



## CONCRETE SOLUTIONS FOR A MORE RESILIENT AGRICULTURE



### THE AGRICLIMATE PROJECT SUPPORTS THE AGRICULTURAL SECTOR IN ADDRESSING CLIMATE CHANGE BY DEVELOPING INNOVATIVE, FIELD-ADAPTED SOLUTIONS.



#### A Project for Climate Mitigation and Adaptation

AgriClimate aims to help farmers reduce their carbon footprint and adapt to climate risks. This cross-border initiative brings together scientists and agricultural advisors to share expertise and develop tailored strategies that meet local challenges.

#### Assessing and Enhancing Existing Tools

A key objective of the project is to evaluate and compare existing tools for measuring carbon footprint, resilience, and socio-economic performance on farms. The DECIDE tool, used to assess carbon footprints, will be deployed on 35 pilot farms and compared with CAP'2ER (France) and Klimrek (Flanders). This comparative analysis will identify strengths, limitations, and complementarities, leading to improvements that will provide farmers with more precise and practical tools. Training sessions will be organized to facilitate adoption.

#### 35 Pilot Farms to Test Innovations

To ensure practical implementation, the project will establish 35 pilot farms across the cross-border region, grouped into three thematic sectors: mixed farming-dairy farming, crop farming and suckler farming. These farms will serve as testing grounds for tools and innovative practices, fostering knowledge exchange between farmers from different regions and countries.

#### Delivering Concrete Benefits to Farmers

Technical and economic audits, along with farm monitoring, will help identify the best strategies for combining profitability and environmental sustainability. The results will be shared through discussion groups, study days, and tailored communication channels, ensuring that farmers have access to actionable insights.

#### Developing a Tool to Assess Transition Costs

Finally, the project will develop a cross-border tool to assess the costs of agricultural transition. This tool will help farmers understand the financial implications of adopting new sustainable practices, offering a realistic pathway towards greener, more resilient agriculture.

Through AgriClimate, farmers gain the support, knowledge, and tools they need to successfully navigate the challenges of climate change.

#### Financing:

Interreg VI project France-Wallonie-Vlaanderen 2025-2028

#### More information:

[www.cra.wallonie.be/fr/agriclimate](http://www.cra.wallonie.be/fr/agriclimate)

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## TOWARDS LOW-INPUT POTATO PRODUCTION



The objective of the **PATAT'UP** project is to research innovative, input-reducing cultivation practices for quality potato production.



Mechanical weeding using the AVR ridge plough (30/07/2024 - Walhain)

In the first phase, the project, in partnership with FIWAP, aimed to study existing levers and techniques for reducing inputs, and then combine them to achieve an effective reduction of up to 75% in potato cultivation.

In this final year of the project, two reduced-input itineraries, one intermediate and one extreme, were installed on two sites and compared with a conventional itinerary testing the Fontane variety. The levers and techniques used in these low-input itineraries include the reduction of fungal treatments and nitrogen fertilisation through the use of more robust varieties, the use of combined weeding (chemical weeding on the top in pre-emergence and mechanical weeding on the side of the mounds), the reduction of insecticides through the use of beetle brooms, and the adoption of alternative haulm destruction methods such as electric haulm destruction or leaf tips.

The project demonstrated that, under conditions of **reduced intermediate inputs**, it is **technically possible** to produce potatoes on a large scale while remaining **economically viable**. Furthermore, life-cycle analyses confirmed a **positive environmental impact**. The reduction in inputs obtained in this intermediate itinerary is as follows: **13%** for fungal treatments, **74%** for herbicides, **30%** for nitrogen fertilisation, and a total reduction of **100%** for haulm destruction and the use of insecticides against CPB.

On the other hand, although an **extreme reduction in inputs** is **more advantageous from an environmental point of view** and technically feasible, it is **not currently economically viable**.

Looking ahead, it is imperative to continue optimising these itineraries so as to balance environmental objectives with economic viability. Further research could focus on the integration of innovative technologies, such as more efficient weeding tools or precision fertilisation solutions, as well as the adoption of high-performance agroecological practices that could help to offset the observed drop in yield.

**Financing:** Walloon Recovery Plan (PRW)

**More information:** [www.cra.wallonie.be/fr/patatup](http://www.cra.wallonie.be/fr/patatup) • <https://patatup.odoo.com/>



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## MOBILAB: CRA-W GETS A MOBILE LABORATORY

The "Mobilab" mobile laboratory is a state-of-the-art tool designed for demonstration and research into the use of innovative sensors and analysers in agriculture and agrifood.



The new mobile laboratory was delivered to CRA-W on 22 January 2025. It was designed and built as part of the **Mobilab** project, part of the Smart Farming programme (PRW 2022-2025).

The Mobilab offers a complete solution for conducting demonstration and research missions directly in the field. Everything is designed to ensure that the mobile laboratory operates fully autonomously, from sample management (sampling, collection, packaging) to analysis and data collection (thanks to the CRAWLSPEC manager & explorer tool).

The Mobilab is equipped with state-of-the-art analytical tools, including vibrational spectroscopy spectrometers, a hyperspectral imaging system, rapid analysers based on different technologies, and a weather station. This equipment makes it possible to characterise agricultural and agrifood products, monitor their processing and detect contaminants and potential stresses (biological, chemical and microbiological).

The Mobilab will use audiovisual aids and live demonstrations to showcase a variety of applications in the field: on the farm, in the fields, in orchards or even within companies. It is fully modular and can be adapted to each mission to meet the research, analysis and demonstration needs of CRA-W projects and collaborations.

By taking the laboratory into the field, this tool aims to help overcome the existing obstacles in the Walloon Region to the acceptance and use of these new technologies by the Walloon farming community and businesses. Its goal is to guarantee the quality, safety and traceability of agricultural production and agrifood products.

**Financing:** Walloon Recovery Plan (PRW)

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## THE CONTRIBUTION OF CATTLE SYSTEMS TO FOOD SAFETY

**Do animal production systems, which are often singled out, contribute positively or negatively to food safety?**

Animal production systems make a major contribution to food safety by producing food rich in energy, protein, vitamins and micronutrients from resources unfit for human consumption (forage and co-products). However, they also represent a threat to food safety due to the inefficient use of human-edible food and arable land. As part of her thesis, **Caroline Battheu-Noirfalise** used data from farm accountancy to estimate the contribution of Walloon dairy systems to food safety, while exploring avenues for improvement.

Her work has made it possible to describe a new indicator, "**net productivity**", which more accurately represents the contribution of dairy farms to food safety, taking into account both the use of human-edible food and land use. It also enabled estimates of the **scope for improvement** in this contribution

to food safety, based on the optimal use of grassland and co-products, as well as its **resilience** (stability over time). This work also explored the **indirect contribution** of livestock farming to food safety, in particular the valorisation of manure and other farmyard fertilisers to support the fertility of cultivated soils. Lastly, it helped identify farms that can reconcile their contribution to food safety with other aspects of **sustainability**.

This **thesis** highlights the importance of the efficient use of permanent grassland in contributing to food safety in dairy systems. Nevertheless, in Wallonia, farmers are losing interest in grass, and in particular grazing, due to climate change, the expansion and intensification of farms, etc. This underlines the need to review the information and support system for breeders. In particular, this



work highlights the resource that data from farm accountancy represents for this purpose. This data should be better used both by the farms and the structures in charge of supporting and guiding them.

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## MONITORING AND EVALUATING SMART FARMING INTEGRATION

**The DuraTechFarm project supports one Walloon arable farmer in optimising their farm through innovative technologies and participatory evaluation.**



New technologies are seen as a solution for the development of sustainable, environmentally friendly agriculture. However, very few Walloon farmers use them. The aim of the project is to integrate Smart Farming into a conventional and organic field crop farm. The project's originality lies in its entirely participative nature, as it is implemented on an entire farm to assess the social and organisational aspects crucial to a successful technological transition, such as perceived obstacles, levers, working hours and apprehension in the face of new technologies.

### Technology integration

The project began with an overview of the technological solutions available to Walloon farmers and a detailed analysis of the farm involved in the project. This led to the definition of two priorities: optimising soil organic carbon management and optimising irrigation water management. Other avenues are also being explored, such as soil fertility optimisation and disease monitoring. In the next stage of the project, Smart Farming was deployed on the farm using soil mapping (carbon, texture, pH, potassium, etc.), soil moisture monitoring using weather data, tensiometric and capacitive probes, satellite images and radar measurements by drone. Other solutions included ADO fungal disease warnings, data management portals, dose modulation tools, biomass production monitoring systems using imagery, and yield mapping.

### What can we expect from the project?

The objective is to carry out technical, economic, environmental and organisational assessments of the different integrated solutions

and present them to all Walloon farmers to help their transition. Several tools will be made available to them for this: the latest developments in available solutions, a detailed description of the solutions implemented by the project, a guide to a successful transition and, lastly, a report outlining the obstacles and difficulties involved.

**Financing:**  
Walloon Recovery Plan (PRW)

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## THE PAMESEB NETWORK IS EXTENDED TO FOREST ENVIRONMENTS

**Forest areas are poorly monitored in terms of weather records, yet forest-specific weather monitoring is important given the climatic challenges they face.**



The Pameseb network has been providing meteorological data for the agricultural sector for over 20 years. This data can be accessed on the [agromet.be](https://agromet.be) platform and used to produce agricultural warnings (potato late blight and wheat septoria) and feed free-access agricultural decision-support tools.

As part of a cooperation partnership between **CRA-W and OWSF** (Observatoire Wallon de la Santé des Forêts - Walloon Observatory for Forest Health), it was decided to extend the Pameseb network to the forest environment, starting with the installation of two meteorological stations in 2025. These stations will

be set up in clearings in the heart of Walloon forests: one in the Bertrix municipality, the other in the Anlier forest.

The aim of this cooperation partnership is to provide meteorological data to forestry professionals to help them monitor plantations and diseases, the practicability of the environment and the development of forestry decision support tools (ADO), etc.

The data measured initially will include air temperature and humidity, wind speed and direction, sunshine, leaf wetness, precipitation and sub-leaf and soil temperature.

See you in 2025 on the [agromet.be](https://agromet.be) platform for the installation of these new stations, which could be the starting point for a more extensive forestry network in the future.

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## SOIL QUALITY IN ORGANIC AGRICULTURE (SOLAB)

**Soil management is a key issue for Organic Agriculture (OA) in Wallonia, which is seeking to develop adapted local practices to optimise the ecosystem services provided by soils.**

The Walloon OA sector needs local references to assess the feasibility and benefits of reduced tillage, quantify the positive externalities of organic production systems and combat soil organic matter loss and erosion risks in arable farming regions.

The **SolAB** project aims to provide answers to these questions through an integrated soil quality analysis for a selection of organic fields representative of the diversity of organic farming systems in Wallonia and the evaluation of the effects soil management practices on soil properties

The main strength of the project lies in the association of key players in the development of OA in Wallonia (BIOWALLONIE, CRA-W) with different soil specialists with complementary expertise (ULiège, UCLouvain, CRA-W).

The project aims to monitor two types of experimental setups :

1) field trials comparing innovative cropping systems (mostly organic without ploughing) with a control system. These trials will make it possible to test practices with a high level of economic risk for farmers in order to assess their benefits for soil quality as well as their technical feasibility in Walloon organic farms;

2) an enlarged network of on-farm fields, to encompass a diversity of real situations at the regional level and therefore support the representativeness of the references provided to the agricultural sector.

Measured soil parameters are related to three types of ecosystem services provided by soils, complementary to biomass production: climate regulation (soil organic carbon stock and quality), water regulation (soil structural quality), and habitat for biodiversity (microbial abundance, activity and diversity). Results are expected for September 2027



### Financing:

Walloon Recovery Plan (PRW)

### More information:

[www.cra.wallonie.be/fr/solab](https://www.cra.wallonie.be/fr/solab)

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