

WWF Baltic Sea Farmer of the Year Award 2018



Drone aerial view of Nemunas, a major river in Eastern Europe. It rises in Belarus and flows through Lithuania before draining into the Curonian Lagoon, and finally into the Baltic Sea.

LAND-BASED SOLUTIONS Are needed more than ever

Although signs of improvement can be seen, recent assessments indicate that about 97% of the Baltic Sea is still affected by eutrophication. Agricultural measures to reduce nutrient runoff, like those highlighted in this brochure, remain a critical part of the solution.

Eutrophication of the Baltic Sea has been going on for decades and, according to one recent study, the levels of hypoxia we see in coastal waters today are unprecedented over the last 1,500 years. As a semi-enclosed, intercontinental shelf sea, the Baltic Sea is particularly sensitive to the effects of nutrient runoff. An excess of nutrients, such as phosphorus and nitrogen, leads to a severe disruption of the ecosystem, with effects including extensive algal blooms, lack of oxygen in deep waters, and an increase of bottom areas with little or no oxygen – so-called 'dead zones.'

The good news is that many of the worst point sources of pollution have already been addressed and significant gains have been made, including by improving wastewater treatment facilities and addressing industry runoff. However, agricultural activities

"Working together with farmers to implement methods that keep nutrients and water on land, utilize fertilizers more efficiently and reduce runoff is more important than ever." which account for nearly half of all nitrogen and phosphorus input – continue to be a major source of nutrient loading to the Baltic Sea.

Addressing nutrient runoff in such a large catchment area over several countries is a challenge. Agricultural loads mostly originate from non-point sources and are discharged over a wide area of land. Furthermore, farming in the Baltic Sea varies from country to country in climate, soil, water and socio-economic circumstances.

Intensifying the challenge is a recent trend indicating a structural transformation. Largely driven by technological advances and profit incentives, farms around the Baltic Sea are becoming more specialized, and larger and fewer in number. This can especially be seen in Germany, Denmark and Sweden, as well as in Poland – which contains 40% of all agricultural land within the Baltic Sea catchment. Among other potential environmental consequences, is a significant increase of manure and other fertilizers which, if mismanaged, can further exacerbate the problem of eutrophication.

Another concerning trend is climate change which was experienced through this year's exceptionally warm weather and drought. Such extreme climate conditions can have a devastating impact on farmers across the region – also affecting groundwater and likely increasing nutrient flow to the Baltic due to low nutrient uptake by crops.

Amid such challenges, working together with farmers to implement methods that keep nutrients and water on land, utilize fertilizers more efficiently and reduce runoff is more important than ever. A commitment to caring for the environment and making active choices to use greener agricultural methods can help preserve and restore critical habitats, protect watersheds, and improve soil health and water quality in addition to providing the region with food and jobs.

Regional support is needed too. Policy reforms, regulatory frameworks, improved market conditions and greater environmental awareness can all help the Baltic Sea region collectively make the urgently needed transition to a sustainable agricultural model.

Highlighting good examples and best practices is also a vital part of the solution. The leadership demonstrated by the farmers through the Baltic Sea Farmer of the Year Award continues to be an inspiration towards this end.



AN AWARD FOR FARMERS WHO MAKE A DIFFERENCE

Many farmers are prepared to go the extra mile in order to help save the Baltic Sea. The winners of the Baltic Sea Farmer of the Year Award have all taken measures on their own initiative to reduce nutrient runoff. With this award, WWF aims to highlight how important this work is and showcase good examples across the region.

A lesson learned from the Baltic Sea Farmer of the Year Award contest over the years is that cooperation among farmers, together with open minds for new research-based methods and techniques, is a winning concept.

The competition was first introduced in 2009 as a way to inspire farmers and decision makers in the agricultural sector, by highlighting concrete examples of the positive measures farmers are applying to reduce nutrient runoff around the Baltic Sea. Each of the eleven jury-selected winners serves as a role model, both to other farmers and the agricultural sector at large.

This year's winning farms are diverse in size and type, ranging from a small biodynamic organic farm to an 800 hectare conventional crop and livestock farm. The socio-economic and political situation for farming in the nine Baltic countries varies widely, and is clearly reflected in the diversity among the winners of this year's competition.

Each farmer has a unique story to tell about the methods they have tried and implemented to address nutrient runoff, as well as the benefits – both planned and unexpected – they have experienced as a result.

On the following pages you will have the chance to meet these farmers and learn more about the actions they are taking, and how they are collectively making a difference for the Baltic Sea – please read on and be inspired! In 2015, farmers Minna Sakki-Eerola and Markus Eerola received the Regional Farmer of the Year Award for the innovative techniques and activities on their organic farm. The recognition has helped Markus and Minna continue to make progress.

"The greatest advantage of the award has been the new networks and dialogues, which have enabled us to develop our operations for broader application," says Markus.

Knehtilä Farm is now the centre of a new kind of food production model called Palopuro Agroecological Symbiosis. Together with a biogas plant, a food procesessing company and other nearby farms, they are developing an economical and environmentally friendly collaboration model that combines local food and biogas production to produce food locally using recycled nutrients and bioenergy. The model reduces waste and emissions, while maintaining good soil structure and fertility. The symbiosis also builds communality by hosting farmers markets and giving consumers the opportunity to become more familiar with the whole production chain

The Palopuro Symbiosis model is expected to be fully operational in the coming years, and as a next step, will be applied to other producer communities to help them respond to global challenges using local solutions.

Learn more at www.palopurosymbiosis.com

BALTIC SEA FARMER OF THE YEAR AWARD 2018 WINNERS

The Baltic Sea catchment area is four times the size of the Baltic Sea itself, encompassing 14 countries and around 90 million people. Given the wide diversity of terrain, natural resources and socioeconomic conditions, adapted and united action to protect the Baltic Sea from eutrophication is all-important.

The catchment area is marked in a light blue colour.

Finland: Tuomas and liris Mattila, Kilpiä Farm

Russia: Igor and Irina Rudenko, Zarechye Farm

Denmark: Ole Lyngby Pedersen, I/S Faurgård Sweden: Christoffer Bonthron and Erik Bengtsson, Karlsfälts Farm

Estonia: Viljar Veidenberg, Pajumäe Farm

Latvia: Andris Kalniņš, Ozoli Farm

Lithuania: Vaiva Jundulaitė-Kosienė and Giedrius Kosas, Miško Sodai Farm

Germany: Alfred and Angelika Stender, Kroghof Farm Poland: Krzysztof Kowalski, Kowalski Farm Ukraine: Bogdan Kostiv, Kostiv R.P. Farm

Belarus: Kanstantsin Chychyra, Kanstantsin Chychyra LPH

POLAND **Second Science** Krzysztof Kowalski

Krzysztof Kowalski's farming methods protect nearby waters, preserve biodiversity and yield better products.



Kowalski Farm is a multi-generation crop and livestock farm run by Krzysztof Kowalski, who took over operations in 1984. The farm is revered for its production of award-winning cold pressed flax and rapeseed oils, and for breeding and conserving the Zlotnicka Biala pig. Krzysztof says he inherited his current, "pro-ecological"

inherited his current, "pro-ecological" way of farming from his father and grandfather, who always managed the farm with utmost respect for the environment.

"My grandfather and father thought that nature would handle any pest and disease well – the only condition was not to disturb her," says Krzysztof.

Krzysztof first became aware of the problem of eutrophication while he and his wife were visiting family near Goldapia Lake. "We went swimming in the lake and noticed that the colour of the water was intensely green," he recalls. "I learned from my family living in the area that the lake blooms every year, especially in sunny and hot summers ... I realized that this process was caused by the intensification of agriculture. This experience influenced me to use mineral fertilizers more economically."

Today, Krzysztof has many methods in place to protect against nutrient runoff. In addition to the careful and well-timed application of mineral and natural fertilizers, a variety of crops are kept in rotation on the fields, including stubble crops, catch crops and fabaceae plants. The farm additionally has nine midfield wetlands and various buffer zones. Last year, Krzysztof and his family planted 1,080 trees along the river and between the fields – which, besides helping prevent runoff, also creates habitats for wild animals.

Krzysztof can see the positive results of his practices reflected in the land, wildlife, and economy of the farm. Every year, the water and feed are tested for nitrates and pesticides – and the results are consistently negative.

"The purpose of my life is to give my children the farm in even better condition than when I received it from my father, and I think that will be possible."



Earthworms are abundant, an indication of high soil fertility, and the farm's 30 bee colonies are thriving. Krzysztof is also saving money on the purchase of mineral fertilizers through the alternative

use of natural fertilizers – manure and slurry. Another outcome is the increased popularity of Kowalski Farm products.

"Demand is many times greater than supply," says Krzysztof. "My products arouse great interest among farmers and students of agricultural schools. Therefore, I have built an education centre to give lectures to those who are interested."

Krzysztof Kowalski, Kowalski Farm

Location: Nasielsk in central Poland

Type of farm: Conventional crop and livestock farm (130 ha) **Main production:** Pigs and various crops – including cereals, rapeseed, flax and legumes

International jury motivation:

"The jury was impressed by the holistic approach towards sustainable crop and pig production taken by Mr. Kowalski at his farm. This farm has implemented an impressive range of measures to reduce nutrient leakage. Both measures such as midfield wetland construction and buffer zones, as well as good practices such as precise fertilization, soil liming and testing. The farm produces a traditional breed of pigs, and practices for environmentally friendly manure and slurry handling have been implemented. The farm retains and expands tree islands and forested buffers along the river and in between the fields which, in addition to reducing nutrient runoff, also protects wildlife and biodiversity. Helping pollinators by maintaining hives also contributes to keeping the farm in harmony with nature. Apart from the wide range of measures taken by Mr. Kowalski at his farm, he is also actively engaged in cooperation with other farmers to spread and communicate his experiences and knowledge, including as a member of the nationwide Network of Educational Farms."

Key practices:

Nine midfield wetlands, buffer zones, midfield margins, shrubs, shelter belt, cultivation of stubble crops (peas with flax) and fabaceae plants, places for storing natural fertilizers (wall tightness checked by tests), precise fertilization, soil liming, soil testing, annual testing of fodder and water for nitrates and pesticides.

DENMARK

Olle Lyngby Pedersen is among the first to establish constructed wetlands, and believes that cross-discipline collaboration is the key to innovation.

Situated between two adjoining

river valleys, I/S Faurgård is a third generation crop and livestock farm run by Ole Lyngby Pedersen and his brother Per. In 2008, their land turned into a testing ground when Ole participated in the LIFE AGWAPLAN project* and ended up pioneering one of Denmark's first constructed wetlands.

"It started with the idea of a 'winter wet meadow' but ended up as a constructed wetland ... approximately 20 metres wide and 140 metres long," recalls Ole.

Constructed wetlands, also known as subsurface flow constructed wetlands, are receiving an increasing amount of attention worldwide for their ability to act as natural wastewater treatment plants – effectively reducing concentrations of nitrogen and phosphorus from wastewater. Measurements from the pilot project Ole took part in showed an average reduced nitrogen loss of 25% and an average reduced phosphorus loss of 40-50%.

Ole was so enthusiastic about the results, he went on to establish a second constructed wetland. While the first wetland was constructed using wood chips, this time it was established successfully with an open basin.

The two wetlands pioneered on I/S Faurgård have had such a big impact on agricultural practices in Denmark, they have inspired the adoption of a nationwide subsidy scheme for constructed wetlands. The objective is to establish 1,000 to 2,000 constructed wetlands in Denmark by the end of 2021.

Today, Ole has become a vital actor in promoting awareness of constructed wetlands and their benefits — sharing his experience by hosting educational field trips, giving talks, and contributing to informational videos, articles, books and brochures.

In addition to constructed wetlands, Ole utilizes other key practices for the reduction of nutrient runoff, such as



fertilizer plans and accounts, and the strategic use of slurry and catch crops. But Ole is far from finished implementing new measures on his farm – this year he plans to experiment with saturated buffer zones. "Everyone can make an effort on their farm," says Ole. "I can only recommend to all my colleagues to map their land and identify possible actions and measures. For advice, having a catchment advisor is a great help."

*The LIFE AGWAPLAN project was led by the Danish Agricultural Advisory Service years 2005–2009 with the aim of demonstrating and quantifying the impact that good agricultural practices (GAPs) have on the reduction of nutrient content on surface and groundwater.

Ole Lyngby Pedersen, I/S Faurgård

Location: Odder in central Denmark

Type of farm: Conventional crop and livestock farm (250 ha)

Main production: Pigs, cereals, winter rapeseed and grass seed

National jury motivation:

"Ole Lyngby Pedersen and his constructed wetlands have been the site of numerous visits, excursions and field trips with big turnouts and acknowledgement. His engagement and measures have formed the basis of many fruitful discussions and helped inspire others to establish constructed wetlands. Ole is a really good ambassador and always invites all kinds of people to see what he is working with in the environmental field – a good way to spread information."

Key practices:

Constructed wetlands and constructed wetlands with woodchips, saturated buffer zones, fertilizer plans and fertilizer accounts, catch crops, drainage system mapping, soil testing, nitrate testing.

ESTONIA **ESTONIA** Viljar Veidenberg

"Working with nature has been our natural way of doing things since the very beginning," says Estonian winner Viljar Veidenberg.

In 1989, Viljar Veidenberg's father Arvo made the momentous decision to transition from growing plants and roses to dairy production, and Pajumäe Farm went from housing a single milking cow to 90 today.

Two generations work side by side to care for the cattle – which totals 200 heads, with milking cows and offspring combined – and cultivate grasses and other fodder crops. All milk is processed on site, and is used to make yoghurt, cheese and other products. In 2001, the dairy farm received its organic certification – something Viljar regards as a natural continuation of things.

Ever since the beginning of the farm's restoration, it has been important for the family that production does not damage the environment.

Viljar and his family employ both traditional organic farming methods and newer technology to manage their farm sustainably. A recently built, energy efficient dairy runs on solar energy and recycles water – helping to supply some of their energy needs while also reducing greenhouse gas emissions.

When it comes to reducing nutrient runoff, manure management is a critical strategy on Pajumäe Farm. A deep manure system has been established in the barn, from which

> "A stable customer base for our milk products has developed because people value our approach."

composted manure is removed once a year and spread on the fields as fertilizer. Additional strategies undertaken include crop rotation, soil analysis, and the use of buffer zones and wetlands.

For Viljar and his family, the efforts have been well worth it.

"We see many indicators that nature is in good health: small insects, earthworms, different plants and birds," he says.



value and practice at Pajumäe Farm. Viljar regularly cooperates with other farmers and organizations to exchange ideas, and hosts educational activities for visitors, including children. In addition, he works closely with the Estonian University of Life Sciences to help develop new, sustainable farming practices.

"It's never too late to take steps in the right direction, big or small," says Viljar.

Viljar Veidenberg, Pajumäe Farm

Location: Abja-Vanamõisa village in southern Estonia

Type of farm: Organic dairy farm (400 ha)

Main production: Dairy cows and dairy products, grasses and other fodder crops

National jury motivation:

"Since its inception, Pajumäe farm has had an environmentally friendly approach to production and operation. For the members of the farm household, acting in accordance with nature is the only way to live. The farm is actively engaged in product development and discovering, testing, and applying innovative and environmentally friendly ways of farming. The jury was impressed by the farm's complex approach to environmental issues, and a new and innovative production line in the farm's dairy."

Key practices:

Nutrient recycling, manure management, soil analysis, crop rotation, buffer zones, wetlands, natural islands.







FINLAND **Here** Tuomas and liris Mattila

Tuomas and Iiris run their farm as an ecosystem, with strong soil health in focus.

When Tuomas Mattila took over Kilpiä Farm from his father in 2005, he was eager to transition to organic methods – an undertaking that, for him and his wife Iiris, would turn out to be a unique challenge and a never-ending learning process.

Years of monoculture and mechanization had left the farm's sandy and silty soil in dire need of regeneration. Adding to the challenge was a tricky landscape with steep and long slopes. Altogether, the farm was highly vulnerable to erosion and nutrient runoff.

> "Switching to minimum tillage and continuous plant cover changed the surface structure radically."

"I had switched the farm to organic crop rotation and farmed that way for four years, but the soil was not getting any better," recalls Tuomas.

Having found no professional advice, Tuomas and Iiris decided to take matters into their own hands. Drawing upon their shared background in environmental science and microbiology, they set to work researching and testing alternative agricultural methods.

"Trying out new methods is unpredictable," says Iiris. "The challenge is to keep on searching and trying. But it's a good challenge."

Eventually, Tuomas and Iiris discovered a formula that worked, based on two key principles: keep the soil in place and keep the soil ecosystem working. They implemented a minimum tillage system, established a contour farming system and covered the most erosion prone slope with an apple orchard.

"Keeping the soil covered, supplying it with photosynthesis derived energy, and avoiding killing soil life through erosion, tillage and compaction just made sense," says Tuomas. "Same applies to plant and soil testing

without knowing what is happening in the system, it would be crazy to add fertilizers at random."

As for the results, the farm's ecosystem speaks for itself:

"The erosion has diminished and the amount of organic matter has grown a lot," says Iiris. "We have moved from

Tuomas and liris Mattila, Kilpiä Farm

Location: Pusula in southern Finland

Type of farm: Organic crop farm (255 ha)

Main production: Rye, oats, green manure and apples

National jury motivation:

"The farm is managed as a whole. The farm uses innovative, research-based methods and pays special attention to reducing erosion and its detrimental effects on water bodies. Methods used also include the improvement of soil, crop rotation, plant choices, renewable energy and energy efficiency. Additionally, a Continuous Cover Forestry approach is used to manage the farm's forests. The farm develops its activities all the time and actively spreads information to other farmers."

Key practices:

Erosion control and soil conditioning, minimum tillage, tillage based on contour lines, conversion of vulnerable fields to orchards, continuous plant coverage, crop rotation, drainage system improvements.

a soil of sand to potting soil. The number

a soil of sand to potting soil. The number of insects on a flowering field is huge."

"The soil surface has so many spiders and beetles, I feel bad driving on the field," adds Tuomas.

But the experimental days are not over yet. Tuomas and Iiris' dedication to finding better, more sustainable ways to farm has grown to such an extent that they now run Kilpiä Farm as a private research and educational farm. Working solutions are regularly shared with fellow farmers through lectures, trade magazine articles and consulting.





GERMANY **HE** Alfred and Angelika Stender

A careful and effective use of nutrients resides at the heart of all management decisions at Kroghof Farm.

Alfred Stender has been recording cultivation and harvest data for every plot on his farm since the 1970s, reflecting a long commitment to the process of learning and improvement.

Kroghof Farm is a family enterprise run by Alfred and his wife Angelika, together with their daughter Silja and son Henrik, and their respective families. Their combined 182 hectares supports a diverse variety of cash crops, 75 milking cows, and 25 pigs.

The efficient usage of nutrients has always been a core value of the family's farming practices. In 2008, Kroghof Farm took on a pioneering role when it was selected to participate as a reference farm within a water protection advisory for farmers for the implementation of the EU Water Framework Directive.

In conjunction with the advisory, Alfred tested a number of measures with the objective of minimizing nutrient losses and runoff. The measures included sampling, rapeseed crop weighing, manure management and nutrient budgets. Implementation was so successful, a deep drilling sample later revealed that, of all the reference farm holdings, the plot tested on the Kroghof Farm had the lowest nitrate concentrations by far (40 mg/l).

"The farm's operational results confirm that we are headed in the right direction, but we must always engage in an ongoing process of reconsidering and reorienting our farm management," Alfred says.

In 2016, he founded a consulting group with over 30 other farmers who now frequently meet on his farm together with experts in the fields of water and plant protection. Their purpose: sharing knowledge, making new findings and bringing effective methods into practice more quickly.

Alfred's vision for the future is a fullcoverage advisory that provides farmers with a nationwide network of advice for sustainable agriculture.

"Too little is known about the very

"The call for optimized plant nutrition in arable farming goes hand-in-hand with improving soil fertility."

important issue of soil chemistry, physics and biology," says Alfred. "This knowledge is very much needed in order to develop awareness of the importance of soil and become a 'real' farmer who is responsible for all plants, soils, and animals."

Alfred and Angelika Stender, Kroghof Farm

Location: Börnsdorf in northern Germany

Type of farm: Conventional crop and livestock farm (182 ha)

Main production: Various field crops, cash crops, root crops, sugar beets, potatoes, dairy cows and pigs

National jury motivation:

"Alfred Stender is an extraordinary and highly engaged farmer. His efforts to effectively utilize nutrients and avoid excess are at the heart of all management decisions. The jury was particularly impressed by the exceptional diversity of this conventionally managed farm, and with the fact that three families are generating their income from it. Alfred's wide network, his willingness to discuss all topics related to sustainability and to always keep learning make him a worthy and important award recipient."

Key practices:

Samplings, rapeseed crop weighing, nutrient budgets, crop rotation, manure management.







LATVIA **M** Andris Kalniņš



When Andris Kalniņš was given

the chance to repossess his family land in 1992, he seized the opportunity and left his engineering job in Riga to try his luck at farming. Today, he operates the 132 hectares as an organic and biodynamic crop and livestock farm.

"Ozoli Farm has proven that it is economically viable and profitable to adopt these farming practices."

"From the moment I took over Ozoli Farm, I knew that the traditional and organic way of farming would be the basis for my own farming activities every step of the way," he recalls.

Andris' enthusiasm for organic farming is unfortunately unique in his nation, where agricultural intensification and pesticide use is becoming the norm. To ensure that his farm would not be affected by his neighbours' pesticide and chemical use, Andris had to implement buffer zones.

"In a market where quantity is more important than quality, it's more difficult for small organic farms to be as competitive as conventional agriculture, so organic farming practices are rarely taken into account," says Andris.

One of the keys to sustainable farming at Ozoli Farm is nutrient turnover. To reduce nutrient leakage, Andris has created a closed-loop methodology where manure is composted for the benefit of soil management, soil fertility and animal welfare. Decomposition is aided by mechanically incorporated bacteria, ensuring that nutrients are effectively absorbed by plants. With such fertile soils, Andris is able to produce all of the farm's livestock feed on site.

Other sustainable methods employed include grassland sowing to help the soil retain organic carbon, and the cultivation of papilionaceous plants to attract atmospheric nitrogen.

The positive results are evidenced by the farm's soil fertility and animal health.



"Being self-sustained in our produc-

Andris Kalniņš, Ozoli Farm

Location: Vecumnieki village in southern Latvia

Type of farm: Organic and biodynamic crop and livestock farm (132 ha)

Main production: Crops, dairy and meat

National jury motivation:

"Andris Kalniņš has not only inspired us with his inexhaustible enthusiasm and energy, but he also serves as an example of how farming and nature can go hand-in-hand when developing a 'closed-loop' farming system that ensures effective resource management every step of the way. 'Ozoli' Farm brings added value when it comes to maintaining the land's biodiversity, ensuring harmony between man, nature, and production and minimizing nutrient runoff through the farm's own methodology for manure composting."

Key practices:

No artificial fertilizers, manure management, manure composting, renewal of grassland through sowing.





tion cycle is what motivates us to do what we do," says Andris.

"Hopefully, in the meantime, we can inspire other farmers to consider transitioning to a more sustainable way of farming that can further enhance the public good."

LITHUANIA **Main** Vaiva Jundulaitė-Kosienė and Giedrius Kosas

"We have always dreamed of a healthy and harmonious relationship with nature," says Lithuanian winner Vaiva Jundulaitė-Kosienė.

Uniquely located in the woodlands of Žemaitija National Park, Miško Sodai is an organic biodynamic crop farm run by Vaiva Jundulaitė-Kosienė and her husband Giedrius Kosas. When Vaiva first purchased the property it was merely the site of a tiny old house. The seven thriving hectares that can be seen today are the result of over ten years of curiosity and a lot of experimentation.

"The results and yields we've achieved on our farm amaze even the traditional farmers using large quantities of fertilizers on fertile lands."

From the very beginning, Vaiva and Giedrius have sought out farming alternatives that would allow them to cultivate a healthy, high yield without harming the environment. Largely selftaught, their current farming practices stem from reading articles, participating in conferences, talking with other farmers and then experimenting with what they learn. Miško Sodai Farm received its organic certification ten years ago, and, a few years back, was also certified as biodynamic.

Through the years of testing and learning, the soil in the region – a light sandy loam – has been a particular challenge.

"Due to the structure of the soil, we cannot – or more like, do not want to – use chemical fertilizers because they easily drain into the surrounding bogs and water bodies and further aggravate the soil's structure," says Vaiva.

To mitigate this challenge and fertilize the land naturally, Vaiva and Giedrius are working to increase the amount of humus in the soil with biodynamic farming methods. All of the green biomass generated on the farm is used towards the production of compost, which is judiciously supplemented with biodynamic preparations to speed up production and add additional nutrition. The resulting natural fertilizer is spread on the soils.



"The use of our preparations has changed the soil structure," says Vaiva. "The land has become lighter and paler. Using humus produced by farm products, plants have become stronger and more resistant, and the nutritional properties of the vegetables has improved."

Today, Vaiva and Giedrius happily

share what they have learned and achieved through biodynamic farming with visitors from all over the world.

"We hope that more people will learn about environmentally friendly farms and that our success in this competition will encourage us to contribute to society's education even more," says Vaiva.

Vaiva Jundulaitė-Kosienė and Giedrius Kosas, Miško Sodai Farm

Location: Visvainių village in northwest Lithuania

Type of farm: Biodynamic organic crop farm (7 ha)

Main production: Herbs, vegetables, berries – and products made from them, including spice mixtures, teas, jams and syrups

National jury motivation:

"Owners Vaiva Jundulaitė-Kosienė and Giedrius Kosas make all efforts to sustain the local landscape and biodiversity, and the whole farm is directed towards the full sustainability of natural resources and biodiversity. The implemented biodynamic farming standards do not use any chemicals or artificial fertilizers. Natural biodynamic farming methods are used to increase the amount of humus. Farm owners cooperate with other farms, share experiences, and participate in various workshops. Educational lectures and classes are often held for visitors."

Key practices:

No artificial fertilizers, soil conditioning through composting.

RUSSIA **ma** Igor and Irina Rudenko

"Our success is bringing new life to adjacent villages," says Russian winner Irina Rudenko.

Zarechye Farm is located along a

river bank in a village that has been inhabited by Irina Rudenko's family for over 200 years. When she and her husband Igor decided to take over the family property ten years ago, however, they found it in a state of serious decline. The village had been nearly destroyed and abandoned during World War II, and never quite recovered after that. Disappointed by what was happening, Irina and Igor decided to rebuild the house on the property and set up their own farm.

"We decided that our farm would be aimed at both agriculture and rural tourism, with a focus on volunteering opportunities for visitors to help look after animals, experience country life and taste local products," says Igor.

Irina and Igor keep a variety of animals on the farm – especially traditional Russian breeds – including goats, sheep, rabbits, geese and ducks.

> All of our work is to show that Russian village traditions can be restored and be beneficial for both society and nature."

Milk and meat products from the farm are sold online and at local farmer shops in St. Petersburg.

Managing the farm in a naturefriendly way is very important to Irina and Igor, so they do not use any fertilizers of chemical origin. Additionally, all of their animals are free-range, which – when it comes to preventing nutrient runoff – has been particularly challenging.

"It is very good in terms of sustainable animal welfare, but we need to collect manure from the land," says Igor.

As a solution, Irina and Igor employ a process where manure is regularly collected from areas where free-range birds and goats are kept. It is then



"By using the mixture of manure, hay and straw, as well as compost, we are able to manage all of the fertilizer needs of our fields," says Irina.

To further guard against nutrient runoff, Igor and Irina have also planted







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trees and shrubs along the riverbanks, and begun restoring the semi-natural grasslands on the property.

The results of Irina and Igor's labours have been transformational for both the land and surrounding community.

"Our main achievement during recent years is that we've brought new life to the farm," says Igor. "It is growing – slowly, but constantly."

Igor and Irina Rudenko, Zarechye Farm

Location: Zarechye village, Luga District of the Leningrad Region **Type of farm:** Conventional livestock farm (27 ha)

Main production: Free-range goats and goat milk products, rabbits, chickens, ducks and geese

National jury motivation:

"Irina and Igor Rudenko have brought astonishing new life to the ancient rural area in the upper reaches of the Luga River. They are highly motivated to reduce agricultural runoff from the farm, which is also being done using very traditional methods in the region that allow for a complete refusal of fertilizers of chemical origin. We also highly value their continuous attempts to restore the banks of River Kuksa in places where the farmland meets the river plain."

Key practices:

No artificial fertilizers, restoration of river banks, restoration of semi-natural grasslands, placement of shrubs and hedges to prevent wind and rain-induced runoff.

SWEDEN Christoffer Bonthron and Erik Bengtsson

The future vision for Karlsfälts Farm is to achieve zero emissions and a closed nutrient loop.

Karlsfälts Farm has been a fam-

ily enterprise since 1927. The owners, Christoffer Bonthron and Erik Bengtsson, took over operations in 2000, and today use the 800 versatile hectares to raise cattle and cultivate crops. They strive to achieve a farming practice that is in harmony with nature, and have plans to switch gradually to organic crop production.

"We have all seen the effects of using too many herbicides, pesticides and artificial fertilizers," says Erik. "Living close to the Baltic Sea means we have a front row seat to the dead bottoms, decreasing numbers of fish, and algal blooms."

Several practices are employed simultaneously to reduce nutrient runoff at Karlsfälts Farm. These include crop rotation, extensive grassland production, the use of manure as an alternative to artificial fertilizers, mapping the soil for structural liming and the use of N sensor precision equipment for fertilizer application.

Recently Karlsfälts Farm gained nationwide attention among farmers and officials for its new sustainable irrigation system, which Christoffer and Erik established in parallel with the introduction of vegetables to the farm. The system includes several measures that contribute to the reduction of nutrient emissions; such as the addition of a wetland area and restoration of two ponds, the cleaning and recycling of drainage water and a modern technique for precision irrigation. Besides minimizing nutrient drainage, precision irrigation is yielding a 20-25% decrease in water consumption and a 30-35% decrease in energy consumption, compared to traditional irrigation methods.

Christoffer and Erik see evidence that their efforts are working. For instance, the ponds on their property are accumulating a lot of seaweed and algae in the summers and autumns, an indication that their nutrient catchment function is in working order.

"If the drainage water had not been

diverted to the ponds, the nutrients would have been transported directly to the Baltic Sea by the constantly moving water," says Erik.

Other visible results include an increase of wildlife on the farm, including insects, frogs and birds. Karlsfälts Farm is also experiencing business benefits.

"We've seen an increase of interest for our farm and our products and,

"We want to give back the best possible soil to our children."

in general, people are giving us credit for taking actions to be more environmentally friendly," says Erik.

In the future, the vision is to have a closed loop of nutrient use on the farm with no emissions to water or air.

Christoffer Bonthron and Erik Bengtsson, Karlsfälts Farm

Location: Ystad in southern Sweden

Type of farm: Conventional crop and livestock farm (800 ha)

Main production: Beef cattle, pigs, sheep, and various crops – including rapeseed, wheat, barely, rye and beets

National jury motivation:

"Karlfält Farm is being awarded for their long-term and detailed strategy to reduce the leakage of plant nutrients, as well as for its owners' future vision regarding water use, climate aspects and the conservation of biological diversity. By collecting and reusing drainage water, and by using precision fertilization, planned structural liming and crop rotation, Karlfält Farm contributes to reduced erosion and nutrient leakage to the Baltic Proper from the part of Sweden where measures are needed most."

Key practices:

Crop rotation and diversification, use of manure as fertilizer, extensive grassland production, regular soil analysis and mapping to plan for structural liming, use of N sensor precision equipment, installation and restoration of ponds and wetland area, cleaning and recycling of water, precision irrigation.





WELCOMING BELARUS AND UKRAINE

This year, WWF is pleased to welcome Belarus and Ukraine as participating countries in the Baltic Sea Farmer of the Year Award. Both Belarus and Ukraine have territories located within the Baltic Sea catchment, and contribute to the nutrient inputs to the Baltic Sea. Just like the other Baltic countries, a successful reduction of agricultural inputs is dependent upon the proactive measures put in place by forward-thinking farmers — like these two national winners, Kanstantsin Chychyra and Bogdan Kostiv.

BELARUS **Manstantsin Chychyra**

Producing crops in a way that benefits both nature and community is a top priority on Kanstantsin's farm.

Nature-friendly farming methods had been passed through the generations and practiced by Kanstantsin Chychyra's parents long before he took over the family farm. When it was his turn, he too adopted these methods, and then he took things one step further: he certified the farm and became an organic farmer — one of only 15 in Belarus.

Kanstantsin has always worked in close proximity with nature, and first grew aware of the problem of eutrophication about ten years ago when his favorite lakes in his home region gradually started to turn green. After learning that the intensification of agriculture was contributing to the problem, Kanstantsin's resolve to practice organic and responsible farming methods grew even stronger.

Growing a demanding crop like strawberries, it is not always easy using organic methods — especially when there are so few organic farms in the region to exchange knowledge with. It's a constant learning process, and careful monitoring and creative solutions are often needed to resolve challenges.

For soil fertilization, Kanstantsin uses a compost made of pesticide-free plant residues. In order to reduce the quantity of weeds, the straw is laid between the strawberry rows. After collecting the strawberry harvest, the straw remains on the ground and eventually turns into a fertilizer. To protect his crops from pests and disease without using chemicals, Kanstantsin uses an approach called allelopathy. Crops are planted together in such a way that protection is generated naturally. For example, garlic is planted next to the strawberries.

Since becoming organic certified, Kanstantsin has been sharing knowledge on environmental friendly methods with other farmers, and is enjoying growing recognition from customers who value his approach. His methods have even had a positive effect on the quality of drinking water.

According to official statistics, almost one-third of all public wells in Belarus contain nitrates in quantities exceeding acceptable limits.

However, in the village where Kanstantsin's farm is located, no such problem exists.





Kanstantsin Chychyra, Kanstantsin Chychyra LPH Farm

Location: Nakvasy village in northwestern Belarus

Type of farm: Organic farm (4 ha)

Main production: Strawberries and vegetables

National jury motivation:

"The jury acknowledges the positive dynamics on the farm and continuous improvement and development on an annual basis. The farm utilizes sustainable technologies in plant cultivation, and farms free from pesticides and synthetic fertilizers. The farm also effectively uses plant residues and produces compost."

Key practices: Organic crop production, composting, green manuring (siderates).



On Kostiv R.P Farm, the motto is: "Live in harmony with nature – take care of life!"

Farm "Kostiv R.P." was founded in 1992 by Bogdan Kostiv's father Roman in the picturesque Opillya region of Ukraine. The farm is located within the Western Bug catchment that starts in Verkhobuzh Village in the Zolochiv District. And through the Zarvanytskyi ditch, Zolochivka, Western Bug and Vistula rivers, this watershed connects with the Baltic Sea.

Over the years of successfully growing crops on their land, the Kostiv family has earned a reputation in the region for their proficiency and knowledge in crop production and agricultural machinery. So it was no surprise when the eldest son, Bogdan, chose agronomy as his profession and, after graduating from the University, began working actively on the farm. In fact, academia would prove to have a profound impact on the future of the farm.

In 2006, Bogdan participated in an International Conference at Lviv Agricultural University, where a presentation by Mr. Zach Rainer, a famous agricultural expert in biodynamics was given. The presentation left such a deep impression, it inspired Bogdan to begin the application process to have the farm certified according to organic production standards.

Today, the farm has successfully received its organic certification, and employs practices and methods that are in harmony with nature. Special attention is paid to the preservation of soil fertility. That's why so-called green



fertilizers (siderates), such as mustard, peas-oat mixes, oil radish, phacelia, amaranth, malva and white lupine are actively grown. The farm also practices crop rotation, which helps to reduce soil erosion and runoff, increase organic matter and generally improve the physical properties of the soil. Quality and safety of output is also of utmost importance on the Kostiv R.P. Farm, and all factors that can negatively influence production are thoroughly explored.

The Kostiv family has enjoyed such great benefits since adopting organic farming methods, that they have become more active in the farming community — hosting activities and sharing what they have learned with other farmers.

Bogdan Kostiv, Kostiv R.P. Farm

Location: Polyany village in western Ukraine

- **Type of farm:** Organic farm (5 ha)
- Main production: Cereals, oilseeds and legumes

National jury motivation:

"The farm uses organic methods in plant protection, and special attention is paid to the preservation of soil fertility. Methods used also include the improvement of soil, crop rotation, and plant choices. Additionally, the farm actively develops its activities and promotes information about organic production, sharing with other farmers and interested people."

Key practices:

Organic crop production, composting, green manuring, crop rotation.

MEASURES THAT CAN HELP SAVE THE BALTIC SEA

Here are the main sustainable agricultural and environmental measures practiced by current and previous winners of the WWF Baltic Sea Farmer of the Year Award:

ANIMAL PRODUCTION

- A solid barn foundation of clay or concrete prevents manure and urine from penetrating the groundwater.
- Storing manure in appropriate facilities, such as containers and tanks with an impermeable base, prevents leakage. Covering the facilities with lids or plastic, or letting a natural crust form, prevents gas emissions and rainfall runoff.
- **Reducing ammonia emissions** and thereby nitrogen losses, while improving local air quality, can be done by adding basalt dust to manure and installing air-filters in animal stalls. Also, using lower protein levels in the animals' feed and keeping the barn at a cooler temperature reduces ammonia levels.
- Reducing the number of animals per hectare helps ensure that the soil can absorb all the manure.
- Cleaning stalls without using water prevents runoff to surrounding waters.
- Keeping permanent grasslands for grazing lowers nutrient runoff and helps store more carbon in the ground. They also help to preserve biodiversity.



CROP PRODUCTION

- Crop rotation, intercropping and using cover, catch and under-sown crops all help to optimize nutrient uptake by crops, minimizing the need of added fertilizer. They also help maintain a good nutrient balance in the soil and can counteract the establishment of weeds and pests.
- No-till farming and direct seeding saves resources since the soil is worked minimally.
- **Covered soil year round** means that there are always plants available to retain nutrients in the soil that would otherwise mineralize in the ground.
- Buffer zones along ditches, streams, ponds and lakes reduce nutrient runoff into surrounding waters.
- Sloped ditches where there is an increased risk of flooding can accommodate more water and thereby decrease nutrient runoff.
- Usage of precision agriculture equipment and techniques minimizes resource use and the risk of over-applying fertilizers.
- **Computers and agricultural software** can be used to plan and follow up farming activities, such as crop rotation and fertilization.
- Analyzing and mapping the soil and its nutrient balance on a regular basis helps determine the precise amount of fertilizer needed.
- Monitoring of drainage systems allows farmers to administer the correct doses of fertilizer and avoid using them in places with high risk of leakage.
- **Crop diversification** improves plant protection and soil quality, and also increases biodiversity.

- Structural liming of soils and lime-based trap filters reduce surface water runoff of nutrients, particularly phosphorous. Better structure of the soil also facilitates tilling, thereby reducing fuel consumption.
- Spreading composted manure on fields is a natural way of fertilizing crops, and adding sulphur and micronutrients to the mix helps crops to use nutrients more efficiently. Manure should only be spread during the growing season and be plowed into the soil right after distribution.

GENERAL MEASURES

- Recycling of water, waste and other resources helps close natural cycles. Recycling products and by-products from farming activities helps maximize the use of nutrients and energy.
- Zoning of farmland and plot swaps, with different levels of farming intensity on different parts of the land, can optimize land use to avoid nutrient leakage and preserve biodiversity.
- Wetlands, ponds and dams on the farm absorb nutrients and store them in growing biomass and in sediments, thereby reducing nutrient runoff. They also create habitats for wildlife and plants.
- Preserving trees, shrubs and other natural elements in and around fields helps reduce nutrient runoff and erosion, and also increase biodiversity.
- Cooperation among farmers, organizations and other stakeholders is a great way to share knowledge on environmentally friendly farming methods and multiply the positive effects.

"Focus on biodiversity and avoid

Krzysztof Kowalski, Poland

"Try to make a serious plan of your farm business – who your consumers are, where the farm is located, and how you are going to deal with your neighbors."

Irina Rudenko, Russia

WORDS OF ENCOURAGEMENT FROM SOME OF THIS YEAR'S WINNERS

"Manage your soils as an ecosystem. Feed them, do not overly disturb them and keep them covered with living plants."

Tuomas Mattila, Finland

"Look at the holistic picture – see how things are linked together and make your efforts with a long term perspective."

Erik Bengtsson, Sweden

"It's important not to be afraid to experiment, bravely take new, sometimes, somewhat strange

Vaiva Jundulaitė-Kosienė, Lithuania

SUSTAINABLE FARMING IS PART OF THE SOLUTION

The future of food production is resilient, profitable, and beneficial for both people and the environment. A reformed Common Agricultural Policy (CAP) is needed to support the next generation of farmers and drive forward the transition towards a sustainable agricultural model.

The current Common Agricultural

Policy (CAP) reflects policy priorities and instruments that were developed to address the challenges of the last century. It has strengthened resource intensive farming, increased pressure on nature, and depleted the natural resources that agriculture itself depends upon.

> "Approximately 80% of the money used for direct payments goes to 20% of the farmers in Europe."

Meanwhile, the farming systems that are providing more public goods have been marginalized by this policy. At present, approximately 80% of the money used for direct payments goes to 20% of the farmers in Europe.

Today's CAP is not fit to address modern societal and environmental challenges. WWF therefore calls for a redesign of the CAP in order to support the necessary transition to sustainable agricultural practices. A reformed CAP should foster diversified climate and market resilient farm businesses that enable farmers to provide healthy food, protect natural capital, address climate change and safeguard ecosystem services for future generations.

WWF would like to see a shift away from the current system of farm subsidies, with programmed and targeted schemes becoming the core of this policy. A widened governance structure would be instrumental to achieving coherence with other EU and global policies.

The CAP should reward farmers and land managers who preserve water, soil and biodiversity, and contribute to building more resilient rural landscapes. It should also guarantee that animal welfare is respected and prevent the negative effects of our agriculture from making an impact outside of Europe. This requires that the 'polluter pays' principle is reinforced, and that the derived public money is used to pay for public goods.

WWF's vision for sustainable and resilient agriculture:

- Agricultural landscapes must be sustainable for nature, people, ecosystems and ecosystem services.
- Agricultural practices must be resilient over time to provide for the needs of future generations.
- Agriculture must support inclusive sustainable development.





FACTS ABOUT THE WWF BALTIC SEA FARMER OF THE YEAR AWARD

To show support for the agricultural sector and highlight good examples in the region, WWF – in cooperation with farmers' organizations around the Baltic Sea – created the WWF Baltic Sea Farmer of the Year Award in 2009.

The award is intended to inspire farmers from the entire Baltic region to take an active part in fighting eutrophication and contribute to a healthy Baltic Sea. Applications have been received from farmers practicing both organic and conventional farming, as well as many different types of agriculture. The national winners, chosen by juries in each country, receive a prize of 1,000 Euros. From these national winners, an international jury selects a regional winner who receives a grand prize of 10,000 Euros.

Members of the national juries

DENMARK

Frank Bondgaard, SEGES Jens Gammelgaard, Skanderborg Landboforening (Farmers Union) Cammi Aalund Karlslund, Catchment Officer Helge Kjær Sørensen, Association of Farmers Union (DLMØ) Irene Asta Wiborg, Construction and Environment, SEGES

ESTONIA

Kuno Kasak, Tartu University, Estonian Fund for Nature (ELF) Aleksei Lotman, Estonian Fund for Nature (ELF) Anne Luik, Estonian University of Life Sciences, Institute of Agricultural and Environmental Sciences Jaak-Albert Metsoja, Estonian Seminatural Community Conservation Association Lii Sammler, Estonian rural life newspaper "Maaleht"

Leho Verk, Agricultural Advisory Service

FINLAND

Elina Erkkilä, WWF Finland Jenny Jyrkänkallio-Mikkola, WWF Finland Airi Kulmala, Central Union of Agricultural Products and Forest Owners of Finland

GERMANY

Herwart Böhm, Thünen Institute of Organic Farming in Trenthorst, Federal Research Institute for Rural Areas Harriet Gruber, Mecklenburg-Western Pomeranian State Research Centre for Agriculture and Fishery Reinhold Stauß, State Agency for Agriculture, Environment and Rural Areas of the German Federal State Schleswig-Holstein Susanne Werner, Bauernverband Schleswig-Holstein e.V. - Farmers' Association Birgit Wilhelm, WWF Germany

LATVIA

Elīna Kolāte, Pasaules Dabas Fonds Jānis Rozītis, Pasaules Dabas Fonds Kaspars Žūriņš, Latvian Rural Advisory and Training Centre

LITHUANIA

Virginija Lukšienė, Public Enterprise "Ekoagros" Agnė Prakapienė, Department of Agricultural Production and Food Industry Nerijus Zableckis, Lithuanian Fund for Nature Romualdas Zemeckis, Aleksandras Stulginskis University

POLAND

Jacek Chmielewski, Department for Direct Payments, Ministry of Agriculture and Rural Development Anna Klisowska, Department of Water Management and Inland Navigation, Ministry of Maritime Economy and Inland Navigation Weronika Kosiń, WWF Poland Marek Krysztoforski, Agricultural Advisory Center in Brwinów

Members of the international jury

BO GUSTAVSSON, Baltic Nest Institute

MARKUS EEROLA, 2015 BSFYA regional winner, Palopuro Agroecological Symbiosis

ALDIS KARKLINS, Institute of Soil and Plant Sciences, Latvia University of Agriculture

DOROTA METERA, Bioekspert Ltd. & International Federation of Organic Agriculture Movement (IFOAM)

KRISTINA NARVIDIENĖ, Lithuanian Agricultural Advisory Service

KARIN STEIN-BACHINGER, Leibniz-Centre for Agricultural Landscape Research (ZALF) e.V



AWARD 2018

Department of Plant Breeding and Protection, Ministry of Agriculture and Rural Development

RUSSIA

Yulia Danilova, Baltic Fund for Nature Evgeny Genelt-Yanovskiy, Baltic Fund for Nature Matteo Guida, Four Seasons Lion Palace St. Petersburg hotel Anastasia Ivanova, Four Seasons Lion Palace St. Petersburg hotel Tatiana Ivanova, Baltic Fund for Nature Viacheslav Komov and Tatiana Komova, 2010 BSFYA national winners Dmitry Taborskiy, Baltic Fund for Nature

SWEDEN

Anders Alm, WWF Sweden Emilia Astrenius Widerström, Federation of Swedish Farmers Youth Martin H. Larsson, Ministry of the Environment





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WWF Baltic **Ecoregion Programme**

IVFRING RFS

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

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We promote constructive interactions to create awareness, spread ideas and stimulate discussion among stake-

holders and partners

We are a diligent watchdog that monitors how governments manage our common resource, the Baltic Sea

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.

www.panda.org

Please contact us for more information! WWF Baltic Ecoregion Programme www.panda.org/balticcontacts

We represent the largest membership network in the region and are present in every country surrounding the Baltic Sea



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