Building the high-tech farm of tomorrow

To ensure the competitiveness of European agriculture, the EU-funded ICT-AGRI 2 project worked to enhance and improve farming’s use of ICT and robotics.

According to the EU-funded ICT-AGRI 2 project, high technology is the future of farming. ‘We believe that modern agricultural engineering tools are needed to enable a sustainable agricultural sector capable of providing for the growing need for food, feed and bio-based products while simultaneously reducing its overall environmental footprint,’ says Project Coordinator Niels Gøtke. In this light, the ICT-AGRI 2 project set out to develop eco/resource-efficient and competitive agriculture through an enhanced and improved use of ICT and robotics.

Funding the future of farming

‘Our overall goal is to strengthen European research within the diverse area of precision farming and develop and fund a common European research agenda concerning ICT and robotics in agriculture,’ explains Gøtke. ‘In other words, we pooled fragmented human and financial resources as a means of improving both the efficiency and effectiveness of Europe’s research efforts.’

To start, the project underwent an intensive mapping exercise where it reviewed all existing ERA-NET projects pertaining to ICT and robotics for agriculture, citing the key players from both industry and research and identifying future needs. From here, researchers developed multiple instruments and procedures for transnational funding activities, as well as a strategic transnational research agenda and programmes. Next, the project established and maintained a network of international collaborations within the realm of sustainable agriculture and conducted an array of workshops to promote the initiative and subsequent calls.

Based on its Strategic Research Agenda, the project issued three calls for innovation. For example, the Enabling Precision Farming Call focused on the development and implementation of complete solutions for the adoption of precision farming. Seventeen proposals were considered for funding, including the Happy Cow project, which developed hardware and software for a cloud-based estrus detection system for dairy cows, and 3D Mosaic, an advanced monitoring system of tree crops for optimised orchard management. The other two calls covered the topics of Applications for Smart Agriculture and Farm Management Systems for Precision Farming.

A huge impact
Digital technologies and robotics are some of the most important recent innovations for all actors in the agri-food value chain, and advances in precision agriculture are helping to address the global challenge of increasing productivity in a more sustainable manner. Beyond assisting in primary production, digital technologies have immense potential for supporting many elements of the rural economy - from food supply chain management to innovative new business models. ‘Provided that sufficient infrastructures are in place, digital technologies can bring new opportunities to rural areas that are likely to raise their attractiveness and viability,’ says Gøtke. ‘I believe that ICT-AGRI 2 has had a huge impact on bringing attention to these opportunities.’

According to Gøtke, ICT-AGRI 2’s strength was its ability to set the agenda for digital farming by bringing together different research communities from ICT, agriculture and the environment. From its onset, the project took a cross-thematic approach with a focus on open-source development. ‘New technologies are rapidly emerging and will soon be capable of revolutionising farming,’ says Gøtke. ‘ICT-AGRI 2 successfully supported the development and implementation of these new technologies for a competitive, sustainable and environmentally-friendly agriculture.’

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### Subjects

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### Keywords

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