ARVALIS, A KEY ACTOR IN THE EUROPEAN RESEARCH ARENA

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ARVALIS

Stéphane Jézéquel

Scientific Director of ARVALIS

ARVALIS, the largest applied research institute in France, is resolutely focused on Europe and its European partners. Why?
Because we need to address contemporary global issues, such as climate change and food security, on a relevant scale: the European scale.
Because collaborations on this scale are essential to target the most promising research, to jointly find the right responses for agriculture on the continent.
Because today, co-construction provides an essential framework for research through data sharing, teaching and the reciprocal learning of new technologies and the collective development of the most advanced tools.
Finally, because the diversity of soil and climate conditions and the variety of French production conditions reflect the experience of different production regions all over Europe.

Within this complex framework, the aim of ARVALIS and its partners, is to mobilise the best scientific skills in each field – whether agronomy, physiology, genetics, plant pathology, data science, machinery, economics, etc. – and use them to tackle agricultural issues. Alongside experts from different disciplines and farmers, we co-construct the best technical combinations by simulating, modelling and validating the most efficient solutions in the field. Our goal is to support the development of productive agriculture to feed populations and generate energy; agriculture that is economically viable for producers, agriculture that is resilient in the face of hazards and limits the use of non-renewable resources, and agriculture that is beneficial for the environment – notably through its involvement in climate change mitigation through carbon sequestration – and conducive to the development of biodiversity.

This demonstrates the magnitude of the task. The need to collaborate increasingly closely on ever wider disciplinary fields is obvious. Our common strategic vision has therefore evolved all the way from the individual plot level up to European level, so that each partner can implement these methods to suit their own agricultural conditions. It is this vision that ***ARVALIS, a key actor in the European Research area***, is pleased to present to you, with information about numerous European collaborative projects.

→ The institute

ARVALIS is the largest applied agricultural research Institute in France and the leading specialist for arable crops.

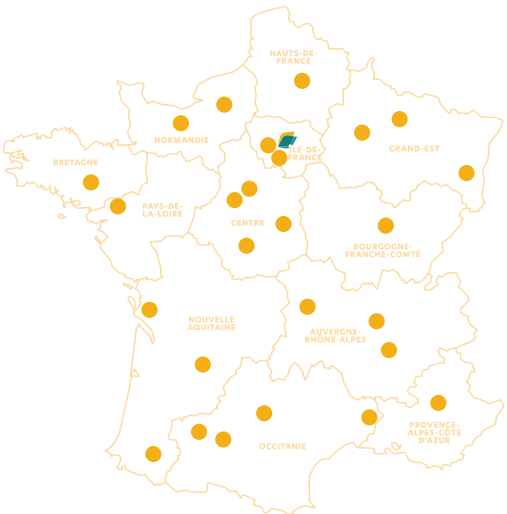
Its mission is to gather knowledge and introduce innovations beneficial to producers of straw cereals (bread wheat, durum wheat, barley, triticale, oats, etc.), corn (grain, seeds, sweetcorn), sorghum, potatoes, fodder, fibre flax, tobacco and associated economic sectors.

Created by farmers and the sectors that finance it, the institute contributes to the development of grain production and quality food and non-food raw materials for local, national and international markets. ARVALIS applies its independent expertise to develop agro-ecological production systems that combine economic, social, environmental, and health performance.

ARVALIS facilities in France

Headquarters

Research and experimentation station



→ Europe : ARVALIS with Acta and ACTIA

ARVALIS and 32 other French agricultural technical institutes (ITA) and agro-industrial institutes (ITAI) are incorporated within the Agricultural Technical Coordination Association (ACTA) and the Technical Coordination Association for the Agri-Food Industry (ACTIA), in order to collaborate with the various agricultural sectors and develop joint research activities.

This Acta-ACTIA network, unique in Europe, enables institutes to bring complementarity to the European projects in which they are involved, both in terms of expertise and agricultural production. In addition, Acta has at its disposal a European management team, which is very active in monitoring forecasts, as well as setting up and supporting European projects, helping it to complement the activities of the Europe division of ARVALIS.

What are the main European funding programs for which ARVALIS is applying?

DIGITALEUROPE

Digital Europe (2021-2027) is a European funding program focused on supporting and accelerating the digital transformation of the economy. It supports the development of mature technologies and the market's adoption of products and services based on digital technologies.

€7.6 bn

€100 bn

Horizon Europe

Horizon Europe (2021-2027) is the European Union's framework program for research and technological development following on from Horizon 2020. Its exceptional budget makes it the most ambitious R&D program in the world. ARVALIS applies mainly to calls for projects from cluster 6 "Food, bioeconomy, natural resources, agriculture and environment".

€26 bn

Erasmus+

The European **Erasmus+** program supports academic mobility, as well as the development of partnerships and the capacity building of higher education and research institutions. Its 2021-2027 program focuses on ecological and digital transitions.

€3.2 bn

Interreg

Funded by the European Regional Development Fund (ERDF), the **Interreg** program (2021-2027) aims to promote cross-border, transnational and inter-regional cooperation and to provide answers to common problems, for agriculture, in the areas of biodiversity conservation and the fight against climate change.

€500 m

PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA

The **PRIMA** partnership (2018-2028) supports research and innovation in Mediterranean countries on the themes of water management, agricultural systems and the development of value chains in the agri-food sector. Its objective is to strengthen cooperation between these countries to develop innovative solutions to the challenges of sustainable food production and water security.

IDENTIFYING VARIETAL INNOVATIONS TO ADAPT TO CLIMATE CHANGE

PROJECTS

Root2Res

2022-2027 | €8,8 M
22 PARTNERS | 13 COUNTRIES
HORIZON EUROPE
COORDINATED BY ARVALIS (FRANCE) AND CO-HOSTED WITH THE JAMES HUTTON INSTITUTE (UK)

ROOT PHENOTYPING AND GENETIC IMPROVEMENT FOR ROTATIONAL CROPS RESILIENT TO ENVIRONMENTAL CHANGE

→ Defining root ideotypes faced with variable growing conditions subject to abiotic stresses and promoting carbon storage in the soil.
→ Developing tools for the characterisation of cultivars and molecular markers related to root traits.
→ Quantifying adaptability and response functions of traits of newly identified cultivars.

CONTACTS: Jean-Pierre Cohan – jp.cohan@arvalis.fr
Pierre Rochepeau – p.rochepeau@arvalis.fr

Scan the QR code to watch the video on the Phénomobile® phenotyping tool (Gréoux-les-Bains).

invite

2019-2023 | €8 M
22 PARTNERS | 13 COUNTRIES
HORIZON 2020
COORDINATED BY INRAE (FRANCE)

INNOVATIONS IN PLANT VARIETY TESTING IN EUROPE

→ Improving the effectiveness of variety evaluation tools in the context of climate change.
→ Facilitating access to variety performance information according to production conditions.
→ Testing the latest artificial intelligence (AI) technologies applied to plant characterisation.

CONTACT: Nathalie Mangel – n.mangel@arvalis.fr

↑ *PhénoField, the high-throughput phenotyping platform dedicated to the study of drought tolerance in crops*

Scan the QR code to view the video on the PhénoField® phenotyping platform (Ouzouer-le-Marché).

3 QUESTIONS TO

Jean-Pierre Cohan

DIRECTOR OF RESEARCH AND DEVELOPMENT, COORDINATOR OF THE Root2Res PROJECT – ARVALIS

WHAT ARE THE AIMS OF THE "ADAPTATION OF ARABLE CROPS TO AGROCLIMATIC CONTEXTS, GENETICS AND PHENOTYPING" DIVISION?

This division falls under the ARVALIS research and development department, for which I am responsible. It designs and leads R&D projects in the field of genetics – ranging from molecular tools to variety evaluation – ecophysiology and the development of crop phenotyping tools using digital sensors. The objective is to produce and disseminate scientific and technical operational references, making a particular contribution to adapt crops to the consequences of climate change.

WHAT DOES PARTICIPATION IN COLLABORATIVE EUROPEAN PROJECTS ENABLE YOU TO ACHIEVE?

Our work requires the development of technical and scientific partnerships to consolidate our references in a wide range of pedoclimatic environments, and to draw on skills complementary to those of our teams. This strategy, already well developed in France, takes full advantage of the involvement in European projects, as the themes we address are common to many R&D teams in other countries.

↑ *Consultation of experts in wheat, barley and potato crops regarding the prioritisation of varietal ideotypes in the Root2Res project*

WHAT IS THE EXPECTED IMPACT OF THE Root2Res PROJECT?

The root system in its overall structure with its architecture and its interactions with the microorganisms in the soil, plays a key role in crop performance, particularly via its uptake of water and mineral elements. Its study, by definition underground, is more complicated than that of the aerial parts of plants. The ambition of Root2Res is to provide a series of tools to geneticists, breeders and agronomists to improve the study and valorisation of primary root characteristics. The ultimate goal is greater resilience of crops to the attendant stresses related to climate change.

TESTIMONIAL

Katia Beauchêne

R&D engineer responsible for sensor-assisted phenotyping projects

–

ARVALIS

"To create the varieties of the future and innovative crop systems that are able to adapt to climate change with increased and better production, agricultural research must have access to more phenotypic information about plants. High throughput phenotyping is a fast, non-destructive way to access plant growth parameters. Sensors associated with sophisticated systems, such as Phénomobile and PhénoField, are used by ARVALIS on different species to study topics such as digitalisation of experimentation, varieties, ecophysiology or fertilisation. The institute is also interested in tools to monitor root growth, such as the Minirhizotron."

Scan the QR code to watch the video "The Minirhizotron in action!"

DEVELOPING DIGITAL TECHNOLOGIES FOR MULTI-CRITERIA PERFORMANCE AND VALUE-CREATING AGRICULTURE

PROJECTS

TEF agrifood

2023-2028 | €60 M
25 PARTNERS | 8 COUNTRIES
DIGITAL EUROPE
COORDINATED BY FONDAZIONE BRUNO KESSLER (ITALY)

TEST AND EXPERIMENTATION FACILITIES FOR THE AGRI-FOOD DOMAIN

→ Establishing a European network of tests and evaluations under real and controlled conditions.
→ Providing services to small and medium-sized AgTech companies to test, improve and validate AI and robotic solutions.
→ Facilitating the marketing and adoption of digital technologies through a quality validation process.

CONTACT: Régis Berthelot – r.berthelot@arvalis.fr

FARMTOPIA

2023-2026 | €5 M
22 PARTNERS | 12 COUNTRIES
HORIZON EUROPE
COORDINATED BY NEUROPUBLIC (GREECE)

DEMOCRATIZING DIGITAL FARMING FOR ALL

→ Testing and evaluating cost-effective digital solutions for small and medium-sized farms in real-world conditions with farmers.
→ Developing effective economic and governance models to facilitate their adoption by small and medium-sized farms.

CONTACT: Caroline Desbourdes – c.desbourdes@arvalis.fr

→ A tailored offer for startups within agricultural sectors

DIGIFERMES®

ARVALIS DigiFermes® support startuppers and digital entrepreneurs helping them to improve their innovations and to promote digital agriculture that meets the needs of farmers. Companies can make use of ARVALIS know-how at all stages of their development: from the experimental phase in the laboratory to the final marketing adjustments and the recommendations that will be made to future users.

WHAT ARE THE BENEFITS OF ARVALIS METHODOLOGICAL EXCELLENCE?

- Support from technical experts knowing the real needs of farmers to co-create innovations.
- Thorough assessment on digital farms to test new technologies or digital prototypes in real conditions.
- Access to the ARVALIS scientific and technical network, composed of proactive French and European participants: research centres, higher education, cooperatives, farmers, etc.

3 QUESTIONS TO

Pauline Mangin

REGIONAL ENGINEER
LORRAINE – ARVALIS

Delphine Bouttet

REGIONAL ENGINEER
ILE-DE-FRANCE – ARVALIS

Scan the QR code to watch the video on the Saint-Hilaire-en-Woëvre DigiFerme® Lorraine Region (East France)

Scan the QR code to view the video on the Boigneville Digiferme® Ile-de-France Region (center of France)

WHAT ARE YOUR OBJECTIVES AS REGIONAL ENGINEERS?

P. M. The main feature of our objectives as regional engineers at ARVALIS is our presence in the field, where our role includes listening to producers and partners in our regions. Secondly, our job is to translate their needs into research actions to develop technical trials, with a view to provide advice and operational solutions. Those trials take account of the regions' pedoclimatic characteristics and agronomic constraints in which these farmers are located.

HOW WOULD YOU DESCRIBE ARVALIS DIGIFERMES®?

D. B. ARVALIS Digifermes® belong to a network of experimental farms that support the development of digital farming agriculture. Their ambition is to boost the transformation of farms by acquiring points of reference on a life-size playing field.

P. M. The Saint-Hilaire-en-Woëvre DigiFerme® is based in the Meuse department in Lorraine and is representative of the mixed farming farms of Lorraine. The services provided by digital technologies mainly operate from the standpoint of "weeding" but also from the perspective of "fodder crops and livestock". The research for optimized grazing management and the monitoring of forage quality and animal health aims to improve welfare and facilitate the management of livestock systems.

D. B. The Boigneville DigiFerme® is located in Essonne and is typical of the arable crop farms in the southern Paris area with three production systems (organic farming, crops under permanent cover, "CAP du Futur" system focused on weed control and irrigation). It has a network of weather stations, and facilities for grain storage research.

HOW ARE DIGIFERMES® INVOLVED IN EUROPEAN ARVALIS PROJECTS?

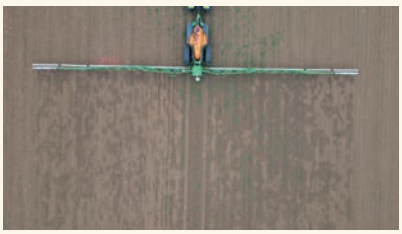
D. B. DigiFermes® are systems for testing and evaluating digital solutions implemented in European projects such as Farmtopia, focused on the evaluation of targeted weeding technology, and AgrifoodTEF, covering the services offered to AgTech SMEs. Beyond their role as experimental farms, ARVALIS Digifermes® also offer outreach services and trainings for almost 1000 farmers, advisors and students, encouraging them to visit these interlinked farms each year. Thus, ARVALIS DigiFermes® are real platforms for demonstrating agricultural technologies.

SUCCESS

THREE DIFFERENT TARGETED WEEDING TECHNIQUES EVALUATED ON ARVALIS DIGIFERMES®

Active guidance of the tool to allow camera-free hoeing.

Tool holder used for independent sowing and hoeing.



Sensor-assisted weed detection.

REDUCING THE USE OF SYNTHETIC INPUTS

PROJECTS

NutriBudget

2022-2026 | €7 M
17 PARTNERS | 10 COUNTRIES
HORIZON EUROPE
COORDINATED BY U.GHENT (BELGIUM)

OPTIMISATION OF NUTRIENT BUDGET

→ Developing a model able to forecast the spatial nutrient and carbon flows of the main European agricultural systems, from regional to farm scale.
→ Co-creating a decision support tool, Nutriplatform: an integrated nutrient management platform that helps to optimise the use of nutrients to reduce pollution and losses.
→ Testing and implementing innovative measures and practices in five pilot cases.

CONTACT: Francesca Degan – f.degan@arvalis.fr

NUTRI-CHECK NET
OPTIMISING CROP NUTRITION

2023-2025 | €2,5 M
9 PARTNERS | 8 COUNTRIES
HORIZON EUROPE
COORDINATED BY AUA (GREECE)

DEVELOPING ONLINE NUTRITION TOOLS FOR CROP MANAGEMENT

→ Establishing networks of farmers, “Crop Nutrition clubs”, to share and highlight the nutritional problems of each farm and to jointly find solutions for uncertainties and nutritional problems.
→ Inventorying and evaluating existing decision-making solutions on crop nutrition (precision agriculture, sensors, laboratory and experimental solutions, etc.).
→ Building an online platform, NUTRI-CHECK NET, to improve the accessibility of these solutions across Europe.

CONTACT: Francesca Degan – f.degan@arvalis.fr

SUCCESS

TWO EXAMPLES OF TOOLS DEVELOPED BY ARVALIS

Un modèle agronomique ARVALIS FERTI-ADAPT CHN

↑ *Workshop with farmers within the context of the FERTI-ADAPT CHN project*

→ FERTI-ADAPT CHN

Since 2017, ARVALIS has been developing **an integral nitrogen fertilisation management tool for wheat called FERTI-ADAPT CHN**. This tool makes it possible to avoid calculating estimated nitrogen requirements in favour of a dynamic reasoning method to adjust nitrogen inputs to plant needs. It is based on the unprecedented coupling of a crop model, called CHN, with data from on-board satellite sensors and a decision-making module. Agronomic performance is interesting and the use of the model in decision support tools (DST) will start in 2025.

3 QUESTIONS TO

Élodie Gagliardi

REGIONAL ENGINEER HAUTS-DE-FRANCE – ARVALIS

WHAT ARE SOIL FERTILITY OBSERVATORIES?

Soil fertility observatories are systems for the diagnosis and monitoring of soil in the medium and long term. They are based on networks of agricultural plots representative of soils and production systems of the region. ARVALIS has created two observatories of this type: one in Northern France with about fifty plots and around twenty partners, and the other in the West, with approximately forty plots, also with about twenty partners.

WHY DID YOU SET UP THESE OBSERVATORIES?

Recently, problems relating to the physical and organic soils conditions in these two regions have been identified, such as phenomena of compaction, erosion or depletion of organic matter. Faced with these growing constraints, ARVALIS made a proposal to the various participants in the agricultural sectors concerned, offering to set up these two regional soil observatories, based on the rollout and monitoring of soil fertility indicators. The objective is to gain a clearer understanding of the way soils function, to preserve their quality and allow better management of ecosystem services. The first measurements were realised in 2023 and will be repeated at the same time every year, until 2030.

WHAT ARE THE POTENTIAL LONG-TERM PROSPECTS OF THESE SYSTEMS?

In the long term, these networks of agricultural plots will be able to support R&D. For example, real-life trials, also called strip trials, could be implemented or multi-criteria assessments of farming systems could be carried out. Each observatory will be able to provide support for the diagnosis, monitoring and creation of techno-economic references to help identify or improve standard reference farms corresponding to different agro-climatic contexts. The northern observatory is also associated with the European Nutri-check Net project. The farmers involved in this project have created a Crop Nutrition Club. This system could serve as a support for future European projects.

→ Agro-Eco Sol

Agro-Eco Sol is a **new consulting offer based on soil analysis**, enabling the assessment of the cropping abilities of soils in arable crops. Led by the Auréa AgroSciences laboratory, in partnership with INRAE and ARVALIS, Agro-Eco Sol has made the following possible:

- transferring the measurement of a large number of biological indicators to the Auréa routine laboratory, for optimised characterisation of labile organic matter and for evaluation of the abundance, activity and diversity of micro-organisms and soil fauna;
- proposing a system for interpreting these indicators, combining them with other indicators of chemical and physical soil fertility, in order to diagnose different soil functions.

The project was supported by ADEME as part of the call for projects "Eco-efficient Industry and Agriculture" of the France 2030 Investments for the Future Programme (PIA).

PROMOTING
DIVERSIFIED AND SUSTAINABLE
AGRICULTURAL SYSTEMS

PROJECTS

4CE MED
WATER AND SOIL CONSERVATION

2021-2024 | €1,5 M
11 PARTNERS | 7 COUNTRIES
PRIMA
COORDINATED BY UNIBO (ITALY)

CAMELINA: A CASH COVER CROP ENHANCING WATER AND SOIL CONSERVATION IN MEDITERRANEAN DRY-FARMING SYSTEMS

→ Experimenting in real-life conditions multi-performance cropping systems integrating both camelina and soil conservation farming practices.
→ Producing new food and non-food resources by reducing competition with existing systems.
→ Raising awareness of these new systems and providing relevant training for active participants in the agricultural world.

CONTACT: Sylvain Marsac – s.marsac@arvalis.fr

Carina | Boosting sustainable diversification in farming systems

2022-2026 | €8 M
24 PARTNERS | 12 COUNTRIES
HORIZON EUROPE
COORDINATED BY UNIBO (ITALY)

CARINATA AND CAMELINA TO BOOST THE SUSTAINABLE DIVERSIFICATION IN EU FARMING SYSTEMS

→ Co-building, experimenting and evaluating multi-performance cropping systems integrating carinata and camelina.
→ Producing and testing bio-based products from camelina and carinata (advanced biofuels, animal feed, biocontrol products, etc.).
→ Producing *low ILUC* (low competition for land use) certification methods and policy recommendations to promote the bioeconomy.

CONTACT: Sylvain Marsac – s.marsac@arvalis.fr

CAMA
Conservation Agriculture in the Mediterranean Area

2020-2024 | €1,5 M€
13 PARTNERS | 8 COUNTRIES
PRIMA
COORDINATED BY CREA (ITALY)

RESEARCH-BASED PARTICIPATORY APPROACHES FOR ADOPTING CONSERVATION AGRICULTURE (CA) IN THE MEDITERRANEAN AREA

→ Experimenting with new CA techniques and assessing their impacts on soil properties, water use efficiency and crop development.
→ Removing technical and socio-economic barriers to the adoption of CA.
→ Raising the awareness of these CA practices amongst active participants in the agricultural world and offering relevant training.

CONTACT: Mathieu Marguerie – m.marguerie@arvalis.fr

TESTIMONIAL

Andrea Monti

Professor at the University of Bologna (Italy), coordinator of the 4CE-MED and CARINA projects

"European agriculture is expected to be severely affected by climate change, the negative effects of which are already tangible today. Crops such as camelina and carinata could represent a win-win strategy to mitigate these effects, while maintaining the sustainability of farming systems. These two oilseed crops are versatile in terms of use and are well adapted to different European pedoclimatic conditions. In addition, the very short cycle and the availability of spring and winter genotypes, especially for camelina, enable them to be easily introduced into current farming systems. ARVALIS is a unique partner, fundamental for achieving the above objectives, given its exceptional and recognised experience in the area of arable crop research. We hope that ARVALIS will provide farmers with innovations, support and advice to make these new farming systems more sustainable and robust in the long term."

↑ *Camelina field*

SUCCESS

TWO EXAMPLES OF TOOLS DEVELOPED BY ARVALIS

→ ASALEE

Created by ARVALIS in partnership with INRAE, Terres Inovia, and the Chambers of Agriculture of Deux-Sèvres and Charente-Maritime, ASALEE is a decision support tool that simulates the techno-economic performance and water use of a farm over twenty climatic years using data characterising the farm and its irrigation management. It enables farmers to compare different farming strategies according to the technical potential of their farm.

↑ *ASALEE was awarded the Global Water Challenges Awards at the Water Europe Innovation Awards in 2022*

→ Systerre

Systerre is a multi-criteria evaluation tool for optimising the strategy of arable farms and mixed farming farms. It is capable of evaluating the sustainability of current practices and designing innovative and multi-performing alternatives. It uses scientifically recognised and standardised methods to calculate a list of twenty technical, economic and environmental performance indicators. Systerre is available on the web and in English.

SYSTERRE

TAKING ACTION FOR THE ENVIRONMENT THROUGH CARBON NEUTRAL AGRICULTURE

PROJECTS

ClieNFarms
Climate Neutral Farms

2022-2025 | €12 M
33 PARTNERS | 13 COUNTRIES
HORIZON 2020
COORDINATED BY INRAE (FRANCE)

SUPPORTING THE TRANSITION TO CLIMATE-NEUTRAL / CLIMATE-RESILIENT EUROPEAN FARMING

→ Establishing a European network of farms to test, evaluate and widely disseminate local systemic solutions for carbon storage and greenhouse gas (GHG) reduction.
→ Developing viable business models to intensify the transition of farms to climate-neutral and resilient agriculture.
→ Developing a carbon credit platform with an automated certification process.

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CLIMATE FARM DEMO

2022-2029 | €23 M
81 PARTNERS | 28 COUNTRIES
HORIZON EUROPE
COORDINATED BY IDELE (FRANCE)

A EUROPEAN-WIDE NETWORK OF PILOT FARMERS IMPLEMENTING AND DEMONSTRATING CLIMATE SMART SOLUTIONS FOR A CARBON NEUTRAL EUROPE

→ Creating a European network of farmers to facilitate knowledge exchange, test and evaluate the effectiveness of innovative practices helping to store carbon and mitigate GHG emissions.
→ Organising 4,500 demonstrations days to support farmers' continuous learning about these sustainable solutions and accelerate their adoption.
→ Developing best practice guides for climate change mitigation and adaptation.

CONTACT: Sophie Gendre – s.gendre@arvalis.fr

CLIMATE SMART ADVISORS

2023-2030 | €18 M
73 PARTNERS | 27 COUNTRIES
HORIZON EUROPE
COORDINATED BY ILVO (BELGIUM)

CONNECTING AND MOBILISING THE EU AGRICULTURAL ADVISORY COMMUNITY TO SUPPORT THE TRANSITION TO CLIMATE SMART FARMING

→ Equipping 140 advisors across Europe in order that they train other advisors with the right tools and knowledge.
→ Training 1,360 agricultural advisors divided into 260 thematic groups to direct farmers towards low-emission practices.
→ Identifying and filling gaps in agricultural advisory activities.

CONTACT: Delphine Hourcade – d.hourcade@arvalis.fr

ClieNFarms and ClimateSmartAdvisors are projects related to ClimateFarmDemo. With a common objective, the three projects aim to work together to increase efficiency and reach more farmers. In particular, they organise joint meetings and demonstration days.

3 QUESTIONS TO

Anthony Uijttewaal

HEAD OF THE AGRONOMY, ECONOMY AND ENVIRONMENT DEPARTMENT – ARVALIS

IS THE SUBJECT OF CARBON NEUTRALITY A PRIORITY AREA OF WORK FOR ARVALIS?

Carbon neutrality is a priority topic for ARVALIS, for several reasons. Firstly, despite agriculture being an essential sector it is nevertheless a major producer of greenhouse gases. It is also one of the few sectors, along with forestry, which is capable of storing carbon in soils. Finally, it is essential to reconcile climate change mitigation and adaptation. ARVALIS is therefore striving to propose solutions that combine reducing emissions, stabilising or even increasing carbon storage in soils and new practices adapted to unprecedented climate risks.

WHAT WORK CARRIED OUT BY THE INSTITUTE IS REPRESENTATIVE OF ITS ACTION TO GUIDE FARMERS TOWARDS CARBON NEUTRALITY?

For many years, ARVALIS has been conducting research at different levels aimed at improving the carbon footprint of farms, and, by extension, national carbon neutrality. For example, I can cite the work carried out to optimise nitrogen fertilisation and to gain a clearer understanding of the mechanisms and fluxes of the nitrogen cycle, some forms of which are powerful greenhouse gases such as nitrous oxide. I also think about the CHN-AMG simulation tool that can be used to model the effects of agricultural practices and the pedoclimate on medium and long-term carbon storage. It has recently become available in API form. All this knowledge has enabled us, with our partners, to draw up the Low-Carbon label method for the arable crop sector, a solid methodological framework and a tool to help farmers progress towards a low carbon target.

WHY DID YOU GET INVOLVED IN EUROPEAN PROJECTS ON THESE TOPICS?

Climate change has no borders and that is why ARVALIS is involved in various European projects focussing on its mitigation and adaptation. It is always inspiring to exchange information about the initiatives of our European counterparts because they are confronted with issues similar to our own. These collaborations also help to create the momentum needed to ensure the transition of agricultural systems.

Joint annual meeting of ClieNFarms and ClimateFarmDemo project partners in Cork, Ireland (2023)

PROMOTING KNOWLEDGE **SHARING** THROUGH PEER-TO-PEER TRAINING

PROJECTS

AGRIFOOD 4Future

2023-2025 | €4 M
23 PARTNERS | 7 COUNTRIES
ERASMUS+
COORDINATED BY UNIVERSITÀ CATTOLICA DEL SACRO CUORE (ITALY)

CENTERS OF VOCATIONAL EXCELLENCE IN SMART FARMING AND SUSTAINABLE FOOD

→ Developing the knowledge of students and professionals about sustainable agriculture and new technologies through the development of a master's degree, doctoral degrees and training programmes for technicians, SMEs and farmers.
→ Supporting digital innovations designed by farmers, start-ups and students through developing a dedicated experimentation program with DigiFermes®.

CONTACT: Bochra Kammoun - b.kammoun@arvalis.fr

PREMIERE

2023-2027 | €5 M
15 PARTNERS | 12 COUNTRIES
HORIZON EUROPE
COORDINATED BY HNEE (GERMANY)

PREPARING MULTI-ACTOR PROJECTS IN A CO-CREATIVE WAY

→ Guiding and ensuring that a multi-actor approach is implemented in the set up of R&D projects, to guarantee the coherence of actions and to maximise the impact of the results obtained on operators within the sectors.
→ Providing guidance to policy makers about agricultural research priorities in Europe.
→ Training active participants in agricultural R&D in the project set-up phase that make best use of the complementary knowledge of their representatives.

CONTACT: Florence Leprince - f.leprince@arvalis.fr

↑ *The partners in the AGRIFOOD4FUTURE project met in Piacenza, Italy, for its launch in 2023*

↑ *At the annual meeting in Ghent, partners in the PREMIERE project participated in collaborative workshops. Their objective was to define the strategy to be adopted in order to develop a realistic and viable multi-actor approach across the entire project*

TESTIMONIA

Shane Conway

PhD in Rural Geography at Galway University (Ireland) and responsible for the communication and dissemination of the PREMIERE project until 2023

"Farmers must be seen as producers of innovation and not as one-way recipients of agricultural innovation, especially in the current and future CAP programming periods. A farm is not just a parcel of land or a place of work. It represents the physical manifestation of knowledge acquired and used over generations by farmers, with this specific practical knowledge not always being disseminated or transferable. We therefore need to bridge the innovation gap between policy, research and practice by integrating the social dimensions of agriculture, forestry and rural society through the multi-actor approach (MAA).

Within the context of the PREMIERE project, ARVALIS plays a central role in the success of the AKIS network's stakeholder engagement strategy by helping to create an optimum environment to foster and accelerate innovation, intergenerational knowledge sharing, digitalization in the agricultural sector and to bring public decision-making closer to research and practice at European, national and regional level. Thanks to its experience and expertise as an applied research institute, ARVALIS is actively involved in developing innovative and inclusive tools and channels to communicate objectives, and to disseminate and implement the results of the PREMIERE project with the AKIS* network and with a wider audience."*

"WITHIN THE CONTEXT OF THE PREMIERE PROJECT, ARVALIS PLAYS A CENTRAL ROLE IN THE SUCCESS OF THE STAKEHOLDER ENGAGEMENT STRATEGY. "

** Agricultural Knowledge and Innovation Systems (AKIS). An AKIS is an ecosystem that brings together all the actors involved in education, research and development in agriculture, forestry and related sectors to produce and exchange information and knowledge.*

SUCCESS

Interreg North-West Europe — Co-funded by the European Union

SIMONE

A PROJECT TO FOSTER AGROECOLOGICAL TRANSITION IN THE REGIONS

ARVALIS coordinates the SIMONE (Systemic Innovations with Multiple performance evaluated in ON-farm Experimentations) project, funded by the Interreg North West Europe call for projects. It is a unifying European project for farmer-led agroecological transition.

In France, for the Grand-Est region and its neighbouring countries, the objectives of the SIMONE project concerning the regionalisation of R&D policies are threefold:

- **to involve agricultural stakeholders** within seven regional networks (living labs) **in accurately characterising the regions and their sectors**.
- **to create a digital platform dedicated to the combination of agro-ecological levers** that can be mobilised throughout the farming system.
- **to give farmers the tools to assess the effectiveness of these levers** in their own production systems via on-farm trials.

With a budget of €5.4 million, the project started in 2024 and is due to last for four years. It brings together 11 partners from seven European countries

→ Key figures for ARVALIS communication

13 000
SUBSCRIBERS TO THE *YVOIR* DAILY NEWSLETTER

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120 000
READERS OF THE QUARTERLY *ARVALIS & TERRES INOVIA INFOS*

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Over 10 000
READERS OF THE MONTHLY *PERSPECTIVES AGRICOLES*

100 000
HITS EACH MONTH ON ARVALIS.FR

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Over 60 000
FOLLOWERS ON SOCIAL MEDIA

–

Over 60 000
SUBSCRIBERS THE WEEKLY *ARVALIS | INFOS* NEWSLETTER

Over 30 000
PARTICIPANTS IN THE LATEST MAJOR EVENTS ORGANISED BY ARVALIS (LES CULTURALES, POTATO EUROPE, LIN'OVATION, PHLOÈME)

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Over 2 500
PEOPLE TRAINED OVER MORE THAN 200 TRAINING DAYS

A team at your service

The Program Management Office, with its Europe division, ensure ARVALIS' position on the European scene by coordinating the institute's international networks, actions and partnerships. A division is also dedicated to the administrative and financial follow-up of all projects involving ARVALIS.

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We would be delighted to talk to you.

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