Ask-Valerie tool could speed up innovation in agriculture

Farmers and foresters are under increasing pressure to produce more quality food while better managing and conserving natural resources and ecosystems. Having the right information and advice can help them meet these challenges. The EU-funded VALERIE project is making innovative research outputs and best practices more easily accessible to farmers and foresters through the ask-Valerie.eu search tool.

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“Although there is a lot of research on agriculture and forestry, this research often does not reach the farmers and foresters on the ground,” explains VALERIE project participant Paul Newell Price from ADAS UK. Sometimes it does not address the practical challenges farmers face, he says. “The VALERIE project recognised the need to talk more to practitioners (farmers, foresters, advisers and enterprises in the supply chain) in order to understand their challenges and provide them with relevant information from the scientific community,” he adds.

Farmers and foresters are interested in information about growing crops and managing woodlands. They need to optimise crop and timber yields, use inputs (such as water, soil, and fertiliser) more efficiently, as well as reduce fuel consumption, labour and costs. “That’s why the VALERIE project focuses on building bridges between new discoveries in the scientific community and the practical realities facing agriculture and forestry managers,” explains VALERIE project coordinator Hein ten Berge, based in Wageningen in the Netherlands. The VALERIE project has done this by bringing people and research together, in person and through technology.

Developing innovative solutions together

VALERIE project participants first reviewed and summarised knowledge from national, EU and international research on:

- crop rotation, soil cover management and integrated pest management;
- ecosystem and social services in agriculture and forestry;
- management of agricultural soils as integrated agro-ecological systems;
- water management in agriculture;
- integrated supply chain services and tools – innovative farm management;
- recycling and smart use of biomass and food waste.

“As part of this process, we built a list of innovations that could provide solutions that enable practitioners to achieve sustainability in agriculture and forestry,” says Newell Price.

“We defined ‘innovation’ as any method, approach or technology that is not generally applied in all regions of Europe,” he explains. Innovations range from reduced tillage systems (accepted in some but not all regions as an alternative to ploughing/inversion of the soil) to the use of robotic weeders (still under development). The advantage of reduced tillage, which is not yet widespread in the Netherlands, for example, is that it can reduce fuel consumption. In turn, this can reduce costs and adverse effects on the environment.

The challenges facing farmers and foresters are context- and country-specific, and so are the solutions. The VALERIE project views innovation as an interactive process involving practitioners, advisers and researchers, rather than as a research-driven process. For this reason, the project identified concerns, questions and solutions by working with practitioners in 10 farming and forestry case studies across Europe. When practitioners and researchers repeatedly interact and work together, they can create innovative solutions for more sustainable farming and forestry.

The Netherlands provides a good example. The country exports most of its onion crop, supplying about 15 % of the world’s onions. Unfortunately, serious quality issues have affected Dutch onion growers over the last few years. For this sector, maintaining product quality is key to the business. VALERIE project researchers and practitioners looked at minimising ‘onion rot’ that affects quality in storage. They investigated the impact that leaf chopping in the field has on pathogen infestation and associated rot during storage. The solutions implemented as part of the VALERIE project could increase export volumes and the sustainability of the onion supply chain in the Netherlands.

In another VALERIE case study, growing wheat and legumes in combination in a process known as intercropping is being investigated in south west France. The legumes fix nitrogen in the soil and supply the nutrient to the growing wheat crop. This increases yields within a low input system. The approach is not without its challenges, but within some production systems could be a sustainable way to increase crop yields without increasing the use of manufactured fertilisers.

Relevant information at their fingertips

With a better understanding of the needs and concerns of farmers and foresters in specific contexts in Europe, the VALERIE project has been able to develop concise factsheets about innovations in agriculture and forestry. Each factsheet tells practitioners about the innovation, how it works, the benefits it offers, and when or where it can successfully be adopted.

These fact sheets are only a modest part of the VALERIE story. The project is in the process of producing (by aggregation) a large library of documents from a wide range of existing repositories that it will make available via an online search engine – www.ask-Valerie.eu. Users will have access to the latest best practices and research. The tool will also include a social media element to provide users the opportunity to network with experts and colleagues locally and in other European regions.

The search engine has been designed and built for purpose. A key feature is that it is underpinned by a structured vocabulary of relevant terms, developed by VALERIE thematic experts. “This vocabulary assists users in precisely formulating their queries, by suggesting related terms. It also serves to produce an index (‘digital fingerprint’) of each document in the library. The index, in turn, is used to match the user query with the most appropriate documents,” emphasises ten Berge.

An advanced version of the ask-Valerie.eu ‘virtual adviser’ tool was displayed at the FOOD 2030 Conference on “Research and Innovation for Tomorrow's Nutrition and Food Systems” from 12-13 October 2016 in Brussels. Further enhancements based on the outcome of intensive user testing, as well as more localised and translated content, will be added before the final launch of the tool towards the end of 2017.

Project details

- **Project acronym:** VALERIE
- **Participants:** Netherlands (Coordinator), France, Italy, UK, Finland, Germany, Spain
- **Project Reference** N° 613825
- **Total cost:** € 3 821 714
- **EU contribution:** € 2 989 056
- **Duration:** January 2014 to December 2017

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See also

Project web site: http://www.valerie.eu
Project details:
http://cordis.europa.eu/projects/rcn/111331_en.html

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