

## Digital Pilot Farms

Taking advantage of digitization for protecting crops and environment



### INSPIRATION

Agriculture is becoming increasingly precise, opening the path to a new field called Precision Agriculture. This promising domain aims at doing exactly what is needed, when it is needed, where it is needed with respect to the recovery capacities of the natural resources.

Combining information on farm inputs, such as fertilizers, pesticides or seeds, with data on weather, soil, and crop status increasingly enables informed actions with optimum efficacy by stabilizing farm income on the one hand and reducing the environmental impact of agriculture on the other hand.

In order to take the best decision, so far scattered information on farm inputs and environmental conditions under which they perform best needs to be merged and visualized for easy interactive access by farmers and agricultural consultants.

### INNOVATION

Digital Pilot Farms has the ambition to develop a software-based expert system for reducing herbicide use. In charge of the expert system's implementation, LIST researchers will make benefit of their strong expertise to integrate publicly available data, as well as expert knowledge on weed control methods and their efficacy as affected by weather conditions. As a partner of the Digital Pilot Farms project, the 'Chambre d'Agriculture' of Luxembourg will provide these knowledge-based data. In a second phase, LIST researchers will test, evaluate and demonstrate the innovative expert system on a network of commercial farms.

### IMPACT

Digital Pilot Farms will develop an expert system that will make expert knowledge on weed control teachable, learnable and available for a wide audience. As a result, it will reduce dependence of Luxembourgish cropping systems on pesticides and particularly herbicides, as well as safeguarding yield and quality levels of crops. Finally, this innovative project will propel a strong pilot farms network that shall spread innovation.

#### Partners

Chamber of Agriculture (LU)

#### Financial Support

Ministère de l'Agriculture, de l'Alimentation et de la Viticulture

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