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AGRICULTURE & INNOVATION

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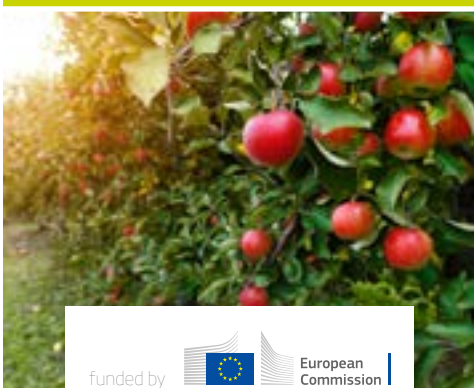
2019

6

ISSN 2363-2143



- The EIP-AGRI network celebrates 1000 Operational Groups!
- Less waste, more value: new opportunities in the circular bioeconomy
- Buzzing with innovation: inspirational ideas for healthy bees
- Connecting with AKIS: innovation support across Europe
- Measuring the water footprint of precision horticulture



LATVIA: Farmer-friendly tools to tackle winter wheat diseases

HUNGARY: Embracing innovation through demonstration

FRANCE: Agroecology for sustainable soils

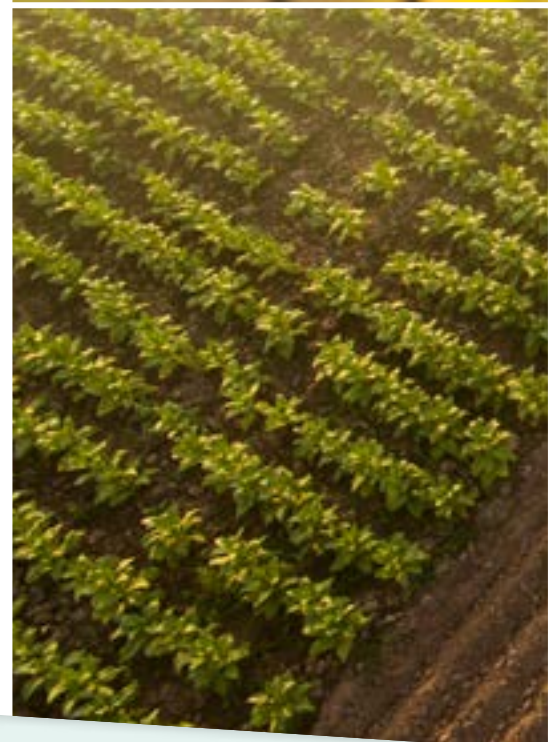
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Welcome

Over one thousand Operational Groups and counting! The EIP-AGRI is spurring innovations everywhere in Europe to make the farming and forestry sectors smarter, more resilient and more sustainable.

Operational Groups put farmers and foresters at the centre of the innovation process and generate solutions that respond to their actual needs. According to a recent study commissioned by the EIP-AGRI network, farmers and farmer organisations are the most represented category in the Operational Group partnerships. 20% of the Operational Groups are led by farmers or farmer organisations. And innovative ideas are contagious! A great majority (91%) of the Operational Group partners who responded to the study's survey say they would recommend others to become involved in a similar project.

It is also exciting to look at the range of challenges and opportunities that these cooperation projects are tackling. Operational Groups are real testing grounds where farmers can try out alternative and more sustainable production methods. This will allow them to address key challenges in improving resource efficiency and food safety and quality, and to tap into the opportunities offered by new value chains, notably the circular bioeconomy.

In this edition of Agrinnovation we want to celebrate the achievements of the EIP-AGRI network. Its success is not only measured by the ever-growing number of innovative projects, but also by the even greater number of connections and collaborations that are generated among people and projects, also across borders. Have you ever participated in any of the EIP-AGRI events? They are really a great example of how to bring people and projects together to share and build new knowledge and innovative solutions together.

Events and other activities from the EIP-AGRI network contribute to building stronger and more effective Agricultural Knowledge and Innovation Systems (AKIS), which bring together farmers, advisers, agricultural training and educational systems, and researchers to promote mutual learning, and to generate, share, and use knowledge and innovation for agriculture.

By reading the stories in this magazine, you are already taking part in building the EU-wide AKIS. So now, just sit back and let Agrinnovation inspire you to continue networking for innovation.

I hope you will enjoy reading this magazine!



Nathalie Sauze-Vandevyver
Director for Quality, Research & Innovation, Outreach
Directorate-General for Agriculture and Rural Development



1000 EIP-AGRI Operational Groups ... and more to be launched across Europe

The number of Operational Groups that have joined the EIP-AGRI network is constantly growing. More than 1000 Operational Group projects are already up and running (June 2019). They make best use of the complementary expertise of farmers, foresters, researchers, and others involved in the project partnerships, to spread innovation across European agriculture and forestry.

While in several EU countries and regions many Operational Groups have already completed their work, some Managing Authorities have launched their first Operational Group calls only quite recently. The first Operational Groups in [Latvia](#), [Poland](#), [Slovenia](#) and Estonia have just started and Hungary, Croatia, Romania and Greece are expecting to have theirs up and running soon (update June 2019).

- ▶ Browse descriptions, objectives, results and contact details from more than 800 Operational Groups [in the EIP-AGRI database](#), and [check the interactive map](#).
- ▶ See the [distribution of Operational Group projects by country](#) (update May 2019) on the EIP-AGRI website.



- ▶ The [EIP-AGRI Innovative projects catalogue](#) features a collection of 190 projects including Operational Groups which were presented at 7 EIP-AGRI events in an interactive pdf file. You can search projects on water, organic farming, short food supply chains, circular bioeconomy and a number of other themes. The interactive feature helps you browse for projects relevant to your country or region.

Celebrating 1000 Operational Groups!

More than 1000 Operational Groups? That calls for celebration! The EIP-AGRI Service Point has collected pictures of Operational Groups posted on social media with the hashtag #1000ogs. [See the result on the EIP-AGRI website](#).

- ▶ EIP-AGRI in your country: Many European countries and regions have set up websites where you can find information on national or regional Operational Groups that have been selected for funding. You can [find an overview on the EIP-AGRI website](#).



Hello EIP, Latvia calling

Latvia launched its first call for Operational Groups in June 2017. As a result, 7 Latvian Operational Group projects have started their work early 2018. The enthusiasm for the EIP-AGRI network is high and Latvia has now (June 2019) already launched its third call for Operational Groups.



Farmer-friendly tools to tackle winter wheat diseases

Winter wheat delivers high yields and good prices for Latvian farmers. To help them target winter wheat diseases more effectively and efficiently, a Latvian Operational Group is developing an online decision support system in close collaboration with regional farmers.



“Our farm processes around 800 ha of winter wheat each year, which makes up a large part of the farm’s revenue. Fungicides are used every year, but costs are high and it isn’t always clear whether the fungicide treatment schemes that we apply are giving us the best results. Our motivation to become involved in this project is to help improve disease control and achieve better economic results.”

- Uldis Vangalis, farmer and Operational Group partner -

The Operational Group is analysing risk factors for the spread of winter wheat diseases to help farmers make informed decisions on fungicide treatments. “We help them decide which fungicide investments are economically justified at different levels of nitrogen fertilisation”, project coordinator Linda Šarke-Fedjajeva explains. “We want to help farmers grow an economically attractive wheat crop, while causing the least possible damage to the environment.”

The project has set up a ‘farmer focus group’. “This group includes 2 farmers who are project partners, and 9 others who are professional agronomists or farm owners with a lot of experience in the field. They are helping us create a user-friendly decision support platform that is suited to farmers’ needs. These farmers will be the first ones to test the platform, allowing us to make it as intuitive as possible. We will provide training to help farmers use the platform. We want to make sure that young farmers with less experience in identifying wheat diseases will also be able to use it for their benefit”.

- ▶ **More information** on this Operational Group [in the EIP-AGRI database](#) or [on the website of the Latvian National Rural Network](#)
- ▶ How can Operational Groups benefit from collaboration? Read the EIP-AGRI brochures [‘Operational Groups’](#) and [‘Collaborate to innovate’](#) for inspiration.



Collaboration with Innovation Support Service

The Latvian Innovation Support Service is hosted by the Latvian Rural Advisory and Training Centre, which is a partner in the Operational Group. The Innovation Support Service informs the project about other Operational Groups that are working on similar themes. It also organises events where Operational Groups can get together with national funding authorities to discuss administration, reporting and other practical aspects that can assist the Operational Groups in running their projects.



Conclusions from the Operational Groups assessment

Farmers and foresters are at the core of every Operational Group. However, many Operational Groups also involve a broader circle of farmers who are not formally project partners (see the project from Latvia, featured on the previous page in this magazine). Through regular meetings and collaboration, these farmers can help to ensure that the Operational Group work stays in line with real farmer needs and becomes accessible. The farmers can test solutions in the field and help share project results more widely. Farmers are usually very interested in being involved in this type of activity. This is one of the conclusions drawn from the Operational Groups assessment, which looked into more than 600 Operational Groups in 2018. The study focused on clustering the Operational Groups according to themes, the composition of their partnerships, how they share results, in what ways Managing Authorities and Rural Networks can give support and more.

- [Read the full Operational Groups assessment report on the EIP-AGRI website](#) ●





What are the neighbours doing?

German and Flemish Operational Groups have a look across the border

Thinking outside of the box can create fresh new ideas. This is also true for Operational Groups, partners can gain new insights by stepping beyond their own partnerships to exchange knowledge with other regional or national projects or with Operational Groups from across borders.

In October 2018, the German national rural network DVS organised an exchange visit where partners from German Operational Groups, innovation brokers and representatives from the Chamber of Agriculture, and agricultural representatives from the Netherlands and Luxembourg visited a number of Belgian Operational Group projects.

One of these was Biofruit Debuggers, a Flemish Operational Group in which 15 organic fruit farmers collaborate with research centre PC Fruit to find sustainable ways of controlling the red-legged shieldbug (*Pentatoma rufipes*) and the non-native brown marmorated stinkbug (*Halyomorpha halys*). Researcher Tim Beliën explains: "These pests cause substantial damage and quality loss to pear and apple orchards. In recent years, we saw more than 50% production loss in organic pear orchards."

Tim continues, "We keep a close eye on the bugs' lifecycles, feeding patterns and migration dynamics to find the most effective control strategies, including netting, traps and trap crops. These are then tested by our farmers. We are for instance exploring the effect of installing nets after the flowering stage to allow

pollinators to reach the trees but to limit damage from the pests. Knowledge exchange matters. We see for instance that birds or other natural enemies are not sufficient to control these pests in Belgium, nor in Germany. Within the project, we hold regular meetings at our farms to exchange experiences and to make sure that research results reach the orchard."

"We organised this transnational excursion to offer our Operational Groups, innovation brokers and administration the opportunity to exchange ideas, learn from each other and explore possibilities for cooperation", says Natascha Orthen from DVS. "We organised interpretation to make sure there were no language barriers. Operational Groups can use this experience to improve their work. After the event, for instance, the innovation broker from Lower Saxony set up a meeting with Dutch EIP coordinators to discuss potential cooperation. We are already looking forward to the next exchange."

- ▶ **More information** on Operational Group Biofruit debuggers [in the EIP-AGRI database](#)
- ▶ All background documents and presentations from the exchange visit can be found [on the website of the German national rural network](#) ●





Less waste, more value

INNOVATION FOR A CIRCULAR AND SUSTAINABLE BIOECONOMY



As the world faces challenges including climate change, land degradation, a growing population and limited natural resources, developing a circular bioeconomy could improve resource efficiency and contribute to a more sustainable farming and forestry sector.

Cooperation between farmers, foresters, researchers and industry can unlock new opportunities in the circular bioeconomy, shape new business models and help promote good practices. Waste from farming and forestry can be turned into bio-based products such as animal feed, bioplastics, heat and fuels. This can open up new markets and provide additional income for farmers and foresters.

► Read more about the [EU Bioeconomy Strategy](#)

Coordinator Giorgios Chalkias: "AgriMax is building two pilot biorefineries. One will process waste from tomatoes and cereals at a family-run farm in northern Italy. The second one, at a fruit producing facility in southern Spain, will process olive and potato waste to produce fibres, protein and aromas. An online stakeholder platform will coordinate the provision of waste from producers across each region. This will help deal with seasonal and regional fluctuations in production so we can make the most of the biorefineries throughout the year, maximising their efficiency and profitability."

Turning crop and food waste into bio-based products

In Europe, almost 90 million tonnes of food and 700 million tonnes of crops go to waste every year, contributing to greenhouse gas emissions and causing economic losses. The AgriMax project is developing economically viable ways to turn this waste into bio-based compounds that can be transformed into a variety of products, including food packaging, food additives and agricultural products such as fertilisers and biodegradable mulching pots.

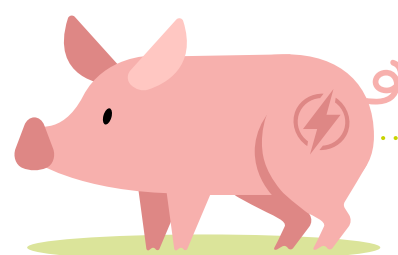
All new products are tested in close cooperation with farmers, agricultural cooperatives and bio-based companies. Any remaining biomass will be used for biogas or returned to the land for soil enrichment. AgriMax is working on strategies to commercialise its new products, to ensure regular incomes for local farmers, horticultural business and others supplying the biorefineries.

► AgriMax is funded under the Bio-Based Industries Joint Undertaking: <http://agrimax-project.eu>
Twitter: [@Agrimax_EU](#)





From pig manure to energy and soil amendments



While pig manure can be used to provide essential nutrients for agricultural crops as a fertiliser, an excess of manure on the farm can cause nutrient loss, lead to the contamination of ground and surface water and release greenhouse gas emissions in the atmosphere. Operational Group FLAMBE is developing solutions to turn pig manure into renewable energy and sustainable fertiliser that improves soil health.

The Operational Group from the Italian region of Emilia-Romagna is developing new processing techniques whereby fly larvae are used to digest the pig manure. The larva residues are then further processed.

“These technologies can help farmers reduce manure and turn this waste into renewable energy and biochar, which can be used on their farms and soils”, coordinator Lucrezia Lamastra explains. “Biochar is a climate-friendly fertiliser that supports long-term carbon storage in agricultural soils, improving structure and quality. Substituting pig manure with biochar as a soil amendment can also limit greenhouse gas and ammonia emissions. A number of farmers and farmer cooperatives from Emilia-Romagna closely collaborate with us to develop solutions that work in practice. They provide pig manure and apply and test the produced biochar in their soils, supporting us in finding ways to make good economic use of excess manure.”

► **More information** [in the EIP-AGRI database](#)

More innovative projects were presented at [the EIP-AGRI workshop 'Opportunities for farm diversification in the circular bioeconomy'](#).

Operational Group FLAMBE was one of the innovative projects proposed for the '1000 efficient solutions' sustainability label, exploring small changes with a big impact for challenges related to energy, water, sustainable food production and consumption.

More info on <https://solarimpulse.com/>





AgroCycle: recycling and adding value to agri-food waste



How can we make best use of waste streams from the agri-food sector from farm to fork? Horizon 2020 multi-actor project AgroCycle is tackling this question by identifying different possibilities for recycling and adding value to agri-food waste.

AgroCycle, which has partners from Europe and China, is piloting a number of projects including using duckweed to improve wastewater treatments, making edible products from rice bran and turning waste into bioplastics for food packaging. Results will help identify strategies that can support the European policy target of reducing food waste by 50% by 2030.

AgroCycle recently launched an online waste trading platform: "The [AgroCycle Marketplace](#) connects producers of agricultural waste with those who may be able to use it, for instance biotech companies", project coordinator Tom

Curran explains. "Platform users can list the residues they can offer, the tonnes available and details of the location, or they can use the platform to look for residues, share experiences, and browse practical examples." With an eye towards the future, AgroCycle has also set up a [Kids platform](#) which includes a toolkit for primary schools to raise awareness about the circular economy.

► **More information:** <http://www.agrocycle.eu/>
Twitter: [@AgroCycle_EU](#)

► The Horizon 2020 research programme is investing in solutions for renewable biological resources, reducing food waste and sustainable agri-food systems. Read more about the new calls in the [EIP-AGRI Brochure 'Funding opportunities under Horizon 2020'](#).



Bioeconomy for forestry

European forests offer many opportunities for making optimal use of natural resources. While wood remains the main source of income, forest biomass and woody by-products can generate additional revenue for farmers and foresters as it can be used in the production of bioenergy and as a substitute for non-renewable materials. For example, wood chips from residual wood can be used to generate biofuel and electricity and also to heat greenhouses, and wood fibres can be manufactured into alternatives to paper or plastic bags.

► More ideas on innovative uses for forest residues in the reports from the [EIP-AGRI Focus Group on Sustainable mobilisation of forest biomass](#) and the [Focus Group on Renewable energy on the farm](#). ●



Inspirational idea



Buzzing with innovation

Operational Groups develop solutions for sustainable beekeeping

Beekeeping plays an important role in the sustainable development of rural areas. It creates jobs, provides honey and other apiculture products, and is essential for pollination. Several innovative projects are developing tools and practices to deal with stressors that are currently affecting bee health, such as diseases, parasites and predators. They are also looking for solutions to threats for bees related to climate change.



Mapping and trapping *Vespa velutina* in northern Portugal

The *Vespa velutina* or Asian hornet is causing a lot of harm to bee colonies in Spain, France, Portugal and an increasing number of other European countries. This wasp preys on honeybees, causing stress to the colonies and severely affecting their honey production and their role in pollination.

To support beekeepers and minimise losses, a Portuguese Operational Group is developing geo-spatial maps that show the distribution of *Vespa velutina* nests in northern Portugal, indicating where the wasps are likely to invade. These maps make it possible to identify the best places to install selective traps to catch queens and worker wasps. They also calculate the most suitable areas for 'apiary transhumance' - moving the beehives to mountain areas where the wasps cannot attack them, but where the bees can still easily access flowers and shrubs. Project coordinator José Aranha: "Two websites will give beekeepers access to all the maps and other necessary information. We are now optimising new models of wasp occurrence, and we are testing a methodology to track wasps and nests through aerial photographs taken by drones."

"We have monthly meetings with the beekeepers that place, monitor and test the traps", José says. "They give us valuable information about the annual start of the wasp lifecycle and about the intensity of attacks. We know it is impossible to completely eliminate the wasps, but we can reduce their presence in areas that have already been invaded. We try to safeguard the regular activity of our honeybees, pollination for orchards and plant ecosystems, and the economic sustainability of our beekeeping."

► **More information** [in the EIP-AGRI project database](#)

The [EIP-AGRI Focus Group on Bee health and sustainable beekeeping](#) zooms in on ways to tackle pests and diseases and deal with climate change and the intensification of agriculture.

► During a field visit to the apiary at the Swedish University of Agricultural Sciences, the Focus Group experts tested a tool to detect the parasite mite *Varroa destructor*, developed by Operational Group Beescanning.

► Keep an eye out for the [results of this Focus Group on the EIP-AGRI website](#). ●





Spotlight on H2020 thematic networks

Bridging research and practice for the bioeconomy

Horizon 2020 thematic networks connect people from research and practice, to stimulate innovation and knowledge exchange for agriculture and forestry. Thematic networks collect existing knowledge and best practices and turn this into useful and easily understandable material for farmers, foresters, advisers and others. Thematic networks AGRIFORVALOR, ENABLING and PANACEA are bringing opportunities for a sustainable bioeconomy to the spotlight.



Adding value to biomass side streams

Thematic network AGRIFORVALOR has explored different ways to turn waste, by-products and residues from agriculture and forestry into valuable products and developed systems to organise these biomass side streams. It set up three 'innovation design hubs' in Spain, Hungary and Ireland, where farmers and foresters are connected with research and industry through smaller multi-actor innovation networks. AGRIFORVALOR coordinator Hartmut Welck: "In each hub people can share ideas for bio-industry applications, learn more about existing research and good practices and benefit from innovation support to develop good ideas into potential new income models. Our interactive 'side stream value tool' lets registered users browse

technologies and products, find practical results including existing market applications and search by country, inputs, readiness level and more. These results show the potential to build a sustainable bioeconomy where farmers and foresters can be active partners in the biomass value chain." AGRIFORVALOR held its final conference in July 2018. The tool will remain available on the AGRIFORVALOR website until 2020.

- **More on AGRIFORVALOR** (03/2016 - 08/2018): www.agriforvalor.eu - [Twitter](#) - [Video](#)
- **Did you know...** that AGRIFORVALOR helped set up [three Operational Groups](#)?





ENABLING: boosting the potential of biomass-to-biobased value chains

Europe has great potential to develop efficient biomass-to-BBP (Bio-Based Products and Processes) value chains. Thematic network ENABLING boosts this potential by sharing best practices and connecting producers with industry and others. "ENABLING is developing a 'Best Practices Atlas', which presents the best practices identified by the project on one single interactive map, to inspire stakeholders in the bio-based sector", scientific coordinator Carla de Carolis from ITABIA explains. "This includes for instance bioplastics or food flavouring made from thistle, or soil nutrients from wool. On the ENABLING website, the 'Biomass Matrix Tool' will give users an overview of available biomass for BBP products for a specific area, so that each user can evaluate which bio-based product chain or technology would be most suitable for them." A coaching service and a permanent innovation brokerage platform, also on the ENABLING website, will stimulate biomass producers and the BBP industry across Europe to contact each other to trade biomass residues, develop market opportunities and exchange knowledge on good practices and innovative approaches.

► **More on ENABLING** (12/2017 - 11/2020):
www.enabling-project.com | [Twitter](#)



PANACEA: a platform for non-food crops

Non-food crops such as flax, hemp and lavender can be used to produce a wide range of bio-based products including bioplastics, pharmaceutical oils and bio-energy. To stimulate the development of non-food crops in European agriculture, thematic network PANACEA is working to strengthen the cooperation between research, industry and the farming community. "We want to align the interests of the industry with those of farmers and researchers", says coordinator Efi Alexopoulou. "The PANACEA Platform, which is currently being fine-tuned, will allow farmers to browse feedstock needs from bio-based industries. The platform will showcase scientific results and directly applicable solutions, and it will feature videos illustrating production techniques as well as the economic and environmental benefits of adopting non-food crops. We expect that this will provide farmers with viable options to diversify their current crops. Farmers and industries will be able to use the platform for networking purposes, to contact each other, set up partnerships and share innovative ideas."

- **More on PANACEA** (11/2017 - 10/2020):
www.panacea-h2020.eu | [Twitter](#)
- Find an overview of all 29 thematic networks established so far [on the EIP-AGRI website](#).
- More details in the [EIP-AGRI brochure 'Thematic networks under Horizon 2020'](#) ●



Innovation by farmers, for farmers

On-farm demonstrations boosting peer-to-peer learning

Farmer-to-farmer exchanges can be very effective to promote the use of innovative technologies and approaches in the agricultural sector. This is why on-farm demonstrations can play a major part in stimulating peer-to-peer learning and sharing best practices. Horizon 2020 multi-actor projects AgriDemo-F2F, PLAID and NEFERTITI have joined forces to connect farm demonstration activities across Europe, stimulating knowledge exchange and the uptake of innovation.

Multi-actor projects [AgriDemo-F2F](#) and [PLAID](#) have compared different types of demonstration activities at open commercial farms across Europe. They looked at different approaches from various sectors and farming systems, covering both low-tech and high-tech techniques. The result is an inventory of demonstration farms and a selection of case studies and best practices, available in the [FarmDemo Hub](#).

[NEFERTITI](#) is taking these results further by establishing an EU-wide network of demonstration farms and the people involved. The project will support more than 700 demonstration events across Europe. It is also setting up 10 networks on selected themes, such as robust organic livestock systems, nutrient efficiency in horticulture, soil quality in arable crops and farm attractiveness for new entrants. Across these networks, 45 regional or national clusters have been established, bringing together farmers, advisers, NGOs, researchers, policy makers and others involved or interested in demonstration activities. The FarmDemo Hub will give platform users access to information on participating farms, events, webinars, videos and more to connect and share experiences.

► **More information:** <https://nefertiti-h2020.eu/> - [Twitter](#) - [LinkedIn](#) - [Youtube](#)





FarmON: embracing innovation through demonstration

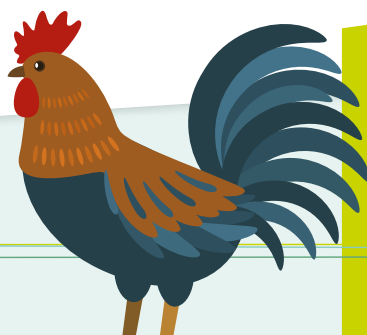
The FarmOn hub is one of the regional clusters in the NEFERTITI network on 'farm attractiveness'. It involves demonstration farms and agri-food innovators from Hungary. FarmOn has held its first hub event, which focused on raising awareness of the benefits of innovative farming and of working with advisory services.

The hub event took place at Imre Fazekas's farm, where he manages 700 ha of land for arable and combinable crop cultivation (hybrid corn, oil radish, mustard seed), combined with hen breeding. Imre showed a group of 29 early-career farmers and agricultural students the innovations that he applies on his farm, including a new seed sorting machine. He also spoke about future investments that he is planning to make, specifically tools for precision farming. "Bringing research results and innovation into agriculture is one of the most rewarding things", Imre says. "Sharing expert ideas gives us new insights and can have a high impact on agriculture."

When Imre was facing challenges with his product sales due to sudden market changes, an adviser helped him analyse and predict market trends, which would be beneficial in the long term. Adviser Tibor Bányai explained to the audience how advisers can help farmers to stay up to date with professional, economic and legal issues, how they can provide support in submitting grant applications and in making innovative changes on the farm. Hub coach András Vér sees this as the main benefits of demonstration events: "They allow farmers to share stories and experiences, inspiring people and initiating discussions and networking. Through our participation in the NEFERTITI / FarmDemo network, we can help build a forum for 'learning by doing' on the farm".

► What did the participants think of the event?

[Watch the event video on YouTube](#) ●



Find an updated overview of all H2020 multi-actor projects on the [EIP-AGRI website](#).



Measuring the water footprint of precision horticulture

Operational Group connects farmers to knowledge and innovation networks

Efficient water use is vital for fruit and vegetable producers in Almería, Spain. To help farmers optimise their resource use and create added value through certification, Operational Group H3 is developing a methodology to measure the water footprint of precision horticulture crops. This will allow farmers to reduce the water footprint of their crops and the risk of nitrate leaching. An agreed methodology to calculate the crop water footprint will also be helpful for Global GAP certification.

Lead partner COEXPHAL is an association of more than 80 farmer cooperatives with over 15 000 small family farmers. It guides the Operational Group in finding solutions by sharing research results and through knowledge exchange with European initiatives such as multi-actor project [Internet of Food and Farm](#). It also provides opportunities for the Group's farmer members to visit on-farm demonstrations in other countries through projects such as [Nefertiti / FarmDemo](#). "The Operational Group fits into a larger ecosystem", says Cynthia Giagnocavo, who holds the COEXPHAL-UAL Chair in Horticulture, Cooperative Studies and Sustainable Development at the University of Almería. "We've invited an Operational Group from another Spanish area working on water themes to the University and we invited our farmers to learn and benefit from this exchange. The connection of several of the Operational Group partners to wider knowledge networks also helps to bring in new ideas. For instance, the University of Almería and COEXPHAL participate in the new 'Almería SmartAgriHub', which focuses on solutions for water and energy use, greenhouse production, digital tools and more. This is connected to the multi-actor project [SmartAgriHubs](#).

Cynthia participated as an expert in the EIP-AGRI Focus Group on Benchmarking. She has attended several EIP-AGRI events on sustainable water use and on digitisation and data sharing in agriculture. "My participation in these events sparked new connections and gave me insights that I can now apply in ongoing and new projects. The multi-actor approach really works to involve different layers in the network, to encourage shared responsibility for knowledge creation, and to find effective solutions."

► **More info** on Operational Group H3 in the [EIP-AGRI Innovative Projects Catalogue](#) ●





Inspirational idea



Carbon 'N' Caux

Agroecology for sustainable soils

The Pays de Caux is an area in the French region of Normandy known for its productive agricultural sector. But since the 1990s, the size of fields has increased and grasslands have been ploughed up, causing soil erosion. This has led to pesticide and nitrate leaching and a decrease in organic matter content. The 17 farmers of the Operational Group Carbon 'N' Caux are addressing this issue by turning to agroecology.

Agroecology is an agricultural approach that builds on and works with interactions between plants, animals, humans and the environment. Farmers apply solutions that are based on the specific situation and natural environment of the farm to increase the production and quality of agricultural products. At the same time, these solutions protect natural resources and preserve biodiversity while reducing the loss of water, nutrients and carbon from the soil. Eline Langlois, adviser and project coordinator says: "The objective of the project is to achieve a positive carbon footprint at farm level. On each of the 17 farms, we will test innovative farming techniques to store carbon in the soil while maintaining profitability and sustainability."

Three trial platforms have been set up. Farmer Fabrice Lethuillier, who is running one of the trials, explains: "Over 3 years, we will test bio-control products to repel pests and avoid the use of pesticides on a plot of my farm. This trial will allow us to analyse the development of soil life and carbon content over a long period of time." The other trials focus on how cover crops contribute to carbon storage, and on the impact of cover crop mulch on carbon variations in the soil. The different project activities will enable the creation of a simple tool to calculate the carbon footprint of a farm. It will be shared with other farmers in France.

This Operational Group is also an Economic and Environmental Interest Group (GIEE) - an official recognition by the French State for collective activities initiated by farmers to enable the transition to agroecology. More information on the [GIEE](#) website.

Agroecology at the heart of the discussions at AIS 2019



Between 300 and 400 farmers, researchers, advisers, associations and decision makers met in Normandy in June 2019 for the second Agri Innovation Summit, dedicated to the contribution of EIP-AGRI to the transition to agroecology. As part of this event, participants visited Fabrice Lethuillier's farm to find out more about Carbon 'N' Caux. [More information on the AIS 2019](#)





Innovation and advisory support in the new CAP

Innovation support services play a major role in grasping ideas and turning them into innovative projects. They can connect farmers with others in the Agricultural Knowledge and Innovation System (AKIS), such as advisers, researchers and rural networks, give them relevant information or foster new partnerships. They can identify funding and offer practical support to prepare project proposals that put farmers' needs first.

The European Commission's proposal for the new Common Agricultural Policy (CAP) after 2020 mentions that all member states will need to provide advisory and innovation support services, to share and make knowledge and innovation available to everyone in the AKIS network.



**Innovatiesteunpunt:
Inspiration for interactive innovation**

Innovatiesteunpunt is the Flemish Innovation Support Centre for agriculture and rural development. It works with a range of partners from various sectors, including research centres, the Belgian farmer organisation Boerenbond and many organisations from their broader European network. To inspire farmers, rural communities and local authorities, Innovatiesteunpunt shares good practices and organises trainings, brainstorm sessions and innovation days on sustainable energy, emissions, climate-friendly farming, new types of cooperation, new income models and more.

Coordinator Stijn Bossin: "When farmers come to us with an innovative idea or concrete need, we give them advice, funding options, and support to develop their idea into a solution. We bring them in contact with other innovation partners such as other farmers, entrepreneurs and researchers to stimulate exchanges. We always work on real problems that farmers face, involving them as much as possible."

Innovatiesteunpunt tests new ideas in practice by setting up pilot projects, or through other project channels including Operational Groups, H2020 projects and demonstration projects. Stijn continues: "By participating in various national and international projects, we broaden our own horizon and gain new ideas that we can then feed back to our farmers."

► **More information:**
www.innovatiesteunpunt.be





As an advisory service, the Innovation Office EIP-Agrar in Schleswig-Holstein, Germany, is closely linked to farmers. It supports the Ministry of Agriculture in preparing and facilitating EIP-AGRI Operational Groups, giving advice on funding opportunities, suitable partners and administrative questions, and it helps share project results:
www.eip-agrar-sh.de/en



Advisory support for innovation and Hen Harrier conservation

Hen harriers are good indicators of biodiversity and well-functioning ecosystems. Irish authorities have classified six Special Protection Areas (SPAs) in upland areas, covering more than 167 000 hectares for the conservation of the species. The low-intensity farming that is carried out in these areas, which are dominated by peatland and wet grassland, supports High Nature Value farmland and biodiversity.

The 'Hen Harrier' Operational Group gives local farmers the opportunity to test agri-environmental measures that will improve hen harrier habitat conditions on their fields. Project manager Fergal Monaghan: "Trained advisers help participating farmers to assess the habitats on their farms, advise them on appropriate supporting actions and help prepare an annual working plan. This plan lists actions selected by the farmer, for instance planting hedgerows, putting in water troughs, grazing firebreaks, linear strips of wild bird cover and safer nesting areas. The adviser scores the habitats on each field, and can advise farmers on strategies to enhance their scores, resulting in higher payments. This gives farmers a real incentive to support agri-environmental sustainability on their own farms."

► www.henharrierproject.ie

► **More information** in the EIP-AGRI brochures on [Agricultural Knowledge and Innovation Systems](#) and [Innovation support services](#) ●





Focusing on food loss

EIP-AGRI Focus Groups tackle circularity in food chains and elsewhere

EIP-AGRI Focus Groups bring together 20 experts to deal with challenges that the farming and forestry sectors are currently facing. Each Focus Group includes a mix of farmers, foresters, advisers, researchers and business representatives to tackle a specific issue. They take stock of difficulties, opportunities and good practices, and they make suggestions for further research and for Operational Group topics.

38 Focus Groups have been set up, many of them have already published their results. A number of them have focused on circular production systems, such as [nutrient recycling](#), [circular horticulture](#), [renewable energy on the farm](#), [forest biomass](#), [new feed for pigs and poultry](#) and [reducing food loss on the farm](#).

Five new Focus Groups started in 2019:

- ▶ [Bee health and sustainable beekeeping](#)
 - ▶ [Diversification through plant-based medicinal and cosmetic products](#)
 - ▶ [Soil salinisation](#)
 - ▶ [Protecting agricultural soils from contamination](#)
 - ▶ [Reducing antimicrobial use in poultry farming](#)
- ▶ Keep an eye on [the EIP-AGRI website](#) for all Focus Group results.





Food heroes

Interreg project 'Food Heroes' has presented an award to three projects working on reducing food loss. Find out more about the winning food heroes EnVie (BE, fruit & vegetables), In Ovo (NL, male animals) and Mussela (FR, fish & seafood) on the project website: <https://foodheroesaward.eu/>



Too good to go: reducing food waste on the farm

The mobile app 'Too good to go' lets users buy surplus food from bakeries, supermarkets, restaurants and



other local retailers at a lower price. Customers can buy and collect a surprise bag of food products that would otherwise have ended up in the bin. With 3 million active customers in 11 countries, Too good to go is now making a particular effort to involve more farmers.

"Farmers are at the start of our food chain. They can help us reduce food waste and ensure that all produced food is actually consumed", says Marine Louessard from the French branch of Too good to go. "We are adapting our application to the specific needs of farmers. Their time is limited, and they may have an issue with providing enough variety in the products, especially in winter or when only specific crops are available. With a farmer from the area of Nantes, we have tried working with seasonal products, only radishes for instance. We have also experimented with letting people collect their products directly from the field. In both cases, the farmer was able to make a profit and customers gave positive feedback. The app will help attract new customers to the farm who, as a bonus, may also buy other farm products when they collect their food bag. We can also help farmers advertise their farm business. Most importantly, the app can help farmers save good food products from their farm that would otherwise go to waste."

- ▶ **More information:** <https://toogoodtogo.com/en>
- ▶ This app was presented at the second meeting of the Focus Group 'reducing food loss on the farm'. The results from the Focus Group will be posted on the EIP-AGRI website. ●



The [EIP-AGRI Focus Groups on Diseases and pests in viticulture](#) and [Pests and diseases of the olive tree](#) propose solutions to make grapevines and olive growing more resilient to pests and diseases. All results on the [EIP-AGRI website](#).



Inspirational idea



A mobile app to monitor pests and diseases in Umbria, Italy

Monitoring systems can be an efficient tool to indicate the presence of pests and diseases and predict future outbreaks, providing farmers with specific information so they can apply crop protection products more efficiently and target pests and diseases more effectively.

The main goal of Italian Operational Group Smart Meteo is to limit damage to vineyards, olive trees and cereal crops while using less pesticides. They are developing a monitoring system that helps predict risks for pests and diseases affecting these common crops in the region of Umbria.

The Smart Meteo platform gives farmers weekly bulletins with accurate information to help them protect their olive trees, grapevines and cereal crops. The reports include local weather observations and forecasts based on data collected through a network of more than 100 weather stations. Specific information is also given about the crops and their growing stages, and about potential outbreaks of pests and diseases. The data are backed up by field observations pinpointing where the pests or diseases were detected. When an outbreak is expected, farmers receive advice on preventive actions or suitable treatments.

“The bulletins are freely available through the Smart Meteo website”, project coordinator Alessandro Sdogo explains. “Website users have further access to specific services, depending on the type of crop that they select, either [olive trees](#), [vineyards](#) or [cereals](#). We are also developing

dedicated apps to monitor grapevines (“4grapes”) and olive trees (“Assoprol DSS”). Currently only designated monitoring technicians can upload field observations using the app, but in the future also farmers will be able to do so. We see that many farmers show a strong interest in using technology to protect their crops from pests and diseases, with both environmental and economic benefits.”

► **More information:** <http://cratia.it/smartmeteo> or check the innovation portal of the Italian National Rural Network: <https://www.innovarurale.it/>

The EIP-AGRI website contains a section on ‘[digitising agriculture](#)’, which unlocks all the digital knowledge available through the EIP-AGRI network. This includes inspiring projects working on decision support tools, precision farming, robotics, improving digital skills and more. ●





Managing editor: Kerstin Rosenow, Head of Unit – Research and Innovation, AGRI-B2, Directorate-General for Agriculture and Rural Development, European Commission

Lay-out and Design: EIP-AGRI Service Point

Photographs: AGRIFORVALOR / Alexander Louvet; AgriMax; AgroCycle; Operational Group 'Carbon 'N' Caux', France; Operational Group 'Development of a decision making support system for the reduction of winter wheat leaf and hoof disease', Latvia; Operational Group 'Development of tools to optimise coordinated manure management and to improve soil fertilisation, crop quality and environmental protection', Spain; EIP-AGRI Service Point; ENABLING; European Commission; FarmOn hub / Krisztina Takács; Operational Group FLAMBE, Italy; Food Heroes Interreg NWE; Operational Group FOPE 2015, Spain; Hen Harrier project; Innovatiesteunpunt; Innovation Office EIP-Agrar Schleswig-Holstein; NEFERTITI / FarmDemo; PANACEA; Scottish Government; Shutterstock.com; Operational Group Smart Meteo, Italy; Operational Group 'Sustainable pastures', Portugal (colophon picture); Operational Group 'Working together on the Kromme Rijn nutrient cycle', the Netherlands.

Group picture Operational Group H3 on p. 16 features: David Benavides-Segura (Caparrós Nature), Cynthia Giagnocavo (University of Almería), Toñi Felices-Gómez (WISE Irrisystem SL), Victoria Cruz-Sánchez (COEXPHAL), Jesús López-Carreño (PROYECTA INGENIO) (partner Global GAP not featured).

Cover picture taken at one of the field trips of the [EIP-AGRI workshop 'Connecting innovative projects: Water and Agriculture'](#), held in Almería, Spain, May 2018.



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Agrinnovation magazine is published in English and is available in digital format on the EIP-AGRI website: www.eip-agri.eu



Manuscript finalised June 2019 | Luxembourg: Publications Office of the European Union, 2019
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Printed in Belgium

The texts in this publication are for information purposes only and are not legally binding

Print: ISBN 978-92-76-01914-5

ISSN 2363-2135

DOI: 10.2762/948609

KF-AM-19-001-EN-C

PDF: ISBN 978-92-76-01913-8

ISSN 2363-2143

DOI: 10.2762/047876

KF-AM-19-001-EN-N



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