

POLAND

Environment & climate action

Location

Nasielsk

Programming period

2014 – 2020

Priority

P4 – Ecosystems
management

Measure

M10 – Agri-environment-
climate

Funding (EUR)*

Total budget 33 613

EAFRD 21 381

National/Regional 12 237

* Planned for 2015-2020

Project duration

2015-2020

Project promoter

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Farm.

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Using RDP support to implement a sustainable model of agriculture that combines the production of high quality products and environmental protection.

Summary

Krzysztof Kowalski's farm is the largest breeder of the rare breed "Złotnicka Biała" pigs in Poland. The farm also grows flax and oilseed rape which are used to produce oil and feed the animals. Agri-environmental support from the Polish RDP made it possible to implement a variety of environmentally friendly agricultural practices while producing high quality products.



To ensure minimal impact on the environment, pesticides are only used in the event of damage from crop diseases, or in cases where pest levels exceed specific thresholds. Fertilisers are only used in minimal doses, catch crops and buffer zones minimise nitrogen and phosphorus leaching. Moreover, annual testing for residues of pesticides and heavy metals in the extracted oil and the use of bees as bio-indicators allow for the effective monitoring of the health of the farm's environment.

Results

Good animal welfare conditions are maintained, manure and slurry are applied according to the terms and doses defined by the codes of Good Agricultural Practices in the Nitrates Directive.

The owner of the farm actively cooperates with other farmers to share his experience and knowledge. The farm is a member of National Network of Teaching Farms.

The farm has won several awards, including Farmer of the Year 2018, Vice-champion of Agroliga 2018, the Baltic Sea Farmer of the Year Award 2018, etc.

Lessons & Recommendations

- Sound, traditional farming methods combined with modern technologies and agricultural know-how is a profitable approach to farming.
- Avoidance of monocultures, limiting the holding's cereal crops area to no more than 50% and growing stubble and winter crops is beneficial to soil and water quality.
- Natural fertilisers from the farm's animals reduces the need for mineral fertilizers.
- Planting trees near watercourses and setting up apiaries leads to increased biodiversity and also has economic impact.
- Investment in renewable energy installations is not only environmentally sound, but is also a good business decision.
- Farmers should continually cooperate with agricultural advisory experts.

Context

The Kowalski holding is a 130 ha traditional family farm in the catchment area of the Turka river that grows flax and oilseed rape. The seeds are used to produce oil which is sold directly to customers. The farm has also bred Polish rare breed "Złotnicka" pigs for over 10 years under the supervision of the University of Life Sciences in Poznań. The farm is the largest breeder of this unique breed of pigs in Poland. The farm is largely self-sufficient, for example the cake residue from oil extraction is used as an ecological and nutritious feed for the animals.

The farm's products are of very high quality and have won the recognition of customers and many prizes in various competitions such as "Distinction of the Masovian Voivodeship" and a Gold Medal at the Polagra Food Fair. The products are included in the National List of Traditional Products.

The success of the farm is largely due its holistic approach towards sustainable crop and pig production.

Objectives

The overall objective of this project is to apply a sustainable model of agriculture that enables it to produce very high quality agricultural products, while contributing to the protection of the environment.

Activities

With EAFRD support from the RDP, the farm has adopted a series of good agricultural practices such as the creation and maintenance of midfield wetlands and ponds, the creation of buffer zones, the cultivation of catch crops and leguminous crops and the annual testing of fodder and water for nitrates and pesticides etc.

Over 1 000 trees (beech, hornbeam) were planted to create islands of trees and buffer zones along the Turka river and in between the fields. These buffer zones prevent nutrient runoff and also support biodiversity.

Winter cereal and rape are sown and cover the entire area along the river from autumn to spring, preventing the leaching of nitrogen and phosphorous.

Stubble crops shade the soil, reducing both evaporation and soil erosion. The remains of organic matter ploughed in increases the amount of humus in the soil which increases its fertility.



The retention of water in the soil is an invaluable advantage in arable land use, this proved to be a factor for yield value in the dry conditions in 2018.

The fertility of the soil is constantly increasing, as indicated by the high incidence of earthworms. Corridors hollowed in the soil by earthworms improve aeration and allow for the drainage of excess water. Earthworms also accelerate the decomposition of post-harvest residues which, after passing through their digestive system constitute an easily accessible source of plant nutrients. An increase in the number of earthworms in the soil is possible through the use of high doses of organic fertilisers and cultivation systems that are less disruptive to the soil's structure.

To help ensure that the farm's environment and the quality of its produce is not affected by the use of pesticides and fertilisers, the farmer keeps 30 beehives. Bees are extremely sensitive to pesticides and act as a bio-indicator of the environment's health.

Soil analyses are carried out every five years and oils pressed at the farm from rapeseed are analysed annually for residues of heavy metals and pesticides by the Warsaw University of Life Sciences and the company Cobico.

Specific economic thresholds for damage to crops from pests or diseases have been set, and pesticides are only used if these are exceeded. Fertilisers are only used in minimal doses.

"...if you want to convince somebody to do something, you have to teach, inform and first and foremost demonstrate good practices..."

Krzysztof Kowalski

Main results

Environmental benefits: Good animal welfare conditions are maintained, and manure and slurry are applied according to the terms and doses defined by Agricultural Good Practice.

The farm has minimal ammonia losses because the animals are kept on deep litter and the slurry is applied directly to the ground. There are tanks with clean water on the farm. There is no eutrophication.

Additionally, environmentally sensitive approaches are implemented throughout the farm and its production, greenhouse gas emissions are reduced as a result of the installation of solar panels and a heat pump. Domestic wastewater is treated in a household wastewater treatment plant with drainage. The farm avoids the use of single-use plastic bags, thus contributing to the management of PVC plastics. The oil produced on the farm is only packed into glass bottles, which also has a very significant impact on the quality of the product.

Economic benefits: The sustainable model of agriculture pursued on the farm is possible because of the direct economic benefit that accrues from the farming methods that are applied.

The installation of solar panels and of a heat pump is not only environmentally responsible, it has led to an 80% decrease in the farm's energy bills.

The fact that the farm has its own apiary has an impact on the efficiency of pollination, increasing the yield of rape by approximately 35%, giving an estimated increase in profit of about €9 400 per year.

The use of natural fertilisers makes for savings on the purchase of mineral fertilisers (NPK): the use of manure gives savings of €9 400 per year, the use of slurry a further €2 200 per year.

The pressing of oil on the farm, as opposed to selling the seed, also brings considerable economic benefit. The additional benefit in respect of the rapeseed crop comes to approximately €56 500 per year; as regards flax, the difference amounts to about €66 500 per year.

The breeding pigs covered by the Programme for the Preservation of Endangered Animal Genetic Resources in Agriculture requires that feed and concentrates are not purchased from outside the farm.

The result of this approach is not only high quality meat, it also brings about savings of €65 000 per year.

The high quality meat also has a significant impact on profit, the market price for livestock (€1.20 / kg) and the direct sale to, among others, a restaurant in Warsaw (@ € 2.80 / kg) results in a profit of €196 000.

Networking value: The farm is also an example of good networking practice: the farmer cooperates with the Regional Agricultural Advisory Unit, the Agricultural Advisory Centre in Brwinów, Poznań University of Life Sciences, and WWF.

The owner of the farm actively cooperates with other farmers to share his experience and knowledge. The farm is a member of the National Network of Teaching Farms, hosting about 5 500 visitors every year.

Transferability: Combining the implementation of good agricultural practices that protect the soil and water with the production of very high-quality products, is a farming model that should be transferred to other farms.

The considerable number of annual visitors shows the enormous potential for transferring the practices employed on the farm to other agricultural holdings.

Synergies with other EU policies - The implementation of the project has contributed to the achievement of the objectives of EU legislation, including the Nitrates Directive. The farm is obliged to comply with rules on the application of fertilisers (periods of fertilisation, doses and methods of fertilisation, restrictions on fertilisation on wet, flooded, frozen or snow-covered soils, near watercourses and on slopes); the storage of fertilisers in a suitable manner and the keeping of documentation; maintenance of slurry and slurry tanks as well as storage places for manure with a volume containing production of natural fertilisers over a period of six months.

The implementation of the agri-environment-climate programme contributes to different RDP focus areas: soil and water conservation; biodiversity conservation; reduction of greenhouse gas and ammonia emissions from agriculture; and promotion of carbon sinks and carbon dioxide absorption in agriculture.

Additional sources of information

www.facebook.com/krzysztof.kowalski.927543

www.facebook.com/Olej-Iniany-Kowalski-610333785644690/

*This project has been categorised under 'Environment & Climate Action' by the nominating National Rural Network