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- Fresh food for cities: Smarter supply chains to link producers and consumers
- Operational Groups: Inspiring innovation for European agriculture
- "If you can measure it, you can manage it": Farm benchmarking benefits
- EIP-AGRI Focus Groups: What's cooking?
- Innovation: From food waste to resource

GREECE: Fresh farm milk for city dwellers

ESTONIA: New forest products: spruce juice

POLAND: Forging opportunities for local farmers



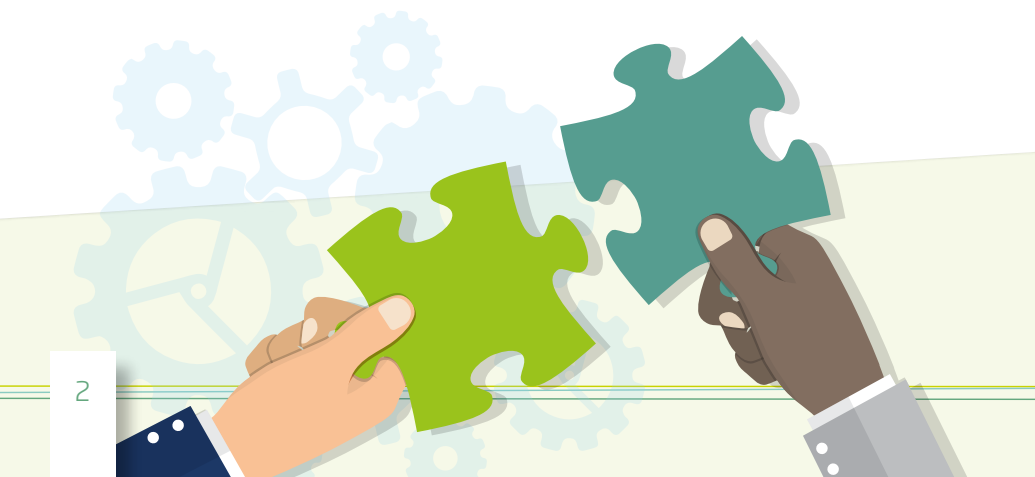
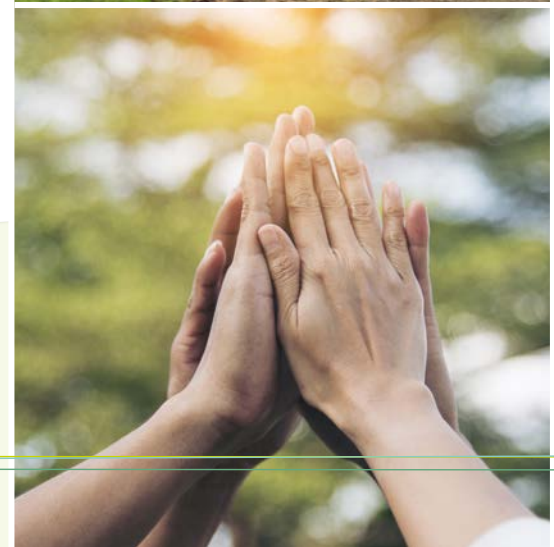
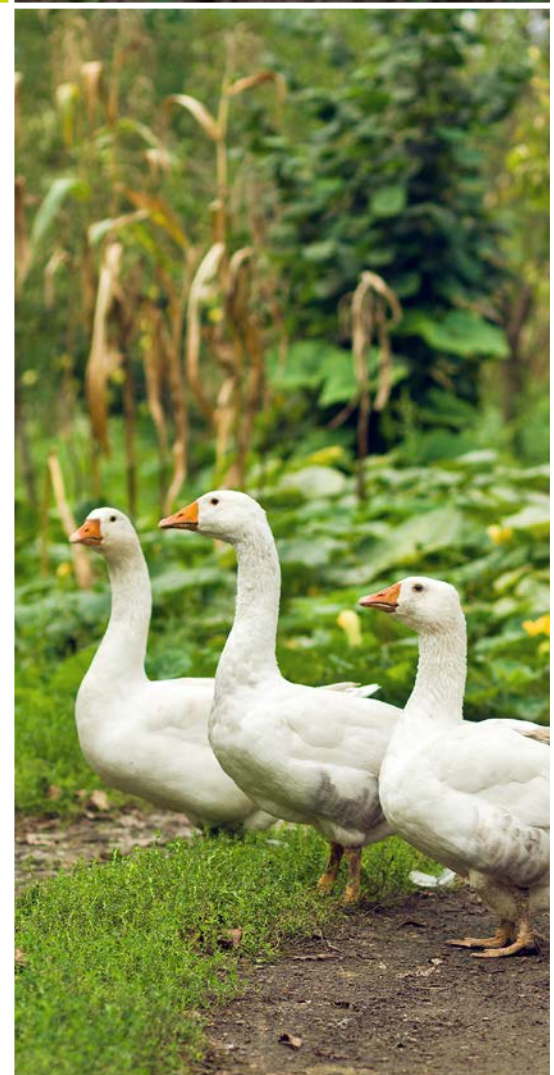
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Table of contents

Welcome	3
Fresh food for cities - building smarter supply chains to connect producers and consumers	4
Thes Gala: fresh farm milk for people in the city	7
Operational Groups: inspiring innovation for European agriculture	8
Grazing on salt marsh pastures	11
Multi-actor projects: stronger together	12
Fighting food waste through innovation: sustainable packaging from tomatoes	13
Thematic networks: interactive platforms for knowledge and innovation	14
Food traceability from honey to hive	16
Farmbench: improving farm resilience through benchmarking	17
Cutting atmospheric carbon: a central role for soils	19
EIP-AGRI Focus Groups: what's cooking?	20
New forest products: spruce needle juice from Estonia	22



Welcome



In 2017 the EIP-AGRI network entered its fifth year of activity. Five years during which it has contributed to turning the EIP-AGRI “interactive innovation” concept into an established way of working. Looking back, a lot has already been achieved in such a relatively short period.

EU Member States and regions are enthusiastic about the EIP-AGRI, and we can proudly say today that so are our stakeholders. Under the Rural Development Policy, the vast majority of rural development programmes (98 out of 112, across 27 Member States) took up the challenge of supporting the EIP-AGRI, and devoted resources to setting up and running Operational Groups.

As the EIP-AGRI is growing, so its network broadens and thrives: the EIP-AGRI network has already directly mobilised over 5 000 experts. These include farmers and foresters, advisers, researchers, policy makers and other actors across the EU, promoting knowledge exchange and a wealth of innovations for the farming and forestry sectors. With this, a unique collection of knowledge is constantly growing, built by the network’s community (you!). Thanks to this community (and thus to you!) around 3 200 innovation projects are expected to see the light by the end of 2020, and over 400 have already started; some are already beginning to make their results available for the benefit of the wider farming community.

Moreover, did you know that the EIP-AGRI online community has more than 3 000 registered website users, 2 500 Twitter followers, more than 1 300 LinkedIn connections and over 6 000 subscribers to the monthly newsletter? Covering the whole of the EU, this represents an impressive range of opportunities, accessible through the EIP-AGRI website, for you to stay updated on the network’s latest activities, explore funding opportunities for your projects, and to find people, inspiring ideas and innovative solutions ready to be implemented in practice.

It is worth to underline also that by linking Horizon 2020 and the EU Common Agricultural Policy, we are gradually building a comprehensive knowledge and innovation ecosystem that is capable of delivering on the challenges faced by EU agriculture and rural areas. I believe all this shows the added value of the EIP-AGRI network to realise the EIP’s mission of bridging research and practice.

In this issue of Agrinnovation we are focusing on food production. We present a diverse selection of interesting projects and EIP-AGRI initiatives, such as a Polish idea to shorten the distance between farmers and consumers, and results from a contest on food waste solutions. We also zoom in on Horizon 2020 Thematic Networks connecting with Operational Groups, and present inspirational stories from Estonia, Greece, the UK and many more.

I hope you enjoy reading this edition, and will feel inspired to test new ideas or share innovative practical solutions through the EIP-AGRI network!



Maria Angeles Benitez Salas
Deputy Director General
Directorate-General for Agriculture and Rural Development



Fresh food for cities

Building smarter supply chains to connect producers and consumers

The majority of people in the EU live in cities. This opens up an enormous potential for agri-food producers involved in food supply chains in and around urban areas. The challenge is to connect the two, stimulating market opportunities for local farmers and giving city populations access to fresh, healthy food.

For farmers and food producers, cooperation with cities and consumers can help establish a stable supply chain and better income. While the number of intermediaries between producer and citizen depends on the product (and for instance on the remoteness of the production location), a clear calculation of costs and revenues in short food supply chains can help the primary producer to retain more added value.

In September 2016, farmers, food entrepreneurs, city authorities, researchers and others from 20 different EU countries met at the EIP-AGRI workshop 'Cities and Food' in Poland. They explored efficient ways of building sustainable food systems and supply chains that can help connect food producers and consumers.

The cities that were represented at this workshop had all signed the Milan Urban Food Policy Pact (MUFPP) in 2015 – committing themselves to actively look for sustainable ways of giving food producers better access to city markets. The MUFPP was signed by 53 cities from 15 EU member states. The workshop in Poland offered an opportunity for them to discuss smarter logistics.

Public procurement for hospitals and schools, for instance, was one of the tools suggested to shorten the distance between farmers and urban consumers. Prior market dialogue and sharing good practices can boost the potential that these short food supply chains and urban food systems hold.



Have a look at the presentations, the final report and the factsheet from the EIP-AGRI workshop 'Cities and Food' [on the EIP-AGRI website](#).





Bringing locally-produced food to the city in Malopolska, Poland

Fresh food produced by farmers in the Polish Malopolska region is increasingly in demand with city consumers. The initiative 'Local products from Malopolska' has forged opportunities for local farmers to sell their food directly, through farmers' markets and other ways to connect producers and consumers.

Until recently, restrictive tax and sanitary rules prevented farmers in the Malopolska region from selling processed food made from products grown on their farms, such as jam, butter, cheese and juices. To answer a growing demand for locally-produced, traceable food, 'Local Products from Malopolska' created opportunities for small farmers and food producers to increase their market access and connect with consumers through direct sales.

Local Products from Malopolska is a food system that is co-created by farmers, food producers, NGOs, and business and public sector partners, including the regional government authorities, with support from the Polish Environmental Partnership Foundation. The partnership has set up a farmers' market in Krakow exclusively for Malopolska farmers and food producers from the Malopolska region, as well as a kitchen incubator that enables farmers to meet sanitary rules and learn about food processing, and a bistro that offers meals, a shop and a catering service. Farmers sell their products directly to consumers, which allows them to increase their profitability. Consumers can buy fresh and locally produced food that is fully traceable, and they can also give valuable feedback to producers.

A certification system is used to assure quality and authenticity of origin.

The key innovation is a customised IT platform that allows producers to organise joint sales every week. This means that farmers jointly offer their products, and an IT-based system then helps them organise sales and distribution. At the start of the 2017 farming season, 175 producers were regularly selling through this system. They also use it to build their own customer base and explore on-farm sales. "Our partnership approach has inspired other local food initiatives, not just around Krakow but also in other Polish regions", says Rafal Serafin from the Polish Environmental Partnership Foundation. "The system works well. For small farmers who are dispersed geographically, it turns challenges into opportunities."

Find out more:

- ▶ Local Products from Malopolska: <http://en.produktlokalny.pl/>
- ▶ Results from the [EIP-AGRI Focus Group on Innovative short food supply chain management](#) offer more inspirational ideas.





Sustainable food for Copenhagen's kitchens

Public food procurement for nurseries, schools and elderly homes can be a tool to shorten the distance between farmers and urban consumers. "Continuous dialogue between suppliers and kitchens can make a big difference", says Betina Bergmann Madsen, chief procurement officer for the Municipality of Copenhagen, Denmark.

The Copenhagen city government is responsible for food procurement for 'public kitchens' including those preparing food for hospitals, schools and homes for the elderly. Copenhagen set itself an ambitious goal in 2001: to use organic food in 90% of all public meals that are procured in the city. In 2016



this goal was achieved. "We continuously want to improve the supply of seasonal, fresh, high quality ingredients into the public

food systems", Betina explains. "Before the tender is written, we ask the kitchen about its needs. Nursery schools may for example request a box of fresh fish in season, delivered every week. We then go into dialogue with the markets to see what they can provide, and keep in close contact with kitchens and potential suppliers during the process of writing the tender."

Tenders are often split up into smaller, specialised lots to make them more accessible to small-scale producers and small and medium-sized enterprises (SMEs). "We offer advice on how to fill in the tender, and use a common template to simplify the forms and lower the administrative burden. Prior market dialogue can substantially improve the contracts. We are convinced that by having better contracts, we can get better products."

The Copenhagen approach was presented at the EIP-AGRI workshop on Cities and Food. For more information, [take a look at the event webpage](#) or [contact Betina Bergmann Madsen](#). ●





Inspirational idea



Thes Gala

Fresh farm milk for people in the city

The Greek dairy farmers' cooperative Thes Gala is selling their fresh milk directly to consumers in the city using milk vending machines. This innovative approach to selling fresh milk has proved very popular, and the cooperative now supplies 63 vending machines in 3 cities, selling milk to around 25 000 customers every day.

In 2013, Thes Gala ('do you want milk?') started installing milk vending machines in the city of Larissa, where they now have 16 outlets, and extended to Thessaloniki in 2015 with 17 outlets. After winning a Greek innovation prize in 2016, Thes Gala set up its first vending machines in Athens.

"We set up the cooperative in 2011, together with a number of dairy farmers who were keen to test new ideas, following a philosophy of transparency and high quality standards", says Thes Gala press officer Iannis Giannakopoulos. "Thes Gala now counts around 45 dairy farms with an average of 110 dairy cows per farm, producing 120 tons of milk per day, or around 10% of the milk produced in Greece. 40% of this milk is sold by the vending machines."

The cooperative has further diversified its products, selling pasteurised chocolate milk and different types of cheese and yoghurt. On their website you can find the locations of the vending machines, instructions on how to use them, as well as interesting recipes. It also describes how the cooperative seeks to reduce the use of antibiotics in the herds, and lists the financial results of the cooperative, showing their commitment to transparency.

The farmers of Thes Gala take pride in their cows and in the quality of their products. They know the farmers who produce feed for the cows, and have installed a rigorous quality control system from feed to farm to dairy product sales. "Being involved in Thes Gala gives us certainty about milk prices and allows us to make plans for our dairy farms and keep them sustainable", says Giorgos Sdanis, one of the farmers involved, and also vice president of the cooperative. "By going straight to the consumer, we can cut out packaging and intermediary costs, and have a more profitable sale, not just for us but also for the customer."

For more information:

- ▶ Contact info@thesgala.gr or visit www.thesgala.gr (website in Greek)





#EU_OG 



Operational Groups

Inspiring innovation for European agriculture

EIP-AGRI Operational Groups (OGs) offer a new way of turning innovative ideas into real solutions for the field. They allow farmers, researchers, advisers and agribusinesses to work together to tackle specific challenges faced by European farmers and foresters. Over 400 Operational Group projects are now up and running across Europe. By sharing experiences and results, and by connecting with other projects, Operational Groups help build a network of knowledge that can benefit the wider farming community.

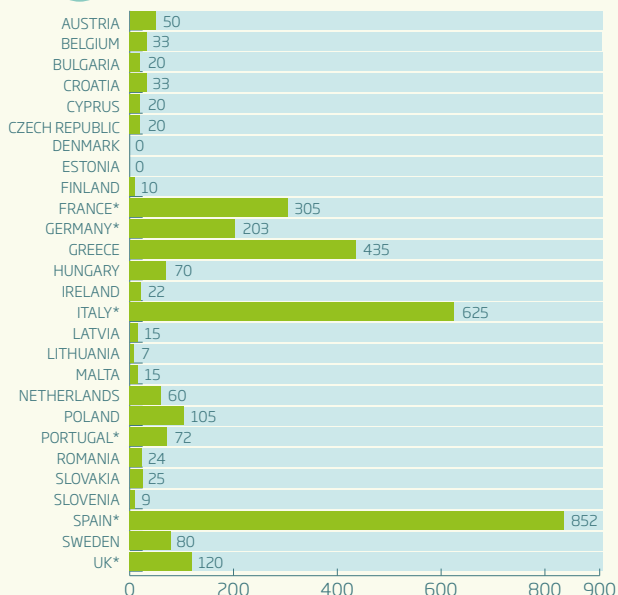
Operational Groups (OGs) are groups of people with complementary knowledge and skills who work together in an innovation project funded by the Rural Development Programmes (RDPs). Farmers and foresters specifically need to be closely involved throughout the project to ensure that the project results are relevant and likely to be quickly applied in the field. A first generation of Operational Groups has started, with some projects already finished.

Did you know?

- ▶ There are 112 (national and regional) Rural Development Programmes (RDPs) in the EU. 98 of these are implementing the EIP-AGRI in the period 2014-2020. Find a full overview on the [EIP-AGRI website](#).
- ▶ The [RDP Managing Authority in your country or region](#) publishes calls for Operational Groups, and selects them. They can give you more information on the calls and their specific requirements. Your country's [National Rural Network](#) can also provide more information.
- ▶ More than 3200 Operational Groups are currently planned for the period 2014-2020.



Number of planned EIP Operational Groups in the 2014-2020 RDPs



*sum of single RDPs - update September 2017 - source European Commission



Want to find out more?

- ▶ Browse Operational Groups in the Meeting Point on the [EIP-AGRI website](#)
- ▶ Get more details in the updated [EIP-AGRI brochure on Operational Groups](#), available in different languages



Bridging research and practice

Operational Groups can connect with multi-actor projects and thematic networks, both funded under the EU research framework Horizon 2020. Operational Groups have a clear, practical innovation purpose in their region or country. They can also benefit from being involved in EU-wide Horizon 2020 projects, which can offer even more knowledge that can help develop a specific practical solution.



SheepNet meets Live Lambs

The thematic network 'SheepNet' collects and exchanges practical knowledge to improve the productivity of meat and milk sheep in European farming. The network creates links between Operational Groups working on similar topics, nationally and across the EU. By doing so, it collects and spreads knowledge to encourage the use of innovative technologies and practices.

The Scottish Operational Group 'Live Lambs' identifies farmers' needs in lamb survival and farm profitability. Some of the group's members have participated in national and international workshops organised by SheepNet. "We are seeing the start of international farmer-to-farmer knowledge exchange across the Operational Groups", says Live Lambs facilitator Poppy Frater. "Farmers get the opportunity to speak with other farmers, advisers and scientists about lamb losses. The value of this collaboration will even increase as we bring all available solutions together and provide future knowledge exchange opportunities in different countries."





Informing and connecting: Innovation Support Services

Innovation Support Services provide information on how to set up Operational Group projects or find suitable partners. They also promote knowledge exchange by making Operational Groups visible and by communicating their results as inspiration for other projects.



► Read more in the [EIP-AGRI brochure on Innovation Support Services](#)

Get connected at My EIP-AGRI

The EIP-AGRI website now has a new section dedicated specifically to Operational Groups. It collects information, publications, news items and all other relevant items from across the EIP-AGRI website, so that you can easily browse information on this topic. It will be automatically updated with all the latest Operational Group information.



► My EIP-AGRI: <https://ec.europa.eu/eip/agriculture/en/my-eip-agri/operational-groups> ●



Innovation support in the Marche region

Innovamarche is the public innovation broker for the Italian Marche region, working in close cooperation with the regional Managing Authority. Innovamarche invites farmers, researchers and advisers interested in setting up an Operational Group to their info days and thematic workshops. An interactive platform helps users look for project partners, share ideas and good practices, and be inspired by results from other initiatives from across Europe. "When projects have been approved for RDP funding, we support them and give technical advice when needed", says coordinator Cristina Martellini. "The Innovamarche platform is an interactive hub that creates networking opportunities for regional projects on a European scale. To stimulate a wide distribution of results, we make sure - in collaboration with the Marche Managing Authority - that all information on active Operational Groups from the region is published on the EIP-AGRI website."

Innovamarche is a project of ASSAM - Agency for Agrofood Sector Services of the Marche Region:
► www.innovamarche.it (website in Italian)

"Information on our Operational Group, including a full description and contact details, is available on the EIP-AGRI website. We have noticed that this makes it easier for others who work in projects with similar themes to connect with us. People have already contacted us to find out how we interact and deal with opportunities and challenges along the way. We can definitely learn from each other."

- Rosa Altisent, coordinator of Operational Group 'control of Monilinia spp. in stone fruit', Catalonia, Spain -



Watch the video where Operational Group members talk about their experiences. Subtitles in different languages are available.



Inspirational idea



Grazing on salt marsh pastures

Lamb production in coastal ecosystems

The tidal marshes on the north coast of Wales have a rich biodiversity making them an ideal grazing area for salt marsh lambs. Farmers across Europe are making the most of the unique character of this type of pasture by marketing the lamb as a specialty product. The lambs have a varied and nutritious diet whilst grazing which gives the meat a very special flavour.

Salt marsh lambs graze on estuary pastures between land and sea that are regularly flooded by the tides. It is this unique grazing environment that really makes the difference in the production of this meat.



continue grazing their sheep on these unique natural pastures.

Welsh sheep farmer Rowland Pritchard started selling and marketing his lambs as salt marsh lamb in 2004: “we graze our lambs on the Gower salt marsh near the Burry Estuary. All our lambs are born on the farm and spend most of their lives grazing the marsh and the plants that grow on it.” The lamb meat is mainly sold through direct and online sales, allowing the business to be more sustainable, “all our lambs are fully traceable”, Rowland continues. “Customers can buy the lamb meat directly from us, and we see that people keep coming back because they know they’re getting a high quality and special product.”

- ▶ More information: www.gowersaltmarshlamb.co.uk
- ▶ Find out more about the value of specific pastures on the webpage of the [EIP-AGRI Focus Group on Permanent grassland](#). ●



The salt marshes are naturally made up of salt-tolerant plants such as samphire, sorrel, sea lavender and thrift. These mineral-rich plants which give the lambs a nutritious diet, also create the rich and sweet flavour and tenderness in the lamb meat that is appreciated by chefs and consumers alike.

Salt marsh lamb has already been considered a delicacy for many years in France, where the lamb has obtained its own PGI certification (‘agneau de pré salé’). This type of lamb is now also becoming more popular in Wales and other parts of the UK where salt marshes are abundant. Marketing the lamb as a high quality product, and selling it directly to chefs or consumers is helping farmers to





Multi-actor projects: stronger together

Horizon 2020 multi-actor projects bring together farmers, researchers, advisers and agri-businesses to tackle real needs from the field, supporting the idea that innovation is strengthened by combining knowledge and experiences from a diverse range of people.

The European Commission's research and innovation programme Horizon 2020 offers funding for projects in the fields of food security, sustainable agriculture, bioeconomy and more. Many of these projects have to apply a 'multi-actor approach' (MAA), which means that project partners must have complementary types of knowledge from research and practice. All partners, especially farmers, have to be closely involved throughout the whole project. This allows MAA projects to develop solutions that are more likely to be applied in practice and picked up by others.

Every MAA project needs to give regular updates on its main findings in what is called 'practice abstracts'. These short documents have a specific format, including a clear title, a brief summary of the topic and main results, and contact details. All abstracts will be made available on the EIP-AGRI website. Anyone in the EIP-AGRI network will be able to search this information by theme, sector or region.



- Read more detailed information in the [EIP-AGRI brochure on multi-actor projects](#) ●

EU research for strong local food chains

The Horizon 2020 funded Strength2Food project explores ways to improve EU food quality schemes and public sector food procurement, and to encourage short food supply chains. One of the project's six pilot initiatives, for example, focuses on school meals in Croatia and Serbia, boosting the nutritional quality of the meals as well as the economic benefits and opportunities for local farmers. Project coordinator Matthew Gorton believes in the MAA approach: "The topics of our pilot initiatives were all identified by people from the field as relevant to them. So while multi-actor projects can be relatively more complex to manage, they allow us to put lessons from research into practice. In terms of having an impact, they're the best way to go."

- More information: <http://www.strength2food.eu/>





Fighting food waste through innovation

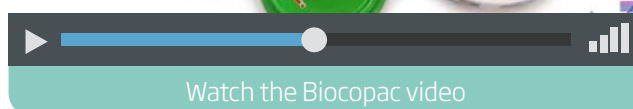
Making sustainable packaging from tomatoes

The fruit and vegetable industry is an important player in the European agri-food chain. With more than 3 000 companies, tomato processing firms are well represented, especially in Southern European countries. Following an increasing demand for environmentally friendly products and attention to food safety, the Biocopac research project has developed a new way to deal with food residues from tomato processing - turning them into a reusable resource for packaging.

By-products from food processing weigh up to about 300 million tons of waste per year in the EU, according to figures from the research project Biocopac. This EU-funded FP7 project has now developed a novel way of turning tomato skins into a bio-lacquer that can be used as a natural coating for metal food cans. It involves extracting cutin (a waxy polymer) from the tomato peel and turning it into lacquered sheets that can be applied to metallic surfaces.

By reusing what would normally be considered waste, food processors can lower their impact on the environment. The development of a natural lacquer for food packaging also reduces the risk of

food contamination, it increases the sustainability of the cans by making them more suitable for recycling, and contributes to the competitiveness of the metal packaging sector.



Fresh solutions to fight food waste

The Horizon 2020 research project [REFRESH](#) (Resource Efficient Food and dRink for the Entire Supply cHain) held a contest to find the freshest food waste solutions across Europe. Meet the winners!

- ▶ [Wastewatchers](#) - the Netherlands
- ▶ [Transition surplus food project](#) - Wales, UK
- ▶ [Zero waste Aiud](#) - Romania (winner of the public vote)

Learn more about the contest winners and the results from the 2017 REFRESH conference:

- ▶ <http://eu-refresh.org/conference2017>

The Life+ project BiocopacPlus is now taking these positive results further. "BiocopacPlus has developed a new pilot plant that can process about 100 kg of tomato skins and extract 10 kg of pure cutin per hour", says Dr. Angela Montanari, who is responsible for the Packaging Department at the Experimental Station for the Food Preserving Industry (SSICA). "We are now exploring ways to upscale the extraction method so that it becomes commercially viable, and it can be used by the industry in real cans with a consistent quality."

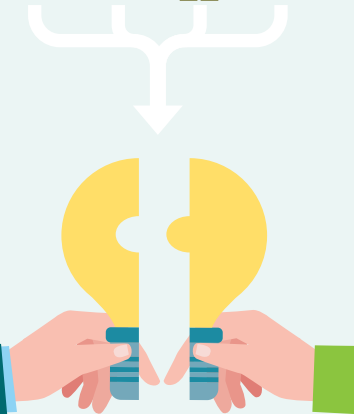
More information:

- ▶ www.biocopacplus.eu





#EIP_TN 



Thematic networks

Interactive platforms for knowledge and innovation

Thematic networks are a special type of multi-actor project, funded by Horizon 2020, the European Commission’s framework programme for research and innovation. They bring together partners from research and practice, but rather than conducting research themselves, thematic networks collect and share existing but insufficiently used knowledge and best practices.

17 thematic networks are already up and running, 5 more should start by the end of 2017 and more are expected to be set up in the period 2018-2020. Thematic networks collect and exchange practical information and recommendations that are easy to understand and ready to apply in the field. All thematic networks produce short summaries of their main findings, which are published on the EIP-AGRI website. This will enrich the EIP-AGRI network with an abundance of ready-to-use solutions and best practices for European farming and forestry.

SKIN (Short supply chain Knowledge and Innovation Network) is a thematic network that collects and exchanges knowledge and best practices on short food supply chains. “SKIN was set up answering a real need that was voiced by many people involved in short supply chains in Europe”, says project coordinator professor Francesco Contò. “We’re planning a series of thematic workshops where we will interact with small and medium-sized enterprises (SMEs), other thematic networks, research groups and EIP Operational Groups. We’ve also already met with other thematic networks to exchange experiences on event organisation and dissemination tools. We will publish our results through our website, a digital newsletter, regular press releases, flyers and posters and of course the EIP-AGRI website. We hope to create an inspiring community with everyone interested in short food supply chains – even beyond the lifespan of the project.”



- ▶ More information on SKIN: www.shortfoodchain.eu
- ▶ Find all the details in the [EIP-AGRI brochure on Horizon 2020 Thematic Networks](#) and in the [brochure on Funding opportunities under Horizon 2020 - calls 2018](#).

Thematic networks funded under Horizon 2020 calls 2014-2016

Thematic network	Topic	Website
4D4F 	Data and sensor driven decision making on dairy farms	www.4d4f.eu
AFINET 	Agroforestry innovation network	www.agroforestry.eu/afinet
AGRIFORVALOR 	Increasing the value of biomass side-streams from agriculture and forestry	www.agriforvalor.eu
AgriSpin 	Innovation brokering - identifying best practices for innovation and support	www.agrispin.eu
CERERE 	CEreal REnaissance in Rural Europe: embedding diversity in organic and low-input food systems	http://cerere2020.eu
EUFRUIT	Fruit - cultivar development, minimising residues, storage and fruit quality, sustainability of production systems	http://eufirin.org
EU PiG 	EU-wide network for an economically viable and sustainable pig industry	www.eupig.eu
EuroDairy 	Practice-based innovations in dairy farming - resource efficiency, biodiversity, animal care, and socio-economic resilience	www.eurodairy.eu
FERTINNOWA 	Water management in fertigated crops - water quality, water use efficiency, environmental impact	www.fertinnowa.com
HENNOVATION 	Laying hens - reducing injurious pecking and dealing with end-of-lay hens	www.hennovation.eu
HNV-Link 	Supporting HNV farmlands through knowledge and innovation	www.hnvlink.eu
Inno4Grass 	Shared Innovation Space for Sustainable Productivity of Grasslands in Europe	www.inno4grass.eu
OK-Net Arable 	Organic arable cropping - increasing productivity and quality	www.ok-net-arable.eu
SheepNet 	SHaring Expertise and Experience towards sheep Productivity through NETworking	www.sheepnet.network
SKIN 	Short supply chain Knowledge and INnovation	www.shortfoodchain.eu
Smart AKIS 	Smart farming technology - Farm management information systems, precision agriculture and agriculture automation and robotics	www.smart-akis.com
WINETWORK 	Wine growing - controlling / fighting diseases	www.winetwork.eu



Inspirational idea



DOMAĆI PRIRODNI
MED



Predrag Prentić



Food traceability from honey to hive

Technology for honey producers and consumers in Montenegro

Montenegro has the ideal natural conditions for high-quality honey production. It has a favourable climate, a rich biodiversity, and a semi-nomadic way of beekeeping that gives bees access to the best Mediterranean herbs. However, lower-quality honey from unregulated production, both domestic and non-domestic, is a significant concern for the growing honey industry, because it undercuts market prices and may cause issues with food safety and quality. To safeguard and promote quality products from domestic honey producers, the National Food Traceability Programme in Montenegro is developing an IT-based system that gives consumers full transparency about the honey they are buying.

Following independent quality control, beekeepers will receive a unique QR code that can be printed and put on honey jars. Consumers will be able to scan this code with their smartphones and access the central website, with details about the beekeeper, the queen bee and the variety of honey that is produced. It also gives information about the beehive, its GPS position, and the weather conditions at the beehive location. Consumer feedback will be encouraged and displayed, ensuring healthy business competition.

“We are developing a national grid of micro weather stations, and data collection software in cooperation with the Institute of Hydrometeorology and Seismology, and the Biotechnical Institute of the University of Montenegro”, says project coordinator Aleksandar Prelević. “The collected data will be useful for beekeepers, but also for advisory services that deal with orchards, viticulture and olive growing. In any case, the system can be a motivation for a more frequent use of IT and sensor-based technologies in the agri-food sector.”



In cooperation with a data collection company (Montenegrin IT cluster), national beekeepers’ associations, and the Ministry of Agriculture and Rural Development, lead partner Jugodata has developed an online database that will give access to certified information on every jar of honey that is produced in the programme.

► **For more information:** [contact Aleksandar Prelević](#)

- This project was presented at the [EIP-AGRI Seminar 'Data Revolution: emerging new data-driven business models in the agri-food sector'](#). Find more examples in the [final report](#).
- [Keep an eye on the EIP-AGRI newsletter](#) for results and announcements of other events on digital innovation.





“If you can measure it, you can manage it”

Improving farm resilience through benchmarking

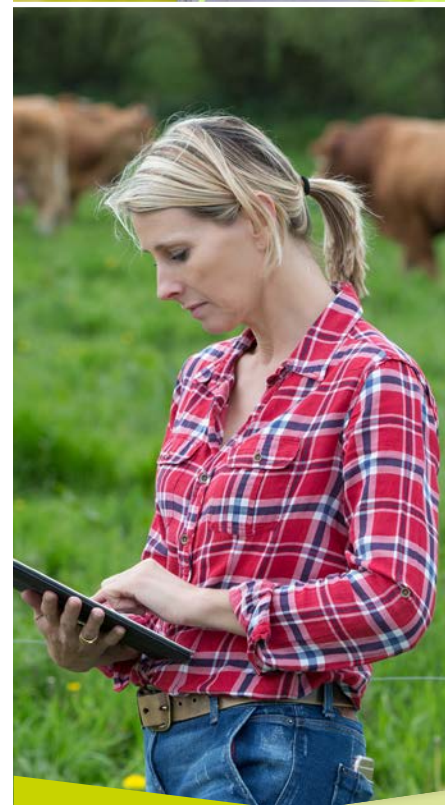
The agricultural market can be affected by fluctuating prices, currency swings and adverse climatic events. This may put pressure on the resilience of farm businesses. Benchmarking can support farmers in improving their productivity and sustainability performance, especially in an uncertain context.

“The basic principle of benchmarking is that if you can measure it, you can manage it”, says Giles Blatchford, Head of Farm Economics, from the Agriculture and Horticulture Development Board (AHDB). Giles is project leader of Farmbench, a free online business tool that farmers can use to benchmark their production costs and farm performance data, comparing them against data from similar UK farms.

What is the added value of using a benchmarking tool like Farmbench?

Giles: “Well, many farmers already informally discuss yields and output prices with other producers. They can draw valuable lessons from doing that, but online benchmarking tools can collect data from a much wider range of farms, and they can give farmers more accurate management advice. Farmbench can be used to benchmark data from cereal and oilseed, potato, and beef and lamb enterprises, with dairy coming on board in early 2018.

Farmers can enter physical and financial farm performance data into the system, either for an individual field, a whole crop or even an entire farm. Farmbench users then get access to reports that compare their performance against an average of similar businesses in the UK. The tool helps to understand and compare production costs, and lets farmers make informed decisions about their farm management practices to improve their business. All data becomes anonymous once uploaded to the site, ensuring privacy.”





Identifying strengths and weaknesses

Adrian Joynt is farm manager at the Apley Estate in Shropshire, in the West of England. Apley is a 1 000 ha mixed farm with parkland and rough grazing for 220 suckler cows. Some land is rented out for potatoes and the rest is put to combinable crops.

Adrian, you were one of the first UK farmers to test the Farmbench software. Did you find it useful for your farm business?

Adrian: "I did. Using the tool helped us identify our strengths and weaknesses. Sometimes they're not where you think they are. For example, our first two years of cereal benchmarking showed us that our oilseed rape fertiliser figures were quite low. You might think that was good, but our yields weren't as good as they could have been or as good as the rest of the group. This year we have adapted our fertiliser plan and our average yield for oilseed rape is much further up the league table in the group. We've certainly learnt a lot, especially from the discussions with the AHDB Monitor Farm benchmarking group. The real value is in the discussion."

What would you say are the tool's main strengths?

Adrian: "Well, Farmbench allows you to enter different costs such as labour, machinery, and telephone bills all at once. That helps me save up to 40% of my time spent inputting information across the arable and livestock enterprises. With this tool I can compare my farm with farms right across the country."



More information:

- ▶ <https://farmbench.ahdb.org.uk>
- ▶ Farmbench was presented as an example in the [EIP-AGRI Focus Group on Benchmarking Farm Performance](#) ●





Cutting atmospheric carbon: a central role for soils

Agriculture and forestry take action to reduce carbon emissions

Maintaining healthy soils with stable levels of soil organic matter can substantially help reduce greenhouse gas emissions. This is why the French initiative '4 per 1000' is bringing together organisations that are committed to preserving carbon-rich soils.



Soil organic matter, the organic component of soils which is primarily composed of carbon, has direct benefits for agricultural and forestry production. Organic matter improves water infiltration in the soil, prevents erosion, enhances biodiversity and even helps prevent soil-borne diseases.

An increase in soil carbon not only leads to better soil quality and soil fertility, it can also have a significant role in limiting the effects of climate change. Even a small 0.4% (4 per 1000) annual increase of organic carbon stock in agricultural and forest soils, including grasslands, could limit the current release of atmospheric CO₂ and the effects of global warming, provided that current efforts are continued.

Inspired by the 2015 Paris Agreement on climate change, the French initiative '4 per 1000' brings together researchers, farmers, NGOs, governments, private companies and others that are actively supporting sustainable soil management. Over 250 organisations have already signed a joint declaration, showing their commitment towards actions and policies that increase carbon stocks in agricultural soils. 4 per 1000 hopes to stimulate collaboration between farmers, researchers and NGOs, and knowledge sharing about farming methods that can help restore soils (such as agroecology, agroforestry and conservation agriculture).

"We want to stimulate practical actions that farmers can benefit from, because they are the first ones to be affected by land degradation and climate change", says Murielle Trouillet, policy officer at the French Ministry of Agriculture and Food. "Increasing soil carbon stocks can help us adapt agriculture and food systems to climate change. The 4 per 1000 online platform will allow everyone involved to share knowledge, experiences and results."



Join the initiative or find out more:

▶ www.4p1000.org ●

- ▶ The [EIP-AGRI brochure 'Soil organic matter matters'](#) gives more tips and tricks to invest in soil quality for long-term benefits.
- ▶ The EIP-AGRI Focus Groups on '[New forest practices for adaptation to climate change](#)', '[Grazing for carbon](#)' and '[Moving from source to sink in arable farming](#)' pay special attention to the role of agriculture and forestry in soil and carbon management.





EIP-AGRI Focus Groups

What's cooking?

EIP-AGRI Focus Groups bring together 20 experts to tackle a specific topic in the field of agriculture and forestry. Each group includes a balanced mix of farmers, advisers, researchers and business representatives. The Focus Group experts take stock of opportunities, problems and best practices, and they suggest ideas for further research and for potential Operational Groups to catalyse innovation across European agriculture.

Short food supply chains, water and agriculture, forest biomass, and livestock emissions are only a few of the 25 Focus Group topics that have been covered. The table on the next page gives a full overview of the Focus Group results so far.

Three new Focus Groups will start at the end of 2017:

- Moving from source to sink in arable farming
 - Circular horticulture
 - Enhancing production and use of renewable energy on the farm
- All Focus Groups have their own page on the EIP-AGRI website. Find their results here: <https://ec.europa.eu/eip/agriculture/en/focus-groups>



Focus on farmers

In 2016, independent consultants evaluated the first steps in the implementation of the EIP-AGRI. One of their findings was that the EIP-AGRI's interactive approach to innovation encourages farmers to play an active role in the innovation process. This is true both for Operational Groups and for Focus Group work. By spreading the word on the work that is being done to colleagues in the field, farmers and foresters who were involved in Focus Groups help to stimulate the uptake of innovative, practical solutions.



"It's a great idea to mix different types of people to address complex agricultural themes. By participating in EIP-AGRI Focus Groups, farmers can help bring the reality of farming closer to the academic world. I was able to contribute and share my expertise, but I also took home a broader view on the 'regenerative grazing' work I do on my farm."

- Manuel Die Dean, farmer and expert from the EIP-AGRI Focus Group 'Grazing for Carbon' -

- EIP-AGRI Focus Groups rely on your expertise. You can volunteer to join a Focus Group by answering the call for experts when it is announced on www.eip-agri.eu and through the monthly newsletter.
- Find out more about the results of the EIP-AGRI evaluation study [on the EIP-AGRI website](#).



EIP-AGRI Focus Group results - update September 2017		Final Report	Factsheet	Brochure
<u>Agroforestry: woody vegetation</u>	Developing agroforestry as a sustainable farming system which can boost agricultural productivity and profitability			Ongoing
<u>Animal husbandry</u>	Reducing antibiotic use in pig farming	✓		✓
<u>Benchmarking farm performance</u>	Benchmarking data to improve farm productivity and sustainability performance	✓	✓	
<u>Dairy production systems</u>	Robust and resilient dairy production systems: creating good conditions for dairy cattle husbandry in different production systems			Ongoing
<u>Diseases and pests in viticulture</u>	Increasing resilience of grape vines to pests and diseases, and supporting the sector's productivity in sustainable ways			Ongoing
<u>Ecological Focus Areas</u>	How can landscape features contribute to the profitability of crop production?	✓	✓	
<u>Fertiliser efficiency - Focus on horticulture in open field</u>	Ways to fertilise crops and comply with legislative requirements regarding water quality through innovative fertilisation and nutrient recycling	✓	✓	
<u>Forest biomass</u>	Improving the sustainable mobilisation of biomass from our EU forests			Ongoing
<u>Forest practices & climate change</u>	Which new practices and tools can improve the climate mitigation and adaptation potential of EU forests?			Ongoing
<u>Genetic resources - Cooperation models</u>	Promoting stakeholder cooperation in the field of genetic resources	✓	✓	✓
<u>Grazing for carbon</u>	How to increase the soil carbon content in grazing systems?			Ongoing
<u>High Nature Value</u>	How to make HNV farming more profitable without losing the HNV characteristics	✓	✓	
<u>IPM for Brassica</u>	Finding cost-effective IPM solutions for <i>Brassica</i> vegetables and rapeseed	✓	✓	✓
<u>Livestock emissions</u>	Reducing cattle livestock emissions in a cost-effective way for farmers	✓	✓	
<u>Mixed farming systems</u>	Livestock / cash crop interactions as a sustainable alternative to farm or territorial specialisation	✓	✓	
<u>New entrants into farming</u>	Patterns and lessons to foster innovation and entrepreneurship in agriculture	✓	✓	
<u>Nutrient recycling</u>	Improving the agronomic use of recycled nutrients (N and P) from livestock manure and other organic sources			Ongoing
<u>Organic farming</u>	Optimising yields in organic arable farms	✓	✓	✓
<u>Permanent grassland</u>	Managing permanent grassland to combine profitability, carbon sequestration and biodiversity	✓	✓	
<u>Precision farming</u>	How to mainstream precision farming to optimise inputs and yield	✓	✓	
<u>Protein crops</u>	Improving the competitiveness of protein crops in EU farming	✓		✓
<u>Short food supply chains</u>	How to stimulate innovative short food supply chains in Europe to increase farm income	✓	✓	
<u>Soil organic matter</u>	Cost-effective ways to improve soil organic matter content in the Mediterranean region	✓	✓	✓
<u>Soil-borne diseases</u>	IPM practices to suppress soil-borne diseases in vegetables and arable crops	✓	✓	✓
<u>Water & agriculture</u>	Farm-level adaptation strategies to deal with water scarcity	✓	✓	✓



Inspirational idea



Spruce needle juice

A product with health benefits which also adds value to the forest

More than half of Estonia is covered in rich forest, and spruce is one of the main tree species. Spruce forests are usually harvested for wood and many by-products from this industry go unused. The EcoSpruce project has been working on finding a commercial value for spruce needles which have been found to have medicinal and nutritional properties.

The EcoSpruce project has carried out research on extracting spruce needle juice using an existing extraction technique. They have found that in terms of health benefits, the juice has a high chlorophyll content which helps to cure infections, control hunger, reduce swelling, protect the colon and prevent cancer. For the food and drink industry, the juice can be used in countless products, ranging from sweets to salad dressings and various alcoholic and non-alcoholic beverages. EcoSpruce is also exploring potential cosmetic applications.

EcoSpruce is working on extraction and preservation issues to increase production while maintaining a high quality product. Indrek Kuuben adds "Even the resulting waste of spruce needle juice extraction has potential



Spruce needles are abundant all year round. They can come from pruning, thinning, felling and other forest management activities and they can also be directly harvested from living trees. "They are a cheap, virtually unlimited and almost entirely overlooked resource" says Indrek Kuuben from EcoSpruce.



as insulation material in buildings, additives for animal feed, horticulture mulching or as a raw material for the biochemistry industry".



More information:

▶ <http://ecospruce.ee>

This example was presented at the EIP-AGRI Workshop on 'New value chains from multifunctional forests' in November 2016. Participants shared innovative ideas for value chains which can offer new income and job opportunities in rural areas, add value to forests and encourage a more sustainable forest management.

▶ More examples from the event can be found on our website, such as [birch sap tapping](#) (Finland), [cork for 3D printing](#) (Spain) and [woodland eggs and poultry](#) (UK) ([see the event webpage](#)) and more.



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