

Smarter farmers

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Camilla Hayselden-Ashby explains how the Royal Agricultural University is helping start-ups develop new farming technology

When most people imagine a farmer, they picture an individual at the wheel of a tractor or out tending cows. What they may not be aware of is that the tractor contains the technology to steer itself and that the farmer has decided what treatment the crops require based on drone imagery of the fields.

The farmer may also be tracking the cows' step count, while smart devices in the herd's rumens are providing up-to-date information on the health of the animals' guts. These are simple examples of technologies being used on farms today. We are only just beginning to realise the potential of what can be achieved and the benefits they could offer agriculture.

'Agtech'

'Agtech' is a significant opportunity to improve results and reduce risk in farming by improving existing systems and devising new methods of food production such as indoor urban farming. It is about being smarter with what is available and helping to ensure:

- food security;
- sustainability;
- health; and
- better economic returns.

Responding to such issues has never been more important as we face the challenge of feeding a growing number of mouths from a diminishing area of useable land. Agricultural production will need to increase by 70-100% by 2050 to support 10 billion people. We will also have to manage increasing levels of risk and uncertainty as climate change causes more extreme weather.

For this reason, the [Royal Agricultural University \(RAU\)](#) in Cirencester has established an incubator for agtech start-ups. [Farm491](#) will provide a state-of-the-art facility where businesses can grow and flourish, and opened its initial 'hub' at Easter to house budding businesses. It will recruit more ahead of its official launch in December.

Research and testing

The name of the programme comes from the 491 hectares of Cotswold farmland that will be available to members for research and testing. Start-ups will also have access to:

- farming data;
- research and equipment; and
- support from a network that includes:
 - farmers;

- entrepreneurs;
- business advisors;
- investors; and
- academics.

Farm491's Centre Director Angela Simkins said the incubator 'will give a focus for the Gloucestershire heartland in the development of agricultural technology'.

Members will be entering a dynamic and rapidly growing sector of the global agricultural industry. Online investment marketplace [AgFunder](#) reports that investment in agtech had surpassed \$2 billion by mid-2015 and is increasing exponentially. It is estimated that precision agriculture alone will be worth \$4.5 billion by 2020.

Investment

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The sector is attracting attention from major venture capital firms and technology companies such as [Google](#). The internet giant's ventures arm has contributed to several high-profile funding rounds, with a \$15m investment in data management company the [Farmers Business Network](#), for instance.

Meanwhile, the venture capital firm [Innovation Endeavors](#) ? founded by Eric Schmidt, Executive Chair of Google's parent company [Alphabet](#) ? has launched an initiative called [Farm2050](#) in the USA to foster the burgeoning start-up community.

The potential of these new companies has not been overlooked by established players. [Monsanto](#) got into the game early, acquiring agricultural analytics and risk management company the [Climate Corporation](#) for \$1.1 billion in 2013.

UK agtech

The UK government has also made global leadership in agricultural technology, innovation and sustainability a key priority. It identified academic institutions as being essential to success, alongside innovative farmers, food manufacturers and trade networks.

Professor David Hopkins, Dean of Agriculture, Food and Environment at RAU, is passionate about the value of agtech:

'The UK is not self-sufficient in terms of food. It is critical we make use of the latest technology to empower farmers.'

A criticism often directed at the tech boom is that 90% of entrepreneurs are focusing on 10% of the problems that technology has the potential to address. Organisations such as Farm491 are vital to help entrepreneurs understand the agriculture sector and support the development of businesses whose products will shape the farms of the future.

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Further information

- Related competencies include [Agriculture](#) , [Sustainability](#)
- This feature taken from the RICS *Land* journal (May/June 2016)