

SMARTFARMING PROJECT

ECOFRIENDLY AND SMART CROP MANAGEMENT

It is important not to downplay the impact that food production has on the environment. Farming uses close to 70% of the planet's freshwater resources. This is only one of many examples. It is a problem that has garnered increasing media coverage, and the research community is focusing more of their attention on ways to optimize resource utilization. Thanks to digital technologies, new solutions are constantly coming on stream. However, Serge Ayer, professor of IT and communication systems at the Fribourg School of Engineering and Architecture (HEIA-FR) has a word of caution, "Of course, many ideas are interesting but they must be affordable and user-friendly for the farming community." The SmartFarming project aims to develop a solution based on existing tools that matches user needs. It is piloted by the HEIA-FR and funded through the federal government's New Regional Policy (NRP).

One of these users is market gardener Blaise Guillod, who is partnering the project alongside Swisscom, Grangeneuve Agricultural Institute and Agroscope. Léandre Guillod, Manager of the family-run business, explains the difficulties it faces, "We generally inspect our crops once a week. This means that several days may go by before we notice that our plants are diseased." By placing sensors in the fields and programming them to

send an alert – say, to the producer's smartphone – as soon as they detect there is a problem means that "we can immediately take targeted action" to protect the environment as best as possible.

Technology transfer

This model opens up lots of avenues for smart solutions to crop management. Professor Ayer explains, "Take weeds, for example. Effectively eradicating them involves a machine that uniformly sprays herbicides over the crops. However, sensors could make it possible to pinpoint those plants that actually require intervention", adding, "A robot could even check the crops and treat them on the spot!" The SmartFarming project has huge potential. "Our long-term goal is to make all sorts of applications available to our industrial partners, and even to other countries."

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Sensors allow market gardeners to identify crops that require urgent and targeted intervention.