Using agricultural land for utility-scale photovoltaic solar electricity generation

Dr Turlough Guerin, Agricultural Institute of Australia

Introduction
There has been a longstanding debate on whether or not agricultural land should be used for producing energy. This debate emerged in recent decades with the prospect of biologically-derived liquid fuels being produced from agricultural grain crops. However, agriculture has for centuries been a producer of energy, albeit indirectly through feeding of animals used to power land-based transport. In recent times, the question of energy versus food emerges again as large-scale and utility-sized solar photovoltaic (PV) projects secure approvals across Australia.

Overall, Australia is a small contributor to global solar PV generation (Figures 1–3, over page). Solar PV installations have,
Figure 1: Cumulative solar PV installed in Australia as a proportion of world total.
Source: IEA (2016).

Figure 2: The size of business of the PV market as a proportion of country GDP.
Source: IEA (2016).

Figure 3: Employment in large-scale renewable energy in Australia.
nevertheless, increased significantly in recent years in Australia. Although Australia represented only 2% of the global market share of solar PV in 2015, in the same year this represented a total installation of just over 1 GW of installed capacity.

While not considered as primary stakeholders in this emerging sector and debate, farmers and their advisors have an important role to play to ensure the growth trajectory of large-scale solar reaps benefits for rural and regional Australia. Without the support of farmers and regional landholders, regional investment in solar PV would be considerably limited.

This article highlights the benefits of constructing large-scale renewable energy projects in regional areas of Australia, over continued agricultural use of land. Specifically, a case study site in Central West NSW (rainfed wheat and sheep) is used to illustrate these impacts and benefits.

**Case study location**

The case study site is located in Nyngan in Central West NSW, Australia. The power plant has an installed capacity of approximately 102 MW. The project was constructed on entirely rural land and located on one land parcel. Approximately 250 ha of land on a larger 400 ha paddock was required for the plant and infrastructure (Figure 4). In terms of agricultural productivity, average yield data for the site’s district varies between 3–4 tonnes per ha for wheat.

**Approvals process**

The approvals process for the project led to a total of approximately 300 consent conditions being applied to the project and the related facilities including the construction and decommissioning of the bespoke accommodation camp. A construction environmental management plan for the project was prepared which included all the necessary subplans to address each of the consent conditions stipulated to be followed during construction. Logistics, fauna and flora management, visual impact, fire risks, soil, water and dust management, and waste management and resource use impacts, were the key impact areas and are discussed in further detail in a previous publication (Guerin 2017).

**Benefits of large-scale solar**

The project has delivered significant social and environmental benefits on a local, state and federal level and has global environmental benefits on the basis that the development will lower greenhouse gas emissions created in the production of electricity. The project also did not significantly affect the conservation values nor agricultural output of the locality. The development has provided indirect benefits as it will decrease costs to the community as a result of a reduction in the externalities involved with burning fossil fuels, such as those resulting from particulate air pollution and emissions from burning coal (Table 1, over page).

Co-benefits can occur when existing agricultural land is co-located with

![Figure 4: (top) Tables on posts prior to placement of solar panels (referred to as flat plate solar); (bottom) installed solar panels with heavy grass growth within and around alleys (spaces between rows of solar arrays).](image)
solar PV generation. With potential minimal risks to food security, co-location schemes can reduce land deficits for food and fibre production. This is a relatively new area for research and the practical experience of this in Australia has been variable and inconclusive based on the author’s experience in construction of large-scale solar power plants across Australia. Researchers in Europe have also shown through modelling that trade-offs between agricultural productivity of land, environmental sensitivities and solar irradiance should be made in order to find the optimum location for the construction of solar PV installations (Sacchelli et al. 2016).

Overall there has been a loss of approximately 0.02% of available agricultural land within the local government area (out of a total of 1.2 million ha of land dedicated to broadacre agriculture in the region). Therefore, there has only been a small reduction in land available for agriculture. However, this reduction was negligible and unlikely to impact on the agricultural production capacity of the region. This loss of area is equivalent to approximately 1500 tonnes of wheat per year.

Farmers and the energy security challenge

From an Australian farmer perspective, the construction of large-scale solar PV power stations may or may not be of concern or an issue. Why is that? New infrastructure for a regional area will generally be seen as positive as it will stimulate local business. Of course farmers are also consumers and are already adopting solar PV technology for their own household and operational use (eg irrigation, pumps, etc). The key issues for farmers are security of energy supply, price transparency and keeping energy costs low (Table 2). So it depends on whether large- and utility-scale solar PV investments impact upon these existing concerns.

Conclusions

It is evident that the opportunities for utility-scale solar are greater where the prospective land area is of low productivity potential. However, this is the case in any land use setting where a new renewable energy project is proposed [not just agricultural]. The benefits versus negative impacts will vary case-by-case and from site-to-site depending on local soil type, water availability, topography, access to the electricity grid, number of sunny days expected each year, the soil’s cropping or stocking potential, among other factors. The overall contribution and impact of any proposed utility-scale solar farm on the wider regional community should be considered. It ought not to focus on the immediate loss of potentially productive agricultural land it is making unavailable [temporarily] for agricultural production.

Whether or not agricultural land should be used for solar PV will depend not only on the presence of a good solar resource, access to the grid and a market for the electricity generated, but on the specific business case for the land and property in question. Further, the law requires that particular issues are addressed, eg foreign ownership, construction consent conditions, and that the project’s overall sustainability and contribution to the region is considered, and is materially important (Figure 5). Both energy and land productivity need to be assessed when selecting locations for new, large- and utility-scale solar PV projects. Nevertheless, large-scale solar has the potential to transform Australia’s rural landscape in a positive way.

Table 1: Benefits from the expansion of renewable energy developments into Australian farming land.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
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<tbody>
<tr>
<td>New leases with renewable energy developers means new revenue streams</td>
<td>from on-farm activity</td>
</tr>
<tr>
<td>Encouraging local and regional investment, such as new jobs</td>
<td></td>
</tr>
<tr>
<td>Gives farmers and landowners an opportunity to be agents of change in</td>
<td>contributing to new, non-fossil fuel infrastructure</td>
</tr>
<tr>
<td>Stimulation of new industry sectors and encouraging new avenues for</td>
<td>trades and employment</td>
</tr>
</tbody>
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Table 2: Expectations and needs of farmers in relation to on-farm energy use and supply of energy to farms.

<table>
<thead>
<tr>
<th>Expectation/Need</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Need for low cost energy, but mostly agnostic about its source</td>
<td></td>
</tr>
<tr>
<td>As price-takers, they cannot readily pass the costs on into the supply chain</td>
<td></td>
</tr>
<tr>
<td>Concerned about lack of transparency in pricing and advocate for competitive</td>
<td>market reform</td>
</tr>
<tr>
<td>Expect bioenergy sources to be incorporated into a broader renewable and</td>
<td>conventional energy mix offering</td>
</tr>
<tr>
<td>Concerned about underinvestment in the power distribution system given</td>
<td></td>
</tr>
<tr>
<td>farmers are often towards the edge of these electricity distribution networks</td>
<td></td>
</tr>
<tr>
<td>Expect greater government support for on-farm energy efficiency investments</td>
<td>as is available in other sectors</td>
</tr>
<tr>
<td>Recognise that energy security is vital for agricultural production but</td>
<td>expect productive farming land to remain productive in agricultural sense</td>
</tr>
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The Australian Farm Institute will be holding its annual Agriculture Roundtable Conference in Sydney on the 9th and 10th of November 2017. The event commences with dinner on the evening of Thursday 9th November and continues with breakfast and a full day’s discussion on Friday 10th November.

Sponsorship opportunities are available

**References**


Turlough Guerin has a PhD in Agricultural Chemistry from the University of Sydney, is a Graduate Member of the Australian Institute of Company Directors, Science Editor and Non-Executive Director at the Agricultural Institute of Australia, and has held several environmental management roles in the energy, mining and communications sectors.
Moving beyond the data drought

The current debate about insufficient public investment in information and communications technology (ICT) infrastructure in rural and regional Australia is suffering from a lack of economic analysis on the potential benefits that increased investment could bring.

While politicians and investors are increasingly heralding the importance of agriculture to the Australian economy, the reality is that the businesses and communities driving the so-called ‘dining boom’ continue to struggle to access affordable and reliable internet services.

The ‘digital divide’ between city and country unfortunately continues to grow. This is partly due to the fact that Australia is one of the most urbanised, sub-urbanised and citified places in the world. Developing infrastructure that meets the nation’s unique demographic and geographical challenges, and serves the needs of rural businesses is never easy.

Rather than dwelling on the negatives, we must re-frame the issue and focus on the opportunities for investment. Current underinvestment in ICT infrastructure is potentially costing the Australian economy billions of dollars each year in lost productivity.

The Australian Farm Institute (AFI) is currently completing an extensive study that aims to deliver a clearer understanding of the value of digital agriculture, the cost of lack of adoption, and the changes that digital agriculture will bring to the business environment supporting the Australian farm sector.

The research is driven by three key questions:

• What is the potential economic impact of fully-enabled digital agriculture (and what’s this worth to the Australian economy)?

• What are current barriers (eg poor rural internet connectivity) costing agricultural industries and the Australian economy?

• What are the business models (and value propositions) that are likely to accelerate the development of digital agriculture products and services?

This research forms part of the Accelerating Precision Agriculture to Decision Agriculture (P2D) project, supported by the Federal Government’s Rural R&D for Profit program. It is the first project to be supported by all 15 Rural Research & Development Corporations (RDCs), whose levy-paying members reflect the diversity of food and fibre production in Australia. In doing so, it takes a whole of agriculture approach to the adoption of digital agriculture technologies and systems, and explores opportunities for improved cross-sectoral industry research collaboration.

To address the many challenges of farming in a data drought we need to develop a clear business case for investment in digital infrastructure. The P2D project aims to shed new light on how to overcome current constraints, while outlining the potential benefits of digital agriculture.

Findings and recommendations from this project will help inform appropriate funding and policy measures to ensure that the full benefits of digital agriculture are realised. In particular, this research will help guide ongoing investments by government and RDCs in areas that reduce current barriers to decision agriculture.

The final project report is expected to be completed by the end of 2017. For more information about the P2D project please visit: www.farminstitute.org.au/P2Dproject
The human touch to digital agriculture

One of the hottest topics of discussion at the recent Australian Farm Institute Harvesting the Benefits of Digital Agriculture Conference was the interaction between people and technology and the effect on the rural workforce. This is probably not surprising given the potential that digital technology has to disrupt many of the jobs and tasks traditionally associated with farming and agribusiness.

There were many aspects of this interaction that were presented by various speakers and discussed vigorously by the conference delegates. Several scenarios were presented that had almost contradictory implications on the requirements for the future workforce and required skill sets.

For example, it is assumed that automation and robotics in agriculture is going to replace some farm labour. While this may be the case for very specific applications it was also recognised that one of the defining requirements of good farm labour is the necessity to be multi-skilled and be able to perform lots of different tasks around a farm. Automation and robotics works well for defined repetitive tasks but is not suited for the sort of multi-skilled applications that most farm labour is required to do.

In circumstances where automation is appropriate, there will be a need for skilled servicing and support of automated machinery. Discussions at the conference centred on the fact that there is already a shortage of skills needed to service and support new technology in agriculture and that further developments in technology would amplify this shortage.

So, on the one hand, automation is going to be disruptive and will replace some farm labour, but on the other, the vast majority of farm jobs are not suited to automation and there is the opportunity for new career opportunities in agriculture providing specialised service and support for technology. To make predictions on the net effect on farm labour requirements would be heroic until there is more maturity in automation technology, other than to say that there will be change, as there has been in every other sector of the economy.

Another theme that was discussed in the interaction between people and technology was the extent that big data analytics would have in replacing human decision-making based on gut feel and experience. There is no question that much of the promise of the new age of digital agriculture is associated with the data that is collected from technology in addition to the application of the technology itself. Big data analytics is promising to deliver value to farmers through better understanding of production constraints and the ability to tailor production to high value markets based on objective information about quality and markets.

Just as with the potential for automation to replace farm labour, the potential for automated decision-making to replace the knowledge and wisdom of farmers is most likely overstated. Farmers have always used all the tools and information at their disposal as part of the decision-making process. Information derived from big data analytics will be another part of the process of acquiring knowledge that contributes to decision-making.

Big data analytics will also provide new career opportunities in agriculture as data scientists and software design specialists become just as critical to extending agricultural science knowledge as agronomists and traditional extension agents. Again, it is too early to say what the net effect of this technology will be on the decision-making capability required of farm managers and owners other than to say that there will be change in the way that things are done and that with any change comes both disruption and opportunity.

Digital value chains enabled by data capture and transfer will provide the ability to connect consumers with farmers more readily and easily. It is hard to see this aspect of technology use being anything other than positive for the promotion of the rural workforce. Consumers that want closer connection with food want to understand the story of how their food has been produced. Food produced in an entirely automated labour free manner is not going to have as good a provenance story as food produced in a way that sustains rural communities and has a human story attached.

It is fair to say that most people attending the Harvesting the Benefits of Digital Agriculture Conference will have formed the opinion that digital technologies will have far reaching effects on farm communities. The exact impact, in terms of labour requirements and skill sets needed probably is yet to be determined. The one thing that can be said with confidence is that there will be far more interaction between technology and people in agriculture than there has been in the past.
Are renewable energy policies hurting farmers?

Q1. Relatively low energy costs were previously a competitive advantage for Australian farms and agribusiness, but this advantage is rapidly being lost as energy costs rapidly increase. What do you believe are the main reasons that Australian farmers have experienced such significant increases in their energy costs?

Senator Janet Rice
Australian Greens Senator for Victoria

The primary reasons for increasing energy costs for farmers are twofold. The first is the massive blowout in both the contract and spot price for gas, which not only provides primary energy for many farm businesses, but sets the price in our electricity market. The blame for this price increase can be laid at the feet of the massive liquefied natural gas (LNG) industry in Queensland and both the Labor and Liberal governments who failed to put in the regulation to make sure that the LNG exporters were sure that they had sufficient gas to export before going into these multi-decade contracts.

The second is the ongoing investment strike in the electricity sector because of Malcolm Turnbull’s inability to pass a climate policy. Until the Government puts together a credible roadmap for us to get to a low carbon electricity sector, we will continue to have an investment strike. Wind and solar are already cheaper than gas and new coal, but we need government setting responsible policy to give investors the confidence to put their money in.

Senator David Leyonhjelm
Liberal Democrats Senator for NSW

Q2. Some have claimed that the switch to renewable energy sources has been a major cause of energy cost increases and supply instability. Do you believe that Australian and state government renewable energy policies have impacted on energy prices and supply stability, and if so, what do you think would be a preferable policy approach?

Senator Janet Rice
Australian Greens Senator for Victoria

No. It is not renewables policies that are affecting price and stability, but rather the complete lack of planning by the Federal Government for an energy transition. While it’s true that the variability of wind and solar does create new challenges for balancing supply and demand, the evidence is in that these can be solved with smart investments in electricity transmission and storage infrastructure. By moving electricity around the country from places where it is sunny and windy to where it is not, or by storing electricity in the form of heat, pumped hydro or the chemical energy in batteries, we can ensure that we maintain secure electricity supply around the clock.

The state based Renewable Energy Targets are a response from some states to a do-nothing government. Everybody agrees that we need to move to a zero-carbon electricity grid as soon as possible, but the private sector will not invest in this infrastructure if they can’t have confidence that they will get a return on these investments. And without a credible national plan for the future of our energy sector, we’ll continue to have policy and investment chaos. It’s time for Malcolm Turnbull to act.

Senator David Leyonhjelm
Liberal Democrats Senator for NSW

Electricity prices have skyrocketed, and electricity supply has become less reliable, because Commonwealth and state politicians have discouraged new fossil fuel based generation and banned nuclear power.
To provide households with immediate relief from high electricity prices, electricity should be made GST-free. Water is already GST-free, and electricity is as much an essential service as water. Making electricity GST-free would save households hundreds of dollars a year. State and territory governments have room in their budgets to manage the reduced GST revenues that would result.

In addition, a number of policy changes are required to make Australia’s electricity supply cheaper and more reliable over the long term.

- The Renewable Energy Target should be suspended and the commitment to reduce Australia’s greenhouse gas emissions withdrawn until most big-emitting countries implement measures to reduce their emissions. That includes Brazil, Russia, India and China. Suspension of the Renewable Energy Target, under which electricity users pay billions in annual subsidies to wind and solar generators, would allow for an immediate reduction in electricity prices.

- A binding commitment should be given to potential investors in new fossil fuel electricity generation that no carbon tax or equivalent will be introduced unless in parallel with similar measures introduced by the major world economies.

- The ban on nuclear power should be lifted.

**Q3. There has been a lot of opposition to coal seam gas exploration and development in regional Australia, and the resulting shortfall in gas supplies has been identified as a reason gas prices have increased. Do you think reducing restrictions on coal seam gas would help to reduce gas prices in the long run, and what policies do you think are needed to better manage interactions between gas companies and farmers?**

**Senator Janet Rice**

Coal seam gas has not only put our aquifers and climate at risk, but has failed to stack up economically too. Even today with gas prices through the roof, the major gas companies are sitting on massive coal seam gas fields in Queensland and New South Wales and refusing to develop them because they know that the gas is just too expensive to extract. And with all the excess LNG capacity sitting in Gladstone, no extra supply of gas will be able to bring down the gas price back below the world LNG price. The era of cheap gas in Australia is now over, and it’s up to governments to set a course for clean and cheap renewable energy, phasing out gas while maintaining security of supply as we transition.

**Senator David Leyonhjelm**

Restrictions on coal seam gas are based on theoretical concerns about fracking and its impact on water. In reality, after decades of fracking in the United States (US) and other countries, none of these fears has been confirmed. If undertaken responsibly, unconventional gas extraction is entirely safe.

Reducing restrictions on coal seam gas development would significantly increase gas supply and lower domestic prices. Subject to price, gas is competitive with coal for electricity generation and also generates lower emissions.

The main policy measure that would significantly increase supply of unconventional gas is to establish an incentive for landowners. A statutory royalty based on gas sales, for example, would ensure landowners had no financial reason to oppose exploration or extraction. A sound complaints process to help resolve disputes between explorers and landowners may also be of assistance.

State governments should also remove restrictions on exploration and extraction on Crown land.

The investment in unconventional gas in the US has transformed that country’s manufacturing sector and dramatically reduced reliance on imported oil. The same benefits could accrue to Australia if restrictions on development were removed.

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**John Ralph Essay Competition 2017**

The John Ralph Essay Competition is an annual competition conducted by the Australian Farm Institute to encourage strategic and creative thinking about issues of importance to the future of the sector in Australia. The topic of the John Ralph Essay Competition for 2017 is: **Structural changes in the Australian agriculture sector over the past two decades have thwarted the objectives of competition reforms.**

The competition awards two prizes – **Open: $5000** and **Novice: $1000**, plus free attendance at the 2017 Australian Agriculture Roundtable Conference

Entries close: **Monday, 4 September 2017**
Perception, reality and Big Agriculture

There is a tendency in some academic circles to be highly critical of something referred to as ‘Big Agriculture’, and to propose that the only ‘real’ agriculture is the traditional and historic model based on small-scale production by near-peasant landholders, who then market their produce direct to consumers. This was the underlying theme of a recent article by Alana Mann of the University of Sydney on The Conversation website, which has been set up to provide Australian academics with an informal mechanism to engage in debates and to expound ideas.

The views expressed by Mann in her article reinforced the extent of the divide between some of the more fashionable academic views of what agriculture should look like, and the reality of the sector both in Australia and globally.

Among the concepts championed by Mann are that food scarcity is a myth perpetrated by Big Agriculture in order to justify increased industrialisation and intensification, monocultural farming systems and increased chemical use.

The issue of global food security is one which has been considered by international forums such as the United Nations (UN), the Food and Agriculture Organization (FAO), and the World Bank. All of these are in agreement that global food production will need to increase by around 70% by 2050 in order to ensure sufficient food is available for the anticipated global population at that time.

There is no credible disagreement with that projection, despite the claim made in The Conversation article. In fact, what the author seems to have not understood is that the global agricultural system is very dependent on climatic conditions, and will invariably experience periods when production exceeds demand (as has been the case in grains for the past two years) and when the reverse is true. The long-term production trajectory, however, is what will be critical in ensuring future demand can be met, and it is the sector’s ability to sustain that long-term growth trajectory of around 1.7% per annum over the next 30 years that is raising concerns for international agencies and governments.

The second issue inherent in this discussion is global food distribution. Irrespective of the overall global food balance, it is inevitable that food will be unevenly distributed based on relative wealth. Those in very wealthy countries will have excess food, while those in very poor nations will have food scarcity. This comes about because wealthy consumers can afford to pay more, and the higher available returns for farmers supplying those markets enables them to invest in the capital and technology that makes farm production more efficient.

This is, in effect, the Big Agriculture model that is the subject of so much criticism. However, it does not operate in isolation from global food markets. The technology and production systems that have been developed by R&D investment in rich nations ‘spill over’ to farm production systems in poorer nations, and helps to enhance output. Similarly, excess agricultural production in rich nations is available for export, which ultimately adds to the global food ‘pool’ and makes food more affordable in poorer nations.

While this global food distribution ‘system’ is frequently subject to criticism because of the inequities that arise, there has not been any viable alternative systems developed. It is also the case that this ‘system’ has lead to a steadily decreasing number of people globally that the UN considers to be undernourished, a statistic that has been improving over the last two decades, but which unfortunately rarely garners any media attention.

A further issue touched on in the article but not fully considered is agricultural intensification. The development of large-scale, industrial farming systems is often the subject of criticism, yet almost in the same breath those critics challenge agriculture’s environmental and greenhouse emission performance. The reality is that these two issues are very directly connected.

The development of more intensive (and efficient) production systems such as large-scale intensive livestock farms or glasshouse horticultural facilities enables more efficient production to occur, which has benefits in terms of the feed required for livestock, or the use of fertilisers. It means the land footprint of the agriculture sector can remain more limited than it would otherwise be, and rates of deforestation and water utilisation can be reduced.

It has also enabled the development of animal waste recycling and bioenergy systems that are simply not possible in more extensive broadacre production systems.

While intensive and industrial-scale agriculture may not coincide with urban perceptions of agriculture, the vast bulk of agricultural production in developed nations is sourced from the largest 20% of farm businesses.

Those who are sufficiently wealthy can opt to source their food from more rustic and artisanal production systems, and there is room for many different sorts of agriculture in the marketplace. However, it is highly misleading to suggest that these systems are a viable replacement for so-called Big Agriculture.
Australian and international farm policy news

US Congress debates farm data ownership

On 13 July, the US House of Representatives Agriculture Committee held a hearing on agriculture technology and data utilisation in preparation for the next US Farm Bill which will be drafted early next year. Arkansas Congressman Rick Crawford said: ‘Farmers have a deep sense of mistrust where data is concerned around the idea of uploading their data into the cloud because there are no laws explicitly protecting that data.’

Witness Todd Janzen laid out three pain points for the growth of big data in farming: a lack of trust of agtech companies on the part of the farmer; the possibility of losing control of their own data when uploading to cloud-based storage; and a frustration with the complexity of the legal agreements they have to sign.

In November 2014, the American Farm Bureau Federation working with commodity groups, farm organisations, and agriculture technology providers, established the Privacy and Security Principles for Farm Data. The 13 principles cover: education; ownership; collection, access and control; notice; transparency and consistency; choice; portability; terms and definitions; disclosure, use, and sale limitation; data retention and availability; contract termination; unlawful or anti-competitive activities; and liability and security safeguards.

Witness Billy Tiller from the Grower Information Services Cooperative (GiSC), a farmer-owned cooperative storage system for data with 1400 members in 41 states, said:

Unlike the data captured and communicated on typical technology and information platforms for consumers, such as social media platforms, farm operation data is, in essence, intellectual property – the farmer’s trade secrets and ‘know-how.’ Farmers are hesitant (and rightfully so) to entrust that data with third parties in which those farmers have no vested interest.

Cattle farmers sue government for $600 million

A group of cattle farmers, led by the Northern Territory’s Brett Cattle Company, are suing the Federal Government for $600 million in compensation after live exports to Indonesia were banned by the Gillard administration in June 2011. The farmers allege the decision to suspend live cattle exports was ‘irrational, disproportionate and unjustified.’ The members of the class action include businesses that provided transport, mustering, feed and agistment services to cattle producers and exporters.

In his opening address to the Federal Court on 19 July, the farmers’ barrister Noel Hutley SC said the decision to suspend all live cattle exports to Indonesia was unjustified: ‘The process miscarried to the point of irrationality, disproportionality and unreasonableness... This was a complex issue that did not lend itself to simplistic solutions.’

Hamish Brett, whose family owns Waterloo Station in the Northern Territory, said he hoped the legal action would prevent similar decisions in the future. ‘You can’t ban something overnight with no industry say in it at all, which is what happened,’ he said. Mr Brett said his family’s financial losses ran ‘into the millions’ and he wanted Mr Ludwig held to account for his role in implementing the ban.

Drought devastates crops in South Europe

Drought in southern Europe threatens to reduce cereal production in Italy and parts of Spain to its lowest level in at least 20 years, and hit other regional crops including olives and almonds. Cereal crop losses are estimated at around 60–70% in Castile and Leon, the largest growing region in Spain.

In June, Italy’s national agricultural association said that soaring temperatures and lack of rainfall had already cost farmers $1.12 billion euros.

Spain and Italy are also among the world’s top producers of olive oil, with production in both countries expected to fall. The decline is likely to be particularly steep in Italy, where drought follows insect plagues and a bacterial disease in recent years. The International Olive Council forecasts a 60% drop in Italian output.

Some see rising temperatures as a long-term trend, which threatens the viability of farming in the region, with scientists linking more frequent heat waves to man-made climate change.

10-year OECD and FAO agricultural outlook predicts low food commodity prices

The OECD-FAO Agricultural Outlook 2017–2026 projects that global food commodity prices will remain low over the next decade, compared to previous peaks. Demand growth in a number of emerging economies is expected to slow down and biofuel policies will have a diminished impact on markets.

Cereal stocks have been replenished by 230 million metric tonnes over the past decade which should help limit growth in world prices, which are now almost back to their levels before the 2007–08 food price crisis.

The report foresees demand for food staples remaining flat, except in the least developed countries. Growth in demand for meat is projected to slow, with no new sources of demand projected to maintain the momentum previously generated by China. Additional calorie and protein consumption, over the period, is expected to come mainly from vegetable oil, sugar and dairy products.
In the news

More than 300 agribusiness professionals, farmers, technology experts and entrepreneurs attended AFI’s recent Harvesting the Benefits of Digital Agriculture Conference, in Melbourne. The event garnered a great deal of media interest, including the article: ‘Montagu farmer Mike Buckby uses provenance in product marketing’, by Johanna Baker-Dowdell, in The Examiner (21/06/2017):

‘I talked about selling the romance of the product – whether it’s beef, dairy or bottled water – and telling people the story of how you do it and why you do it,’ Mr Buckby said.

The conference also featured in the articles: ‘Data harvested with cotton’, by Alex Sampson, in The Weekly Times (21/06/2017); ‘New network to boost farm tech capabilities’, by Gregor Heard, in Queensland Country Life (21/06/2017); ‘Digital Ag adds value to entire supply chain: AFI’, by Andrew Miller, in Stock & Land (16/06/2017); and ‘Digital agriculture to provide value throughout the supply chain’, on Beef Central (16/06/2017):

‘The agriculture industry is moving to a point where we are getting more serious about where the benefits are in technology, or what we call digital agriculture, and we want to know what the business case for that technology is,’ AFI executive director Mick Keogh said in his address.

‘Digital agriculture is emerging right through the supply chain and there is a need for a whole-of-industry approach that provides benefit from producers and throughout the supply chain,’ Mr Keogh said.

‘For data to be valuable it has to go both ways – from farmer up the supply chain and back again,’ AFI general manager of research, Richard Heath said.

A Twitter moment shared some of the conference atmosphere: ‘This is about smart farmers getting even smarter’ (Carissa Buckland @clbuckland); ‘Really enjoyed #womeninag on every panel at today’s #aficonf Aptly wrapped up by Fiona Simpson’s #nff passionate voice #genderdiversity’ (Jane Trindall @TrindallJane); and ‘Ideas are a cheap commodity – we need an execution boom’ Bob McKay – Founder and executive chair of AgriDigital (Hannah Marriott @agrifoodsys).

Out and about

Recently the Institute’s Executive Director, Mick Keogh, has spoken at:
• Warakirri Agricultural Asset Management Leadership Group, Melbourne
• NSW Department of Primary Industries Biosecurity and Food Safety 2017 Strategic Planning Workshop, Sydney.

Richard Heath, the Institute’s General Manager Research, has spoken at:
• Consulate General of India Food Supply Chain Management Seminar, Sydney
• 2017 Farming Together Forum, Adelaide
• GrainGrowers Innovation Generation Conference 2017, Adelaide
• Epping Probus Club, Sydney.