

Precision agriculture can revolutionise the industry, say leading experts.

What do data analytics and modelling, fertiliser applications, harvesting, irrigation, seeding, planting and spraying equipment, GPS systems, robotics and smartphone apps have in common? They're all precision agriculture systems that can revolutionise various aspects of a farm's operations. And as technology evolves to keep pace with the changing needs of a business that's worth as much as 12% of the country's GDP, they're poised to help transform Australia's agricultural industry. With the Federal Government wanting Australian agriculture to become a \$100 billion industry by 2030, a key focus for the industry is the unlocking of new technology, supported by a favourable tax and policy environment for innovation. It's no surprise, then, that interest is firmly fixed on how producers can harness the benefits of precision agriculture to achieve everything from increased production and reduced labour costs to water savings, lower wastage and greater task automation. The breadth of available applications is huge. Whether it's computer and mobile-based apps designed to provide real-time information relating to crop disease, or GPS mapping to better understand soil conditions, new technologies are emerging to help farmers collect data, manage risk, increase yields, save time and cut costs. As Anastasia Volkova, CEO and Founder of data analytics platform FluroSat explains, "there have been major advances in spatial and navigation technology, meaning that agriculture can increasingly be underpinned by technologies like self-driving tractors and robotics. Secondly, the ability to use proximal or remote sensing to collect information that can both inform decision-making and measure its effects is also key. And the final piece of the puzzle is machine-learning advancements, and the ability to collect data to create a highly detailed picture – which again, can have hugely beneficial implications for agriculture." Technologies that address drought-related challenges are another burgeoning industry. Following the government's recent plans to set up a \$3.9 billion fund to support water infrastructure and drought-related projects, the Global Forum for Innovations in Agriculture (GFIA) has identified a suite of new technologies that can help combat Australia's current drought. They include a water conditioning system that enables growers to utilise supplies previously considered unsuitable, a device that continually informs farmers of flow rates and total water used, and a microclimate solution combining sensors, analytics and apps that analyses atmospheric conditions, leaf wetness, soil moisture and temperature to provide localised growing condition data. Anastasia believes there's a strong case for embracing new technologies, especially in the face of extreme conditions. "Robustness is the key characteristic needed for agricultural systems, especially in the face of adverse weather like drought. Technologies like variable rate, advance sensing and machine learning technologies can underpin a successful solution that can mitigate the worst effects and support the industry through these types of challenges." AgTech Cluster Leader at CSIRO Data61 Dr Peyman Moghadam agrees that new technologies are receiving a huge amount of interest currently, especially relating to drones, aerial and satellite imaging, robotic technologies, automated harvesting and precision spraying. Yet a sense of innovation fatigue is also affecting the industry, he says. "Growers are right now more interested in adapting technology to fit their existing equipment than investing in brand new assets. So what's happening currently is a trend of retro-fitting existing assets to make them smarter. We're not taking drivers out of the tractors just yet. Instead we're offering smart features, retro-fitted to make lives easier, using technology like auto steering and automated harvesting, weeding and pruning, which can help reduce labour costs by as much as 30-40%." Whether through robotics, virtual reality, AI or new automation technologies, the digitalisation of agriculture means that farmers and growers will over time be better able to increase production and yields, with fewer inputs and labour costs. As Anastasia explains, "Costs can be reduced by knowing for instance the response to nutrients in different areas of a farm, so that fertilizer use can be fully optimized. Whether it's used for weed detection in the field, or for grading the protein content of a grain that's about to be harvested, precision agriculture solutions can offer impressive results for farmers who are able to embrace these new technologies." The GFIA will present the latest innovations and technologies for smart food production in the precision agriculture sector at Australia's largest agricultural innovation event, GFIA in Focus, in Brisbane on November 27-28. Anastasia and Peyman will join a host of guest speakers discussing everything from smart irrigation and big data to robotics and Virtual Reality. To register your attendance or to find out more, visit www.gfiaaustralia.com Ends Media Enquiries: Kate Munsie - C7EVEN COMMUNICATIONS (02) 6766 4513 kate.munsie@c7even.com.au Photo captions: Precision Agriculture Previous GFIA Precision Agriculture Conference

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