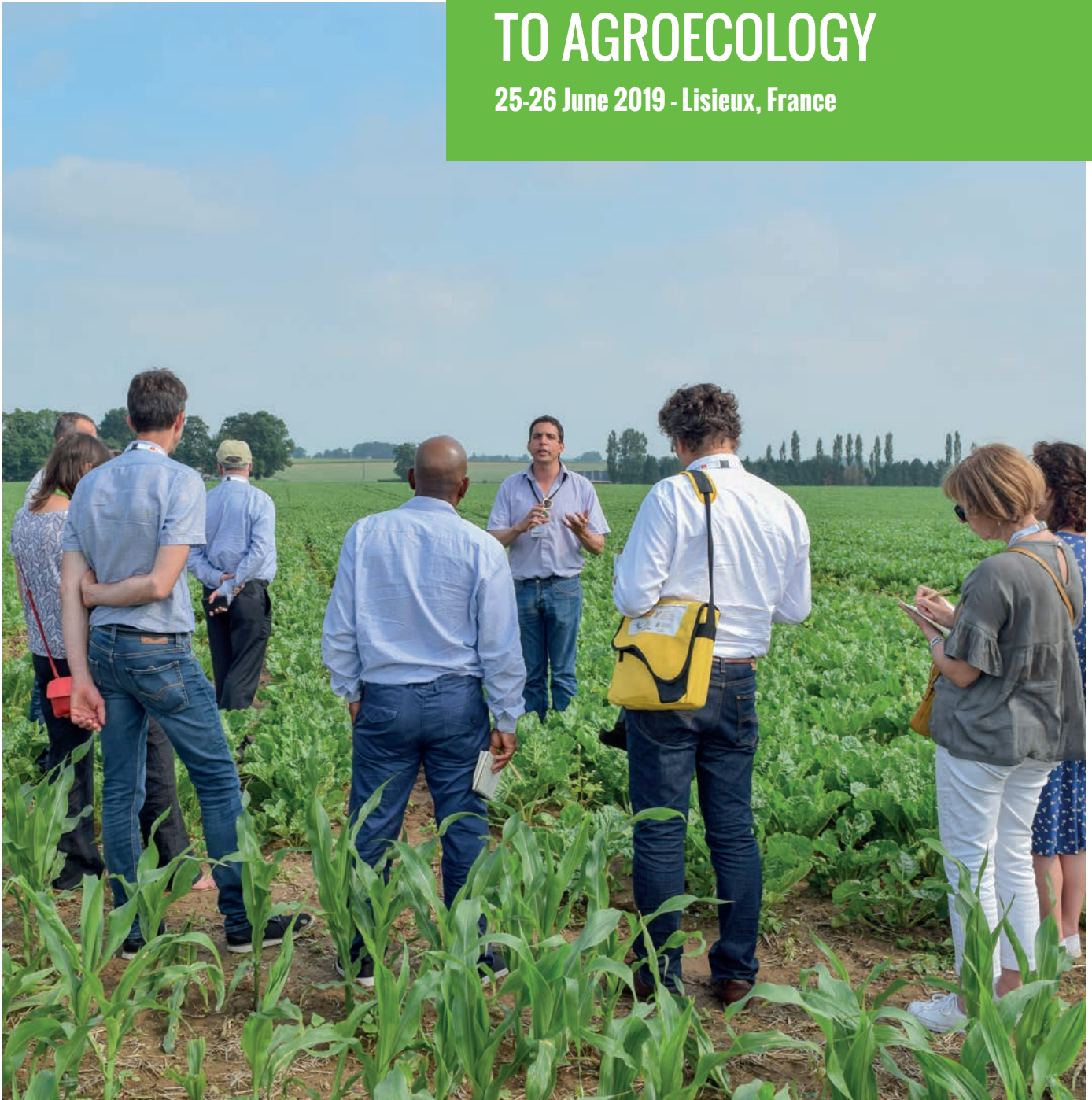




AGRI  
Innovation summit 2019

# THE EIP-AGRI LEADING THE TRANSITION TO AGROECOLOGY

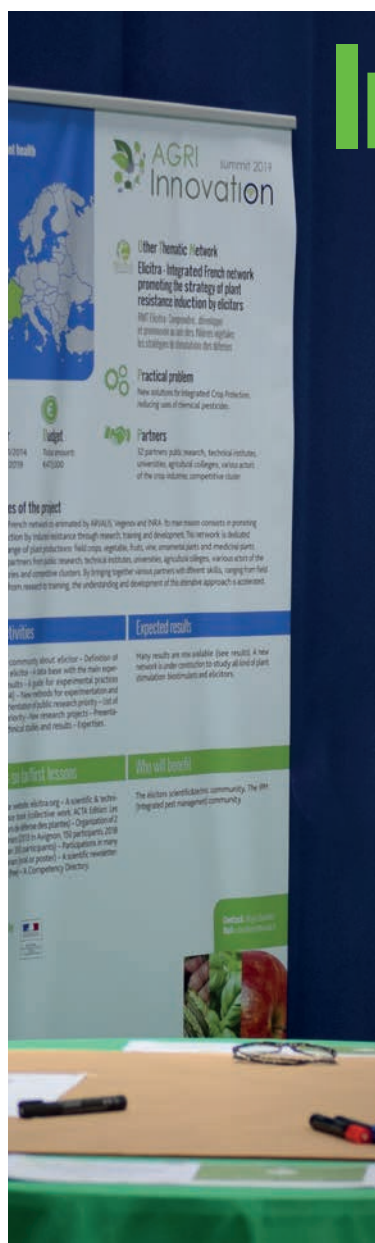
25-26 June 2019 - Lisieux, France



**FINAL REPORT - FULL VERSION**



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# Introduction

Welcome to the report of the AIS 2019: the Agri Innovation Summit held in Lisieux, France on 25 and 26 June 2019.



**Phil Hogan,**  
European  
Commissioner  
for Agriculture  
and Rural  
Development

*"Ensuring long-term food and nutrition security, addressing climate change and the overexploitation of natural resources, providing the basis for healthier diets, boosting the sustainable growth of rural territories... None of these can happen if farmers and foresters are not fully engaged in the innovation process. The Common Agricultural Policy has financed more than 1200 EIP-AGRI Operational Groups throughout the EU. In more than 90% of these groups, farmers are present and play a key role in developing innovations that can be immediately operational in fields ranging from water and soil management, control of pests and diseases, food quality, competitiveness of the value chains, energy efficiency and many others."*

It was co-organised by the French Ministry of Agriculture (with the French Rural Network), the Normandy Region, the European Commission and the EIP-AGRI network. This event was the second European summit highlighting the potential of interactive innovation to address the challenges faced by European agriculture and forestry. The European Innovation Partnership for agricultural productivity and sustainability (EIP-AGRI) is a key tool for supporting interactive innovation in the sector both through local Operational Groups financed under the Common Agricultural Policy and transnational multi-actor research projects financed under the EU Research and Innovation policy (Horizon 2020 and Horizon Europe).

Following a first edition of the Agri Innovation Summit held in Lisbon in 2017 which was dedicated to digital transformation in agriculture, the AIS2019 in Lisieux focussed on the transition to agroecology. The uptake of agroecological approaches in EU farming is key to improve productivity, resilience and sustainability. Supporting a network of agroecology multi-actor projects and Living Labs and ensuring knowledge exchange on agroecological approaches through EU-level platforms, like the EIP-AGRI network, can effectively accelerate the transition to agroecology.

The AIS 2019 brought together over 480 participants from all over Europe: farmers, researchers, advisers, businesses, associations, decision-makers... 120 innovative projects and networks were presented at the event during the workshops and projects market places. 8 field trips to discover projects located in Normandy were organised.

This report complements the information available on the event website <https://www.reseaurural.fr/Sommet-agri-innovation-2019> and presents the results of the discussions and reflections that took place during the AIS 2019.



**Didier Guillaume,**  
French Minister  
of Agriculture  
and Food

*"The agroecological transition is inevitable, it must guide our policies and agricultural practices. We must be successful in this transition in order to meet the expectations of citizens and to preserve the environment. The European Innovation Partnership for Agriculture is a valuable tool to tackle this challenge and the changes which need be to be made. It encourages innovation and inspires all actors to build solutions together which are tailored to all types of farms and places."*



**Hervé Morin,**  
President of the  
Normandy Region  
and of the  
Association of  
French Regions

*"It has been a great opportunity for Normandy and the rural area of Pays d'Auge to host the second edition of the Agricultural Innovation Summit, with representatives from 25 European countries. Over two days, this important event was a place of dialogue, reflection, sharing, exchange and mutual learning on the issues of innovation and knowledge acquisition to support agriculture. Innovation and the partnership between research, development, production and consumers are at the heart of regional policies in the agricultural sector. In 2019, the Normandy Region allocated a budget of 2.7 million euros, including 1.8 million euros of European funds, to finance its agricultural innovation policy."*



The **AIS 2019** started with opening statements by:

- **Phil Hogan** – European Commissioner for Agriculture and Rural Development <https://www.reseaurural.fr/Sommet-agri-innovation-2019/sommet-agri-innovation-2019-videos/videos>,
- **Didier Guillaume** – French Minister of Agriculture and Food <https://www.reseaurural.fr/Sommet-agri-innovation-2019/sommet-agri-innovation-2019-videos/videos>,
- **Hervé Morin** – President of the Normandy Region and of the Association of French Regions and
- **Maria Angeles Benitez Salas** – Deputy Director-General for Agriculture and Rural Development for the European Commission.

**A roundtable** dedicated to the **"Future policy for innovation in agriculture and forestry"** set the scene, presenting the needs and expectations of European innovation actors in the sector and how to address them through public policies. **The transition to agroecology, the main theme of the event**, was then introduced in a keynote presentation by **Philippe Mauguin**, President and CEO of the French National Institute for Agricultural Research (INRA).

**On the first day of the event**, eight field visits were organised in the Normandy region to observe the results of innovation in multi-actor projects that could inspire and demonstrate some of the topics which are central to the transition to agroecology debate.

The 480 participants then engaged in interactive discussions on specific aspects of agroecology which took place in three thematic sessions and nine workshops over the two days:



### **Thematic Session 1** "How to reduce the use of inputs as a way to increase the self-sufficiency of farms?"

- **Workshop 1.1** – Feed self-sufficiency and animal health
- **Workshop 1.2** – Plant health
- **Workshop 1.3** – Plant nutrition

### **Thematic Session 2** "What kind of production systems are needed for the sustainable management of natural resources?"

- **Workshop 2.1** – Soil: fertility, biological life and fighting against erosion
- **Workshop 2.2** – Climate resilient farming and forestry systems and water management
- **Workshop 2.3** – Wild and cultivated biodiversity

### **Thematic Session 3** "How can agroecology be better integrated within the value chain and with consumers, citizens and the local area?"

- **Workshop 3.1** – Integrating agroecology with the downstream: food value chains
- **Workshop 3.2** – Integrating agroecology with the downstream: non-food value chains
- **Workshop 3.3** – Governance models promoting this integration with citizens and local areas as well with the downstream and consumers

The process that took place in these thematic sessions used an innovative combination of participatory methods, such as 120 poster presentations, silent discussions, open discussions and plenary agreements. The participants explored the nine topics of the workshops to discover what is being done in the innovation projects and Operational Groups. They imagined and identified the ways forward by answering two questions in each workshop:

- ① "What are the most promising innovations that are taking place in Europe?" and,
- ② "What will it take to implement or scale up these innovations?".

The conclusions of these group discussions provided input for the second and final round table on the question *“How to achieve successful sharing, co-creation and uptake of knowledge and innovation at all levels?”*

Three sector representatives were invited to comment on the discussion and results of the nine workshops to give their perspectives on the relevance, applicability and importance of these results:

- **Christian Huyghe**, Scientific Director of the French National Institute for Agricultural Research
- **Paola Migliorini**, President of Agroecology Europe
- **Sébastien Windsor**, President of ACTA (Coordination of French Technical Agricultural Institutes) and of the Chamber of Agriculture of Normandy

The insights and comments of these sector representatives conclude this report, with the aim to provide different points of view and food for thoughts to all those engaged in moving European agriculture towards agroecology.

The closing statements and reflections at the AIS 2019 were made by

- **Clotilde Eudier**, Vice President of the regional Council of Normandy,
- **Pierre Schwartz**, Deputy Director for environmental performance and regional development from the French Ministry of Agriculture and Food, and finally by
- **Maria Angeles Benitez Salas**, Deputy Director-General for Agriculture and Rural Development for the European Commission.

This report aims to deliver the results of the collective intelligence produced in two days of debates and discussion between the 480 participants of the AIS 2019, so that its readers can continue promoting the transition towards agroecology, through innovation, in Europe.

This report is accessible on the AIS 2019 [website](#), together with photos, videos, presentations and press materials.



# Round Table

## “What Future Policy for innovation in agriculture and forestry?”

Watch the video

footage here:

<https://www.reseaurural.fr/sommet-agri-innovation-2019/sommet-agri-innovation-2019-videos/videos>

Moderated by  
Nora Hamadi,  
journalist  
specialised in  
European affairs,  
ARTE television  
channel.

### Round table speakers:

- **Hervé Morin**, President of the Normandy Region and of the Association of French Regions,
- **Maria Angeles Benitez Salas**, Deputy Director-General for Agriculture and Rural Development for the European Commission,
- **Anikó Juhász**, Hungarian Ministry of Agriculture’s Deputy State Secretary for Agricultural Economy, Co-President of the Working Group on “Agriculture Knowledge and Innovation Systems” of the Standing Committee on Agricultural Research (SCAR),
- **Wolfgang Burtscher**, Deputy Director-General for research and innovation for the European Commission (DG for Research and Innovation),
- **Iris Bouwers**, Vice President of the European Council of Young Farmers (CEJA),
- **Eva Courtalier**, Project manager at Panjee, innovative food-tech platform addressing sustainable food systems,
- **Arnaud Degoulet**, President of the agricultural and agri-food cooperative AGRIAL,
- **Jean Louis Peyraud**, President of the Animal Task Force, member of the Collaborative Working Group on ‘Sustainable Animal Production’ of the Standing Committee on Agricultural Research (SCAR), Deputy scientific director for Agriculture at the National Institute for Agricultural Research (INRA).



The main points raised by the round table speakers and their discussions with event participants are summarised in topics I to IV below.

## I “If we want to produce more with less impact, we need innovation” Wolfgang Burtscher.

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### WHAT IS INNOVATION?

Several innovation categories were discussed:

- Technical innovation. Includes both technological biotechnological innovation.
- Organisational innovation, which is about rethinking the relationships and interactions throughout the innovation chain and the value chain, from upstream to downstream and to the consumers.
- Social innovation.
- Political innovation. The CAP is an example, its support was originally linked to production, then to the producer and now, innovatively, it is moving towards the production chain in order to take into account the entire food system.

The round table speakers' perceptions and reactions to innovation were not identical:

“Innovation is about change” **Anikó Juhász**

“Innovation is about improving what we already have” **Arnaud Degoulet**

**The slow pace of the innovation process** was highlighted. There is a contrast between the fast pace of current changes with the slowness of innovation as it requires a lot of thought in advance. The importance of thinking in the long-term was mentioned several times.

“The most important thing is to have a long-term vision”

“We need evolution, not revolution” **Maria Angeles Benitez Salas**, talking about public policy to support innovation.



## FARMERS AND CHANGE

**Some say that farmers do not like change**, as is arguably the case for everyone. This reluctance to embrace change is not unique to farmers.

“*In order to change practices, we need to force farmers to do it. Changing practices therefore, comes from the adaptation to new regulations*” **Anikó Juhász**.

Adaptation to regulation can be a catalyst for change and innovation. The changes requested by consumers are also a strong argument for change and innovation.

**Others say that farmers are constantly innovating.** A small number of farmers, pioneers, are currently the drivers of innovation.

One of the forces **promoting the acceptability of the aforementioned change is co-construction and peer learning**, which is at the heart of the multi-actor approach of the EIP-AGRI.

“*In order for change to be made, the solutions which are suggested have to be accepted and acceptable, therefore providing information is important and also you must co-create the innovations*” **Jean-Louis Peyraud**.

Cooperatives were presented as an example of drivers of innovation. They provide support, they reduce technical risk and they help find markets which correspond to the innovations.

**Arnaud Degoulet**, president of the cooperative AGRIAL, shared his experience of innovation within his cooperative. He said he was surprised by the number of requests for change from his members and the elected officials of his cooperative, “*People are not afraid of innovation*” in his cooperative, he says.

## THE RISKS LINKED TO INNOVATION FOR FARMERS.

Halfway between the two visions of farmers when faced with change is another point of view that farmers do set up innovative processes which are more environmentally friendly, but sometimes they fail. This raises the issue of when **innovation fails**. The **risk** is inherent to change and innovation.

Changes in the environment happen quickly, including changes in the natural environment, but also the market and consumer demand. Farmers are striving to find their place in this, both in their daily work and for the future.

The difference between change and risk was highlighted. **Farmers are not necessarily averse to change and innovation, but they do have an aversion to risk.**

 *"It is variability, the unknown, which can hold back new initiatives"* **Arnaud Degoulet**

## II Needs of farmers when facing innovation

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### THE NEED TO BE SUPPORTED THROUGH CHANGE BUT ALSO IN RISK TAKING

In order to innovate, it is necessary to have a framework, a structure to support the new changes. Therefore, the importance of public policy to stimulate innovation, and with a suitable framework, was highlighted by many of the speakers. The suggestions for this framework related to simplification, the quality of support from agricultural advisers and specific support for risk taking.


**Simplification of policy and access to funding**, from the CAP in particular, was presented as essential so that policy can efficiently support innovation. The European Commission shares this goal: the proposals for the future CAP aim to increase flexibility. For this reason, the future CAP will not try to regulate everything but will look at the impact of the actions, based on the objectives defined (moving away from conformity to performance).

 *"Modernisation requires simplification"* **Maria Angeles Benitez Salas**, European Commission.

Remarks from the speakers about the need to significantly simplify administrative and financial processes included the following points:

#### Access to funding

It is often difficult for European farmers to access funds, particularly for innovation, despite them having a higher education and being very familiar with the system. Farmers at the event explained that they have to hire advisers in order to access support for innovation.

 *"I have a higher education diploma. I grew up with the internet, I work on the internet every single day, but the system is so hard to understand, it is so bureaucratic, that at some levels it is not do-able. So I hired an adviser, and I had to pay the adviser"* **Iris Bouwers**.

From another point of view, there are many funding opportunities already in place, and accessing them is facilitated in France (by regional authorities in particular). Public policy supporting research and concrete innovation in France was highlighted. Several speakers said that this was not necessarily the case in all European countries.

“Farmers who want to innovate find the funding to help them do this. There are already enough funding systems in place” **Hervé Morin**.

**Delays in funding payments are seen as a problem.** Setting up shorter payment deadlines for funding for innovation, and specifically EIP-AGRI Operational Groups, was requested.

**Adapting payment systems to the specificities of agroecology.** For example, the yearly nature of accounting makes it impossible to estimate the profitability of measures in the medium term, whereas a multi-annual approach is essential in agroecology (introduction of longer rotations including leguminous crops for example).

**The establishment of independent advisory systems which cover the fields of agroecology and innovation.** This is a very important condition for the modernisation and the economic, social and environmental performance of agriculture. The CAP is known for promoting access to advisory services, and this will be reinforced in the next programme. Member States will have to describe their national AKIS (Agriculture Knowledge and Innovation System) in their strategic plans so that the necessary measures are put in place to strengthen it.

**Supporting risk-taking** was widely reported as insufficient. It must be available in addition to funding for innovation. We must work further on the procedures for this support.

**The right to make mistakes.** During the exchange with the audience in the plenary, the Young Farmers of Normandy claimed the right to a margin for failure within the CAP innovation funding framework, so as not to penalise the farmers who take risks for innovation but whose trials are unsuccessful.

**The complexity of the construction of innovative and partnership projects.** The construction of this type of project requires a lot of preparation and complex work and requires a transversal approach.

**The emergence of the role of strategic facilitator** to help set up these complex projects. This role goes beyond mediation and advice, the facilitator must be able bring people together from upstream and downstream within sector who do not ‘speak the same language’, who do not always have the same objectives, and help them structure and build their projects together. It is important to find financial solutions for funding these strategic facilitators.

“We have invested a lot in competitiveness. We need to invest further in cooperation and find a way to combine cooperation with competitiveness” **Isabelle Roux**, Rural network of Grand Est (France).



### III New methods of interaction

The creation and exchange of knowledge plays an essential role in the success of innovation. The speakers at the Summit specifically stressed the following points:

**The importance of a collective approach.** The importance of a collective approach, group farming and agricultural development organisations was mentioned several times. For example, in France there are development groups working on the ground, such as CUMAs (Cooperatives for the Common use of Agricultural Equipment), CIVAMs (Innovative Centres for the Valorisation of Farming and Rural areas), but also GIEE (Economic and Environmental Interest Groups).

Collective approaches help to better manage the risks associated with changes in practices or systems. It was therefore requested that the next CAP should further encourage collective approaches in agriculture.

🗨️ *"Farmers believe farmers"* Anikó Juhász.

**Reconsidering the relationship between farmers and researchers.** It is generally believed that that the link between research and action on the ground needs to be strengthened. It was mentioned that the EIP-AGRI has been helping with this process. The multi-actor approach is called upon because it enables bottom-up research instead of only top-down. It also makes it possible to co-construct innovations, which increases their chances of success and adoption.

Within this context, maintaining public support for scientific excellence is considered as very important.

🗨️ *"Nothing in life is to be feared, it is only to be understood"*, Marie Skłodowska Curie, quoted by **Maria Angeles Benitez Salas**.

**Agricultural sociology is changing.** Several speakers observed that young farmers have increasingly higher education and training, they have a lot of knowledge. They can both learn a lot from multi-actor projects and also make a significant contribution to them.

In some European regions, a growing number of people in the agricultural world have direct links with consumers or come from the urban world themselves. This helps to develop and accelerate a culture of innovation within the farming community.

However, in other European regions the proportion of farmers with a higher education is lower and subsistence farming is still a fairly widespread reality.

“Farmers are increasingly becoming ‘engineers’, whilst also becoming more and more “paysan” (connected to the earth and to nature). They are more and more technically skilled. They are also conscious of bearing part of the responsibility for the future of the planet.”  
**Hervé Morin.**

The flow of information between researchers and farmers was therefore raised. As this Summit illustrates, there is no longer one ‘all-knowing’ being giving information to all. Everyone’s skills are important, each type of expertise must be disseminated, exchanged, challenged.

**The importance of including the downstream parts of the value chain as well as the consumer in setting up innovation projects.** It was highlighted that a new idea only becomes an innovation if it meets an audience, if someone buys into it.

It was said that young farmers no longer work solely to produce but to respond to market demand. This inclusion of the downstream and of consumers requires the design of new methods of interaction, which are related to organisational innovation.

In short, innovation must be carried out with a transversal, interdisciplinary and multi-actor approach. In fact, for innovation to be successful, it was stated that farmers and consumers must be included from the very beginning of an initiative.

“Co-construction with everyone involved is essential, all stakeholders have to be part of the process in order to create an innovation which is sustainable and accepted by all”  
**Eva Courtalier.**

### Inspiring example: Living Labs

A Living Lab brings together innovation actors, people from both the public and private sectors, fundamental and applied researchers, individuals, direct and indirect financial beneficiaries, with the aim to do a trial run of services, tools or news uses.

The idea is to move towards open, multi-actor innovation, to share networks and involve users early in the design process. Living labs allow demonstration and testing on a large geographical scale.

Discover two of the Living Lab projects presented at the AIS 2019:

- Operational Group Living Lab Iracoubo ([link](#))
- LIT Ouesterel ([link](#))

The issues related to **the flow of information and data and to transparency play a crucial role** for the future of the agricultural sector and the rural world as a whole.

**The interoperability of agricultural data systems** means that for farmers, processes are simplified and their autonomy increases.

**The transparency of data** all the way to consumers is a means of empowering the producer. Information systems should be able to approve all information to make it easy to read for the end-user (farmers, consumers...).

#### Inspiring example: Start-Up Panjee

During the round table, Eva Courtalier, project manager, presented the start-up Panjee. It is an innovative food-tech platform for sustainable food systems. Panjee offers a networking application for sharing product-related and job-related information for the agro-food sector. The aim is to give consumers the opportunity to decide. *"In order to do this, we must give the producer the opportunity to inform, to explain his/her choices and products,"* says **Courtalier**.

Panjee offers product information via product factsheets which the consumer can easily access. The system is interoperable with all existing information and communication systems and all applications on the market.

The creation of Panjee came from the need for transparency for consumers: professionals did not have tools to be transparent, to make information available.

- Find more information on Panjee [here \(https://panjee.com/\)](https://panjee.com/)





## IV Favouring systems and multi-performance approaches, including social performance

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### FOOD SYSTEM APPROACH

The speakers were in agreement about the importance of a global, holistic approach, considering the food system as a whole (production, processing, marketing, consumption). They emphasised that the holistic approach must take into account the impact of the food system on the environment.

The changes demanded by consumers influence changes and innovations made by farmers.

The food system approach creates new value chains by developing new methods of interaction, a type of organisational innovation.

The CAP reform aims to take into account the food system as a whole, so that the efforts and value created by farmers will not be lost along the food chain.

### SETTING UP CIRCULAR SYSTEMS

**A paradigm shift between food security and resource security.** Traditionally, innovation was at the service of food security, farmers tried to extract as much as possible from their surroundings in order to be productive, regularly from one year to the next. Now, innovation must also serve the security of resources, a more ecologically intensive, agroecological agriculture. This involves in particular, practices that are more dependent on the environment and encourages research and innovation actors to work on managing the volatility of being dependent on the local environment as well as on external conditions, for example climatic conditions (both technically and from a public policy point of view).


**A systems approach, including circular systems, is especially promising when it is closely connected to the local environment. This includes rethinking the link between crops and livestock,** connecting agricultural practices developed by different agricultural actors, and creating holistic and circular systems that make agriculture sustainable. The practices are well-known, but it is necessary to take a new look at them taking into account the innovations, norms and expectations of today's society. The systems also enable the reduction of inputs, the development of co-products, diversification and the creation of new business models.

## ECONOMIC PERFORMANCE, A DRIVER OF INNOVATION

**The speakers of the round table stressed the need for prices which allow profit to be generated**, taking extra costs into account.

Economic performance is also a driver of innovation, this should be highlighted.

Innovation also requires significant financial resources. There is already a lot of knowledge and information on changes in practices, but farmers may not have access to it or cannot set up new practices because they do not have the financial means.

 *"It is really hard to act green when your numbers are in the red"* Iris Bouwers.

## THE SOCIAL ASPECT OF AGRICULTURE

**Often the agricultural profession is not attractive to young people.** This lack of appeal, and therefore low rate of generation renewal, was pointed out as a cause for concern. Society requires farmers to carry out several roles at the same time. There has been a significant increase in demand for short circuits and organic farming by European consumers. This demand requires more farmers but it is difficult to attract new entrants into the sector.

**Innovation and new production methods** were mentioned as a way to make the profession more appealing again. Not only technical innovation but also social innovation.

**A feeling of isolation for some farmers.**


Some suggestions were made to help to solve isolation, specifically through dialogue and sharing: collective approaches, group farming, cooperatives, agricultural organisations and digital technology.

**The social aspect of agriculture is often forgotten.** Throughout Europe there is an urgent need to deal with isolation and loneliness, but it is often a taboo subject, especially between farmers. The speakers emphasised the need for dialogue and work on this subject, to solve the social problems linked to the farming profession and to improve agriculture as a whole. Urgent needs were mentioned, for example emergency support services in case of injury but especially related to suicide.



## AVOIDING BECOMING OVERWHELMED BY TECHNOLOGY AND THE DIGITAL AGE

**There are so many technologies available in agriculture.** It is important to seize the opportunities presented by digital transformation without getting lost in the plenitude of technologies and data.

 *“We must say to ourselves ‘What kind of information do I need to develop my processes’ and not ‘I’ve ordered a new sensor, what am I going to use it for?’”* **Jean Louis Peyraud.**

**New skills to use the technology.** Carrying out research and creating new technologies is not enough, it is also necessary to set up the right conditions so that farmers to use them. When new technologies are introduced into agriculture, it is also necessary to introduce the new skills to farmers and their advisers so that they can be understood and used properly.

**Technology itself should not be an objective.** It must support the goal of agricultural sustainability (economic, social, environmental and intergenerational agriculture).

## AVOIDING A DIGITAL AND INNOVATION DIVIDE

**Pioneers must support other farmers.** The speakers highlighted the crucial importance of not creating a divide between pioneering farmers who use digital technologies and are generally drivers of innovation, and the rest of farmers. Overcoming this division is important to improve the performance of farms but also the environmental and land management performance.

To do this, **Agriculture Knowledge and Innovation Systems (AKIS) are very important because they allow the dissemination of knowledge.**

**There is a need for incremental innovations and not just disruptive innovations.** This is to avoid creating an innovation divide between the pioneers and the vast majority of farmers.

# An Introduction to Agroecology

The Agri-Innovation Summit 2019 was dedicated to the contribution of the EIP-AGRI to the transition to agroecology

*The full presentation is available here.*

**Philippe Mauguin, President and CEO of the French National Institute for Agricultural Research (INRA), introduced the theme underlining its multiple dimensions. The key points of Mr Mauguin's speech are summarised below.**

The outcomes of the nine interactive workshops held during the AIS 2019 which were to discuss specific aspects of the transition to agroecology are summarised in the following sections of this report.

Agriculture is at the crossroads of some of the world's most pressing challenges. Climate change, biodiversity loss, fossil energy depletion... these all call for new forms of agriculture that ensure access to sufficient and quality food, to an expected world population of more than 9 billion in 2050, while at the same time respecting planetary boundaries and limiting environmental degradation. Farming systems that are based on the principles of agroecology can respond to the environmental, economic and social sustainability issues of today and of the future.

Agroecology is about linking agriculture, food, citizens and the planet. The agroecological transition responds to the need of fulfilling food production needs while increasing the ecosystem services provided by agriculture through the enhancement of biological processes. Agroecology moves beyond the single farm to the landscape and territorial levels that are necessary in order to maximise its ecological benefits and to facilitate the integration of agroecology products in the agri-food value chain. It therefore calls to move from an individual decision system to a collective and integrated one in which all relevant stakeholders are involved in co-developing solutions. Agroecology therefore calls for a re-design of agroecosystems.

Agroecology requires the involvement of new fields of knowledge and new ways of working. It opens up new areas of research, requires decompartmentalisation of knowledge and innovation, is based on a systems approach integrating all actors in food systems from the producer to the consumer, requires tools for individual and collective learning, and calls for a renewal in the way public policies are built in order to accompany change. Science and innovation have a central role in this transition.

As with all transitions, agroecology brings social and economic consequences that should not be underestimated and that must be anticipated today (increased risk for farmers, consumer willingness to pay, reorganisation of upstream and downstream industries, and reorganisation of distribution). New mechanisms that allow to experiment and promote adoption of agroecological practices, such as farmer groups and farm networks, must be promoted. A key success factor of the agroecological transition will be to develop a positive and shared vision of the changes that need to be made.

As José Graziano da Silva, former Director General of the FAO mentioned: *“The future of agriculture will not be intensive in inputs, but intensive in knowledge”*.

The **Food and Agriculture Organisation of the United Nations (FAO)** has identified the different definitions of agroecology and [has listed 10 elements](#): diversity, co-creation and knowledge sharing, synergies, efficiency, recycling, resilience, human and social values, culture and food traditions, responsible governance, circular economy and solidarity.

## THE 10 ELEMENTS OF AGROECOLOGY



**Diversity**



**Recycling**



**Responsible  
governance**



**Efficiency**



**Culture and food  
traditions**



**Synergies**



**Human and  
social values**



**Co-creation  
and knowledge  
sharing**



**Resilience**



**Circular economy  
and solidarity**

**France has synthesised it as follows:** agroecology is the integrated use of natural resources and mechanisms for the purpose of agricultural production. It combines ecological, social and economic dimensions and aims to better leverage interactions between plants, animals, humans and the environment.

## THE FOUR MAIN DRIVERS OF AGROECOLOGY AS PRESENTED BY THE AIS 2019 ARE:

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- 1 Engaging in a holistic and systematic discussion that puts the farm at the centre, with a view to finding the right solutions for each context;
- 2 Capitalising on the positive biological interactions in farming systems through: the promotion of practices that favour an increase in biodiversity (e.g. hedges, grass strips), natural regulatory mechanisms between plants and animals and pests, and the most appropriate cropping systems and crop rotations;
- 3 Supporting the autonomy and resilience of farms by promoting the completion of the bio-geochemical cycles (water, Nitrogen, etc.), including: crop rotation and cover crops, reducing dependence on inputs, improving soil fertility, developing livestock/crop synergies, management of organic effluents...;
- 4 Achieve a successful integration of agroecology within the whole supply chain in a way that contributes to a fair remuneration for farmers; including the agroecology principles in all parts of the food chain up to the consumer; promoting the creation of new value chains (new market opportunities and prospects, new products as a result of diversification)...



Agroecology Europe, a recognised European association, defines agroecology as the following:

**agroecology is considered jointly as a science, a practice and a social movement. It encompasses the whole food system from the soil to the organisation of human societies.**

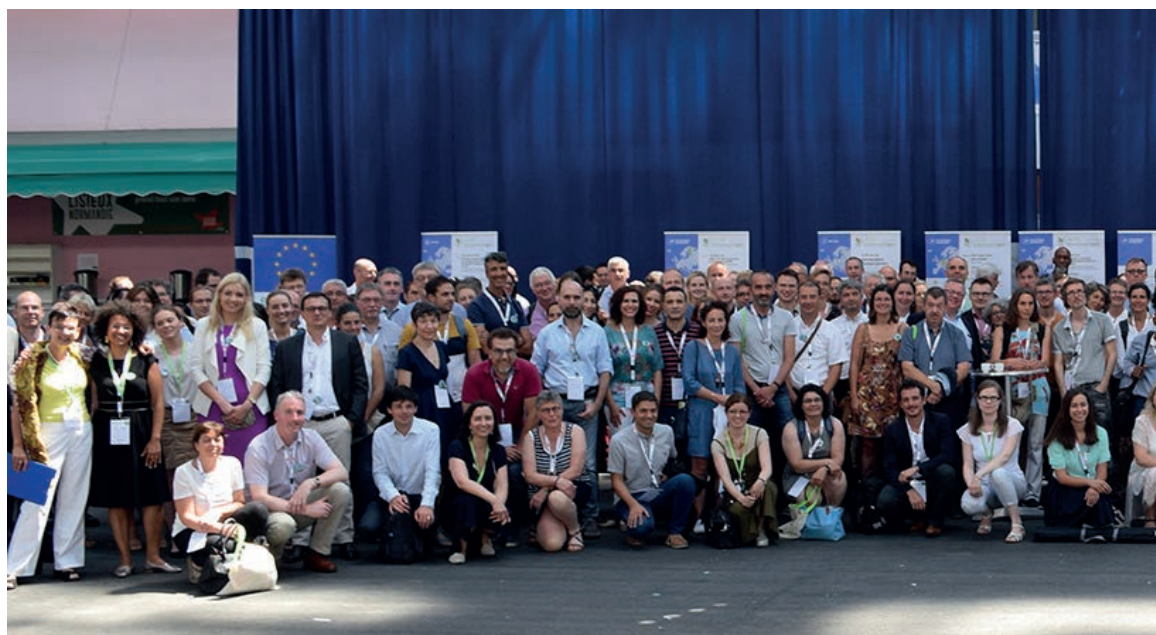
It is value-laden and based on core principles.

**As a science**, it gives priority to action research, holistic and participatory approaches, and working in a transdisciplinary manner including different knowledge systems.

**As a practice**, it is based on sustainable use of local renewable resources, local farmers' knowledge and priorities, wise use of biodiversity to provide ecosystem services and resilience, and solutions that provide multiple benefits (environmental, economic, social) from local to global.

**As a movement**, it defends smallholders and family farming, farmers and rural communities, food sovereignty, local and short marketing chains, diversity of indigenous seeds and breeds, healthy and quality food.





**The result from a forum of Agroecology Europe identified 7 challenges to develop and amplify agroecology in Europe:**

- 1 Lack of a common, broadly accepted definition of agroecology**

Although various definitions exist, the interpretations and understanding of the concepts behind them can be perceived quite differently by different actors, also because they are involved in different 'agroecologies' which reflect the diversity of contexts in Europe. Thus, a major challenge is to establish a common understanding of what agroecology is and what it implies.

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- 2 Education and training in agroecology**

Although there is an increasing number of study and training programmes in agroecology, a big challenge is to integrate this into more classical, mainstream agronomy and rural development studies, to educate future actors in sustainable agriculture and food systems. Agroecology training programmes for, by, and with farmers are still judged to be underdeveloped in number and size. A connected challenge is how to **better foster knowledge sharing** amongst farmers, researchers, and educators as well as **knowledge creation by farmers** and its subsequent documentation and integration into training or education programmes. Another related challenge is how to engage more farmers with research in a meaningful way.

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- 3 Lack of widespread, interdisciplinary agroecology research**

Widespread belief that agroecology means less productivity, lower yields, and more labour, or that it represents a non-viable alternative to current ways of food production. Overcoming this notion, by improved communication and through bringing on board new allies, is a key challenge.





4

#### Policies

There is a need to put agroecology on the political agenda, and more specifically to integrate agroecology firmly in the new Common Agricultural Policy after 2020. There is a need for better connections between farmers, science, and policy makers to provide effective local solutions, or local adaptations of national and European policies.

5

#### Productivity and practices

Agroecology is more intensive in knowledge and labour and less in inputs and machinery. Agroecological farming systems have the potential to produce higher incomes than farms that follow the conventional logic. Switching to a more agroecological approach offers huge potential and radical opportunities to EU farmers. This could (and should) be the basis for the future transformation of European agricultural policies, since agroecology not only allows for more sustainable production of healthier food but also considerably improves farmers' incomes.

6

#### Food systems

**Agroecology** is part of whole food systems that go beyond production, and thus the amplification of agroecology requires more development of concepts and actions at the food systems level. One challenge is to (re)connect farmers with urban dwellers, increasing awareness of consumers about the impact of their eating and buying habits, the quality of their food, the way it is produced, and promoting regionally-oriented food systems.

7

**Possible co-optation and misuse of the term 'agroecology'** by the agriculture and food industry, conservative farmer associations or cooperatives, and governments, risking a watering down of the essence of agroecology as a science, movement, and practice.

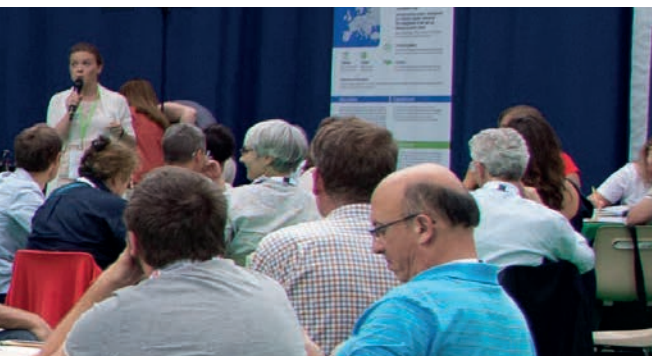


# Agri-Innovation Summit 2019 Thematic Sessions

## The EIP-AGRI leading the transition to agroecology

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A large part of the AIS 2019 was dedicated to interactive work on the theme of agroecology. 120 concrete examples were presented, illustrating multiple ways of moving the transition to agroecology forward thanks to interactive innovation. These examples were the starting point of interactive discussions engaging the 450 participants to reflect on different aspects of agroecology in Europe, organised in three thematic sessions and nine workshops.



## Thematic Session 1: “How to reduce the use of inputs as a way to increase the self-sufficiency of farms?”

Workshops under this theme focused on the establishment of farming systems and practices that reduce or eliminate the use of various external inputs, which can be harmful both for the environment and for health, and costly for producers. Moving to such farming systems and practices allow farms and forestry businesses to improve their autonomy, reduce their negative impacts on the environment and increase their resilience to various shocks (economic, climatic, etc.).



**Feed self-sufficiency  
and animal health**



**Plant health**



**Plant Nutrition**

## Thematic Session 2: “What kind of production systems are needed for the sustainable management of natural resources?”

Workshops under this theme aimed to look further into systemic approaches, which are key to agroecology. The aim was to focus on the interactions between the farm and its immediate surrounding environment and on the natural resources that are needed for agricultural production. Currently, these natural resources either constitute an asset in terms of production or are degraded and need restoration. The projects displayed showed successful strategies for the use of these resources and the changes required for their use, as well as their preservation, as part of a general move towards sustainable development and management practices. As agriculture and forestry are increasingly hit by climate change, the projects displayed looked into knowledge and innovation and climate change adaptation practices in the farming and forestry sectors.



**Soil: fertility, biological life  
and fighting against erosion**



**Climate resilient farming  
and forestry systems  
and water management**



**Wild and cultivated  
biodiversity**

### Thematic Session 3: “How can agroecology be better integrated within the value chain and with consumers, citizens and the local area?”

The transition to agroecology must go hand in hand with changes in value chains with a view to encourage, acknowledge and highlight the efforts made by producers to satisfy the changing demands of consumers, citizens and regions. The success of this transition will rely on strengthened links with consumers, citizens and territorial development actors. Through their choices, these actors can encourage more ecological production methods or practices that meet their environmental, socio-economic, regional, ethical and health expectations. Involving value chains in the agroecological transition can be considered as a positive contribution to the bioeconomy, i.e. the production, mobilisation and valorisation of natural resources, which simultaneously creates value for farming and forestry sectors and helps create new products and new markets, thus providing consumers with alternatives to products derived from fossil fuels. The bioeconomy can contribute to the ecological transition whilst keeping the balance between food security, needs for bio-based products and preserving ecosystems. Three workshops addressed this theme.

The process that took place in these thematic sessions used an innovative combination of participatory methods, such as silent discussions, open discussions and plenary agreements. To explore the nine topics, discover what is being done through EIP-AGRI Operational Groups and other innovative projects, the AIS 2019 participants answered two questions in each workshop:

- ① *What are the most promising innovations that are taking place in Europe?*
- ② *What will it take to implement or scale up these innovations?*



**Integrating agroecology  
with the downstream:  
food value chains**



**Integrating agroecology  
with the downstream:  
non-food value chains**



**Governance models  
promoting this integration  
with citizens and local  
areas as well [as] with the  
downstream and consumers**

*N.B.: The authors of this report opted for presenting the workshops' outcomes in the form of bullet points, reflecting as closely as possible the thoughts of participants as they emerged from the discussion process. This was motivated by the risk of bias or misinterpretation that a more organic synthesis of the material produced in each workshop would have implied.*

# Thematic Session 1



“How to reduce the use of inputs as a way to increase the self-sufficiency of farms?”



## Workshop 1.1 Feed Self- Sufficiency and Animal Health

Feed self-sufficiency and animal health. These two subjects were combined in order to look at livestock production systems with the threefold objective of ① reducing input supplies; ② optimising farm labour, and ③ improving animal health and welfare. Reducing feed costs reduces the impact on farms of fluctuations in cereals and soya prices. The selected projects showcased systems that enhance autonomy, contribute to developments in livestock rearing methods and encourage integrated crop and livestock production and the introduction of new crops, including protein-rich crops. The evolution in livestock production methods aims to improve animal health, thereby decreasing the consumption of veterinary medicines, reducing losses (mortality) and ensuring greater feed efficiency, all resulting in lower costs for farmers.

## KEYNOTE SPEAKER

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**Bram Moeskops.** Research & Innovation Manager – IFOAM EU

Bram Moeskops (°1982) is the Research and Innovation Manager of IFOAM EU. Bram Moeskops holds an M.Sc. in Bio-Science Engineering, a Master in International Relations and Diplomacy and a PhD in Soil Science. Bram Moeskops coordinated the thematic network OK-Net Arable (2015-2018) and coordinates OK-Net EcoFeed (2018-2020), as well as the multi-actor project LIVESEED (2017- 2021). Bram Moeskops is member of different advisory groups on EU agricultural innovation policy such as the EIP-AGRI Subgroup on Innovation. He is also vicechair of the Stakeholder Advisory Board of FACCE-JPI and the Advisory Board of the Fit4Food2030 project.

Download presentation: <https://www.reseaurural.fr/sommet-agri-innovation-2019/sommet-agri-innovation-2019-travaux/presentations>

## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Protein resources

- Improve efficient use of feed resources with emphasis on alternative protein resources
- Increase protein crops in the EU including processing for feed and food
- Use low grade protein and energy to feed monogastric animals

#### Grassland

- Become more efficient in the use of grasslands, e.g. different species in the same space using different part of grass
- Improve grassland management
- Use mixed species of grass
- Develop research on grass and protein extraction
- Use in a better way the marginal land/resource
- Increase nutritional value of raw materials

#### Farming techniques

- Use mixed species of cattle and poultry
- Reduce the use of antibiotics in animal husbandry
- Develop research on feed components, active molecules that improve animal health, resilience of livestock and reduce the use of other products

**Bioeconomy**

- Build circular systems, economics, using the by-products
- Recycle animal manure as a fertiliser (organic matter good for soil)
- Promote beekeeping
- Inform farmers and society on how to use bio-products
- Use by-products from agri-food as animal feed (competition with biofuel?)
- Enhance the role of animals in the bioeconomy

**Diversification and extensification**

- Diversify crops and livestock species
- Increase relationship between vegetal productions and animal productions on a same land/territory
- Develop biodiversity/mixtures with legumes to increase nutrient/feed self sufficiency
- Understand the economics of reducing the intensity of farming practices (“désintensification”), especially in high nature value areas
- Promote innovations and new business models for high nature value farming
- Implement programmes such as health procedures, HACCP (Hazard Analysis Critical Control Point) and ISO (International Organization for Standardisation) type system

**What will it take implement or scale up these innovations in my sector, region, activities?****Precision farming/IT – Promote the effective use of IT in the sector**

- Develop precision feeding to limit waste and environmental impacts
- Use sensors and digital tools as indicators
- Promote precision livestock farming (monitoring prediction)
- Use Decision Support tools for farmers to implement good practices
- Use already existing knowledge

**Regulation/funds**

- Integrate innovations with programmes such as health procedures, HACCP or ISO type systems
- Increase/adjust financial incentives, financial help
- Support measures to implement new techniques (veterinary, consultants...)
- Create measures that compensate groups of farmers (associations, clusters) financially to share their knowledge
- Implement measures on holder duty to have projects data in readable form
- Innovations should be connected with subsidies
- Improve product certification

### **Sharing/connecting/dissemination**

- There is a need for facilitators/innovation brokers
- Develop long-term perspectives for strategic facilitator
- Use cascading approaches: food, feed, other at farm level with neighbours on a territory, needs facilitations
- Go from a silo approach in research and advisory services to a multi-disciplinary approach and multi-actors approach. Share knowledge between farmers, stakeholders, consumers and researchers
- Promote co-working between research institutes and farmers (not only top-down transfer)
- Interoperability
- Connect farmers, advisers, researchers: on-farm transferability through co-construction of solutions, validation and dissemination of alternative feed practices (animal health)
- Organise innovation and knowledge dissemination, bottom-up ideas, peer-to-peer/best practices, multi-actor approach
- Involve the entire value-chain and disseminating the results of (EIP-AGRI) projects (local network)
- Create a global active network
- Organise and promote local groups and networks
- Increase teaching, transfer, and networking: methods and innovation have to be more "individual"
- Organise training, give examples, raise awareness
- Focus on young farmers
- Support farmers who have implemented good examples

### **Consumers**

- Strengthen relationships between producers and consumers
- Promote projects dealing with acceptability, strengthen traceability/transparency, use consumer "pressure", publish consumer awareness, communicate to the consumers through "education of children"

## **POSSIBLE CONTROVERSIES AND DEBATE NEEDS**

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Identified by participants: Possible conflict between animal feed and bioenergy.



## LIST OF POSTERS

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→ [Download projects](#)

SMART FEED	Collective Dryer "Plaine Pays d'Auge"	Digestibility Increase
EURODAIRY	Horse grazing practices	IdEA
Casdar Résilait	PROGRAILIVE & 4AGEPROD	Union of animal husbandry for health
LegForBov	OK-Net EcoFeed	Feed-a-Gene
Legumes Translated	iSAGE	Grasslands Tomorrow
SANT'Innov	Robust and resilient dairy farming production systems	Reducing antibiotic use on sheep farms at lambing time
	Development of a learning network to continuously improve health management in pig production to reduce antibiotics	



## Workshop 1.2 Plant health

The aim of this workshop was to discuss ways to reduce pesticide use. It explored the impacts on plant health of the structuring of farming systems, through diversification, soil tillage, extended rotations, including cover crops, and optimising alternatives to chemical treatments, including biological control and new farm machinery. The role of the environment surrounding plots and the establishment of agroecological infrastructures (hedges, grass buffer strips, etc.) as tools to regulate pest cycles and to encourage the development of pests' natural predators, was brought forward. The potential of perennial crop systems was also highlighted.

## KEYNOTE SPEAKER

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**Susana GAONA SAEZ**, Research Officer, Directorate General for Agriculture and Rural development, European Commission.

Susana Gaona Sáez is an Agricultural Engineer from the Universities of Córdoba in Spain and Ghent in Belgium, specialising in plant production and agricultural soils. She has more than fifteen years of professional experience in food and agricultural matters developed in regional, national, European and international organisations. Having worked for many years for farmers' organisations and for the Food and Agriculture Organization of the United Nations (FAO), she currently serves as Research Programme Officer at the Directorate General for Agriculture and Rural development of the European Commission, where she is responsible for the portfolio of ecological approaches to farming.

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Overall, two types of innovations needed:

- short-term, in order to answer immediate needs
- long-term (landscape management, collaboration of different value chains). For this, research is needed (both academic and participative)

#### Use diversification and biodiversity to prevent disease and pests

- This strategy uses measures such as multi-crop, mixed species and intercropping systems, (eg. in vineyard use wine + aromatic), plant association (allelopathy), agroforestry.
- Diversification - in time and/or space - of:
- Species (allocation of plants, plants + animals)
- Genotypes (mix of varieties)
- Diversification of varieties
- Inter-cropping
- Seeds
- Plant selection for tolerance/resistance
- New breeding techniques, simple and accessible innovation to foster uptake by farmers, increase of biodiversity
- Natural protection mechanisms

- Microbiological innovation
- Integrated systems approach, biological plant protection combined with integrated pest management practices
- Use animals to control pests and diseases
- Stimulate natural defence mechanisms of plants (e.g. elicitors)
- Grow plants that provide natural protection for the crops
- Use of biopesticides (e.g. microbials, elicitors) and reducing the use of pesticides
- Pest mating disruption/pheromones – also needs landscape approaches for diseases
- Needs of knowledge/insect biology
- Needs of coordination at landscape scale
- Better soil health to fight plant disease and increase resistance to pests
- Use compost, biochar and soil bacteria and soil microorganisms to reduce pests in soils
- Reduction of tillage
- Careful cultivar selection and new breeding methods to increase resistance to diseases and pests
- E.g. Rustic varieties (endemic), more competitive cultivars for weed tolerance, resistant varieties
- Systematic approach on larger scale (landscape level)
- Coordinated action and strategies of diversification and integrated pest management at the landscape level
- Combination of several agroecological techniques in a systems approach

## **What does it take to scale up these innovations in my region?**

### **Recognition and promotion of agroecology**

- Recognition, teaching, practice and promotion of scientifically proven agroecology practices by universities, policies, certification, reference farmers and distributors
- Address research activities for agroecological approaches
- Develop innovations for different pedo-climatic conditions

### **Technology based solutions/precision agriculture**

- Develop monitoring systems, robots, new system of crop rotation
- Develop robots for weeding
- Develop solutions adapted for different crop rotation schemes, and for biocontrol
- Promote precision agriculture/smart farming but create solutions also for small farms

**Economic aspects**

- Solutions need to be easy to implement and profitable
- Developing economic value chains (for diversification species) with added value
- Easier funding for investment in sustainable agroecological innovations and implementation
- Labelling (consumer has to be informed) and quality labels could help consumers to locate quality products that could cost more (storytelling)
- Sharing the cost/benefits between actors

**Policy level support**

- Clear regulations, adapted to regional needs and coherent with the management of innovation
- Promote education for healthy food
- Loss of income should be compensated
- CAP instruments should be more adapted to support multi-crop/twin crops/associated crops

**Research and trials more related to the problems in the field**

- Involve farmers in research projects since the beginning – including farmers in the experiments

**System approach**

- Think of farm and cropping systems instead of crop
- Integrated landscape approaches
- Acknowledge the agroecological approach as a result of many scientific achievements

**Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels**

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

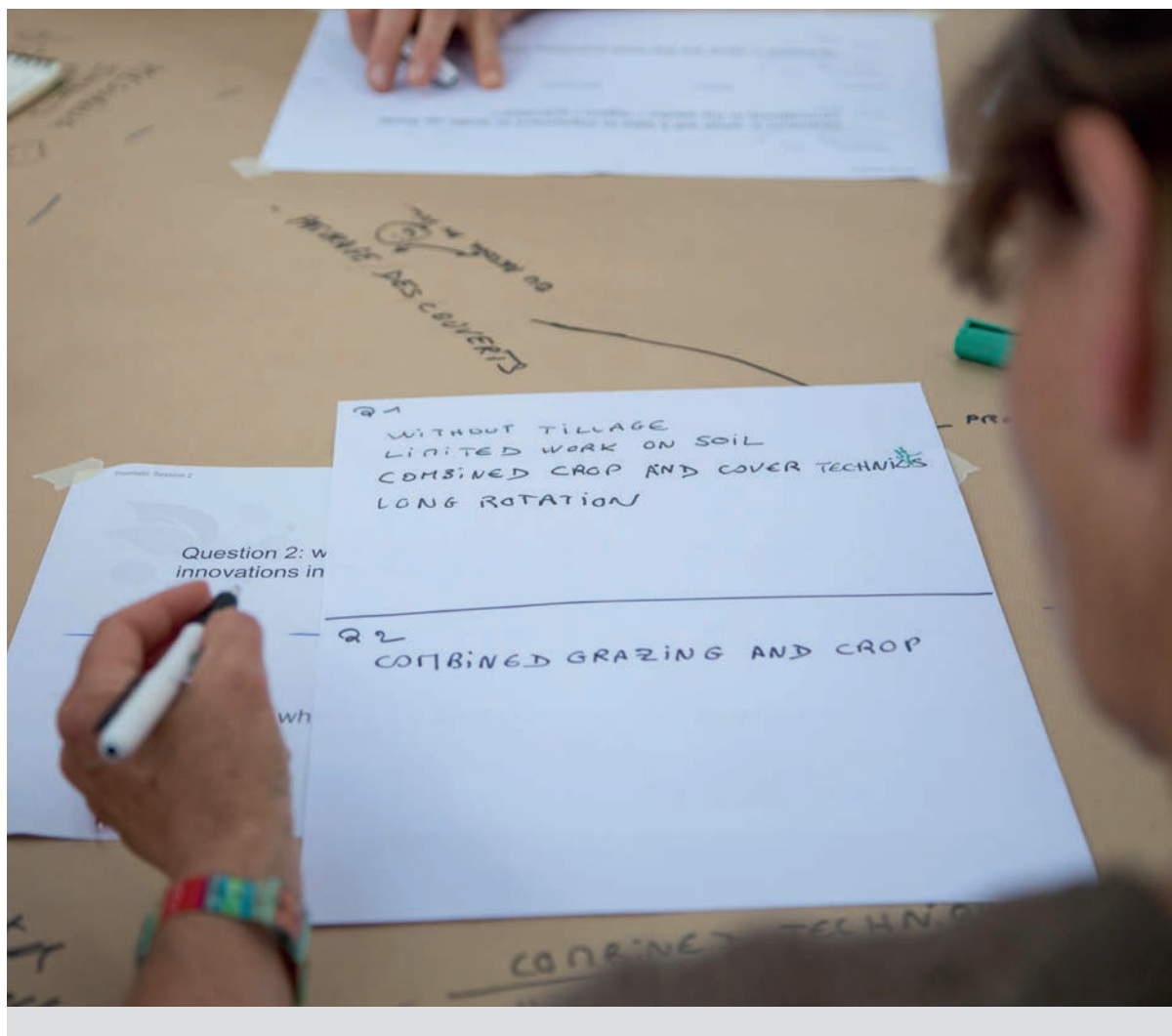
## POSSIBLE CONTROVERSIES AND DEBATE NEEDS

The use of GMOs (Genetic Modified Organisms) and genetic techniques like CRISPR were proposed by one of the participants but not accepted by others thus identifying the controversy on using these tools, due ethics, biological and environmental safety, specially within the goals and principles of an agroecological transition.

## LIST OF POSTERS

→ [Download projects](#)

Combining animals with perennial crops in PACA	INNOVEG	Evaluation of Fiber Flax agro-ecological crop managements
VIVEA	VitiPPAM	MoPlaSa
BioPest	Mating Disruption against grapevine moth	Sustainable management of phytopharmaceuticals in olive groves
Organic-PLUS	DEPHY Ecophyto network	Elicitra
Decision making sytem	GIS PIClég	



### Workshop 1.3 Plant nutrition

Alongside the subject of plant health, this workshop aimed to focus on the various approaches to both annual and perennial crop nutrition. This included the efforts being made to reduce the use of fertilisers through improved soil fertility management, in particular through the development of organic fertilisers. The importance of introducing new crops and service crops was also highlighted. The workshop took into account mixed farming systems and the circular economy from the perspective of animal waste recovery.

## KEYNOTE SPEAKER

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**Isabelle GATTIN**, RMT Fertilisation et environnement, FR.

Isabelle GATTIN holds a PhD in microbial ecology from Lyon 1 University. She completed her thesis work at the UMR INRA/URCA FARE on N and C fluxes during crop residues decomposition, under the direction of Dr. NICOLARDOT, Dr. RECOUS and Dr. MONROZIER. After 2 post doctorates in the field of the exogeneous organic matter characterisation (Limoges University & Copenhagen University, KLV), she joined Esitpa (School of Agricultural Engineers in Rouen) in 2002 as lecturer. In January 2016, Esitpa and LaSalle Beauvais school merged to give UniLaSalle, she is entrusted with the management of the research unit AGHYLE (Agroecology & Hydrogeochemistry). Her skills focus on organic matter characterization, soil C and N cycles, soil microbial ecology and soil biological indicators.

Download presentation: <https://www.reseaurural.fr/sommet-agri-innovation-2019/sommet-agri-innovation-2019-travaux/presentations>

## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Nutrient provision

- Increased use of organic fertilisers and reuse of organic residuals
- Use of ferti-irrigation
- Presence of woody perennial vegetation can help reduce nutrient leaching and increase nutrient recycling
- Adequate crop rotation techniques and using complementary crops can help improve the nutrient balance in soils
- Irrigate the cover crops (in dry climates)
- Find the right balance between organic and mineral fertilisers
- Stimulate the use of vegetal waste and residues as fertilisers
- Avoid leaving barren soil during winter to prevent nutrient leaching
- Increased use of bio-infrastructure (micro-organisms, agro-forestry, legumes) can help preserve nutrients in soils

#### Decision making

- Create maps of soil nutrient content
- Use tools that calibrate fertilisation based on the actual needs of the plants



- Use of plant sensors and innovative decision support tools
- Use of information obtained from satellites and drones for determining the nutrient needs of plants

### What will it take implement or scale up these innovations in my sector, region, activities?

- Design financially accessible tools that help farmers better understand the plant nutrient needs
- Increase farmer's trust in decision support tools that promote efficient nutrient management
- Benchmarking nutrient management could help more farmers adopt innovation in this field
- There is a need for specific training on this issue
- Use of precision measurements of soil nutrient content
- Decision support tools and systems have to be efficient, cost-effective and reliable
- Good advisory systems are essential
- Knowledge transfer and participatory approaches must be stimulated

### POSSIBLE CONTROVERSIES AND DEBATE NEEDS

No controversies identified by the participants.

### LIST OF POSTERS

→ [Download projects](#)

NutrInnov	OFIVO	SOLINAZO
Increasing the viability of sown biodiverse pastures	SmartAgriHubs	Fertilization & Environment joint
Optimisation of organic waste		Improving nutrient recycling in agriculture

# Thematic Session 2



“What kind of production systems are needed for the sustainable management of natural resources?”



## Workshop 2.1 Soil: fertility, biological life and fighting against erosion

Soils: fertility, fight against erosion and biology life. For many years, soils have been regarded as merely an inert substrate, and loss of soil fertility was compensated for by the addition of chemical inputs. However, soil quality and health, and their crucial role for the ecosystem, have now become a major concern for farming and forestry sectors. This workshop aimed to discuss soil management practices that help to combat soil erosion, increase and preserve soil fertility and biology, notably by increasing soil organic matter and through soil preparation and crop diversification. The introduction of protein crops and intermediate crops to improve the symbiotic relationships between plants and micro-organisms and to combat soil contamination and the negative effects of climate change (e.g. through greater water retention and increasing carbon storage in soils) were also discussed.

## KEYNOTE SPEAKER

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**Francesca BAMP**A, LANDMARK H2020 project – Wageningen University & Research, NL.

Francesca is a researcher at the Soil Biology Group, Wageningen University, The Netherlands. Since 2015 she has administered the H2020 project LANDMARK (call SFS-04-2014 Soil quality and function). During the project she spent 18 months at the French Chamber of Agriculture APCA organising 32 workshops across Europe, harvesting stakeholder knowledge on soil and land management. Previously she worked a postdoc on soil quality and metadata in TEAGASC, Johnstown Castle Centre, Wexford, Ireland. Her joint PhD [2014] from the Doctoral School of Crop Sciences, University of Padova, Italy, focused in a multiscale study on soil organic carbon sequestration options in agricultural soils, granted by the Joint Research Center of the European Commission.

Download presentation: <https://www.reseaurural.fr/sommet-agri-innovation-2019/sommet-agri-innovation-2019-travaux/presentations>

## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Combining different management practices and keeping the soil covered

- Combination of practices (crop rotation, cover crops, no-till or reduction of tillage, natural fertilisers, organic inputs)
- Combined crop and cover techniques
- Use of cover crops and retaining stubble

#### Systems approaches

- Developing a system vision as a tool to better understand soil life
- In such a systems vision, organic matter has to be considered as a key element
- Combine the following approaches which can drive innovation in a systems approach:
  - *Less pesticides - reduce the use of pesticides*
  - *Crop rotation and diversification*
  - *Use of biocharge*
  - *Promote Mycorrhizae*
  - *Use biowaste in fertilisation -> circular economy*
  - *At the same time ecosystems restoration -> protect what we have*
  - *Use biological indicators*
  - *Agriculture with empathy*

### **Nutrient recycling**

- Integrating biodiversity in research, in application in the field and in designing indicators which are clear and practical for the farmers
- Use of waste (agri-urban) as nutrients, good characterisation in terms of nutrient and carbon content is needed to use this efficiently

### **Land management with a long-term view**

- Long rotations
- Land management with a focus on long-term productivity

### **Tools to measure and promote soil health**

- Measuring soil quality: indicators, methods and tools for measuring, reference data (specific), feedback for farmers
- Develop easy-to-use tools (ex: soil mapping) to better know the soil, to make simulations and communicate with farmers, advisers.
- Find solutions to manage soil pathogens
- Focus on soil quality and organic agriculture
- Improving nematode management with organic amendments

## **What will it take implement or scale up these innovations in my sector, region, activities?**

### **Measuring soil quality**

- Develop indicators, methods and tools that are applicable not only to research but also to farm management
- Create specific reference data and results for different soils, climates, crops and farm management objectives

### **Communication and cooperation along the value chain**

- Find and promote ways to communicate good farming practices to consumers to enhance the appreciation of and payment for sustainably produced agricultural products

### **Financing good soil management and farming practices**

- Strengthen CAP instruments and other public policies paying for ecosystem services linked to soil health goals
- Foster private investment for carbon compensation and biodiversity

### **Knowledge, technology, inputs and logistics for soil conservation farming**

- Systematisation of practices and training of farmers in universities and also in technical training on soil conservation and regeneration science and techniques

- Promote the availability of technology for soil conservation farming (research & development, marketing, dissemination, economic incentives)
- Promote the availability and accessibility of inputs and logistics for soil conservation farming and agroecological practices

### Policy support and legislation adoption

- Include policy objectives, goals and targets for soil conservation and regeneration in Europe
- Adopt legislation that fosters soil quality, soil health, soil conservation and soil carbon sinks

### Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

## POSSIBLE CONTROVERSIES OR DEBATE NEEDS

- How to improve circularity by using (composted) biowaste to fertilise and improve the soil? This may require changes in legislation.
- How to recognise and promote long-term sustainable land management? What is the role of public and private support and investment in this context?
- How to develop, together with farmers, good and easy-to-use indicators and tools to measure the impact of measures on soil quality, soil biodiversity, soil organic matter?
- How to promote exchange between farmers and other along the value chain on the importance of sustainable soil management, and the links with the (quality of) agricultural products?
- Taxes on tillage, or ecosystems services payments for sustainable soil management?

## LIST OF POSTERS

→ [Download projects](#)

GASCOGN'INNOV	GIEE Carbone 'N' Caux	GO PEI Living Lab Iracoubo
GONEM	Guyafer 2 project	Agroecological Cover
GO Solo	4 Returns	LAND Management
NEWFERT	GIS FRUITS	GIS GC-HP2
Grazing for Carbon		Soil organic matter content



## Workshop 2.2 Climate resilient farming and forestry systems and water management

Agriculture and forestry are directly affected by the effects of climate change (drought, rising temperatures, etc.). In many areas, this leads to reduction in water availability, reduction of productivity, changing harvest dates, the emergence of new pests and diseases, and in general new conditions to which crops are not adapted. As a consequence, cropping systems will need to be adapted and planned according to new climatic conditions. New strategies and management practices will need to be explored and put in place. We are already witnessing some of these changes. For instance, water use and management is already a source of tension and conflict in many places, and this calls for changes in farming systems. As a result of this, in order to meet the qualitative and quantitative challenges involved in water management and reconcile the interests of farmers and other users and suppliers of water, the involvement of new, non-traditional partners becomes relevant, as well as bringing together farmers and the whole set of water users and providers. At the same time, trees play a role in mitigating the effects of climate change (for instance, by contributing to carbon sequestration in the soil). Agro-forestry will be promoted as a mean to protect agricultural production (for instance by providing shade for crops and animals). Moreover, sustainable forest management practices that maximise carbon storage both above and under the soil surface are drivers of climate change mitigation.

## KEYNOTE SPEAKER

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**Olivier PICARD**, Research development innovation in forestry, FR.

Olivier PICARD is Forestry Engineer and has a Master in Economy. Since 2018, he has been coordinating Research Development and Innovation activities in CNPF, and European cooperation. CNPF is a state organisation for private forest management and development. His main topics include carbon storage by forest growth contributing to mitigation of climate change. In April 2019, CNPF is participating in work to develop forestry methods for the new Label of Low Carbon. Since 2009, he has coordinated the French national network on forest adaptation to climate change (AFORCE network). AFORCE is a platform with 18 partners, to bring together scientist, practitioners, teachers, advisers, about transfer and dissemination of knowledge on adaptation to climate change. The challenge is to connect adaptation and mitigation skills to produce diagnosis, and provide advice to private owners for decision-making in forestry.

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Adapted Species

- Crops and livestock need to be adapted to the most expected situation
- Re-evaluation of (knowledge of) traditional/local species
- Introducing/testing species from other areas (drought, water, heat, salt tolerant or resistant)

#### Microclimates and zoning

- Locate crops and species according to local climate conditions such as shade, humidity, soil, solar exposure, etc.
- Create local climate conditions using shade, windbreaks, etc.

#### Diversity

- Increase stand/crop diversification of the production – in time and space – to increase ecosystem resilience
- Maintain and improve biodiversity

### **Improve soil and water management**

- Carbon storage, soil conservation, mechanical weeding, soil monitoring
- Use integrated systems combining different tools to better manage water
- Improve water use efficiency through models, monitoring of water content in plants, water needs of plants and water quality in nearby rivers and aquifers
- Make use of precision agriculture and precision forestry

### **Mitigation, resilience, sustainability and circularity**

- Closing nutrient cycles on farm and region
- Recycling of water, either on the farm or through used water from elsewhere.
- Promote circular economy
- Composting organic waste and farm vegetable residues
- Decentralised production of renewable energies (small scale biogas systems, solar, etc.)

## **What will it take implement or scale up these innovations in my sector, region, activities?**

### **Landscape planning and farm management**

- Landscape planning is needed at multiple spatial scales (region, landscape, farm, plot)
- Use system approach and local adapted solutions
- Plan with long-term perspective and include uncertainty and risk management
- Use participatory methods to include relevant stakeholders and knowledge
- Protect farm (adapt animal infrastructures for heat, increase fire protection, etc.)
- Protect landscape and regions (promote region's adaptive capacity, promote Disaster Risk Reduction measures)

### **Foster Transition**

- Progressive transfer to diversified farming systems that are more climate resilient

### **Foster cooperation and the role of the farmer/forester**

- Involve all actors in innovation and develop trust between them
- Farmers involvement is essential: farm network for showing good practice and farmer led projects
- Involve different types of professionals (facilitators, farmers, communication specialists, researchers: co-construction
- Include customers, policy makers, all stakeholders

### **Proactive governance**

- Identify/promote conditions of success, context
- Embedding projects with existing institutions in order to continue the projects after they end



- Support from the rural development legal framework
- Develop payment schemes of ecosystem services in order to increase resilient silviculture/agriculture practices
- Importance of innovation brokers and of strong policy support

#### Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

### POSSIBLE CONTROVERSIES OR DEBATE NEEDS

Although farmers would have a central role in the proposed innovations, there are different views in terms of how to change mindsets to support innovation. This concerns not only farmers but the whole AKIS (Agriculture Knowledge and Innovation Systems) and the conglomerate of suppliers and customers/traders as well as the end consumers.

### LIST OF POSTERS

→ [Download projects](#)

Les ArboNovateurs	Artichoke	CLIMARBO
Potatoe production in Normandy	Cropping systems of the onions	Adaptations and Forestry Innovations
Aqua C+	Evaluation of innovative adaptation strategies in vineyard and winery	EGIS
Improved forage production and conservation	PRO-PRODUCTION	LIVESEED
Forests adaptation to climate change	ICLS	Adaptation and mitigation of climate change
	Water and agriculture	



### **Workshop 2.3** **Wild, cultivated and domesticated biodiversity**

Wild, cultivated and domesticated biodiversity. Promoting biodiversity within the farm and in its surrounding landscape, including within forests, constitutes both an objective and a lever in terms of ensuring the success of the agroecological transition. This allows increasing reliance on nature in order to limit or reduce the use of chemical products on the farm. Genetic diversity is a powerful resource for climate change adaptation and for increasing the resilience of agricultural and forestry ecosystems. This workshop looked into farming and forestry practices that promote biodiversity, and into the relationships that those involved in farming and forestry can build with other stakeholders in their regions with the aim to preserve biodiversity. This workshop covered both crop and animal biodiversity and the promotion of varietal diversity and breed diversity, as means to enable farms to adapt to changing environmental and climatic conditions.

## KEYNOTE SPEAKER

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**André Vizinho:** AIS 2019 main facilitator and researcher in the Faculty of Sciences, University of Lisbon.

As researcher and project coordinator he is currently finishing his PhD focused on the climate adaptation of agriculture and forestry in the Mediterranean. In the field of biodiversity, he has been responsible for the participatory planning for climate adaptation of the natural park of Noudar, the municipality of Mértola (mainly occupied by the Natural park of the Guadiana Valley) and a conservation farm where he coordinates a LIFE project intervention in 100 ha. In these contexts, managing the trade-offs and integration between biodiversity and agriculture and forestry is a central part of his work as an action-researcher and project manager. Professional facilitator, keynote speaker, trainer and consultant, he is also coordinator of the Portuguese National Rural Network group on Climate Adaptation of Forests. Academically André Vizinho is an Environmental Engineer, master in Economy of Tourism and Regional Development and now pursuing a Doctor degree in Climate Change and Sustainable Development Policies. He is reviewer of two scientific journals: Springer Nature Applied Sciences and Elsevier Land Use Policy

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Biodiversity

- Linking agricultural practices to biodiversity - agriculture needs biodiversity and biodiversity needs agriculture
- Need to study relation between wild species and agriculture
- Use ICT for bridging transition and innovation for biodiversity
- Big data to collect information on local varieties for their preservation
- Diversification of species and crops
- Focus on rare species and genes
- Develop agroforestry as it takes into account the whole system
- Use lessons from people closer to nature
- Landscape/ecosystem territory scale planning and innovation
- Use land-sharing approach
- Have "island" areas with no intervention, just for conservation

### **Policy, market**

- Make agroecology profitable (e.g. through labelling)
- Focus on economic sustainability for farmers
- Better valorisation through:
  - *better prices (by quality scheme, traceability, insurance)*
  - *public payments (targeted, public goods)*
  - *rural tourism*
- New technologies useful to trace the origin of products and their “biodiversity effort”
- Need of financial incentives under the CAP and other public policies

### **Knowledge exchange**

- Raise awareness so that consumers and local people can better know their (local) products
- Storytelling & entertainment of the industry
- Networking support for:
  - *start-ups to launch new ideas and techniques*
  - *education to improve a “demand-driven” approach*
  - *multi-actor approach*

## **What will it take to implement or scale up these innovations in my sector, region, activities?**

- Business models that support nature conservation and high nature value farming
- Wild and cultivated biodiversity complement each other. Farmers need business models for biodiversity, and to be compensated for the provision of ecosystem services
- Farm tourism and rural tourism (to diversify income but also to support conservation measures and increase market for local diversified agroecological produce)
- Economic valorisation with product labelling
- Territorial marketing (labelling biodiversity)
- Market based valorisation through labels, consumer education, target consumer groups

### **Policy**

- Improve (EU and national) policy measures remunerating ecosystem services and scale up payments
- Improve calculations of the value of ecosystem services
- Local authorities are important in bridging local actors and creating groups for innovation
- CAP strategic plans and policy innovation should be both at regional/national level

### **Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels**

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

## POSSIBLE CONTROVERSIES OR DEBATE NEEDS

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- Importance to keep the farm economically sustainable, while aiming at increasing or maintaining existing biodiversity – how to find the right balance and the right measures? Wild species pose controversy: importance to keep farming activity economically viable, need for a diversification strategy for landscape, gene species diversity. How much area should be dedicated to conservation inside each farm? Should/must it be connected between farms?
- How to balance and compensate the loss of productivity due to strong conservation objectives? How to assess and choose trade-offs between different land uses, traditions and heritage in different regions and countries?
- Is it better to focus on disseminating new effective monitoring tools and new studies, or to focus first on the dissemination of already existing knowledge and solutions?

## LIST OF POSTERS

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→ [Download projects](#)

BeeTRIP	VALAB	KARIBIOPOR
Let's grow	Biodiversamente Castagno	Olive biodiversity and safeguard
ECOMONTADO XXI	TREASURE	EASYFORCLIM
Wetland management	Biodiversity and agriculture	Promote and use biodiversity in agriculture

# Thematic Session 3



**“How can agroecology be better integrated within the value chain and with consumers, citizens and the local area?”**



## **Workshop 3.1 Integrating agroecology with the downstream: food value chains**

The agroecological transition requires operational changes within farms, such as the introduction of new cropping systems involving longer rotations, land use changes, adaptations regarding livestock (new breeds, different products as regards age and conformity, etc.), moving back to mixed production systems that combine crops and livestock, as well as agro-forestry; either at farm or landscape levels. These changes require investments, adaptation periods, evolutions in the products supplied by farms but also in processing industries. They also require the identification of profitable markets for these new products. Agricultural diversification is also a response to changing consumers' demands. Projects under this workshop will highlight in particular: the possibilities of increasing added value, of acknowledging farmers' efforts, and of diversifying farm income sources; alternative channels that improve the economic feasibility of the agroecological transition; market-based approaches that remunerate farmers for their environmental services to society.

## KEYNOTE SPEAKER

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**Antoine KIEFFER**, European project manager, FR.

Antoine Kieffer has a background in food engineering and more specifically sensory analysis. He has been working at ACTIA for 4 years as European project manager. He has experience in project management, technology transfer, dissemination and communication in the context of FP7 and Horizon 2020 projects. He also is a National Contact Point for the Societal Challenge 2 in Horizon 2020. He has been and is involved as France representative in two thematic networks funded in the scope of Horizon 2020: SKIN, focused on short food chains and ENABLING, focused on innovative biomass valorisation and processing.

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Diversification of activities

- Use technological innovations to improve quality both at production (e.g. low additives) and processing (e.g. packaging) stages
- Reduce food loss on the farm
- Provide technological and marketing support to food processing SMEs, e.g. to give them access to the organic market
- Diversification of products (e.g. superberries) - new crops adapted to marginal areas
- Imagining new types of food-based on-market trends and develop new value chains

#### Value creation

- Economic viability of the farm must be preserved
- Adding value to food production starts at farm level and agroecology practices are a way to create additional value
- Value must be fairly shared along the chain (co-valorisation)
- Share knowledge about production systems and practices with consumers in order to valorise and differentiate particular products - product language for customers is crucial
- Circular economy - the waste of one farm could be valuable to another farm. Valorisation of products and by-products. Valorisation of local crops

### **Short supply chains**

- Digital market places - smart collaboration for value creation
- Education of consumers, retailers, processors, etc, is important but specifically on quality of products that result from agroecology (including nutritional info if scientifically proved)
- Take opportunity of new market demands to diversify communication channels between farmers and consumers
- Demand-driven production and processing (what does consumer want)
- Integration of ecosystem services in supply chains
- Participative approaches to short supply chains
- Food products from agroecological practices should target also long supply chains and "mass" market

## **What will it take implement or scale up these innovations in my sector, region, activities?**

### **Tools for traceability**

- Creating trustable traceability tools. Involving distributors to trace products from farmer to consumer and linking practices with products
- Sharing information of traceability between producers and consumers (what's the most cost effective way of doing this?)
- Developing methods to assess the increasing biodiversity dynamics in farmland

### **Digitalisation**

- Free tools for the value chain
- Making consumers aware of agroecological practices using digital technology

### **Educational aspects**

- Working with all actors of the value chain for an evolution of commercial practices concerning agroecological products (prices, compliance)
- Educational-marketing process to connect producers with consumers
- Collect the right set of data from farmers to be able to explain practices to consumers
- Build knowledge and gather expertise between practitioners (farmers, consumers, local authorities) and research. Manuals for good practice
- Putting together all European projects about short value chain giving evidence to organic farming and other typology of farming (agroecology)



### **Better governance and increasing people awareness (at global, local level), knowledge exchange**

- Collecting technical and economic data to assess the global impact of local actions
- Demonstration/sharing good practices. On farm demonstrations. More TV films about good practices in agriculture, about products and how they are produced
- Identifying types/categories of consumers to adapt the information (levels of education). Tailored solutions. Dissemination, communication, campaigns among consumer groups
- Specific labelling and marketing – developing a brand around ecological products e.g. agroecological labels, CO2 labels on products
- Collecting the right set of data from farmers to be able to explain practices to consumers; using/deploying communication channels to consumers with education method. Making it simple, interactive, connected
- Registering the results (how the consumers understand, reply/forward the information). Shared database of methods to explain agroecological practices to consumer

### **Support systems (e.g. financial, advisory tools)**

- Facilitating access to land in urbanised regions;
- Evaluation of socio-economical influences of short supply chains
- Policy support to local initiatives of short supply chains, knowledge and information sharing, meeting places and multi-stakeholder engagement
- Creating and funding advisory services

### **Improved technical, digital solutions**

- ICT for innovative networks: consumers, farmers, researchers, policy makers
- Building farmers´ portals, forum to share knowledge and goods
- Adapting sized machinery

### **Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels**

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

## **POSSIBLE CONTROVERSIES AND DEBATE NEEDS**

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- Emphasis on individual solutions at farm level vs the need for collective solutions
- We should also fund innovations that are not profitable
- Tax those who do not add value at the farm level
- Quality and communicating on quality of agroecological products (not yet proven or clear what is the value added)
- Definition of agroecology



## LIST OF POSTERS

→ [Download projects](#)

All Farmers!	Sweet potatoes	GojiBerries
Valorisation of the production of Cherry	LIFT	EcoStack
Aronia and other organic super berries	French network on organic food	Local food
Panjee	ProRefine	Queen Mathilde Program
Innovative Short Food		Mixed Farming Systems



## Workshop 3.2 Integrating agroecology with the downstream: non-food value chains

Integrating agroecology with the downstream: non-food value chains. The bioeconomy contributes to the transition to a low-carbon economy (since it is based on renewable carbon rather than on fossil carbon) and can provide farmers with additional sources of income. Creating new value chains to market new crops not only can contribute to the agroecological transition, it also calls for the involvement of a new set of stakeholders (research, processing, industry, marketing, construction, etc.): textile fibres, latex, biomaterials, biochemistry, cosmetics, etc. An alternative means to achieving the transition is through the recovery of animal or vegetable by-products. Agroecology aims at closing production cycles, both on farms and at a regional level. It enables the agricultural sector to reduce and recycle both farm and food waste (for example, through biogas production and composting), as well as urban and industrial waste (by recovering organic matter). The agricultural sector therefore forms part of the circular economy and can be a driving force behind new regional dynamics. Regarding biomass-derived energy, and aside from the energy consumed on site, the recovery of effluents (biogas production, etc.) and biomass (brushwood, hedge cuttings, etc.) by farms contributes to the development of renewable energy sources and to the efficient and economic use of energy, typically within the local community. The structuring of all these new channels requires the development of new links between stakeholders.

### KEYNOTE SPEAKER

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**Antoine MESSEAN**, INRA Eco-Innovation, FR.

Dr Antoine Messean is Research Manager at the National Institute for Agricultural Research (INRA, France). He has an agronomic background and coordinates interdisciplinary projects on the impact of innovations in plant production. His research has a particular focus on modelling environmental impacts of innovative cropping systems as well as on the design of multi-criteria assessment tools to help design sustainable agriculture. He has been involved in a range of National and EU funded research projects on GM plants (SIGMEA, Co-Extra, PRICE, AMIGA) and IPM (ENDURE, PURE) and is currently the coordinator of the multi-actor H2020 project DiverIMPACTS on crop diversification.

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

#### Re-circulation of biomass and circular economy

- Promote the circular economy approach that includes use optimisation (valorisation for energy, materials, medicines) of non-food crops, sub-products and waste from crops, forestry, industry or other local sources, paying attention to proximity and short value chains
- Explore the market value of non-food crops and promote diversity
- Create markets and increase value for non-food species, crops, products or services present in the landscape
- Give value to different by-products and residues coming from woody perennials (trees, shrubs, fruits, olive)
- Use of non-food crop sub-products as inputs/nutrients for crops
- Promote value chains based on cascading and bio-refinery concepts
- Develop 'waste to product' systems to increase circularity and profitability
- Produce compost with biomass
- Explore the potential of digital technologies

#### Mixed farming systems and agroforestry

- Promote a sustainable integrated land use system at farm level by using agroforestry and mixed farming systems (mixed cropping, energetic crops in rotation, crop associations, inter-cropping, longer rotations, etc.) aiming at environmental neutrality or regeneration and producing several non-food products
- Create non-food products out of diversity and by-products present in the landscape

#### Energy systems

- Decentralise the energy system, creating energy production at local level based on multiple biomass sources
- Produce energy by using biomass for heat (wood, pellets)

### What will it take implement or scale up these innovations in my sector, region, activities?

#### Research needs

- Elaborate feasibility studies that are multiscale, holistic and multi-actor, including consumers and provide recommendations

**Information, communication and training**

- Inform the community about the importance of agroecology
- Foster communication on bio-based products, facilitating the change of mindset: a waste or a pest can be a resource

**Territorial approach**

- Implementation of a global thinking approach: agroforestry vs. territories

**Policy**

- Definition of overall strategies, development of regulations (impact and results oriented) and implementation of financial incentives

**Monitor**

- Monitor the systems with a multicriteria approach, including economic viability

**Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels**

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

**POSSIBLE CONTROVERSIES**

No controversies were identified by the participants.

**LIST OF POSTERS**

→ [Download projects](#)

Biomethane	Guayule	Noir & Sens
Mobile hygienization	DiverIMPACTS	AFINET
Ecological transition Haute Côte d'Or	Agroforestry in Normandy	Territorial Economic Development



### Workshop 3.3 Governance models promoting this integration with citizens and local areas as well with the downstream and consumers

Both agroecology and the sustainable management of forests aim at balancing the production of agricultural or forestry marketable goods with environmental services. These environmental services fall within the scope of environmental public or common goods and public sector interventions, which require innovative governance systems and models. These public interventions may be organised at different levels: European, national, regional or local. They may also involve new stakeholders, such as associations, businesses, agencies, and citizens in innovative governance models. Multi-stakeholder projects focusing on agroecology constitute examples of good governance, for instance on water management, both from a qualitative as well as a quantitative point of view, or on the preservation and restoration of habitats and biodiversity, or on the fight against climate change and air pollution. These governance systems may also link public interventions and private approaches, among which labelling, including among others organic farming, high environmental value certification and private brands (green labels). Furthermore, among the projects on display in this workshop, several involve and/or analyse the effects of public policies in triggering or preventing the shift towards agroecological practices in specific places, and provide food for thought on the consistency between, for instance, the EU's Common Agricultural Policy, the European environmental legislation, national or regional policies on land-use planning, land tenure, legal right of access to the land, etc. Finally, projects will also show various ways for rewarding the provision of environmental public goods, such as payments for environmental services (PES) and result-based agro-environmental payments.

## KEYNOTE SPEAKER

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### Ronan O'MHAOINIGH, IE.

Ronan O'Mhaoinigh is currently pursuing a Master's Degree in Sustainable Energy & Green Technologies at UCD, Dublin, Ireland. He has participated in the Horizon 2020 AgroCycle research and innovation project which addresses the recycling and valorisation of waste in the agri-food sector, led by UCD's School of Biosystems and Food Engineering. Previously Ronan has had various sales and finance roles in the humanitarian, electrical appliances and logistic sectors in countries such as Mexico, Colombia and the Republic of Congo. He holds an MBA from IPADE in Mexico, a Post Graduate Diploma in Finances from ITAM in Mexico and a BSc in Marketing Techniques from DIT.

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## OUTCOMES OF DISCUSSIONS

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### What are the most promising innovations and solutions?

**Multi actor approaches - using co-creation, cooperation and exchange/ integration of multiple perspectives, different experiences and knowledge to achieve "better integration with the value chain and with consumers and citizens and the local area"**

- Cooperatives that bring together land owners, farmers, workers, consumers and other stakeholders. Small cooperatives
- Platforms that facilitate product selling/marketing, knowledge sharing and data analysis, and bring together various types of actors (such as farmers, consumers, citizens, tourists, etc.)
- Living labs for experimentation of territory-based agroecology at local level (show-casing and demonstration as a particular means to deliver knowledge), promoting multi-disciplinary and stakeholders' involvement are one of this type of initiatives

#### **Territorial approach**

- Develop territorial motivation through geographic indications (e.g. DOP) and other quality schemes
- Local food projects, bringing together producers, consumers and local authorities
- Supporting local value chains & local labelling
- Short supply chains - direct sales via social media

- Experimentation with local groups of a territory-based agroecology linked to farm-level strategies
- Linking consumers and farmers (Community Supported Agriculture systems, trust-based systems)

**Improved relationship/connection between farmers and consumers and citizens:**

- Long-term networks that bring together agriculture/ food sector, farmers and consumers to co-create a business model (and eventually a formal structure) that answers identified needs and achieves concrete results measured with robust indicators
- Platforms that are a forum for farmers and consumers to exchange and to shorten value chains
- Shorter production chains and other initiatives that bring farmers and consumers closer by building trust and increasing transparency (e.g. via improved traceability, evaluation or monitoring systems)
- Initiatives promoting communication and reducing the gap between farmers and consumers and citizens
- Consumers and citizens education and awareness (product quality versus market price, trust in producers, environmental concerns, use of waste, etc.)
- Identification of the expectations from consumers and citizens, and its reflection (added value) at production level (e.g. quality schemes, labelling, etc.)

**What will it take to implement or scale up these innovations in my sector, region, activities?**

**Promote effective networking and co-creation**

- Fund long term networks, facilitation and awareness raising
- Networking at different scales (sectorial, territorial, local)
- Industry associated locally with agriculture to promote circular economy
- To create groups of producers as ambassadors of agroecological projects
- Farmers cooperating with NGOs at local level
- Business model for high-tech on small-scale farms by cooperation and sharing equipment
- Local environment and social performance reporting
- Corporate social responsibility
- Local standards for agroecology are key
- Involvement of citizens from peri-urban areas

**More and improved knowledge on agroecology and related to:**

- Dissemination of concrete activities and systems
- Concrete examples of good agroecological practices



- Indicators for impact and results from practices
- Analyses on successes and failures
- Collect data and produce information for advisory purposes
- A well-recognised methodology to measure and quantify agroecological services
- Support decision-making tools for: waste management, sustainability investment, marketing & communications, connection between citizens & farmers, fertilisation plan yield predict
- Engage children in schools and students in universities

### **Policy level**

- Financial support to the transition. Funding that is result-oriented and based on the ecosystems services that are provided. Converge several policies (agriculture, environment, tourism, etc.) in territory-based strategies.
- Funding the setting-up and operation of platforms to facilitate product commercialisation (larger platforms can cover more varied products)
- Use public procurement, since it can create new markets (e.g. via contracts, trade-offs)
- Give more relevant roles to local stakeholders in public policies, bring decision-making in public policies closer to citizens
- Agro-environmental policies co-created at local level
- Promote open innovation (e.g. participation of citizens in public-funded programmes)
- Policy support to improved equality on social issues in agriculture (e.g. gender, emigration, etc.). More innovation with women leading
- Integrated local representative groups – including farmers, consumers, schools, recreation users, etc.

### **Market-related aspects**

- Marketing, define strategies, consider/involve the value chain. Develop a 'market-exchange' of agroecological services.
- Promote integrated local food chains and local market places
- Transparent traceability systems
- Create quality products and promote them to consumers via quality schemes
- New technologies (e.g. online markets, webpages or e-platforms) can work as a marketing tool for producers (for instance, by providing their geolocation so that consumers are aware of who are the farmers closer to them)
- Promote the integration between farmers and tourists – platform
- Sharing machinery for sustainable farm management
- Stable prices for farmers
- (Big) processing companies implementing 'continuous improvement' programmes for their processing, distribution and suppliers (farmers) – focus on sustainability or biodiversity
- Agroecology without added-value on the market has no chance to be accepted by the majority of farmers unless if chemical and energy intensive farming is more regulated and taxed

**Dissemination, sharing, co-creation and uptake of knowledge and innovation at all levels**

Related outputs were extracted from this section and included in the Synthesis of Related Outcomes, page 57.

**POSSIBLE CONTROVERSIES**

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No controversies were identified by participants.

**LIST OF POSTERS**

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→ [Download projects](#)

Agricultural business development	TERUNIC TERRitory	Biorefinery Glas
Parmigiano-Reggiano	UNISECO	AgroCycle
AgroEcological Projects	Territory-based agroecology	FROM USES TO USERS
Livestock Tomorrow	MyCumalink	LIT OUESTEREL

## “How to achieve successful sharing, co-creation and uptake of knowledge and innovation at all levels?”

### SYNTHESIS OF RELATED OUTCOMES FROM THEMATIC SESSIONS 1, 2 AND 3.

The question of “how to achieve successful sharing, co-creation and uptake of knowledge and innovation at all levels, in the context of the agroecological transition”, was addressed by participants in the three thematic sessions when attempting to answer the question “What will it take implement or scale up these innovations in my sector, region, activities?”. These topics can be organised and presented in the following way:

#### 1 When facing the question: **What is the problem?** **Do we need a transition to agroecology?**

Raising the awareness about different problems identified and quantified from different perspectives clarifies the need for action.

- Research problems and expected impacts
- Share and discuss present and future problems
- Organise training
- Disseminate information
- Education, from school to university

#### 2 When facing the question: **What are the agroecological innovations?**

After acknowledging the problem(s), stakeholders need to be informed of solutions in order to prepare for action.

- Use already existing knowledge about solutions/innovations and disseminate.
- Develop innovations through
  - *Operational Groups*
  - *Multi-actor projects*
  - *Scientific research*
  - *Research farms*
  - *Technological development*

- Disseminate and communicate solutions/innovations:
  - *Farmers seminars*
  - *Dissemination materials*
  - *Training*
  - *Demonstrate the viability of biodiversity-based/agroecology-based business models*
  - *Prove the effectiveness to farmers and advisers*
  - *MOOC – Massive Open Online Courses*
  - *Education, from school to university*

### 3 When facing the question: **How can I implement the innovations?**

After deciding to act, farmers and other stakeholders need practical information and examples on how to proceed.

- Support farmers and stakeholders in implementation
- Use multicriteria information and decision support tools
- Farm-level demonstration of technologies
- Demonstration farms
- Demonstration projects, demonstration in real farms, repeated at several locations
- MOOC – Massive Open Online Courses
- Video demonstrations (e.g. farmers, youtubers videos)
- Farmers meetings (e.g. farm labs, farmer groups)
- Promote knowledge transfer through producers' organisations

### 4 When facing the question: **How can we go further?**

- Innovations
  - *Co-create and co-develop innovations for each context*
  - *Co-create solutions to needs expressed by farmers and consumers*
  - *Involve the entire value-chain and all relevant stakeholders, including farmers and politicians, in developing short distance food chains, governance for agroecological food systems and other innovations*
- Networks
  - *Organise and promote local groups and networks*
  - *Long-term networks*
  - *Networks at different scales, local, landscape, regional, national, climate regions, European Union, global*
  - *Platforms to connect farmers to consumers, to share experience and knowledge, facilitating discussions and future endeavours*

- Vision
  - *Create a collective vision for the territory*
  - *Landscape planning at local, regional and landscape level*
- Facilitation
  - *To go from farm level to cooperation on a territory, there is a need for facilitation*
  - *There is a need for innovation brokers*
  - *Develop long-term perspectives for strategic facilitators*
  - *Approach*
    - *Collaboration, cooperation, interdependence*
    - *Holistic, interdisciplinary and multi-disciplinary approaches*
    - *Go from a silo approach in research and advisory services to a multi-disciplinary approach and multi-actors approach.*
  - *Living Labs or multi actor approach*
  - *Develop trust between innovation partners*
  - *Co-construction (involvement)*
  - *Open-source innovation, knowledge transfer*
  - *Involve all actors in innovation*
  - *Involve farmers as key actors*
  - *Involve the entire value-chain*
  - *Practitioner/researcher collaboration*
  - *Projects should involve different types of professionals (facilitators, farmers, people from communication, researchers)*
  - *Associate consumers, farmers, researchers*
  - *Include customers, policy makers, all stakeholders*
  - *Open-source knowledge*
  - *Adapt innovations to each specific context and conditions*



# Round Table

**“How to achieve successful sharing, co-creation and uptake of knowledge and innovation at all levels?”**

Representatives of research, advisory services, education, training, networks and media participated in the final round table of the AIS 2019. They shared their experiences, success-stories or failures following an appreciative inquiry approach discussing the actors, the content and the process of past and on-going good practices. The examples discussed during the round table were quite diverse but some common key points emerged from the discussion.

- As a knowledge-intensive system of farming, agroecology needs professionals (farmers, advisers, teachers, support services...) who are able to cope not only with the agronomic aspects but also with the integration in the value chain and in the whole ecosystem.
- Education and vocational training systems need to evolve. They should provide professionals not only with the new skills required by the market (e.g. digital skills) but also with the capacity to appreciate the complexity of the environment in which they work and make informed decisions.
- Science and practice should work hand in hand, through partnerships involving different types of expertise.
- Keeping the farmer at the centre of the knowledge process provides the best chances for a successful implementation of new methods and tools, taking into account the diversity of European agriculture.
- Advisers play a key role: they should provide strategic and operational advice, to promote the uptake of knowledge and innovation to all farmers and not just to the most innovative farmers.
- Peer-to-peer training, exchanges farm to farm, collective and group farming are very effective ways of sharing and co-creating knowledge.
- Networks and facilitators are essential and need public support to be effective.

## Insights from the Round Table



**Almudena Justo,**

Director of EU Programmes Department at Enterprise and Galician University Foundation –FEUGA

*The multi-actor approach is not just a way to disseminate and involve, it should be included in all the tasks of research projects as a way to produce better, more applicable results, that can effectively go from research to practice. To do this, all the activities of research projects should have inputs from farmers and the agriculture sector.*



**Margot TYSEBAERT,**

Living Lab LIT Ouesterel

*In a Living Lab we create a space and a process where producers, consumers, citizens, can work and reflect together.*

*Working with cooperatives is an advantage because it becomes easier to reach farmers.*



**Declan BYRNE,**

Project Manager Operational Group - Sustainable Uplands Agri-environment Scheme (SUAS)

*It is very important to promote cooperation between Operational Groups. Efforts need to be made to analyse all the Operational Groups and find synergies, to work, to take advantage of best practices and to transfer them to groups in other Member States. I think we have to do it better.*



**Comment from audience:**

*Farmers need time to participate in these very interesting projects. It is very long, it takes time to participate, and we do not necessarily have time to participate in all the projects we want.*



**Hubert GERHARDY**, Market Researcher, Consultant, and Part Time Professor, Operational Group Pig Health Lern-Netzwerk

*In order for farmers to be motivated and to see a benefit of participation in an Operational Group or project we need to use approaches that take into account their particularities. This is what we did in (Operational Group Pig Health Lern-Netzwerk ): we asked why are breeders reluctant to launch the necessary measures at the livestock level to reduce antibiotics ? It was necessary to find new methods and using a bottom-up approach we have set up a complete network (research, technical, consultants, breeders) that produced the first results and is now developing as a learning network to, then prove the transferability.*



**Claudine LE GUEN**, Director of the institution for agricultural education EPLEFPA du Robillard, Normandy

*Agriculture education needs to exceed the old models of the past and stop promoting ready-made solutions. For several years now we have been thinking about no longer applying ready-made recipes, but helping young people to diagnose and find and apply locally adapted solutions. It requires multiplying the approaches, especially with the "plan to teach to produce differently" (which accompanies the agroecological project of the ministry). It has changed the training standards: move from a disciplinary approach to a multidisciplinary approach.*



**Marie Mardon**, co-manager of L'Atelier Paysan

*It is important to remember that innovation is already happening on the farms. The first mission of Atelier Paysan (<https://latelierpaysan.org/> ) is to go to the farms to research and document the innovations that are made on farms. Secondly, we invest in a free broadcast of these learnings. Farmers are able to self-build and should not be limited to buying their tools. It is also by building their tools that they can innovate and adapt tools to the particular conditions on the ground. We believe in a reconquest of peasant skills, making innovation accessible to all. Finally, we prefer to speak of accompaniment rather than advice: we accompany change and provide support and peer learning to make the right decisions.*





**Thierry Baillet**, Farming YouTuber

*I have more than fifty thousand followers on YouTube because I believe that agriculture deserves to be explained and there are so many things to discover and explain! One of the most important things to empower farmers and to transfer knowledge is to put more resources into the communication of knowledge.*



**Jean-Marc THÉVENIN**, Facilitator of RITA – Agricultural Innovation and Dissemination Network for French overseas territories

*In RITA we have established a network that goes deep into the diverse French overseas territories, and we permanently have to be careful not to marginalise small structures, if we want to keep close to the farmers and the farming reality. The easiest to reach are the pioneers, and the passage of innovations from pioneers to smaller farmers is harder to reach and must be intensified. Our success comes from persistence, continuity and proximity.*



**Dr Hans-Christoph EIDEN**, President of the German Federal Office for Agriculture and Food – German EIP-AGRI network

*We need money to finance all these networks and concrete achievements, not just thinking! Putting them in place requires money. There is a need to facilitate dialogues between the European Operational Groups. These dialogues must be thematic. There must be advantages for network partners, especially economic ones.*

# Speaker Highlights

## Main conclusions by the speakers

Watch video interview on the event website.



**Paola Migliorini,**  
President of Agroecology Europe  
Watch video interview for AIS 2019 here:

<https://www.youtube.com/watch?v=MQOgnuYRxTs>

*There are different issues and approaches to agroecology and there is a lack of a common understanding of what agroecology is. According to Agroecology Europe's definition, agroecology is at the same time a science, a practice and a social movement. Our definition has a focus on food sovereignty. Agroecology is based on a holistic approach that aims to cross local and scientific knowledge, in order to produce by preserving soil and biodiversity. More than evolution, agroecology is co-evolution.*

*The Summit emphasised that co-creation of innovation is a process is not just a result. Some key words that came out during the workshops were social innovation, rethinking interactions, new economies ...*

### Thematic Session 1

*"How to reduce external inputs to increase farm autonomy?" showed the importance of the multi-stakeholder approach, the focus on farmers in order to put in place the right tools, more self-governance. Technologies have also been much discussed. The main theme of the exchanges was the reduction of chemical fertilisers and the new methods to be found to lead this reduction, especially at the territorial level. The posters focused on the multi-actor approach, and also on technology and reduction of fertilisers, but there was very little presence of transformative approach: the process that implies the redesign of the food system and the integration of both horizontal and vertical diversification of production systems within sustainable food systems.*

### Thematic Session 2

*"What production systems for the sustainable management of natural resources?" highlighted the appetite for participatory approaches and cooperation. Conservation approaches (soils, biodiversity, resilience) from gene to system level have been much discussed, but not the agricultural landscapes as a whole. A question that needs to be asked is how to move from conservation to regeneration of new and more adapted landscapes. Natural biodiversity/wild biodiversity and its interactions has not been much discussed in the workshops, including cultural biodiversity (farmers' knowledge). In relation to wild/cultivated biodiversity, most posters showed participatory approaches, but the approach was mainly on conservation strategies (genetic diversity, species, etc), few spoke of landscape and territorial approaches. It came out clear from the discussions that more efforts are needed to improve diversification of systems at all levels.*



### Thematic Session 3

*“How to successfully integrate agroecology with citizens and territories, downstream and consumers?” was ultimately aimed at building new relationships. The tools for this are already available (CSA, farmers’ markets, agritourism, farm visits and experience on farm, ... ), but they require some financial resources and energies to be developed. Economic actors must be integrated into exchanges and projects. In general, the socio-economic level has not been addressed enough, and the cultural biodiversity element should be included in the discussion.*

**Watch video interview on the event website.**



#### **Sébastien Windsor,**

President of ACTA (Coordination of French Technical Agricultural Institutes) and of the Chamber of Agriculture of Normandy

Watch video interview for AIS 2019 here:

<https://www.youtube.com/watch?v=qFzGlXPyc0s>

*The main interest gained from the workshops and visits was the exchange, the sharing of enthusiasm between the various actors present. It gives you energy to carry your projects. It emerged from these workshops that the multi-stakeholder aspect is found at several levels of the innovation chain (TRL): applied, fundamental research ...*

*Interactive innovation has been widely discussed. Its main interesting feature is that farmers also participate in innovation and this is key in order to come up with the right innovations. In France, there is a lot of compartmentalisation between the disciplines and the actors, the EIP-AGRI comes to change that. The core of the methodology is to focus on a common project to move forward together.*

*The importance of having results from Horizon 2020 projects to feed the projects of the Operational Groups was mentioned in the workshops. There is demand for exchanges and desire to seek solutions in other Operational Groups, especially from other parts of Europe.*

*Economic actors are largely missing in the Summit. It is nevertheless absolutely crucial to involve them in research projects in order to succeed. There is also a need to attract start-ups, cooperatives and competitiveness clusters.*

*Digitalisation has also often emerged during exchanges, first as a tool for analysis and data exchange. For this to be a good tool, data and knowledge exchange must be liberalised, also in order to increase transparency.*

**Watch video  
interview  
[on the event  
website.](#)**



**Christian Huyghe,**  
Scientific Director Agriculture of the National Institute of Agronomic  
Research  
Watch video interview for AIS 2019 here:  
<https://www.youtube.com/watch?v=-wv-vwDfN1I>

*Exogenous innovations are key to change practices and systems. The change of landscape in the region hosting the AIS 2019 is an example: Normandy is today a region of pastures. However, 150 years ago the region had very few, even no meadows. The pastures developed because the new railway made it possible to transport perishable goods to the French capital to feed the Parisian population. It is important to investigate the forces of change and include exogenous elements like in this example.*

*To encourage innovation and change in practices and systems, policies and public support are needed. The EU Common Agricultural Policy is critical to promote change in the farming sector. The inclusion of new partners in the system is another essential driver of change. Citizens or consumer associations may be such new partners. The use of digital technologies facilitates their inclusion in order to facilitate exchanges. Multi-actor approaches, such as the EIP-AGRI Operational Groups and the living labs, may facilitate the co-creation of solutions considering both private and public goods. They may lead to a diversity of outcomes, such as grounded knowledge, business and ownership of partners. Many EIP-AGRI projects carry the bases for such new networks.*

*The workshops highlighted unanimous support for systemic approaches and the importance of the spatial scale. Systemic approaches are popular, but the projects are local. This calls for a reflection on how to extract generalised lessons from local EIP-AGRI projects. Important aspects such as the fixed elements of the agricultural landscape (hedges, trees, forests ...) and their governance need more in-depth discussion.*

*A theme that was widely discussed in the workshops is the management of risks and hazards inherent to innovation. Innovations contributing to system resilience must be a target. This issue must be managed with counselling and risk-taking training. It is necessary to move beyond approaches that focus only on the production side of the agri-food chain and leaves aside the downstream, the consumer and the citizen. They hold part of the solutions for more resilient agri-food systems. These new players must be integrated in the discussion, their demands taken into account since they are the real drivers of change.*

*Paradigm shift and change in mind-sets of all players were considered essential in all the workshops. The digital transformation has been identified as a clear innovation driver and a key resource for change.*

*Finally, 3 important paradoxes spotted in the workshops that need to be worked on are:*

- Diversity and diversification vs complexity and risk aversion*
- Economies of scale vs finding locally adapted solutions*
- Rural vs urban: all the issues discussed at the summit are directly relevant for urban citizens, who account for 80% of EU population.*



# Field Visits

## Presentation of the 8 field visits during the Agro Innovation Summit 2019

### N°1

#### **AgroEcoLif – Evaluation of agroecological crop management techniques which can be applied to fibre flax production (EIP OG)**

*Field visit:  
farm parcel  
located on a farm  
in La Haye-de-  
Calleville:  
about 45 km  
from Lisieux*

France produces 85% of the World's fibre flax. The departments of Eure and Seine-Maritime represent 52% of this production.

Fibre flax requires few chemical inputs. Nevertheless, pests and lodging are difficult to handle without chemical control. The main aim of the AgroEcoLif project is to develop alternatives to chemical control.

This project is led by ARVALIS (Agricultural Techniques Institute) and three cooperatives. The project is studying the overall consistency of fibre flax management techniques through the use of agronomical approaches, biocontrol and mechanical weeding.

The objective of this Operational Group (composed of the project partners) is to achieve a high yield level and sufficient fibre quality. The economic outcomes and the level of chemical control dependency are measured in comparison with those of conventional farming crop management techniques.

### N°2

#### **Milk resilience – a study of the socioeconomic resilience of dairy farms in Normandy (EIP OG)**

*Field visit :  
Chamblac  
about 30 km  
from Lisieux*

This project aims to develop the sustainability of cattle farming. Several Operational Groups and a network of pilot-farms were created at different scales in order to foster the sharing of knowledge, references and tools between farmers, experts and scientists in different countries.

This project is a regional spinout of the European project Euro-Dairy, funded by the Horizon 2020 programme aiming to boost cooperation at the regional, national, and transnational level, through networking and the sharing of tools and knowledge.

This group is composed of pilot farms, engineers, technicians and cattle farming advisers.

The project has two main focuses: "Efficient use of resources" and "Biodiversity" for the development of agroecological practices.



Carbon N Caux

## N° 3

## Collective Dryer “Plaine Pays d’Auge”: a partnership between cattle farmers and cereal growers to add value to alfalfa and manure (EIP OG)

**Field visit:**  
about 50 km  
from Lisieux

This project, developed by 15 cattle farmers and 5 cereal growers, aims to foster collective action on the use of leguminous fodder and the creation of a solar dryer to add value to hedgerows. It relies on a triple management of resources: introducing alfalfa in the crop rotation as a source of protein, using manure as an organic amendment for soils and using the shredded wood of hedgerows to supply extra power to the solar dryer. Alfalfa reduces the need for chemical inputs, is an agronomical approach for soils and reduces the need for the weeding.

The project aims to reduce the dependency on external supplies by fostering a local collective approach between cattle farming and cereal growing. The objective is to reinforce the partnership through a lasting contract. The organisational aspect of this project is very innovative.

N° 4

## Carbon N Caux (EIP OG)

*Field visit:*

*farm in*

*Gommerville:*

*about 57 km*

*from Lisieux*

This project is exploring and examining various sustainable agricultural practices in order to achieve a positive carbon footprint: carbon sequestration and understanding the interactions between carbon and nitrogen in the soil.

The aim is to develop a more self-sufficient system so as to limit the use of inputs and maximise the use of resources.

The group is composed of 17 farms. They will develop a tool to calculate a farm's carbon footprint. The region for this study, Pays de Caux, is known for its intensive agriculture, soil erosion and crusting. With 11 priority catchment basins, this agricultural region also faces significant water management challenges.

The group expects to find ways to maintain soil fertility and water quality, in order to improve the transferability and sustainability of farms.





## N° 5

## “Creation and facilitation of an innovative and operational network of Normandy forest areas” and “Normandy Original Forestry Innovations and Adaptations Network” (EIP OG)

**Field visit:**  
a forest located  
in Saint-Germain-  
de-Livet:  
about 10 km  
from Lisieux

Forests in Normandy are currently faced with several challenges: adaptation to climate change, sustainability, additional value for wood for industrial purposes, sanitary issues, energy transition (wood energy, carbon sequestration), multifunctionality (hunting, hiking) ... In order to tackle these issues, the partners of the two projects are carrying out discussions and activities including:

- predictive mapping of forest plot in order to help foresters select forestry species taking into account adaptation to climate change;
- implementing and facilitating a regional network of forest territories to enable dialogue and collective actions in conjunction with foresters, researchers, local authorities, schools and environmental advocacy groups;
- Douglas and Nordmann firs management: creation of references, implementation of a demonstration network for new forestry species, implementation of demonstration tests of dynamic juvenile forestry and the comparison of different formats.

## N° 6

## Economic and Environmental Interest Grouping “Biodiversity to raise farmers’ awareness about good practices and gain a better understanding of ecosystem services”

**Field visit:**  
55 hectares  
arable land,  
located in  
Ouilly-le-Tesson  
– about 44 km  
from Lisieux

The project objective is to bring together the skills of beekeepers, farmers and academics to foster the presence of auxiliary and pollinator insects. This is achieved by adding specific landscape features in farmed areas such as melliferous flower strips, in relation with other landscape features such as hedges. The project will evaluate the benefits of these landscape features using smart objects (beehives, drones).

Bringing farmers and beekeepers together in a common project raises awareness amongst farmers about biodiversity and enables them to have a better understanding of ecosystem services.

The partnership with an agricultural school contributes to raising awareness amongst future generations of farmers and other agriculture stakeholders. Various actions are planned in this project: good practices guide, integrating the observations in training programmes, communicating to local stakeholders and the general public.

N°7

*Field visit: farm  
in Tracy Bocage:  
about 78 km  
from Lisieux*

## Queen Mathilda

“Reine Mathilde” (Queen Mathilda) is an innovative, multi-stakeholder and structuring project for the organic dairy sector. Its aim is to make Normandy a pilot region for the production and processing of organic milk by supporting farmers on the environmental issues. The objectives of the project are to develop the organic dairy sector by fostering and facilitating the converting to organic agriculture in Normandy and reinforcing the sector by innovating for the competitiveness and sustainability of cattle farms. To reach these goals, the project aims to:

- federate the stakeholders to develop and communicate together on matters such as food selfsufficiency;
- develop regional expertise on organic dairy production through the creation of references from the tests on fodder producing agriculture and environmental approaches.

The interest of the project lies in the partnership between conventional and organic farmers, advisers, veterinarians, scholars and students.

N°8

*Field visit:  
farm parcel  
near Neubourg  
agricultural school:  
about 50 km  
from Lisieux*

## Association for Agroforestry Dynamics in Normandy (Economic and Environmental Interest Grouping)

This project aims to increase agroforestry dynamics in the region by setting up a stakeholder network for sharing experiences and knowledge (including a bee health protection group, beekeepers union, regional association for the study and improvement of soils, three agricultural colleges, forestry cooperatives, cooperatives). Agroforestry systems associate the three founding components of agroecology: economic, social and environmental performance. In addition to improving agricultural yield which can be seen in certain agroforestry systems, the multifunctionality of agroforestry ensures a financial gain for the forester through the sale of wood or improving beekeeping activities and fruit cultivation. The field visit will be on a test parcel used for training courses.



# THE EIP-AGRI LEADING THE TRANSITION TO AGROECOLOGY

25-26 June 2019 - Lisieux, France



Short and full report, videos, projects and documents are available on the AIS 2019 website

<https://www.reseaurural.fr/Sommet-agri-innovation-2019>

EIP-AGRI website: [www.eip-agri.eu](http://www.eip-agri.eu)

French EIP website: [www.reseaurural.fr/le-partenariat-europeen-pour-linnovation-agri](http://www.reseaurural.fr/le-partenariat-europeen-pour-linnovation-agri)