the worse parts. Because they are on a plot longer, they manage to gnaw

the same plant two, sometimes three times, causing the more valuable species to often fall out of the pasture sward. A holistic livestock grazing system assumes that 60-70% of the sward is gnawed, 20-30% is trampled, providing soil cover and humus-building material, and 10% is left upright, creating a seed reservoir not only for the meadow but also for the birds. On top of this, dividing the pasture into more plots ensures that cattle droppings are evenly distributed, consequently improving soil quality and reducing manure run-off into watercourses.

The farm is planning to introduce so-called *chicken tractor*. The idea is for poultry to follow cattle on pasture. Cow droppings contain a lot of insect larvae, especially flies, which are an excellent source of high-quality protein for poultry. On the positive side, poultry are also excellent at sanitising the pasture ([reducing the number of larvae and parasite eggs), and they also decompose cow faeces, spreading manure over the pasture surface. Regenerative agriculture is complemented by no-till systems.

The animals are kept on a *grass-fed* system.

Cows have access to shrubs and trees, and readily gnaw on leaves and shoots. Willow in particular, and this contains natural salicylates that reduce parasites in the digestive tract. These 'herbal' supplements are very important for the animals, a natural and inexpensive supplementation.

Main data

Budget, main dates (investment, start of production, period of raise funding, etc.), location, module name and number, contact data when possible, institution

- Mr Marcin Wójcik's farm is located in the Beskid Niski.
- It is an organic farm that raises Limousine beef cattle. It currently maintains around 30 dams in its core herd. The farm area is more than 200 hectares, of which 82 hectares is grassland and the rest is forest and woodland. The Oikos farm includes areas converted to woodland pasture, new plantings on existing pasture. There are also areas with natural succession used, over 2 km of

Further Information

..... to be completed with links when possible

https://agrolesnictwo.pl/wp-content/uploads/2021/02/Perzyna-Borek-Wojcik_Agrolesnictwo_web.pdf

<https://www.topagrar.pl/articles/aktualnosci/>



hedgerows, 200 m of buffer strips and three 800 m long windbreaks (mainly of hornbeam, birch, lime). There are plans to create a new agroforestry pasture (poplars, which have a production cycle of 25-30 years).

- Production is based on the farm's own fodder, natural grassland characterised by very high biodiversity. There are many protected plants, numerous species of wild birds and deer. Meat from the farm is sold at the Pet Market in Kraków and the Bio Bazar in Warsaw.
- Agroforestry practices are implemented on the farm. The woodlots have a protective, biocenotic and productive function. They also provide shelter for grazing cattle.
- The farmer carries out various projects on his farm in cooperation with scientific centres such as IUNG in Puławy, the University of Rzeszów, the University of Life Sciences in Lublin and the State Higher Vocational School in Sanok.
- On behalf of the All-Poland Agroforestry Association, the farm owner is taking part in the pan-European AGROMIX project, which is being piloted by the University of Coventry. Twenty-eight units from all over Europe are taking part, and Marcin Wójcik's farm is one of 12 case studies. He is also working with Dr Jacek Walczak, a scientist at the IZOO PIB in Balice, who developed the first Polish carbon calculator, to investigate emissions.
- Marcin Wójcik plants trees, including old varieties of high-growing fruit trees, taking care of the biodiversity on the farm.

systemy-rolno-lesne-w-polsce/

<http://>

www.zpkww.pl/

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[AFINET_pressrelease_1](#)

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[oikos-marcin-wojcik/](#)



ANNEX - STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

Module Name: The name of the partner: Country:

The name of the module	
Target group involved	
Current information about the topic	
Principles of the specific module	
Basic terms/measures of the module/topic	
Training materials (tasks, case studies, exercises)	
Short description of the materials	
Link of the online resources (film or video resources)	
Specific images (to support the purpose of the resources)	
Duration	
Materials	
No of Learners/Representatives	
Individual or group work	
Step by step guide	