

The Fräkentorp Centre for Climate Transformation In Agriculture and Forestry

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Sustainable Development and Sustainability Science
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ECONomy - The Fräkentorp Centre for Climate Transformation in Agriculture and Forestry

The Vision

The ECONomy Agriculture and Forestry Centre gathers people committed to develop and spread ecologically sustainable culture systems and technological solutions for production of food, forest raw materials and ecosystem services. Here are also included a strive to maintain and develop socially sustainable work conditions and a high level of animal and ecosystem ethics

Expected outcomes

- A development journey towards a more sustainable farming and forestry for small and middle-sized farming and forestry activities
- Farming and forestry activities much more self supported with renewable energy leading to a lower climate impact and higher farming resilience
- Forestry activities with an increased continuous forestry leading to a higher wood stock in the forest (carbon sequestration) improved water cycle functioning, higher plant diversity and in the end increased biodiversity,

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Existing ecologically oriented activities at the Fräkentorp Farm

- Ecologic milk production based on 60 cows
- Ecologic meat production based on bullocks
- Ecologic feed production on grasslands
- Production of forest raw materials on 300 ha forest land (spruce, pine and birch)
- Photovoltaic energy production with an installed capacity of 160 kW
- Production of heat in wood pellet furnaces (capacity 80 + 80 kW) fuelled with wood residues from own forestry
- Production of biocarbon in one of the two wood residue fed furnaces
- Production (in demonstration scale) of fish fry and full size fish of Tilapia in an aquaponic system
- Provision of ecosystem services in a newly constructed wetland with the main aim to capture phosphorus from upstream farmlands

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Ecologically oriented activities under discussion

- Start up of a purchased 300 m³ biogas plant for treatment of manure and other organic wastes
- Establishment of a local/regional network of farmers for mutual learning and exchange of knowledge
- Construction of a wetland for improved pike reproduction (a so called pike factory)
- Financing activities aimed at evaluating the overarching achievements
- Start-up of organized visit and education programs



Pastures – several hundred years old - at Fräkentorp farm



The Bjursätter barn at Fräkentorp with aquaponics plant and 35 kW solar plant



Spruce production forest at Björn Frostell's farm in northern Sweden

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Main outbuildings with
125 kW photovoltaic system
on roof structure and 300 m³
biogas plant main tank at
Fräkentorp farm

Aquaponic pilot
plant in
Bjursätter barn at
Fräkentorp farm



Tilapia fry in the
Bjursätter
barn at
Fräkentorp farm

The Fräkentorp Manor – Energy Metabolism for 2021

Energy metabolism for the Fräkentorp Manor, Malmköping Sweden						
Energy type	Energy use	MWh/år	Renewable, %	Renewable, MWh/yr	Own prod., MWh/yr	Purch. prod., MWh/yr
Electricity	Electricity Fräkentorp*	122	100	122	46	76
	Electricity Bjursätter**	35	100	35	10	25
	Total electricity	156	100	156	56	101
Heat	Heating of all buildings	800	100	800	800	0
Fuels	Own vehicles (HVO diesel)	169	100	169	0	169
	Vehicle fuel lego-work (diesel)	15	0	0	0	15
	Vehicle fuel (gasoline)	2	0	0	0	2
	Total energy use	1142		1125	856	287
	Sum total renewable	1125				
	Sum total non-renewable	17				
	Energy use and production					
	Renewable energy use, %	98,5				
	Non-renewable energy use, %	1,5				
	Own production, %	75,0				
	Purchased productionm, %	25,1				

In November 2022, the Fräkentorp Manor was awarded the National Prize
Climate Farmer of the Year in Sweden