

FICHE – ORGANIC FARMING CASE

“ KNEHTILÄ ORGANIC FARM AND PALOPURO SYMBIOSIS ”

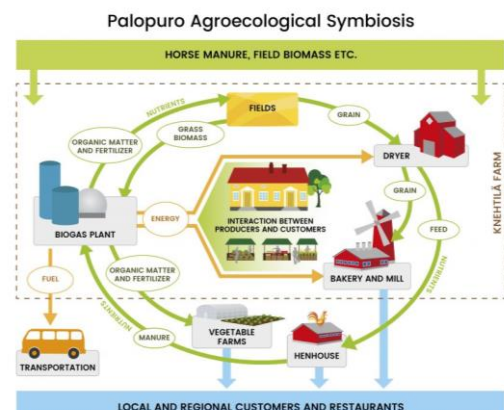
Data extracted in January 2022

Note to the reader: This set of *fiches – organic farming case* is offering additional information to the meta analysis literature review summarised in *general fiche* and set of fiches on the environmental aspects of ORGANIC FARMING SYSTEMS. Each individual case describes an initiative in different parts of organic food systems within the European Union, delivering more detailed information on possible ways to develop organic systems.

1. DESCRIPTION OF THE ORGANIC SYSTEM

Geographical location	Finland
Geographical level	Farm, multi-farms
Description	Knehtilä Farm is an organic farm located in the Palopuro village, in the municipality of Hyvinkää, Southern Finland. The farm is at the centre of a cooperative food production network based on energy and nutrient self-sufficiency. Palopuro is a pioneering model of symbiotic cooperation between different producers, food processors, and a biogas plant.
Key descriptors	<ul style="list-style-type: none"> • In 2015, Knehtilä farm won the WWF Baltic Sea region environmentally friendly farm competition. • The cooperative serves as a model for organic food production and processing which is truly energy and nutrient self-sufficient. • It is a mutually beneficial, locally integrated, agro-food industrial complex that minimises waste and emissions, relies on renewable energy, maintains fertility of the soils and recycles nutrients.
Production system	Organic production of cereals, pulses, green manure (sillage), hens and vegetables.
Actors involved	<ul style="list-style-type: none"> • Three organic producers: a cereal farm (Knehtilä, 385 ha of fields), a henhouse (5500 hens), a vegetable farm (3 ha) • Food processor: a bakery • An energy company and a technology provider, who helped make the establishment of the biogas plant financially feasible. • A farm market and local consumers
Project type	European Agriculture Fund for Rural Development-funded project
Project status/ date of report	2020

2. VISUALS ASSOCIATED TO THE ORGANIC INITIATIVE



3. ACTIVITIES AND ACHIEVMENTS OF THE ORGANIC INITIATIVE

Rationale / Motivation for the project	
<p>The objective of Knehtilä farm was to fulfil the organic production criteria in the Finnish Rural Development Programme in order to be eligible for the organic production support through the five year commitment.</p> <p>In addition, Knehtilä farm recognised the need to develop cooperation with other neighbouring organic farms, a process known as "Palopuro symbiosis". The underlying aim was to locally recycle the nutrient flows generated in the production processes and fully utilize the bioenergy potential in the biomass flows.</p>	
Actions	
Food production	<ul style="list-style-type: none"> • On-farm grain milling & bakery to produce bread using the farm's flour. • Organic eggs and chicken broth. • Vegetables
Energy production	<ul style="list-style-type: none"> • An anerobic digestion plant was built to process biomass from green manure harvested in the fields, hen and horse manure, and milling & baking residues. • The biogas is used for drying grain, heating the bakery's ovens, and running the farm machinery. The surplus is sold as car fuel at a on-farm service station.
Nutrient recycling	<ul style="list-style-type: none"> • Part of the milling and baking residues can be used as feed for the hens. • The nutrient-rich digestion residue from the biogas production is used as an organic fertiliser in the cereal and vegetable farms.
Strengthening the local community	<ul style="list-style-type: none"> • Direct sales by all three farms • Market days, which have become a central part of the village's social life, bringing together producers, the village association, local hunters, artisans and customers. • The project integrates food production back into the local community. It allows for a transparent and understandable production process.
Tourism	<ul style="list-style-type: none"> • Markets days, and other specific events attracts around 10 000 external visitors each year. There is also a restaurant and a hostel.
Lessons	
<ul style="list-style-type: none"> • With the "Palopuro symbiosis" system the biomass loops are closed and the cooperative is able to operate in a sustainable manner. • This type of symbiosis enhances the nutrient use efficiency of farms without cattle. • This model could be replicated by other farms across Finland. Cooperation could be the answer to a sustainable and vibrant organic sector in Finland. There is also potential for transnational cooperation. 	

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

ENRD fiche https://enrd.ec.europa.eu/projects-practice/knehtila-organic-farm-and-palopuro-symbiosis_en

Koppelmäki et al. 2019. Agricultural Systems 170. 39-48. <https://doi.org/10.1016/j.agsy.2018.12.007>

[https://helda.helsinki.fi/bitstream/handle/10138/174616/Koppelmäki et al 2016 Palopuro Agroecol Symbiosis
_COMREC Stud Env Dev 2.pdf?sequence=1](https://helda.helsinki.fi/bitstream/handle/10138/174616/Koppelmäki_et_al_2016_Palopuro_Agroecol_Symbiosis_COMREC_Stud_Env_Dev_2.pdf?sequence=1)

Video "*What is Palopuro Symbiosis? Check out our story!*" <https://www.youtube.com/watch?v=ISJWpSc4004>

<https://www.oneplanetnetwork.org/knowledge-centre/projects/agroecological-symbiosis-palopuro>

Cooperative's website <https://palopuronsymbioosi.fi/>