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Big gains to be made from digital agriculture

‘Digital agriculture holds the promise of significant productivity benefits for Australian farmers,’ said Mick Keogh, Executive Director of the Australian Farm Institute.

The Institute has recently released research into, ‘The implications of digital agriculture and big data for Australian agriculture.’ The report investigates how digital technologies, increasingly being used in agriculture, are generating large amounts of data sufficient for ‘big data’ analytics. Details of how production and business management systems are being disrupted by new applications of collected data are presented.

‘Digital agriculture systems are enabling farmers to change from paddock and herd average management, to square metre and individual animal management,’ said Mr Keogh. ‘The productivity gains associated with this change are reported to be in the order of 10% to 15% in cropping systems.’

‘While there has been more development to date of digital agriculture in the cropping sector there are rapidly increasing applications in the livestock, horticultural and viticultural sectors. In all examples the main benefit of digital agriculture is the ability to make informed management decisions based on quantitative data at a much higher level of precision than was previously possible.’

The report makes several recommendations about the rapidly evolving policy environment around digital agriculture. ‘Due to the speed of development of digital technology for agriculture there is much uncertainty about the rules that govern how the new environment should operate,’ said Mr Keogh. ‘There are many questions being asked globally about who actually owns the vast amounts of data that are being collected, and how the data can be used. In the United States (US), codes of practice for data use and ownership have been developed. The codes provide workable arrangements which are not overly restrictive for service providers, but which also give sufficient confidence to farmers.’

Productivity gains promised by digital agriculture are limited in Australia due to critical infrastructure requirements, according to findings of the report. ‘Digital agriculture is about collecting, transferring and analysing huge amounts of data,’ said Mr Keogh. ‘To do this successfully in rural areas a fast, accessible, and robust mobile telecommunications network is required. This network is lacking in rural Australia.’

‘Australia is also lagging in the acceptance and development of open data platforms. These platforms are necessary to enable the portability of data required for big data analytics. Open data platforms also facilitate a competitive environment for service providers to create novel applications for agricultural data.’

The report concludes that global developments in digital agriculture provide enormous potential for Australia. ‘It is probably reasonable to argue that agriculture is undergoing a digital revolution. The dramatic reduction in cost of digital and computer technology, and the adaption of the technology into farm implements and monitoring systems, is changing the way that agriculture monitors, measures and manages production and business systems,’ said Mr Keogh.

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