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BROCHURE

2015

Baltic-friendly agricultural practices

Winners and finalists of the Polish WWF Baltic Sea Farmer of the Year Award

WWF Baltic Ecoregion Programme

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AN AWARD FOR FARMERS,
WHO CHANGE THE FACE OF AGRICULTURE

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Many farmers take innovative steps to reduce nutrient runoff from their farms to the Baltic Sea to achieve sustainable agriculture.

By organising this Baltic Sea Farmer of the Year competition, WWF intends to emphasize how important these initiatives are and to promote these solutions throughout the region.

Eutrophication, or over-fertilization of waters, is the biggest environmental problem of the Baltic Sea. Farmers find themselves often blamed for it, as their activity causes nearly half of the nitrogen and phosphorus runoff into the sea. However, as shown by the Baltic Sea Farmer of the Year competition, many farmers take active steps in order to reduce these emissions and are moving towards a more sustainable agriculture.

The competition aims to raise awareness of good agricultural practices consistent with the principles of sustainable agriculture used in farms in the Baltic region. This competition is also meant to promote cooperation in the region in order to disseminate good practices in the agricultural sector.

This booklet seeks to achieve the aforementioned objectives. We present therein agricultural practices used by the winners and commended by the national and international jury of the competitions of the following years; 2011, 2013, 2014 and 2015. Examples from Polish holdings show a wide spectrum of possibilities for applying eco-friendly practices.

The methods showcased here can easily be replicated by farmers in the region and help them achieve a more sustainable agriculture, thus contributing to achieving a better environmental state of the Baltic Sea.

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Winners of the WWF Baltic Sea Farmer of the Year Award

2011-2014

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Marian Rak

Regional winner of the overall 2011
Baltic Sea Farmer of the Year Award

Location: Samotwór village near Wrocław (Lower Silesia Voivodeship*)

Type of farm: Crop production: rye, barley, corn, rape, potatoes, orchards; maintaining permanent grasslands and breeding Limousin cattle

Marian Rak has run a family farm since 1975. At the beginning, he owned only 5 hectares of farmland. Today, his acreage is 102 hectares. He currently grows rye, barley, corn, rape, potatoes and breeds Limousin cattle.

Marian has made outstanding achievements in regards to the implementation of environmentally friendly farming practices.

He implements agri-environmental schemes in order to reduce nutrient losses using wide buffer strips, trees planted along the roads, streams and drainage ditches, inter- and undersown crops.

Apart from reducing nutrient runoff, Marian Rak has made a great effort in the preservation and restoration of biodiversity on his farm.

Among the measures he has taken to restore natural habitats and offer sufficient space for wildlife are, among others, the construction of artificial ponds and marshes, the plantation of midfield trees and shrubs, as well as installing nesting boxes for bats.

Through his strong commitment to protecting the environment Marian Rak has showed that a progressive conventional farm can reduce the loss of nutrients while increasing biodiversity and protecting the landscape.

** Region*

Anna Stępień

National winner of the overall 2013
Baltic Sea Farmer of the Year Award

Location: Kiełpin
(Kuyavian-Pomeranian Voivodeship)

Type of farm: organic farm; pig production and crop production, among others: wheat, rye and vegetables (43 ha)

© ANNA HADYŃSKA

Anna Stępień's family farm is a pioneering holding in organic farming in Poland. It is one of the first farms whose owners began to adhere to organic farming methods.

The family farm was founded in 1938 by Anna's grandparents and was later managed by her parents, the Wegners.

They started their organic production with organic cultivation of wheat for export, and then extended the range to many other types of crops.

At present, the farmer also breeds pigs using only and exclusively her own organic feeds.

Anna uses many methods aimed at reducing emissions of nutrients from the farm. These methods include: use of crop rotation, nitrogen content monitoring and storage of manure in containers.

Moreover, in order to increase biodiversity on the farm, midfield ponds were established and trees as well as shrubs were planted along with installing nesting boxes for birds and bats.

The farm uses solar collectors to heat water in order to reduce emissions of greenhouse gases.

The farmer also collaborates with many research institutions and invites to her holding trainees from vocational agri-culture secondary schools. All this is meant to help create and disseminate new methods of organic production and increase environmental awareness.

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Wiesław Gryn

National winner of the overall 2014 Baltic Sea Farmer of the Year Award

© WWF / K. TYMOREK

Location: Rogów (Lublin Voivodeship)

Type of farm: crop producing farm, managed in a sustainable agriculture system (520 ha)

Wiesław Gryn has had many outstanding achievements in using precision farming methods for applying fertilizers. His farm is a family holding with a long tradition of agricultur production. His ancestors started farming in the area in 1785. For this reason, Mr. Gryn has now undertaken to manage his farm keeping in mind future generations.

On the farm ploughless tillage is used based on the innovative technology of belt cultivation (so-called. strip-till) further expanded with the application of mineral fertilizers on two depths.

The cultivation technique allows to minimize fuel consumption, reduces workload and decreases the use of a variety of machines, and the entire cultivation is usually reduced to a single passage, during which the soil is cultivated, fertilized and seeds are sown.

Mr. Gryn has cooperated now for many years with various scientific institutions, such as e.g. the Institute of Soil Science and Plant Cultivation in Puławy which monitors the water status at the farm and in its surroundings. The results have shown that nutrients do not leak from the farm to the surrounding waters.

Undersown clover is used as intercrop on the farm. There are also field woodlots that constitute a refuge for animals and waterfowl. Additional efforts to further biodiversity include building resting places for buzzards and placing hives. Study visits are organized for different groups of farmers and students.

The farming methods used in this holding prove that Mr. Gryn understands the relationships between cultivation of land and water condition.

© WIESŁAW GRYN

Winners and finalists of the WWF Baltic Sea Farmer of the Year Award

2015

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Elżbieta Reitzig

Winner of the 2015 National Baltic Sea Farmer of the Year Award

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Location: Stefanowo (Greater Poland Voivodeship)

Type of farm: organic farm; animal production: Hereford bovines for fattening (75 animals), horses, goats, rabbits, geese, guinea fowl, chickens, ducks, pigs; crop production: extensive permanent pastures and meadows; the second area of activity is agri-tourism (115 ha)

Elżbieta's farm is living proof that cattle breeding can be carried out in a Baltic-friendly manner and that closing the nutrient cycle on the farm should become the new standard for this type of activity. On the farm's pastures and meadows a number of practices are used to reduce nutrients' runoff into water bodies.

There are carefully delineated natural buffer zones on the farm along watercourses. Rotational grazing of cattle in plots provides grasslands with a dose of nutrients that can immediately be utilized by the plants. This grazing method makes storage of manure on the farm unnecessary and thus eliminates the risk of nutrients leaching to water. No storage of silage feed, other than those used in the feeding of cattle, is another initiative that eliminates leachates. The grazing plots for cattle are delimited in such a manner that the shortest side is adjacent to the river. This reduces to a minimum the runoff from droppings left by animals during grazing.

Free range cattle breeding has as consequence that annually about 2,500 kg of nitrogen, 1000 kg of phosphorus and 3,200 kg of potassium from excrements end up in appropriate doses, at an opportune time on the ground and are absorbed without unnecessary losses so that they can be used by plants for the production of grass in the pasture. In addition, Elżbieta's farm constitute a buffer zone for neighbouring holdings' arable land farmed in a conventional manner and which use synthetic fertilizers. The farm uses all available technical solutions that might reduce the negative impact of agricultural activities on the surrounding water and air, including: a household biological sewage treatment plant (capacity: 30 000 litres per year), biomass-fired central heating, solar collectors.

The owners are eager to share their insights, skills and experiences with other farmers, whom they teach farming secrets and demonstrate the latest technologies used in the farm, aimed at reducing its impact on the environment, particularly in terms of water quality and biodiversity. Apart from her farming activity Elżbieta is also actively implementing measures for the protection of endangered species of birds (such as lapwing, corncrake, common snipe) through the conservation of natural habitats within and outside of a Natura 2000 site. The complete elimination of plant protection products clearly furthers improvement and conservation of biodiversity in bird breeding habitats.

In 2014, Elżbieta's farm came second place in the national competition organised by the Ministry of Agriculture and Rural Development entitled for "Best organic farm" in the category "Organic commercial farm".

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Jacek Plotta

Second place winner of the 2015 National Baltic Sea Farmer of the Year Award

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Location: Trzcińsk (Pomeranian Voivodeship)

Type of farm: organic farm; animal production: Danhybryd pigs (30 sows), suckler cows (4 animals), 1 horse, 2 ponies, rabbits, poultry; crop production: for feed: cereal mixes, legumes and cereal mixes, legumes, papilionaceous, clover, grass and clover mixes, on some plots seed clover (135 ha)

The livestock population and the way in which it is kept (sow and piglets in Danish type huts grazing system type pig huts, fatteners in the livestock building stalls on shallow litter) makes that the farm produces approx. 300-400 tons of manure. It is stored on a manure pad which limits runoff of nitrogen and phosphorus into the soil. The crop rotation is also properly used, taking into account the large percentage of vegetation cover in the winter. Moreover systematic studies of the soil are carried out. The farm has a rational fertilization system using lime.

On his farm Jacek planted trees on most of the slopes and hills (approx. 20 hectares; captures approx. 260 tonnes of CO_2 per year), which provide a natural wide buffer zone of a significant surface. Artificial reservoirs were also built (5 reservoirs of an area of approx. 1 ha). Natural ponds, marshes and marshy meadows have been preserved and on those wetlands tall sedges have been introduced. The farm owner decided to preserve natural field baulks, fallow land plots, trees and shrubs and is cultivating ecological grounds, keeping natural meadows, reed beds and natural land.

The farm participates in the protection of endangered bird species and natural habitats in Natura 2000 sites. As a result of this it hosts many protected habitats of numerous species (Montagu's harrier, lapwing, black and white stork, grey and great white heron, cranes, beavers, newts, orchids, club moss).

The farm has a training room to carry out environmental education activities. The University of Warmia and Mazuria also conducts some research here on verification of organic cultivation methods of chosen species (for example soy and corn).

Jacek runs his farm in a closed loop system called ERA (*Ecological Recycling Agriculture*), based on the recycling of nutrients on the farm. The farm has participated in the following projects as a demonstration farm: Baltic Deal and BERAS (*Baltic Ecological Recycling Agriculture and Society*).

Krystyna and Robert Wagner

Third place winner of the 2015 National Baltic Sea Farmer of the Year Award

Location: Lubnów (Lower Silesia Voivodeship)

Type of farm: organic farm; crop production: vegetables, fruit, herbs, cereals, chokeberry orchard; animal production: poultry, bees (9.49 ha)

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The owners of the Organic Demonstration Farm "Wagnerówka" pay special attention to selecting species and varieties that are resistant to pests and diseases, their proximity and the use of allelopathic properties. They use only natural, organic and green fertilizers. The farm produces its own manure and compost, to which effective trace elements are added. Papilionaceous, especially clovers, which are grown both as a main crop and sown in among cereals (good results of rye cultivation with serradella and oats with peas) play an important role. In the chokeberry orchard, the lawn is composed of a mixture of clover with grasses. The owner uses agricultural practices in line with the principle of "shallow soil inversion, deep loosening". A rational management system has also been implemented, with a properly constructed crop rotation and plants sequence scheme. In the winter, more than 30% of the arable land is covered with vegetation, which helps to limit nutrient leaching to the surface water, preventing soil erosion and protects it from degradation.

The farm woodlots have been kept, as well as old field baulks, properly maintained ditches and water flows, in which crested newts and toads dwell. The Lubnowianka river flows through the farm yard.

The owners are leaders in environmental awareness raising in their region and strongly support actions against GMOs. The "Wagnerówka" farmstead hosts a series of meetings called "The Open Farm".

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Stanisław Baliński

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Drawsko
(West Pomeranian Voivodeship)

Type of farm: animal production: Simmental cattle for milk production (yearly average livestock: 110 cows); crop production: cereals and fodder crops, commercial production of high quality wheat (470.80 ha)

Stanisław pays special attention to environmental protection on his farm, uses good agricultural practices in plant and animal production. The farm is equipped with a manure pad and the cowshed itself has a solid floor that prevents the penetration of liquid faeces into groundwater.

Correct crop rotation (large percentage of vegetation cover in the winter) and catch crops are implemented. To reduce the use of mineral fertilizers and improve soil quality Stanislaw uses straw stubble ploughing as a natural fertilizer, which has a beneficial effect on the depth of the humus layer.

High-quality compound fertilizers with micro and macro elements that improve nutrient uptake by plants are used on the farm, and the equipment to apply them is professional and precise.

These activities are aimed at further reducing the amount of fertilizer applied and, consequently, at hampering nutrient runoff. The farm's soil chemical composition is systematically tested.
In order to reduce the excretion of nitrogen from livestock manure, cattle receives feed with an optimum composition and less protein.
In cooperation with the Agricultural Advisory Centre and the West Pomeranian Chamber of Agriculture the farm is made available as an educational facility, a place for meetings and trainings for farmers.

The owner is happy to share his rich knowledge with other agricultural producers by pointing out opportunities for development and ways of proceeding so that the farming activity does not harm the environment.

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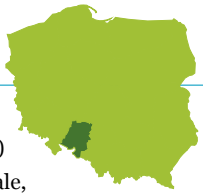
Michał Baucz



Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Oldrzyszowice (Opole Voivodship)

Type of farm: crop production: winter triticale, winter wheat, spring barley, winter rape, blue lupine, corn for grain (21.99 ha)

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The farmer uses many ways to reduce runoff of nutrients from the farm: proper rotation of crops, taking into account natural factors (soil condition, climate) and agronomic habitats (balanced fertilization based on soil studies), the use of intercropping, legumes in crop structure. This is also achieved by restricting the number of agrotechnical procedures. After the harvest, the stubble aggregate runs only once and immediately the first mixing takes place with a later sowing of intercrop.

The farmer applies a soil improver – a natural liquid concentrate containing micro-organisms and macro- and microelements. On most of his land, simplified ploughing is used. Straw is fully mulched and shallowly mixed with the soil.

It has been observed that due to the use of crop rotation, intercrops and a simplified cultivation method there is better water retention in the soil, which is important for light soils. The soil structure has improved and the number of meso-fauna is increased. Generally speaking, biological life of the soil has been stimulated.

The farmer is already implementing the second edition of the Rural Development Programme with measures for sustainable agriculture and soil and water protection.

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Tadeusz Błauciak

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Nowiny Wielkie (Lubuskie Voivodship)

Type of farm: animal production: Limousin beef cattle (190 animals) and crop production: winter rye, grass mixtures with papilionaceous and corn for silage and haylage (139.09 ha)

Tadeusz uses traditional farming methods based on natural fertilization. The animals are kept in a free range system. In the winter, they stay in shelters on deep litter with concreted paddocks. The manure is removed and stored on a hardened ground. During the spring-summer-autumn season the animals graze on grassland divided into plots, along which buffer strips are planted with shrubs, trees and ditches overgrown with vegetation. Green areas are fenced, which protects them from being damaged by the cattle.

Rotational grazing in plots ensures an even introduction of dung and a limited manure production.

The farm is managed according to sustainability requirements. Even mineral fertilizers were eliminated while the amount of chemicals used was reduced. Manure is used on arable land where feed producing crops are planted. Buffer strips stop the outflow of nitrogen and phosphorus, which is limited in this farm (produced only by animals).

Nutrients that get into the water are collected and processed by water plants. A farm managed in this manner with its animal husbandry, to a very large extent protects from and limits runoff of pollutants into the catchment area of the Warta River.

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Jarosław Buczek

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Ochotnica Górna (Lesser Poland Voivodeship)

Type of farm: animal production; grazing sheep using a traditional method in the NATURA 2000 site Ostoja Gorczańska (400 animals), (100 ha, including 20 ha leased and 80 hectares used on the basis of an agreement with the owners)

The farm was founded in 2010 in order to restore pasturing in the Gorce mountains in Ochotnica Górna. Grazing is carried out using traditional methods. In the period from May to October sheep belonging to several owners are collected and grazed on mountain pastures. Two shepherd helpers – called juhas [you-has] – are hired for the grazing season. The chief shepherd, called the baca [ba-tsah], is responsible for organizing work. He concludes agreements with owners of clearing and sheep breeders.

Natural fertilization of the clearings is used by rotational grazing in plots, i.e. bringing the sheep back at night in a fenced area. The fence is moved every 2 nights.

According to the research results by institutes of animal husbandry, 1 sheep produces about 1.5 litres of urine/night. 400 sheep (the herd grazed in plots) produces 600 litres of urine/night, i.e. within two nights they excrete 1200 l of urine. This is the recommended dose. The fences used in 1 season are then left out for 4 years. During this period they are mowed and grazed.

For many years Mr. Jarosław Buczek has been promoting the contemporary pattern, which takes into account the economic aspects and refers to the centuries-old tradition of extensive pastoral activity in the mountain pastures, as a very good way to protect the natural heritage of the Gorce Mountains and in a wider perspective also the Baltic Sea catchment area.

Janusz Bystron

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Sławki (Pomeranian Voivodeship)

Type of farm: crop production: high-protein cereals for own supplies; animal production: reproductive geese (1800 animals), broilers (100 thousand animals /year) – (31.58 ha)

On his farm Janusz implements agri-environmental programmes. In order to reduce the outflow of nutrients, fertilization is performed based on current soil testing results and according to a carefully elaborated fertilization plan. Catch crops are used (to retain phosphorus, nitrogen) in order to accumulate organic matter in the soil and protect against erosion.

Animals are kept on litter and poultry manure that is composted before being transferred to a manure pad for a period of approximately one year. Modern equipment for precise application of manure (as well as mineral fertilizers) and direct ploughing allows to reduce the outflow of nutrients. The farm has limited the use of chemical plant protection products by maintaining appropriate agro-technical deadlines, observing hazard thresholds for pathogens and using a modern, precise sprayer.

In the meadows adjacent to the Rąty Lake, the owner does not perform any agro-technical procedures and these parts are not fertilized. There are indicator species for wet meadows dwelling here, for e.g. bistort, *Lotus pedunculatus*, *Lychnis flos-cuculi*, cabbage thistle or globe flower (protected species). The lake and meadows constitute waterfowl reserves, which proves that they are very clean.

Janusz built a small fishing cabin available to all where ornithologists and bird lovers can observe waterfowl.

Educational meetings for farmers from all over the county are also held on the farm.

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Leszek Glezer

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

Location: Pławin (Lubuskie Voivodeship)

Type of farm: organic farm specializing in deer and fallow deer breeding (1.5k animals), (300 ha)

Mr Glezer is the owner of the largest deer herd in Poland. At 1500 animals, he supplies both domestic and international markets. The breeding requires vast areas of grassland divided into grazing sections as well as winter sections that grow fodder for the colder season. These are divided by buffer strips with trees and shrubbery. The lowest area of the farm has three ponds surrounded by trees and shrubbery and bursting with aquatic vegetation. All the plantings are fenced in to prevent damage by the deer. Rotational grazing in plots and keeping the animals out in the open all year round ensures uniform stream of faeces introduced to the ecosystem. Buffer strips manage to contain the limited nitrogen and phosphorous runoff. Leached nutrients that still get into the water are processed by vegetation in the ponds.

The farmer has been working together with agricultural researchers from the West Pomeranian University of Technology, University of Warmia and Mazuria and Warsaw University of Life Sciences for many years now.

He was the first in his region to win in the category of "Best Organic Farm" in the 2012 national competition.

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Damian Groszek

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

Location: Kujawy (Opole Voivodeship)

Type of farm: organic farm; plant production: legumes, mustard, grains, millet, potatoes and vegetables; animal production: sheep (10 animals) for manure and wool (8.83 ha)

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Mr Groszek's farm operates according to a biodynamic crop calendar. The production focuses on leguminous plants conducive to nitrogen fixation in an environmentally friendly manner as well as the establishment of positive balance for soil organic matter. Farm animals are kept on deep litter cleaned out every six month and then mixed with soil, straw and seed cleaning waste (to achieve C to N balance that would limit release of N into soil, water and air to a minimum) and composted in heaps.

The only fertilizer used is composted manure. After the main crop is harvested, straw is grinded and mixed with the soil using a cultivator, without inverting the upper layer. Then inter- and wintercrops are sown in to protect the soil and, consequently, the water as well, as they serve as so-called catch crops that contain nutrients and improve organic matter balance. No skimming or deep inversion ploughing is performed to avoid drying the soil. Liquid manure with extracts from plants such as nettle, tansy and thistle is used. No signs of eutrophication in the watercourse adjacent to the farm indicates limited nutrient effluence. Mr Groszek is always willing to provide free of charge advice on leguminous crops and environmental protection to conventional farmers.

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Sylwester Imiołek

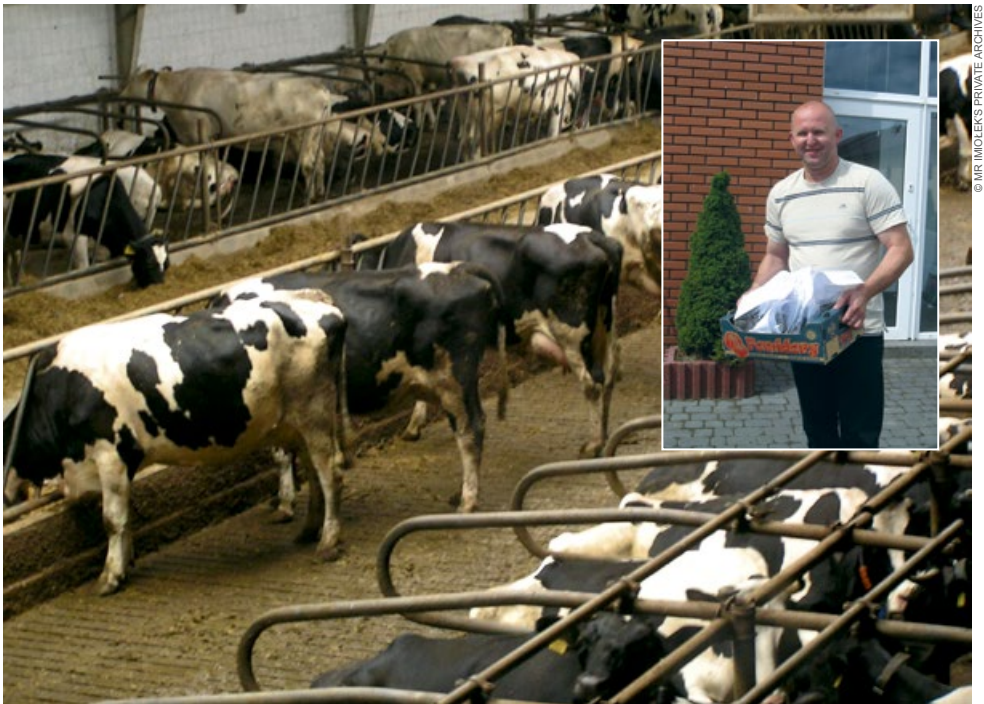
Location: Krępa (Lodz Voivodeship)

Type of farm: plant production: corn for silage and grass for haylage; animal production: dairy cattle (350 animals including 200 dairy cows), (280 ha)

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

The farm specializes in milk production. The animals are kept in free stall slatted barns with matting (feeders with litter), equipped with liquid manure tanks. The facilities are well maintained to limit ammonia emissions. Manure collection and storage in tanks facilitates optimized timing of its use according to plant capacity to effectively process nitrogen and phosphorus. The farm also carries out regular tests of soil and natural fertilizer content, thus rationalizing the supplementation process. Cattle feed is stored in solid feed silos and silage in airtight tanks.

The owner invests in modern technological solutions to limit the use of pesticides and fertilizers. He collaborates with the Institute of Technology and Life Sciences (Instytut Technologiczno-Przyrodniczy, ITP) in Falenty that studies samples of water from piezometers and drainage ditches. Since June 2011, Mr Imiołek's farm has been a model farm within, among others, the "Baltic Deal" – project. The farm get much attention from visiting groups of farmers, specialists, agricultural sector employees and authorities working with farmers in Poland and abroad, including researchers from Polish and international institutions. The farm uses a modern environmentally friendly domestic sewage treatment plant.



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Piotr Łukaszewicz

Location: Broniewo
(Kuyavian-Pomeranian Voivodeship)

Type of farm: plant production: winter rapeseed, sugar beet, starch potato, winter triticale, oats, spring barley, corn for grain and silage, winter wheat, pastures and meadows: animal production: pigs and sheep, (99 ha)

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

On this farm pigs are kept in an open system (selling 400 animals a year) and there is a flock of Polish Merino sheep protected under a genetic resource protection program (350 animals). On top of animal production, the farm also produces its own feed. Animal waste is collected with the use of a manure pad with a tank for effluents. Part of the natural fertilizer volume is mixed with soil by ploughing or skimming; the rest is removed.

The owner adheres to buffer zones established in the vicinity of watercourses. In order to minimize use of plant protection products, split doses, adjuvants and low-drift nozzles are utilized, in line with integrated pest management provisions. In terms of crops planning, the farm has implemented rational crop rotation (4-field-gun) and intermediate crops (mustard) and follows guidelines as to specified varieties recommended for the voivodeship.

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Mr Łukasiewicz implements 4 packages of the „agri-environmental program", including Package 3: Extensive permanent grassland (extensive meadows and pastures in Natura 2000 areas) and Package 8. Soil and water protection (stubble intercrop).

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Marek Matuszak

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

Location: Janowica (Lublin Voivodeship)

Type of farm: organic farm focusing on plant and vegetable production; animal production: Malopolski and SP horses (12 animals), Polish Red dairy cows (36.5 ha)

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The farm specializes in growing pumpkins; other crops include lentils, soybeans, spelt, small spelt (a traditional wheat variety), buckwheat, spring rapeseed and oats.

Microorganisms are used to reduce temperature of manure storage on a pad, reducing nitrogen loss to atmosphere. The farm uses crop rotation (cereals following vegetables), forecrops (e.g. rye before pumpkin or red clover before leek) and catch crops. Soil analysis is performed systematically every 2-3 years and depending on the outcome liming or chalk supplementation (for vegetables) is undertaken to improve soil structure, enhance nutrient use and improve nitrogen binding by leguminous plants.

The farm has a pond with an area of 8 acres. Multiple woodlots and coppers are covered with wild vegetation and are a refuge for wild animals, birds and insects. A home sewage treatment plant and water heating solar panels are an additional effort to lower environmental impact.

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Mr Matuszak is always willing to share his expertise, his farm participates in the ERASMUS+ project associated with the functioning of the Organic Production Folk High-School.

Kazimierz Niwiadomy

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Bielsko-Biała (Silesian Voivodeship)

Type of farm: plant production: cereals, legumes, root crops, permanent grassland; animal production: bovines for fattening (15 animals per year on average), (60 ha, including more than 10 ha of arable land)

80% of the farm's arable land is allocated to grass mixes and permanent grassland. Any cultivation related procedures (fertilization, mowing etc.) are only undertaken when the soil is relatively dry so as not to leave ruts that could change the direction of precipitation flow. At the beginning of the growing season he applies decomposed manure that mineralizes relatively fast, with released nutrients fully absorbed by the rapidly developing spring vegetation, minimizing nutrient leaching into the soil. During fall season manure is only used as fertilizer for the winter crops. Intercrops (mustard, buckwheat) protect the soil from water erosion preventing the effluence of nitrogen and phosphorous left after the growing season. Additionally, biomass left for late fall is a source of nutrition for forest animals. The fields are interspersed with trees, shrubs and coppers that provide refuge to insects, birds and small animals while at the same time reinforcing stretches of arable land located on slopes with its root systems. The inclined fields are always cultivated across the slope to prevent surface runoff. For a few years both natural and mineral fertilizers are applied based on soil testing results and a fertilization and nitrogen balance plan is calculated.

Cattle breeding with the use of natural feed reduces methane emission levels while an airtight liquid manure tank and a manure pad prevent effluent leaching. Haylage is prepared in form of bales wrapped in impermeable plastic.

The owner has always limited the use of plant protection products to a bare minimum due to his proximity to Bielsko Biała municipal drinking water system intake and residential areas. On top of that, the objective is to protect biodiversity of fields and waterways in the neighbourhood and to avoid pesticide residue in agricultural crops. These are achieved by the cultivation of stubble intercrops that reduce the quantity of weeds in crops, thus cutting the required herbicide use. Introducing a 5-year crop rotation scheme with three plant groups has eliminated the incidence of troublesome stem base diseases affecting cereals.
Mr Niwiadomy is always willing to share his expertise with local farmers.

Iwona and Andrzej Olejniczak

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Dąbkowice (Lodz Voivodeship)

Type of farm: plant production: winter rapeseed, corn for grain, winter wheat; animal production: pig rearing and fattening in a closed cycle (430 sows), (115 ha)

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As an industrial pig farm (selling 11 000 finishers a year), it keeps the animals in a bedding system, partly with grates. The facilities are equipped with two liquid manure tanks with respective volumes of 1034 m^3 and 2212 m^3 as well as manure pad that improves natural fertilizer management.

The buildings have a computer controlled ventilation and air conditioning system in order to optimize the ambient temperature (too warm environment contributes to elevated ammonia emissions) and reduce electricity consumption. The farm also produces its own animal feed. Phase feeding and wet feeding significantly reduce ammonia and phosphorus emissions to the environment. Plant production involves the use of catch crops used for mulch.

The farm cooperates with the Institute of Technology and Life-Sciences which tests its water samples.

Since 2011, the Olejniczaks' farm has been a model farm under a FAPA to be raised: "Good agricultural practices in areas particularly vulnerable to nitrates of agricultural origin (OSN)" project. They have also participated in the "Baltic Deal" project.

The Olejniczaks have won many competitions and received multiple awards. They are always happy to receive groups of farmers, specialists and students at their farm.

Janina Saacke

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

Location: Wrabczynkowskie Holendry (Greater Poland Voivodeship)

Type of farm: organic farm; animal production: dairy cattle, chickens, geese, rabbits, pigs; animal production: cereals, vegetables, herbs, black currant (32 ha)

Ms Saacke's farm utilizes a homemade biodynamic preparations for plant protection. Manure, straw and hay are processed into compost mixes in a designated area. With proper composting process and balanced compost prism ingredients both nitrogen and phosphorus emissions are maintained way below the norm.

For 15 years the farm has been using solar power – the installed solar panels virtually eradicate carbon dioxide generation related to household water heating from April until October.

In 2011, the farm got first place in the voivodeship and second in the country in the to be raised: „Ecology – environment" category. In 2014, it served as a model for practices fostering closed mineral cycles on an individual farm level. The owners also conduct experiments in compost usage, host school trips and train interested individuals in manufacturing biodynamic preparations. The farm collaborates with foreign higher education institutions including the University of Humboldt, Germany and its researchers. Since 1996, the farm has held to be raised: „Demeter" and „Ökol" certificates, too.

The farm and pond enjoy high levels of fauna and flora diversity.

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Mirosław Serafinowicz

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Grabina Wielka (Greater Poland Voivodeship)

Type of farm: organic farm; plant production: vegetables (cabbage, potatoes, carrots, onions, pumpkins, beetroot, leeks, parsley, cucumbers), winter rye, winter triticale, winter wheat, yellow lupine and California bluebell for seeds (43.78 ha)

© MR STEFANOWICZ'S PRIVATE ARCHIVES

On his farm, Mr Serafinowicz uses only organic and green fertilizers (compost made from plant waste, grass and straw; sowing after- and intercrops). In spite of abstaining from artificial nitrogen and phosphorus, satisfactory crop levels are recorded. Soil and crops are conditioned with solutions containing live bacteria strains that enhance mineralization rates and nitrogen binding in soil, at the same time improving plant health. Plant brews, extracts and plant-infused liquid manure made with nettle, tansy and tomato replace foliar fertilizers with nitrogen and phosphorus content. Soil quality and structure improvement were recorded (with increased hummus content, improved absorption capacity, lack of caking). This in turn has resulted in reduced fuel consumption related to fewer agro-technical procedures required. The farm also uses catch crops (e.g. mustard) and includes a pond surrounded by poplars and willows – a haven for birds.

The farm was selected as a model farm by the Agricultural Advisory Centre and as such it receives groups of farmers, agricultural school students and advisors. It also serves as an information and training centre for individual interested in organic farming, offering demonstrations in compost, plant brew and plant extract preparation. The farm also has a pest and weed monitoring system in place together with a computerized field weather station. In 2013, it has received a Third Place Minister of Agri-culture and Rural Development Award for the best organic farm in the "ecology – environment" category.

Peter Stratenwerth

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Grzybów (Masovian Voivodeship)

Type of farm: organic farm; plant production: cereals, legumes (serradella, lupine, alfalfa), pumpkins, turnips and fodder beets; animal production: cows, dairy goats (26 goats, 7 cows, 3 heifers), 2 horses (28 ha)

The farm was established in 1989 by Peter Stratenwerth and was one of the first in Poland to receive the certified organic status in 1991. No chemical pesticides or artificial fertilizers have ever been used. The animals are free range, with deep litter in their barns/stables, and the manure is partially composted and spread out in grasslands in spring and autumn. The legumes, used as green fertilizers, take up roughly 25% of the crops. Some of the meadows are in extensive use and as such mowed late (in July), which supports biodiversity among insect, amphibians and bird species. Farm foliage and shrubbery is replenished on a regular basis. The farm also has ponds, one of them with a reed sewage treatment plant.

The owners are more than willing to share their knowledge during workshops organized for adults and children.

Joanna i Adam Szymańscy

Honorable mention
at the 2015 National Baltic Sea
Farmer of the Year Award

Location: Łukawa (Świętokrzyskie Voivodeship)

Type of farm: plant production: sugar beets, wheat, mixed cereals, peas; animal production: pigs in a closed cycle (a boar, 28 sows, 82 feeders, 69 weaners, 62 piglets), (26.81 ha)

The plant production on the Szymańscy's farm follows the integrated plant protection principles, wherein pathogen occurrence is limited through the application of crop rotation, tillage operations and antagonistic plant sowing. For nine years now, the farm has participated in the Agri-environmental Program (sustainable agriculture program and soil and water protection program). Intercrops (legumes) are used to contain water and prevent wind erosion and serve as sources of organic matter and nutrients, at the same time radically limiting the runoff of nutrients into groundwater. A fertilization plan prepared for the farm based on updated soil fertility analysis balances nutritional needs of plants with soil fertility for individual nutrients such as nitrogen, phosphorus, potassium and magnesium and provided recommendations as to the use of calcium and natural fertilizers. The owner ploughs under the post-harvest residue to stimulate soil life and reduce the use of mineral fertilizers; the procedure also reduces the number of agricultural equipment passages through the fields thus reducing fuel consumption.

Animals are kept in a modern, well equipped pigsty compliant with to-date animal welfare requirements, including a manure pad and a liquid manure tank.

The owners strive to maintain biodiversity and landscape components by preserving enclaves of natural vegetation that are a mainstay of native fauna and flora, both on the farm and in its neighbourhood. During the melliferous plants blooming season, the farm hosts bee hives.

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Polish Organic Farm Foundation „ECOFARM”

Location: Małkowo i Wyczechowo (pomorskie voivodeship)

Type of farm: organic farm; animal production: Holstein Friesian cattle (220 cows); plant production: subsistence plants – (Małkowo 9.92 ha, Wyczechowo 249.50 ha)

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

Both farms are run by the “ECOFARM” foundation. Their core activity is organic milk production and sales to an organic dairy. The farms have not used pesticides since 1993. Carefully arranged crop rotation and undersown legumes prevent the occurrence of weeds, crop diseases and pests. At the Małkowo farm, cattle is kept on deep litter. Manure is taken out in the spring to ensure maximum utilization of nutrients to limit their leaching into the groundwater and ammonia release into the atmosphere. Liquid manure on both farms is contained in airtight tanks with the naturally forming crust preventing gas emissions. Roughage is prepared in form of haylage, in plastic-wrapped bales, considerably reducing leakage of nutrients into the soil. A pond on the farm is a clear indicator of positive environmental changes recorded over time – over the first few years of “ECOFARM” existence it was devoid of biological life. Now the water is clean and the pond is home to many bird and fish species.

The farms invite groups of farmers interested in organic production. There is an internship program in place for agricultural school students as well that takes advantage of the staff’s know-how. Vocational school students can learn the farming occupation there, too. In 2014, modern technological solutions reducing gas emissions and green silage harvesting for haylage by means of modern environmentally friendly methods were presented to 130 farmers. The Wyczechowo farm participates in the “Protecting endangered bird species and natural habitats outside NATURA 2000 areas” program, “Semi wet meadows” option due to presence of the following vascular plant species: bistort, *Cirsium oleraceum*, *Lotus uliginosus*, *Geum rivale*, *Lychnis flos-cuculi* and *Trollius europaeus* as well as natural *Carex meadows*.

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Experimental Unit of the National Research Institute of Animal Production PRI* Grodziec Śląski Sp. z o.o.

Location: Grodziec, Jaworze, Roztropice and Kostkowice farms (Silesian Voivodeship)

Type of farm: animal production: Holstein Friesian and Polish Red cattle, pigs, sheep bred for meat, fish (carp, African catfish); plant production: cereals, rapeseed, corn, energy willow; the Jaworze farm was formatted for organic production (1056 ha)

The Experimental Unit of the National Research Institute of Animal Production Grodziec Śląski is an active promoter of renewable energy use, with its farms constituting important locations for research. A Renewable Energy Sources Research and Training Centre was established in Kostkowice, consisting of an agricultural biogas plant, an agricultural refinery, a wind turbine, solar panels and a heat exchanger to recover heat from milk cooling. The agricultural biogas plant with a power of 600 kW is an experimental installation processing a wide range of components, both of agricultural origin (manure, liquid manure, slurry, silage, residues from feed bunk) and waste biomass from the agri-food industry. Since 2012, the Unit has been processing biodegradable waste in an R3 process in order to lengthen the list of components to be processed by the biogas plant as a substrate for electricity generation from biogas. Recovery is performed on a disc digester. Substrate components are applied according to specific recipes to optimize the methane fermentation process and biogas generation. The electricity powers the farm with excess transmitted to the national grid. Thermal energy is used to heat the fermenter and livestock facilities at the Pig Farm and the African Catfish building. Animals are fed with rapeseed cake (a by-product of the agricultural refinery), an alternative to expensive exported soybean meal. The Renewable Energy Sources Centre serves as a research site, a facility allowing pupils and students to carry out experiments to further their studies and develop diploma theses and a traning centre for teachers who can expand their knowledge of renewable energy sources. Over the past 4 years, the Centre has had over 1000 visitors.

Honorable mention at the 2015 National Baltic Sea Farmer of the Year Award

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** PRI – Polish Research Institute*

INFORMATION ON THE WWF BALTIC SEA FARMER OF THE YEAR AWARD

In order to show its support to the agricultural sector and to disseminate knowledge on good agricultural practices used in the region, WWF has established a Baltic Sea Farmer of the Year Award in collaboration with agricultural organizations from the Baltic region.

The competition has been organized each year starting from 2009 in all Baltic coastal countries. It aims at encouraging farmers from the whole Baltic Sea region to take an active stand against eutrophication. Entries come from both organic and conventional farmers, all types of farming practices.

National winners are selected by respective national juries and receive awards of 1000 euro each. The international jury selects one international winner to get an additional prize of 10,000 Euros out of all national 1st place winners.

Members of the Polish jury in 2015

Bogusław Rzeźnicki
Director, Department of Plant Breeding and Protection, Ministry of Agriculture and Rural Development

Monika Zabrzeńska-Chaterera
Head, Department of Fertilization Impact Assessment on the Soil and Aquatic Environment, Department of Plant Breeding and Protection, Ministry of Agriculture and Rural Development

Karina Makarewicz
Senior Specialist, Department of Fertilization Impact Assessment on the Soil and Aquatic Environment, Department of Plant Breeding and Protection, Ministry of Agriculture and Rural Development

Monika Lesz
Advisor to the Minister, Department of Convention, Forestry and Nature Conservation Unit, Ministry of the Environment

Weronika Kosiń
Specialist, Department of Water Management Planning, Planning and Water Resources Unit, National Water Management Authority

Justyna Fila
Specialist, Agricultural Advisory Centre, Radom Branch

Dorota Metera
Organic Farming Expert, Bioekspert Sp. z o.o.

Marta Kalinowska – WWF Poland

Anna Sosnowska – WWF Poland

Katarzyna Lubczyńska-Saffell
WWF Consultant for the Baltic Sear Farmer of the Year Competition

METHODS OF REDUCING NUTRIENT LOSSES FOR FARMS

Methods presented below are ones used by winners and finalists of the WWF Baltic Sea Farmer of the Year Award:

PLANT PRODUCTION

Crop rotation, catch crops and intercrops help optimize nutrient absorption by crops, minimizing the need for fertilizer. Furthermore, these methods help to maintain adequate soil nutrient balance and prevent the occurrence of weeds and pests. Many farmers include nitrogen binding plants in their rotations to provide other crops with access to biologically bound nitrogen.

No-tillage farming and direct sowing save resources by minimizing required procedures. Moreover, soil quality improves and additional space emerges to enhance biodiversity.

Maintaining year-round plant cover means that there are always some plants to capture nutrients that would otherwise mineralize in the soil.

Buffer zones along ditches, streams, ponds and lakes to reduce runoff of nutrients to the surrounding waters.

Use of precision farming techniques minimizes the use of resources as well as risk of excessive fertilization.

Agricultural computers and software can be used to plan and maintain farming operations such as crop rotation and fertilization.

Soil and nutrient content analysis and mapping help to determine precise quantities of required fertilizer if performed on a regular basis.

Dewatering system monitoring help the farmer in applying adequate fertilizer doses and avoiding their use in areas with high risk of leakage.

Use of natural fertilizers only and control of pesticides, most commonly associated with organic farming, radically reduce or completely eliminate the runoff of chemicals.

Crop diversification improves plant protection and soil quality and increases biodiversity.

Structural soil liming reduces surface water runoff and reduces the loss of nutrients, particularly phosphorus. Better soil structure makes ploughing easier thus reducing fuel consumption.

Using composted manure on the fields is a natural method of fertilization; further addition of sulfur and trace elements to the mix supports the plants in a more efficient use of nutrients. The manure should be scattered only during the growing season and plowed into the soil immediately after application.

ANIMAL PRODUCTION

Solid barn floor – e.g. made of clay or concrete – prevents leakage of liquid animal faeces to groundwater.

Proper manure storage, e.g. in containers and tanks with impermeable base can prevent leakage. Covering such storage tanks with lids or plastic or allowing the formation of a natural shell prevents gas emissions.

Reduction of ammonia emissions and resulting nitrogen losses while improving air quality can be achieved by adding basalt dust to manure and installing air filters in the animal stalls. In addition, the use of lower protein content feed and maintain lower interior temperature in barns helps reduce ammonia levels.

Reducing the number of animals per hectare can ensure absorption of the whole manure by the soil.

Cleaning stalls, facilities and cages without water helps avoid runoff of pollutants into surrounding waters.

Maintaining permanent grasslands for grazing also reduces the nutrient losses with more carbon captured in the soil and preserves biodiversity.

Rotational cattle grazing in plots provides grasslands with nutrient doses that can be immediately utilized by plants. This way of grazing eliminates the need for manure storage and thus the risk of nutrients leaching into water.

Assigning grazing plots for cattle so that they only have the shortest side adjacent to the river/watercourse. This minimizes surface runoff of faeces left by grazing animals.

GENERAL METHODS

Recycling of water, waste and other resources helps close the natural cycles. Water recycling systems help savings in terms of both heating and water. Additionally, wastewater treatment plants can be used to convert household waste into fertilizer used for crop production.

Zoned cultivation, i,e. use of varying intensity crops in different parts of the farm allows optimal use of farmland in order to reduce nutrient losses and preserve biodiversity.

Wetlands and ponds on the farm allow the retention of nutrients in growing biomass and sediments and thus reduce nutrient leakage. They also provide habitats for wild animals and plants.

Trees and shrubs between fields help to reduce nutrient loss and erosion and are also conducive to maintaining biodiversity.

Cooperation between farmers, organizations and other interested stakeholders is a great way to share knowledge about environmentally friendly farming methods and helps disseminate best practices.

WWF Baltic Ecoregion Programme

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DELIVERING RESULTS

We are an active and effective agent of change in the conservation and sustainable management of the Baltic Sea

REGIONAL NETWORK

We represent the largest membership network in the region and are represented in all the countries surrounding the Baltic Sea

INFLUENCE REGIONAL POLICY

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature

COOPERATION

We promote constructive interactions to create awareness, spread ideas and stimulate discussion among stakeholders and partners

Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

More information at **wwf.pl**

BALTIC SEA AGRICULTURAL SOLUTIONS - BEST PRACTICES OF BALTIC-FRIENDLY AGRICULTURE

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