

Why \$1 milk won't take us from mining boom to dining boom

Alex McBratney and Andrea Koch June 1, 2016, 3:33 p.m.



Rapidly growing Asian markets and a kitbag of new free trade agreements have cast a warm glow over Australia's agriculture sector in the past few years.

As the dairy industry is discovering however, growing demand and open markets won't necessarily guarantee the right returns for Australian farmers.

Australia's commodity production mindset may be holding our agriculture sector back.

Australian agriculture has relied on a model of producing bulk commodities cheaply and keeping ahead of the world through the adoption of technology.

In today's global markets however it will be increasingly difficult for Australia to compete with this low-cost commodity approach as other agricultural nations power up

. A painful example is currently unfolding in the Australian dairy industry.

In spite of attempts to add value through processing and packaging, the industry has been caught by simple economic reality – a global over-supply of commodity milk that has driven down prices.

Shocks such as the current dairy industry crisis can be avoided in the future by changing the long accepted view of Australia as a bulk commodity producer.

Agriculture needs to get out of its commodity mindset and find new ways to differentiate food and fibre products for large and even mass markets.

Differentiation in the future must go beyond value-adding through processing, and instead stand apart from soil, seed and animal to post consumer.

This fits with a big trend in food purchasing. Increasingly food buyers are demanding quality products of known provenance at good prices.

They want to know how the food is produced, what the environmental footprint is and they want specific nutritional qualities.

Put simply, they want a whole lot more information about what they are consuming.

Adding information about how food is produced can transform Australia's low cost commodities into highly value-added products.

In dairy, this is already happening. Single-source milk is the premium market example, where the customer is buying milk from a known farmer, farm, breed of cow, approach to soil and pasture management and even the genetic history of the cows.

A2 milk commands a nutritional price premium, it is differentiated at the farm through the selection of particular breeds of cows that produce milk with a difference, and this difference is carried right through to the customer.

To de-commoditise Australian agriculture, information about how each 'commodity' is produced must be captured behind the farm gate, and then carried through the supply chain to the customer.

So often farmers are producing products that have high differential value through the way they manage their soil and water, or how they treat their animals, or how they grow their crops.

These approaches translate into food with much higher nutritional value and lower environmental impacts, but this value is lost the minute the product gets past the farm gate and into the commodity supply chain.



Dean of the Faculty of Agriculture and Environment at the University of Sydney, Alex McBratney.

We now have the technology to change all this. Sensors are being imbedded into every aspect of farm systems, generating streams of information about soil moisture, plant and animal health and a raft of other factors.

Capturing this information tells the unique story of how food is being produced on each farm.

By creating new smart, sensorised food supply chains, it will be possible to digitally stamp provenance information on food and fibre behind the farm gate, and carry it right through to the customer.

Instead of producing half a dozen bulk commodities, Australian farmers could be producing tens of thousands of value-added products of specified quality and known provenance.

This new approach to agriculture can be referred to as 'digital differentiation'.

The key challenge is to design, build and implement these new digital information supply chains – not just for dairy, but for all agricultural products.

By adopting this approach, Australian farmers can start to realise the full economic value of how they are producing, not just what they are producing.

At the University of Sydney we are thinking about what science, technology and human knowledge is required to bring this vision of digital differentiation of Australia's agriculture into being.

Our expertise in precision agriculture and field robotics provides a good foundation but it can't end there.

To be effective, to change the world, this digital transformation has to go all the way up the supply chain, from the paddock to the plate.

Achieving this new vision for agriculture will go beyond just one University.

A new agricultural innovation ecosystem is required that brings all of the players together in new ways and to take the latest ideas and findings from science and engineering, and transform them in manifold ways for agricultural supply-chain design application.

Governments have a critical role to play, to create the policy settings and funding environment to set up this new innovation ecosystem for agriculture.

But at the end of the day, it is the farmers themselves and their industry supply chain stakeholders who must be willing to step into this new vision for agriculture.

If Australia can break its commodity production mindset and capture the value of our hard and smart working farmers, we might just break the boom-bust vagaries of competitive global markets.

Digital differentiation holds the key.

- Alex McBratney is Dean of the Faculty of Agriculture and Environment at the University of Sydney and Andrea Koch is an Adjunct Associate Professor at University of Sydney.