

## SWEDEN

### Farm performance, restructuring and modernisation

#### Location

Härnösand

#### Programming period

2014 - 2020

#### Priority

P2 - Competitiveness

#### Measure

M4 – Investments in physical assets

#### Funding (EUR)

Total budget 912 482

EAFRD 122 807

National/regional 179 673

Private 610 002

#### Project duration

2016 – 2018

#### Project promoter

Peckas odlingar AB

#### Contact

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[www.peckas.se](http://www.peckas.se)

The challenge of increasing food production without harming the environment might be solved through innovative production techniques, such as aquaponics.

### Summary

Soils are increasingly experiencing a loss of nutrients, with nutrients leaching and running off into lakes and seas. Peckas Naturodlingar has invested in an industry that combines the cultivation of tomatoes with the rearing of fish in a closed system. The nutritious water from the fish streams down to the tomatoes that take on the nutrients. The clean water is then led back to the fish.



This operation ensures that nutrients and water are used in a most efficient way, and the system doesn't lead to any waste. The support from the Swedish rural development programme was used to build a greenhouse that extends over 4000m<sup>2</sup>. The new greenhouse allowed the beneficiary upscale its tomato production.

### Results

In January 2018, Peckas delivered its first batch of tomatoes to grocery stores in Härnösand. The whole production of tomatoes in 2018 has been booked by the distributor company, Grönsakshuset.

100% of the nutrient water from the fish farm is circulated into a bio-bed/plant bed and then back to the fish farm. This reduces the need for water and ensures that all nutrients in the water are used in the tomato cultivation. Instead of becoming a waste stream, the fish farm becomes an input for tomato cultivation.

### Lessons & Recommendations

- ❑ When introducing new, untested technologies, it is vital to seek help and advice from others that have made similar investments, wherever they may be located.

## Context

Producing food requires energy, land, water and fertilisers and is responsible for CO<sub>2</sub> emissions and eutrophication. While the problem of too many nutrients entering the wrong place (eutrophication) is common, there is also a need for more nutrients in other places to make crops grow. As society becomes more aware of these issues, demand for locally produced food, which is energy efficient and environmental friendly, is growing.

Aquaponics could have a key role to play in supplying the market with exactly this kind of food, but it needs support to become established. Aquaponics is a system of farming aqueous animals and plants together. According to Peckas company, in order to make this kind of innovative production system widely accepted and recognised, a full-sized demonstration of the production process must be organised. The advantages of this kind of production is still unproved, however, and this might make it difficult to obtain investment help from banks and other similar institutions.

## Objectives

Specific project aims were to:

- Produce sustainable food (salmon and tomatoes) close to consumers;
- Grow and expand the consumption of aquaponics produce across Sweden;
- Produce 20 tonnes of fish and 200 tonnes of tomatoes per year;
- Spread knowledge about aquaponics by providing a good example and by organising seminars and workshops on the theme; and
- Prove that it is possible to raise fish on land with zero emissions.

## Activities

The company Pecka Nygårds was founded 20 years ago to experiment with this kind of cultivation. The company decided that this concept was too good to not be tried out on a larger scale and applied for funding in the Swedish RDP.

The support from the programme was used built a greenhouse of 4000m<sup>2</sup>. The new greenhouse would allow the farm to upscale tomato cultivation. The construction took place in the summer of 2017. The greenhouse

includes spaces that are used for raising the fish and also offices for the administration.



## Main results

The facilities has been operational since the end of September 2017, and Peckas delivered their first batch of tomatoes to grocery stores in Härnösand in January 2018. The whole production of tomatoes in 2018 has been booked by the distributor company, Grönsakshuset.

The investment has resulted in a high technological, highly intensified and very space efficient cultivation under controlled conditions. 100% of the nutrient water from the fish farm is circulated into a bio-bed/plant bed and then back to the fish farm. This reduces the need of water and all nutrients in the water are used in the tomato cultivation. Instead of a waste stream, the fish industry becomes an asset for tomato cultivation.

The tomatoes are sold within a distance of 200 km from the farm which makes it possible for Peckas to cultivate species that don't have to survive long transportation, which is usually the case in Sweden.

## Key lessons

The concept is all new and fairly untried which has its benefits and disadvantages. The competition might be low, but the fact that few have tried it out before might raise problems. If possible, try to seek help and advice from others making similar investments wherever they might be located.

*“The idea is too good not to be spread, and in order to work it must be done on a larger scale. We do not want Pecka's Naturodlingar to be a nice little farm shop. The idea is too good for that, and the market is mature for locally produced, climate-smart, high-quality food. We believe that cyclical cultivation is the cultivating system of the future!”*

Daniel Brännström, Peckas Naturodlingar