BLUEPRINT FOR
AUSTRALIAN AGRICULTURE
2013-2020
INTRODUCTION

The Blueprint for Australian Agriculture (the Blueprint) is the first sector-wide effort to set out a strong and sustainable future path for Australian agriculture and its supply chain, looking ahead at least to 2020, and towards 2050.

The Blueprint aims to ensure the full agricultural sector (including the supply chain) is prepared for the challenges we are facing now and in the coming decades. It involves people from all parts of the sector working towards the future by mapping out where we, the agricultural sector, want to go and how we could get there. The Blueprint will inform and direct policy development and innovation for the sector, ensuring a strong and sustainable future.

While many developed and developing countries have agricultural ‘blueprints’ or plans, in many cases these have been devised by government entities rather than organisations in the sector (White & Pearce, 2012). This Blueprint is innovative because it has been created by the agriculture sector—including its supply chain—and it therefore has strong stakeholder involvement.

The process has involved Australia’s farmers, agriculture specialists, the agricultural supply chain, and government entities and representatives. It has involved several stages, including extensive consultations and surveys over the past year, plus roundtable discussions and workshops. The purpose was to identify the issues and challenges that are the highest priorities for agriculture, and to work out ways to address them.

It’s an ongoing process. The National Farmers’ Federation (NFF) has spearheaded the Blueprint effort; however, the Blueprint belongs to the sector as a whole. No single organisation will implement it—it is up to the agriculture sector; which has joined in to create the Blueprint, to now to develop and carry out the strategies through the pathways suggested in this report.

The Blueprint process has brought together everyone from farmers to futurists to contribute their ideas on the challenges facing agriculture and how they can best be met in the future. The Blueprint has tracked the details of specific issue discussions and stayed open to an uncertain future by imagining likely, possible and ‘out there’ scenarios such as robotic technology development, laboratory production of meat and 3D printing of food.

The Blueprint needs to be flexible enough to deal with the reality that in 20 to 40 years’ time the world is likely to be significantly different. In all likelihood it will be unimaginably different.

This report shows what information came out of the consultation process and how the Blueprint has taken that information and built it into a series of themes, priority issues, goals and strategies.

The Blueprint has been facilitated by the NFF, with support from Westpac, Woolworths and the Department of Agriculture, Fisheries and Forestry (DAFF), and assistance from the Rural Industries Research and Development Corporation (RIRDC), the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), rural/ regional market research company Kaliber, rural communication consultancy Seflon & Associates, futurists/strategists Emergent Futures, farm policy researchers the Australian Farm Institute, rural publishers Fairfax Agricultural Media and the 26 NFF member organisations. From 2013 onwards, Westpac and Woolworths will be continuing their partnership with the NFF for the legacy phase of the Blueprint, along with new major partners Bayer and Syngenta Australia.

The Blueprint has involved a wide range of stakeholders from the agriculture supply chain, including farmers, transporters, processors, retailers, consultants, rural businesses, agribusinesses, educators, governments, rural communities and community groups. The Blueprint ensures that participants in the agriculture sector are all on the same page as we work towards a strong and sustainable future for Australian agriculture.

THE VALUE OF THE BLUEPRINT

The role of the Blueprint is to identify major issues and priorities shared across the sector, articulate broad strategies to deal with them, suggest pathways for implementation and drive greater coherence and coordination of the agriculture sector’s efforts into the future.

The Blueprint does this by choosing key themes and issues on which to focus. The Blueprint initially took 2050 as the long-term horizon, but during the process it became apparent that there was too much long-term uncertainty around key issues to plan that far ahead. The Blueprint revised its aim to look at least as far ahead as 2020, with an eye on the longer-term future.

The steps in developing the Blueprint have been:

- involving the agricultural value chain and the government in identifying the critical issues facing farming and agriculture (complete)
- setting a vision for the future of Australian agriculture (draft version in this report)
- identifying issues that are critical to achieving that vision (complete)
- grouping those issues under broader themes (complete)
- identifying potential solutions and actions at a broad strategic level, with the highest priority being given to issues where the sector can exert influence (complete)
- identifying specific strategies, setting targets and assigning responsibilities (to be done via the 2013 Blueprint forums)
- considering likely and potential futures to ensure the Blueprint can adapt to changes and uncertainty (ongoing)
- providing a framework in which the agriculture sector can work in a coherent and coordinated way towards desired outcomes (ongoing)
- providing a pathway for the Blueprint to be implemented (ongoing).

This report captures the process of the consultations and discussions, and identifies the heart of the Blueprint itself—the vision, themes, priority issues, goals and broad level strategies. It also identifies issues that need to be on the radar due to their potential future impact.
The Blueprint consultation process has attempted to involve as many of the agriculture sector’s stakeholders as possible through forums, meetings, online activities, surveys and consultations.

In 2012 the NFF ran nine regional forums covering each state and territory; hosted Blueprint sessions at Parliament House for Members of Parliament and advisors; ran a Blueprint forum through the online agricultural twitter community #agchatoz; organised two Blueprint webinars; and hosted meetings of the Blueprint Advisory Group. More than 3,700 people attended the forums, sessions and workshops, completed the online survey, or were interviewed over the phone as part of the information-gathering phase.

Online and phone surveys

The forums and online surveys collected data from 2,052 valid responses. These responses came from the following sources:

- farming businesses, farming lifestyle businesses or agribusinesses (63 percent of respondents)
- the agriculture supply chain (including those involved in transport, processing, retailing, exporting, commodity trading, rural community organisations, government, education and training, research, policy, consumers, information technology and not-for-profit organisations) (29 percent)
- ‘other’ respondents (including media, students, banking/finance, veterinarians, health, energy, retired farmers and tourism) (8 percent).

The telephone survey data contained 1,710 valid responses from farmers. The survey sample was developed through random selection from a database of some 100,000 farmers. The sample was weighted based on industry, location and size of landholding. For more information about the demographics of the people who participated, please see the appendix.

In both the online and phone surveys, respondents gave their opinions on the issues facing agriculture (including its supply chain) now and in the future, and what the sector could do to address these issues now (in a five-year time frame) and in the future. Respondents also considered opportunities, actions and risks, and put forward their ideas for an overall 2020 vision for agriculture.

The top issues identified in the two surveys were:

- government policy, funding and decision-making
- commodity prices and the impact of the Australian dollar
- perceptions of agriculture
- climate variability and drought
- fuel and energy costs
- land and input prices
- water availability and management
- carbon markets
- red tape and government regulation
- agriculture sector representation and structure of the wider supply chain.

These findings were gathered together and reported on in detail in the Blueprint for Australian Agriculture Initial Findings report. The report went to stakeholders for comment, including those who participated in the surveys, the NFF Congress, and the Blueprint Advisory Group.

The Blueprint Advisory Group

The NFF assembled a Blueprint Advisory Group to look at the future of agriculture and associated industries in Australia. The group considered how the findings from the consultation process could be streamlined into themes and priority issues, and identified issues and possibilities that might have been overlooked. The Advisory Group also aimed to bring big picture thinking to bear on the issues, consider alternative strategies and approaches, look at a range of future scenarios including ‘but there’ possibilities, and try to identify blind spots and assumptions that may have been blocking new ideas.

The Advisory Group consists of some 30 agriculture sector leaders and strategic thinkers from across the agricultural supply chain, including farmers and representatives from agribusiness, transport, processing, retailing, research and education as well as industry bodies. This selection ensured there was a broad cross section of knowledge, skills and expertise.

The Advisory Group identified important issues for the Blueprint in addition to those identified in the consultation. These included:

- skills development, workforce flexibility and attraction of new entrants to the sector
- innovation, research, development and extension (RD&E)
- trade and market access and development
- Brand Australia—investment, coordination and promotion
- improving the cohesiveness of the sector and united representation on key issues.

Part of developing the Blueprint involved considering how the many issues raised could be addressed. To be successful, the Blueprint needed to prioritise issues before identifying how to move forward. The 15 issues—10 from the consultation process and five from the advisory group—are all important to the sector. The Advisory Group reviewed the 15 issues and considered their relevance to common overarching themes. Each priority issue was grouped under one of seven overarching themes. These now form the foundation for the Blueprint and provide a framework for identifying strategies and implementing the Blueprint.

RIRDC contribution

The NFF approached RIRDC to carry out a review of national blueprints and strategic plans related to agriculture, and to identify the elements that indicated successful plans. RIRDC researchers analysed some 19 national plans relating to agriculture/food production from developed and developing countries including the USA, New Zealand, Canada, Japan, South Africa, the European Union, the United Kingdom, Ireland, Brazil, India, Scotland, Uganda, Kenya and China. They concluded that effective blueprints/plans:

- identify a strong value proposition
- consider and involve critical stakeholders in the development of the plan
- articulate key drivers and constraints of the sector (and its components)
- demonstrate a clear relationship between objectives and interventions
- articulate the responsibilities that stakeholders agree to accept
- use an effective, logical and engaging structure
- incorporate specific, measurable, achievable, relevant and time-bound targets (White & Pearce, 2012).

RIRDC’s recommendations have been used in formulating this report and in recommending the way forward.

ABARES contribution

The NFF approached ABARES to analyse the Blueprint data and provide further information on some of the priority areas to more deeply inform the Blueprint and ensure that it took into account important developments in agriculture and policy. In addition to analysing the data collected throughout the information-gathering phase, ABARES researched some of the key issues raised, including the background and context, stakeholder views and the ‘state of play’ (current programs and policies, trends or research findings that informed the issues). Much of this information has been included in the sections that explain the themes in greater detail.

Future Thinking workshop

Looking forward to 2050 is challenging. In four decades’ time the world is likely to be different to the one we see today—more different than we can possibly foresee. The Blueprint process involved a ‘Future Thinking’ workshop for the Advisory Group, run by Emergent Futures. The decision to hold this workshop recognised that creating a long-term Blueprint for the sector involves significant challenges because it must address the issues at a high strategic level, while people tend to be interested in detailed specific areas and immediate solutions. The Blueprint must be flexible enough to adapt to changing realities and it must be ready to respond to unexpected developments.

The workshop aimed to:

- identify assumptions and blind spots in the agriculture sector’s view of the future
- identify possible alternative strategies and approaches that might be missed by the rest of the Blueprint process
- consider key questions that need to be asked
- construct a draft issues scanning list that could be used as a basis for horizon scanning in the future in order to review and alter the Blueprint as circumstances change.
In the Future Thinking workshop the Advisory Group worked with uncertainties and a range of possible scenarios, ranging from those considered ‘likely’ on current trends through to those but there and hard to imagine. More detail about different futures and how uncertainty is being addressed within the Blueprint is included under the ‘transformation’ theme later in this report.

These future drivers have been taken into account in developing the Blueprint, to ensure that the likely operating environment for the agriculture sector is considered, along with future challenges and opportunities.

**WHAT WILL THE FUTURE LOOK LIKE?**

Given the difficulty of predicting the future, the Future Thinking workshop considered that the ‘likely’ future will be a world driven by:

- strong population growth, with continued urbanisation of that population
- significant climate change effects
- high levels of price volatility
- significant challenges in the availability and skills of labour
- sufficient telecommunications availability for business processes
- a significant requirement for R&D investment to meet the challenges ahead
- tight profit margins in the sector
- continued high levels of trade restrictions
- low impacts from foreign ownership, urban farming, changes to customer cultural values, and demand for biofuel
- significant uncertainty around economic growth, energy costs, farm ownership structures, and consumer attitudes to natural versus technologically enhanced production and products
- the impact of policy, regulation and legislation.

**SUMMARY OF THE THEMES**

One of the challenges in creating a big-picture plan that looks decades into the future is getting the scale of effort right. The Blueprint needs to be broad in its scope to encompass uncertainty and incorporate the views of its many stakeholders. But going too broad risks trying to ‘become everything to everyone’ and diffusing the effort. The Blueprint stakeholders are conscious of balancing big-picture thinking with the focus that will be needed to achieve specific outcomes.

A vast amount of data was gathered during the forums, meetings and surveys of the information-gathering phase in late 2011 and throughout 2012. Although many important issues were raised, a process of selection was needed so the plan could focus on those areas where it has the best chance of making a difference.

Drawing on the findings of the forums and surveys, and an input from the Advisory Group, ABARES and the Futures Thinking workshop, NFF identified seven themes for the plan:

1. Innovation and research, development and extension (RD&E)
2. Competitiveness
3. Trade and market access
4. People
5. Agriculture within society
6. Natural resources
7. Transformational issues.

The 15 issues identified through the Blueprint process (via the information gathering phase and the input of the Blueprint Advisory Group) have been included within these seven themes. Some, like skills development, workforce flexibility and attraction of new entrants to the sector, fit within one main theme, and overlap with another one or two themes, while others, like government policy, funding and decision-making, sit across all seven themes, and are critical to their success. The accompanying table shows how the issues have flowed into the themes.
CHOOSING OUR PRIORITIES: THINGS WE CAN INFLUENCE

Two of the key factors that have been considered are the impact an issue can have and the sector’s ability to exert influence over it. If an issue has a high impact, and the sector has a high level of influence over that issue, then it is identified as a very high priority for the Blueprint. Similarly, if an issue is perceived to have a low impact and the sector has a low capacity to influence it, then it is ranked as a moderate priority or lower. Only those issues ranked as very high, high or moderate have been included in the Blueprint.

The Blueprint has identified goals and broad strategies within each theme to provide further direction and help build a pathway towards success. These are a starting point for ideas, and NFF’s plan is to work with key stakeholders across the Australian agriculture sector and government to action these ideas through a series of forums scheduled for 2013 onwards. These forums will develop specific strategies, assign responsibilities, provide resources and set timelines during the next stage of the Blueprint.

THE VISION

The consultation process asked participants to help build a vision for the future of Australian agriculture. Stakeholders were of the view that the Australian agriculture sector should be:
- productive, profitable, viable and efficient
- valued, respected and seen as a high priority by government and the community alike
- supported by government policies
- contributing to providing the fundamentals of food and fibre for an increasing global population
- served by well-funded education, training and research and development
- delivering high quality outputs that keep Australia’s clean and green reputation intact
- seen as an attractive sector for young people.

The following statement captures these sentiments and provides an overall guide for where the agriculture sector wants to go:

AUSTRALIAN AGRICULTURE TO 2020 AND BEYOND

The Australian agriculture sector is a world leader in providing high quality food and fibre for a global population using innovative technologies and sustainable natural resource management. It is productive, profitable, innovative and valued for its environmental, economic and social contribution to Australian life.

THE SEVEN THEMES IN DETAIL

The next section looks at each of the seven themes in detail. It sets out what is covered within each area, the background, the current state of play and other relevant policies and developments. The priority issues that sit within each theme are identified, and expressed as goals, with broad level strategies. The examination of each theme concludes with reflections on what success in this area would look like.
This theme relates to innovation and research, development and extension (RD&E) activities that improve the productivity, quality and profitability of Australian agriculture, and the sustainability of primary production and the natural resource base.

‘The future of agriculture to me is farmers being able to sustain a business and a lifestyle on the land as well as being profitable and being able to give back to their communities. The long-term future of agriculture depends upon how efficiently we use energy and so we need further investment in R&D and policies. To foster this approach we need to work with policy makers to re-direct funding to more R&D and then link it to increasing productivity.’

- Blueprint Participant
BACKGROUND

Innovation and research, development and extension rely on public–private partnerships and are carried out by the Australian Government, state and territory governments, rural research and development (R&D) corporations, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), universities and the private sector (e.g. participants in rural industries).

The adoption of new technologies and management practices can improve productivity and profitability of businesses, and also reduce the sector’s impact on the environment. The need for investment in innovation and productivity growth through research, development and extension (RD&E) is a critical area of concern for the Blueprint. There is strong evidence that a more cooperative approach to R&D, and in particular extension, is where real productivity gains for Australian agriculture are to be found. Funding innovation in other parts of the sector, particularly food and fibre processing, is also essential to long-term success.

Innovation is the cornerstone of the food processing industries; technologies that have the resources and expertise necessary to successfully invest in rural research; technological advances in plant and animal genetics and breeding that have created new opportunities for private firms to generate revenue from innovative developments; and advances in computer technology and scientific analytical techniques that have likewise made it easier for firms to make more rapid progress in developing new crop varieties and other innovative products (Keogh & Potard, 2011).

The private sector funding share of agricultural R&D in Australia has increased significantly in recent decades but is still lower compared with other developed countries (Pardey et al., 2006, cited in Keogh & Potard, 2011).

Current funding arrangements

In Australia, rural R&D spending was in the order of $1.5 billion in 2008–09 (Productivity Commission, 2011). Public funding accounted for around three quarters of this, with farmers (via R&D corporation levy arrangements) and other private sources making up the remaining quarter. It is important to note that these figures do not include public or private R&D investment in other parts of the agricultural sector, and nor do they fully account for some other significant sources of private investment in rural R&D.

Government funding

The matching contributions provided to the rural RDCs is the Australian Government’s most obvious involvement in rural innovation and RD&E, but it is involved in other ways too. Funding of cooperative research centres, CSIRO, universities, department programs and foregone tax receipts totalled around $497 million in 2008–09 (Productivity Commission, 2011). RDC funding was around $218 million.

Private sector funding

The private sector is playing an increasing role in agricultural R&D in developed nations, and contributed on average 54 percent of total investment for OECD nations in 2000 (Keogh & Potard, 2011). Factors contributing to private sector investment include more effective intellectual property protection mechanisms; the emergence of large multinational firms which have the resources and expertise necessary to successfully invest in rural research; and new crop varieties and other innovative products (Keogh & Potard, 2011). The private sector funding share of agricultural R&D in Australia has increased significantly in recent decades but is still lower compared with other developed countries (Pardey et al., 2006, cited in Keogh & Potard, 2011).

The flat productivity growth of the last few years will need to be addressed through the development and adoption of existing technology and new technology. The whole community, urban families, agricultural professionals, farmers, supply chain businesses all need to be educated about agriculture, the cost, environmental impacts and the social decisions that drive markets and production. Efficiency needs to be created on-farm and within the supply chain through continued technological developments and R&D.

- Blueprint Participant

Most recent RD&E policy

The rural RD&E system has undergone two recent examinations and the reports of both were released in June 2011.

- The Rural Research and Development Council produced a National Strategic Rural R&D Investment Plan, which outlines a rationale for greater prioritisation of Australian Government investment in rural R&D provides a picture of the current level of investment, and offers a vision for the rural R&D system.

- The Productivity Commission reviewed the RDC model, and examined the rationale for government investment in RDCs and the overall effectiveness of the RDC model.

The government released its Rural Research and Development Policy Statement in July 2012, including its responses to these two reports. The government states that consistent with the commission and councils’ acknowledgement of the strengths of the rural RD&E system, and with stakeholder support, the policy statement does not propose large-scale changes to the existing system. Its responses include principles for what is expected of RDCs as a condition of receiving government funding, changes to increase transparency and accountability in the RDC model, and proposed initiatives to pursue greater productivity growth and improve the efficiency and effectiveness of the RDC model.

CURRENT ISSUES: INNOVATION AND RD&E THEME

Agricultural productivity growth is linked to RD&E. Agricultural productivity growth is closely linked to innovation and RD&E. Australian public RD&E directly accounted for nearly a third of the productivity growth experienced in Australia’s broadacre farming sector between 1952–53 and 2006–07 according to an ABARES analysis (Sheng, Gray, Mullen, & Davidson, 2011). As Figure 1 indicates, between 1977–78 and 2009–10 broadacre productivity growth averaging 1.2 percent a year helped maintain farm profitability in the face of generally worsening terms of trade (i.e. output prices relative to input prices) (Gray, Sheng, Oss-Ernen, & Davidson, 2012).

Figure 1: Broadacre total factor productivity and the farmer terms of trade, 1977–78 to 2009–10

Source: Sheng et al. (2011)

Note: Although total factor productivity shown here relates to broadacre (non-irrigated) agriculture only, the farmer terms of trade cover all Australian agriculture.

Foreign public R&D was similarly important, comprising 32 percent of the money spent, indicating the value of Australian farmers being able to access technologies developed elsewhere (Figure 2). Australian agricultural R&D also makes a significant contribution to overseas farmers and communities, contributing to the diets of some 400 million people worldwide (Pirasad & Langridge, 2012).

Figure 2: Relative contributions of public R&D and extension to annual broadacre TFP growth (percent)

Source: Sheng et al. (2011)
‘Invest in R&D for increased profitability. Additional R&D will allow us to deliver profitability under a different environment. Profitability of all areas of the supply chain is needed to ensure long-term sustainability of the land, the people and the businesses involved.’

- Blueprint Participant

Stagnant R&D funding has affected productivity growth
Apart from a spike in investment in 2001, Australia has had little growth in real R&D investment since the mid-1970s (Sheng, Mullen, & Zhao, 2011). There is a time lag of several decades for the impact of R&D investment to show up in agricultural productivity. ABARES has identified a downturn in total factor productivity growth in the mid-1990s, and this slowdown has probably been caused by a combination of adverse seasonal conditions and stagnant public R&D expenditure since the late 1970s (Sheng, Mullen, et al., 2011). This stagnation is cause for serious concern. The ABARES report concludes that although R&D is just one factor contributing to agricultural productivity growth, the innovations needed to address changing climate conditions and future resource constraints in 2050 and beyond are likely to result from investments made in agricultural R&D today (Sheng, Mullen, et al., 2011).

The food processing industry is also suffering the effects of stagnant R&D investment
The food processing industry is also concerned about a lack of investment in R&D and innovation, noting there is little targeted government support or research into food manufacturing, and supporting the establishment of a national innovation network for food manufacturing (Australian Food and Grocery Council, 2012).

Innovation and new product development are critical to maintaining a leading position and brand within a product category. Without these, players are highly exposed to the power of retailers and import competition. The food processing industry as a whole is under-investing in research and development, according to a 2011 report (Australian Food and Grocery Council & A.T. Kearney Australia Pty Ltd, 2011). Only 12 percent of surveyed companies invested $10 million or more in R&D, with 30 percent of companies investing $5 million or less and nearly one-quarter of respondents investing less than $1 million.

The report also found that 65 percent of surveyed food and grocery manufacturers perceive Australia to be less favourable for R&D activities than other countries in the region (Australian Food and Grocery Council & A.T. Kearney Australia Pty Ltd, 2011). Given the margin pressures on food and grocery manufacturers, it is uncertain whether smaller players will have the financial resources to invest in new product development. Longer term, food manufacturers’ negotiating power with the major retailers will deteriorate further if they are unable to invest sufficiently to maintain their brands and develop new products as a non-price source of value for consumers. This highlights the need for the sector to address barriers to investment.

Extension is crucial in applying R&D outcomes
R&D generates new knowledge and technologies, but extension services play a crucial role in communicating these in a useful form. State and territory governments have historically dominated the funding and delivery of on-farm extension services in Australian agriculture, but this has been changing for a number of decades (Sheng, Gray, et al., 2011). On-farm extension is in a state of flux and how it will look and function in the future is uncertain (Hunt, Birch, Coutts, & Vancly, 2012). Private agronomists, input suppliers, grower groups and RDCs have become increasingly important sources of extension services (Productivity Commission, 2011).

The benefits of RD&E are only realised when individuals choose to adopt new technologies and management practices. This capacity to adopt new innovations will be important as increasingly sophisticated farm technologies are developed. Education policy and funding will thus have a bearing on how agriculture can benefit from RD&E. In other parts of the value chain, the capacity to drive innovation appears to be linked to a range of factors including access to capital and the cost of getting new products to market.

Improved coordination could improve efficiency
Collaboration and coordination among funders, and between funders and providers, may improve the efficiency of Australia’s agricultural innovation and RD&E system (PIMC, 2009; Productivity Commission, 2011). Improvements may come through reducing duplication, improving information sharing, and better use of the knowledge and resources of different providers. The Australian Government is working with state and territory governments, rural R&D corporations (RDCs), the CSIRO and universities to develop the National Primary Industries RD&E Framework. While this is an example of better coordination and efficiency, there are still improvements to be made.

There is interest in improving the evaluation of RD&E
Stakeholders across the RD&E system have expressed interest in improving the evaluation of RD&E (Cunyas-Cubria, et al., 2012). It has been recommended that investments be made to support measurement of rural RD&E system performance (Rural Research and Development Council, 2011). A focus on measuring program performance and the benefits of RD&E is also observable at the sector level through the National Primary Industries RD&E Framework.

Improved measurement and evaluation should contribute to the efficient allocation of resources, but it is important that decision-makers understand the potential trade-offs in different RD&E investment strategies. Extension may provide greater short-run profits which are more readily identifiable, but investment in R&D is more likely to maximise long-term productivity growth (Sheng, Gray, et al., 2011). It is also important that the mix of public and private benefits from investment in R&D are taken into account, and that implicit benefits to society are acknowledged.

SUMMARY OF ISSUES
The Blueprint has grouped the following issues under the Innovation and RD&E Theme:
• under-investment in R&D (very high priority)
• poor access to new technologies (high priority)
• low uptake of best practice (moderate priority).

Goals and strategies
The examination of the Innovation and RD&E theme has led to the following goals and strategies:

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<th>Goal</th>
<th>Priority</th>
<th>Strategies</th>
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<tr>
<td>Increase investment in R&amp;D</td>
<td>Very high</td>
<td>• Demonstrate public good from government expenditure in R&amp;D, including its contribution to rural social capital and rural resilience.</td>
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<tr>
<td>Improve access to new technologies</td>
<td>High</td>
<td>• Create a policy and tax environment that encourages partnershipBSD in R&amp;D.</td>
</tr>
<tr>
<td>Improve uptake of best practice</td>
<td>Moderate</td>
<td>• Develop pilot projects to test new technologies.</td>
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‘Funding arrangements that share production risks between farmers and corporate backers. Production that keeps in step with demand through earlier investment in R&D while generating sufficient returns for each member of the supply chain and with farmers generating their own power on sustainable productive farms. Producers that are directly connected to consumers.’

- Blueprint Participant
WHAT WOULD SUCCESS LOOK LIKE?

RD&E in the agriculture sector is enjoying increased levels of real government and private investment and an increase in the share of the total RD&E spend. Due to a strong focus on the adoption of research outcomes the sector is embracing proven technologies and driving innovation.

FURTHER READING


This theme relates to the competitiveness of Australian agriculture and covers domestic issues such as infrastructure, capital, regulatory costs, branding and some trade-related factors (such as the volatility of commodity prices, terms of trade and the value of the Australian dollar).
BACKGROUND

A competitive and productive agriculture sector will contribute to the security and profitability of Australia’s food and fibre supply chain and contribute to wider economic growth. It will also provide ongoing economic opportunities across rural and regional Australia including employment, infrastructure and community wellbeing. The Australian agricultural sector’s long-term growth and profitability is linked closely to its status as a globally competitive producer that can develop and retain market positions. A solid domestic economic framework will help the global competitiveness of Australian agriculture for farmers and the supply chain.

The twenty-first century has been defined as the Asian Century, in which the global centre of gravity will shift to Asia. World food demand is expected to rise by 77 percent by 2050, with most of the growth occurring in Asia (DAFF, 2012). According to the Australian Government’s Asian Century white paper, the tyranny of distance is being replaced by the products of ‘proximity’ for Australia (Australian Government, 2012). Opportunities exist for Australia to be an important supplier of agricultural produce to Asia.

The Australian Government is preparing to take advantage of the Asian Century. Australia’s National Food Plan Green Paper (DAFF, 2012) and the white paper on Australia in the Asian Century (Australian Government, 2012) both outline ways that the Australian Government intends to respond to the opportunities and challenges posed by the growing demand for food in the future. The government’s position is that a market-based policy approach is the best way to help Australian food businesses take advantage of future opportunities (DAFF, 2012). In its Asian Century Green Paper the government has committed to supporting a competitive and productive food industry through:

- developing strategic policy for regulation of agricultural and veterinary chemical use (DAFF, 2012).

In Australia in the Asian Century, the government has committed to building strong connections with Asia for mutual economic and cultural gain, through building a productive and resilient local economy, improving education, and connecting to Asian markets. Many of the issues raised in this Blueprint are slated for action in the white paper (Australian Government, 2012).

Strong growth in global agricultural demand is likely to be met with increasing supply constraints over the coming decades. Chief among the scarce inputs will be water and land. The shift to a supply-constrained agricultural market will create enormous commercial opportunities for resource-rich, export-oriented countries in the region. Australia could significantly increase agricultural export revenues if the right actions are taken to harness the opportunity. However success is not guaranteed. Success depends on the agricultural sector addressing the issues that are constraining growth, and systematically focusing on fostering globally competitive industries with high growth potential (Port Jackson Partners/ANZ, 2012).

Other nations are also seeking to compete in international agriculture through attributes such as quality/convenience, price, appeal to consumer values (e.g. through animal welfare and environmental credentials) and meeting niche market needs. Consumers expect production systems to be based on ethically and environmentally sound principles. To take advantage of the opportunities available, Australian producers must have access to the technology and skills to increase production, the infrastructure that efficiently connects them with consumers, and access to global markets (DAFF, 2012).

CURRENT ISSUES: COMPETITIVENESS THEME

Australian agriculture is well placed to service growing markets

Australian agriculture is responsible for three percent of Australia’s gross domestic product (GDP) at the farm gate, rising to 12 percent of GDP when other economic activities supporting farm production are added (NFF, 2012). Australian farmers export some 60 percent of what they grow. Australia currently produces far more food than it consumes and has the capacity to increase food production in response to market signals and take advantage of growing markets in Asia. Australia is well placed to take advantage of these opportunities due to key strengths including our proximity to emerging markets in Asia, our abundance of productive land, a largely pest-and-disease-free biosecurity status, a record of rural innovation, and a skilled and capable workforce (DAFF, 2012).

Australia needs to re-establish agricultural growth to remain competitive against other nations

While Australian agriculture has significant capacity to take advantage of improving markets, it’s clear that other countries have also recognised the opportunities and are racing to improve their competitiveness and supply expanding markets. While the value of Australia’s gross agricultural production grew at an average rate of 4.3 percent per annum between 2000 and 2011, close examination suggests surging global commodity prices may have masked a period of mostly flat production and export volumes. The beef and wheat industries stopped growing, while previously promising industries like barley, cotton and canola stalled, and even declined in some cases. The wine industry was the only exception. Although it has also stalled recently, wine delivered strong production and export growth until 2005–07.

It would seem that as the world raced to capture global soft commodity opportunities, Australian agriculture came to a standstill, with no major engines of growth currently in motion. Moreover, the period also showed few signs of agriculture shifting to higher value products to compensate for flat production volumes (Port Jackson Partners/ANZ, 2012). As incomes in developing economies grow, their capacity to consume also grows.

Accordingly, countries around the world are vying to secure a competitive place in the supply chain for agricultural and food products in these markets. Many countries are seeking to increase efficiencies and leverage off their own individual strengths via research and development, commercialisation, the adoption of new technologies and market development.

Other nations are also racing to improve their competitive advantages

Most developed countries are focused on improving agricultural productivity and bettering their access to new and high-value markets, with a focus on research and development, commercialisation, adopting new technologies, enhancing practices that improve productivity, marketing their different attributes and facilitating market development.

Developing countries tend to focus on measures that support the development of markets. Some of the steps that international competitors are undertaking with respect to new markets and market access include:

- research to provide a sound scientific basis to the safety and quality of products, including environmental credentials (Canada, United States, Ireland and New Zealand)
- market research and dissemination of research to the agriculture sector on consumer tastes (Canada and New Zealand)
- developing national branding strategies linked to health and safety, animal welfare and environmental attributes (Ireland, New Zealand and Japan)
- grants to increase capital in firms to meet consumer requirements in relation to hygiene, quality and safety (India and Japan)
- funding for skills development to improve capacity to meet product standards and improve marketing (India and Japan)
- general institution building to improve regulatory capacity and credentials (Canada, Japan, South Africa, Kenya, Uganda and China) (White & Pearce, 2012).
Australia needs to improve competitive strengths and build competitiveness in higher value industries. Successful and globally competitive industries compete internationally from a domestic platform of highly capable and collaborative supply chain. This supply chain collaboration requires a shared understanding of products and markets and the science underpinning them. Currently Australia’s two strong competitive advantages are its ability to produce volume commodity products at a lower cost than most developed nations, and its ability to deliver product quality and traceability characteristics that are not easily matched by developing nation agriculture exporters. There have been numerous suggestions in recent times about how to build on these competitive advantages, however they generally come back to similar core themes: that Australia should continue to be a source of competitively priced raw commodity products utilising available natural resources; and that there should also be an increased focus on the higher-end value-added products that benefit from the competitive advantage of the high quality and security of the supply chain. Australian agriculture can increase its share of the global market via coordinated cross-supply chain initiatives focusing on key characteristics, including improvements to brand profiles (e.g. Angus beef), reducing the environmental impact of products, developing and sustainable sourcing practices and producer stewardship regimes. These are examples of how differentiated products can result in higher value offerings and improved levels of service to an expanding but potentially overcrowded market.

There are concerns around the competitiveness of Australia’s domestic food markets. Farmers and food processors also face challenges in achieving profitable outcomes in the Australian domestic market. A recent analysis by Macquarie Private Wealth concluded that most of the gains by consumers over recent years, in the form of lower prices, have arisen due to reduced supplier margins (Kruger, 2012). While there have been several official inquiries into the impact of the dominance of Australia’s two major retailers, these inquiries are generally handicapped by a lack of transparent market information. The Australian Competition and Consumer Commission (ACCC) has focused on competition and consumer issues in highly concentrated sectors, including supermarkets, and is examining how the major supermarkets deal with their suppliers (DAFF, 2012). The Australian Government, as part of developing the National Food Plan, has held a forum to improve supply chain transparency and the issues that affect them (ACCC, 2012). Critical to the success of any action in this area will be the delivery of transparent market information, healthy levels of competition and ensuring fair market dealings. Both farmers and food processors agree that for long-term financial viability there must be equitable risk and reward arrangements across all parts of the supply chain (Australian Food and Grocery Council, 2012).

Ongoing investment—public and private—is required to gain access to markets and remain competitive. Investment is a vital part of maximising food production and retaining Australia’s position as a major net exporter of agricultural produce. PricewaterhouseCoopers notes that the Australian model of largely disaggregated and often family-owned and operated farms must respond to the need to substantially increase global agricultural production, and it questions where the required capital will come from (PricewaterhouseCoopers, 2010). Farmers face significant challenges in raising capital to fund growth and support farm turnover. Farm debt levels are already high and few external sources of equity capital are available to farmers, particularly given strong competition from investors in the financial markets. Before the turn of the century, capital required by farms was largely sourced from bank debt and internal farm equity, with few alternative external sources available (Port Jackson Partners/ANZ, 2012).

According to the Greener Pastures report, between now and 2050 around A$60 billion in additional capital will be needed to grow and improve profitability in Australian agriculture, based on current capital valuations. A further A$400 billion will be needed to support farm turnover, as ageing farmers make way for the next generation. In a world where capital with a long-term focus is in huge demand, agriculture needs to find innovative ways of attracting domestic and foreign investment, particularly given strong domestic competition from sectors such as mining (Port Jackson Partners/ANZ, 2012). This analysis does not account for all parts of the agricultural supply chain, and improved estimates will be required to understand the full picture.

New structures for owning and operating farms need to be encouraged to attract investment from domestic and foreign investors and capital markets. These structures might include rapidly evolving equity partnerships, modern variants of share farming and the use of off-take agreements like those used in the mining sector (Port Jackson Partners/ANZ, 2012). It is likely that because of the costs of remaking supply chains to account for smaller farm businesses consolidating will continue, and new farm ownership and operation structures, succession, and risk-sharing models will develop.

‘All Australians, through their primary education, will be aware of their reliance on the land and they will respect and value their knowledge of their food production systems. All members of all sectors of the agricultural workforce (production and process, agribusiness, regulation etc.) will have a scientifically informed understanding of their work and the issues that affect them.’

- Blueprint Participant

Foreign investment is needed, but transparency could be improved. Australian investment alone is not sufficient for agriculture to grow and develop. Foreign investment plays an important role in providing capital and delivering productivity gains and technological innovations, according to the Foreign Investment Review Board (FIRB). In assessing foreign investment applications in agriculture, the FIRB typically considers the effect of the proposed investment on:

- the quality and availability of Australia’s agricultural resources, including water
- land access and use
- agricultural production and productivity
- Australian capacity to remain a reliable supplier of agricultural production, both to the Australian community and our trading partners
- biodiversity
- employment and prosperity in Australia’s local and regional communities (Foreign Investment Review Board, 2012).

The Australian Competition and Consumer Commission assesses all proposals that have the potential to raise competition concerns, including any potential competitive effects of agribusiness supply chain chain acquisitions by foreign investors. All potential investors must also obtain any other approvals, such as environmental approvals, that are required under Australian laws (Foreign Investment Review Board).

However public concerns about foreign investment in agriculture remain and the national interest tests used to assess foreign investment lack clarity and transparency in relation to agricultural assets. Government moves to improve the data on foreign investment in agriculture through ABS surveys may not be sufficient to provide the necessary transparency and many stakeholders (including the NFF) have called for a national foreign ownership register as a total first step. The Coalition and the Australian Government responded to these calls, with the Government announcing its commitment to a national register in October 2012.

The establishment of a comprehensive register to document and review foreign investment in agriculture, land and water will provide information that will allow a more informed debate on the issue (Majer, 2012).

Infrastructure is ageing, damaged and inadequate. In the last few years droughts and floods have damaged transport infrastructure and in the same time some of the most worthwhile infrastructure projects are in danger. ‘If Australian infrastructure is not maintained in the short term, the potential to raise competition concerns, including any potential competitive effects of agribusiness supply chain acquisitions by foreign investors. All potential investors must also obtain any other approvals, such as environmental approvals, that are required under Australian laws (Foreign Investment Review Board).

‘Ensure that there is enough primary and secondary food production happening so that if Australian trade should stop overnight, Australia will have the infrastructure and the means to provide for itself indefinitely.’

- Blueprint Participant

Modern and efficient infrastructure for telecommunications, energy and transport is essential to enabling Australian farmers to remain competitive in international markets. The statutory body Infrastructure Australia was formed in 2008 to help governments develop a strategic blueprint for unlocking infrastructure bottlenecks and to modernise the nation’s economic infrastructure. Its National Ports Strategy (awaiting final sign off) and Draft National Land Freight Strategy (still in development) both consider the needs of the agriculture sector and will help improve the development of Australia’s transport infrastructure, allowing for a national, seamless freight network that enables products to move from ship to shore to door as efficiently as possible, with real productivity gains. Infrastructure Australia has identified implementing the National Ports Strategy and finalising the National Land Freight Strategy as two of its top priorities in the coming year. While this progress is encouraging, the agriculture sector needs to remain a priority for investment in order for its concerns to be resolved.
Agriculture has unique characteristics that need to be considered in transport planning. According to RIRDC, planning for infrastructure investments needs to consider the entire Australian freight task and the likely volume and patterns of demand for transport services. However, agriculture has some unique characteristics that need to be considered in the infrastructure planning process:

- Agricultural transport relies on rural road systems
- There is a large and unpredictable seasonal variability in production volumes
- The transport of livestock and fresh produce requires efficient systems that minimise delay to ensure transport does not result in the damage or loss of product
- Agriculture is a major export sector and so requires passage from rural areas to ports
- The mining sector shares some of the rural roads and is a competitor for some transport resources such as port capacity (Tulloh & Pearce, 2011).

There is a risk of fuel and energy costs rising because of policy change. The Australian Government intends to apply a carbon price on heavy on-road vehicles from 1 July 2014 and has signalled that fuel excise/taxation will be the subject of a Productivity Commission review in 2014, with changes to apply from 2015–16. The review will examine the merits of a taxation regime based on the carbon and energy content of fuels. At present, agriculture, agriculture, fisheries, and forestry do not pay an effective carbon price for off-road fuel use. A key issue for the industry will be the current diesel fuel excise rebate for off-road farm fuel use, and its continued exemption from the carbon price. The farm sector can prepare for this review with information such as comparisons with fuel costs faced by overseas competitors, research on the fuel costs impacts on different Australian food supply chains, and case-studies of a range of Australian agriculture and supply chain businesses that would be impacted by any reductions to the off-road diesel fuel excise rebate and/or the application of the carbon tax to off-road fuel use.

Electricity prices in parts of Australia have increased at nearly four times the rate of inflation over the period from 2005 to 2010. Drivers of the increase include the Renewable Energy Target (RET) and significant new infrastructure investment (specifically the poles and wires investment due to historic under-investment) (Institute of Public Affairs, 2010). Household electricity prices have increased by 40 percent since 2007 and the Australian Energy Markets Commission (AEMC) projects electricity prices to rise by another 30 percent by 2013–14 (CME, 2012).

While Australia’s electricity prices were amongst the lowest in the developed world, current prices are now higher than Japan, the EU, the US and Canada (CME, 2012). The agricultural industry could make substantial gains in energy productivity by focusing efforts on the investment policies around network infrastructure, and by seeking the termination of those policies that do not complement the carbon price (Productivity Commission, 2012a).

Unnecessary administration and red tape increase costs and reduce competitiveness. Complying with US regulatory rules has become a significant cost to Australian agriculture. In many cases there are good reasons behind regulations and they have helped agriculture build its global competitiveness—for example, the industry-led National Livestock Identification System. However, many regulations impose unnecessary costs on farmers, the wider supply chain and service providers. Service providers are often required to report the same or similar data to multiple reporting agencies. Inflexibility in reporting formats, and they may experience inflexibility in the ways authorities deal with their individual circumstances.

The challenges of duplication and its cost impacts exist right across the sector. For example, water information is collected by five different Australian Government agencies (Bureau of Meteorology, National Water Commission, Department of Sustainability Environment Water Population and Communities, Murray-Darling Basin Authority and the Australian Bureau of Statistics) all requiring separate collections, with slight variations in file formats, and in the type of information requested. Entities cannot simply provide one set of data to one agency as a ‘one-stop shop’. Under environmental law, there are threatened species or ecological communities lists at both state/territory and Australian Government levels, with actions requiring different approvals under different jurisdictions.

The Productivity Commission inquiry into regulation burdens on primary industry identified a number of areas where the Australian Government could act without delay to reduce regulation burdens including:

- removing duplication in applying for drought assistance
- amending Part IIIA of the Trade Practices Act to provide greater clarity and transparency
- ensuring marketers can more easily check the work eligibility of overseas visitors

- improving communication about the significant impact trigger under the Environment Protection and Biodiversity Conservation (EPBC) Act
- undertaking negotiations for specific bilateral agreements for approvals under the EPBC Act (Productivity Commission, 2007).

Regulatory Impact Analysis (RIA) is a process to examine and provide relevant information to decision makers and stakeholders about the expected consequences of proposed regulations and a range of alternative policy options. The Productivity Commission has found that RIA has become a significant cost to Australian agriculture. In many cases there are good reasons behind regulations and they have helped agriculture build its global competitiveness—for example, the industry-led National Livestock Identification System. However, many regulations impose unnecessary costs on farmers, the wider supply chain and service providers. Service providers are often required to report the same or similar data to multiple reporting agencies. Inflexibility in reporting formats, and they may experience inflexibility in the ways authorities deal with their individual circumstances.

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The Australian Government and the Opposition have both made commitments to reducing the amount of environmental regulation for farm businesses (NFF, 2012), but progress is slow. The newly created Parliamentary Budget Office (Parliamentary Budget Office, 2012) provides a new opportunity to use a formal process to assess the real costs of policies and pieces of legislation, specifically identifying the impacts on rural and regional businesses.

The level of the Australian dollar is a major factor in competitiveness, but it is hard to influence. The exchange rate is an important macroeconomic variable that influences Australian exports. A higher exchange rate means agricultural exports from Australia become more expensive in world markets, making them less competitive and reducing returns to producers in Australian dollars (Apted et al., 2006). Since the late 1990s Australia’s currency has become stronger against the currencies of export destinations and competitor countries, and this has reduced export values and export levels of some commodities, such as vegetables (Apted et al., 2006). At this stage there is little that can be done for the agriculture sector to influence the exchange rate, other than to raise awareness of the impact that a high Australian dollar has on agricultural exports. However, Blueprint participants placed great importance on this issue.

The RIRDC has commissioned the Department of Primary Industries in Victoria to provide an updated analysis of the impacts of a high dollar on agriculture, which will result in data that can be used to further the issue. As other issues have raised a useful debate on whether there is a role for governments to alleviate pressures on trade-exposed sectors by dampening inflating exchange rates would be timely for the agriculture sector.

Global commodity prices are high and volatile. According to work done by the Australian Treasury, beginning in around 2002 commodity markets entered a strong and sustained upward trend. By its peak in mid-2008, this upswing had seen the prices of almost all classes of commodities rise substantially. The speed and magnitude of this run-up in commodity prices is rivalled only by two other episodes in the last century—the mid-1930s and the 1970s. During the second half of 2008, commodity prices quickly corrected with the escalating global financial crisis and associated downward revisions to forecasts for global economic growth. From July 2008 to March 2009, commodity prices fell precipitously, reversing most of the gains made over preceding years. At a broad level, commodity prices have since recovered more than half of what they lost during the crisis period. At the same time, volatility in prices has also been elevated over recent years (Devlin, Woods, & Coates, 2011). The OECD expects average real prices over the next decade to be 20 to 30 percent higher than in the prior decade for many commodities, and to be increasingly volatile (Port Jackson Partners/ANZ, 2012).

Policies that alter the prices paid or received by domestic consumers or producers—by distorting the incentives producers and consumers face to increase or decrease consumption or production—cause international prices to fluctuate to a much greater degree than would otherwise be the case. International Monetary Fund research shows that volatility in world food prices could be substantially reduced if all countries ceased to insulate their domestic markets. Ensuring free, fair and open access to global commodity markets is therefore critical, both for smoothing commodity price volatility and for improving global food security (Devlin et al., 2011).
SUMMARY OF ISSUES
The Blueprint has grouped the following issues under the Competitiveness Theme:
• aging and inadequate infrastructure (high priority)
• access to capital (high priority)
• cumulative cost of red tape and government policies (high priority)
• supply chain balance and profitability (moderate priority)
• Brand Australia (moderate priority)
• volatility of commodity prices/terms of trade (moderate to low priority)
• high Australian dollar (moderate to low priority).
These have led to the goals and strategies outlined in the accompanying table.

WHAT WOULD SUCCESS LOOK LIKE?
Australian agriculture has a reliable supply chain and access to critical infrastructure. Access to advanced telecommunications is driving the adoption of new technologies and practices. Along with improved availability of capital (foreign and domestic) and shifts in ownership models, the sector has become more highly competitive in global markets.

FURTHER READING
This theme relates to how Australia can improve its access to high value global markets through securing new markets, maintaining existing markets and addressing impediments to trade.

‘All sectors of the broader agribusiness community need to work together to provide the imperative to government at all levels (the elected representatives of the broader community) to emphasise the importance of a healthy and strong agribusiness sector to ensure ongoing food security and maximising the potential for positive international trade flows.’

- Blueprint Participant
BACKGROUND
Trade is an essential part of global economic growth and export markets are vital to the sustained profitability of food businesses. Globally, the growth in agricultural trade has already outstripped production growth in recent years. Exporters in the developing world (e.g. Brazil) have captured much of the benefits, while those in the developed world have been slower to respond, with Australia’s annual growth rate in agricultural exports coming in at less than 4 percent (Port Jackson Partners/ANZ, 2012).

Within a few years, Asia will be not only the world’s largest producer of goods and services, but also the world’s largest consumer. It will be home to the majority of the world’s middle class, which is already emerging and demanding an increased range of goods and services (Australian Government, 2012). The demand for differentiated products that meet different needs—and the willingness to pay premium prices for them—will provide opportunities right through the agricultural supply chain.

Agricultural exports amounted to $35.9 billion in 2011–12, equivalent to 14 percent of Australia’s total merchandise exports (Figure 3).

Figure 3: Value of Australian farm exports, by commodity, 2011–12

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Value (A$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat</td>
<td>17%</td>
</tr>
<tr>
<td>Wool</td>
<td>8%</td>
</tr>
<tr>
<td>Dairy</td>
<td>6%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>4%</td>
</tr>
<tr>
<td>Sugar</td>
<td>5%</td>
</tr>
<tr>
<td>Wine</td>
<td>5%</td>
</tr>
<tr>
<td>Other Agriculture</td>
<td>13%</td>
</tr>
<tr>
<td>Grains and oilseeds</td>
<td>11%</td>
</tr>
<tr>
<td>Other, 15%</td>
<td></td>
</tr>
<tr>
<td>ASEAN, 20%</td>
<td></td>
</tr>
<tr>
<td>Middle East, 9%</td>
<td></td>
</tr>
<tr>
<td>EU, 27.8%</td>
<td></td>
</tr>
<tr>
<td>China, 19%</td>
<td></td>
</tr>
<tr>
<td>Middle East, 9%</td>
<td></td>
</tr>
</tbody>
</table>

Source: AABARES 2012

While the agricultural sector’s reliance on export markets has been increasing in recent decades, the Australian economy’s reliance on these exports has been declining, particularly with the strong rise in mineral resource exports and services exports. In the early 1960s, rural exports were two-thirds of total exports. By the early 1990s they had fallen to under a quarter of total exports. In 2011–12, the rural sector accounted for 12 percent of Australia’s goods and services exports on a balance of payments basis (ABARES, 2012b). Nevertheless, Australia continues to exhibit a much more rural-based export profile than is the norm for high-income industrialised countries. Australia’s agricultural exports have also become more diverse in recent decades, with less reliance on traditional commodities such as wool, and more on processed products including wine, cheese and processed foods.

GROWTH OPPORTUNITIES: TRADE AND MARKET ACCESS THEME
Asia presents the strongest market opportunities for Australian agriculture
The changing demand and supply dynamics in Asia clearly point to an enormous opportunity for Australian agriculture, due to factors including population growth, urban encroachment on arable land, increasing per capita incomes and biofuels (McElhone, 2012). China and increasingly India, are at the heart of the trade opportunity and emerging Asian markets including Vietnam, the Philippines, and Saudi Arabia are potentially where the Australian agricultural sector can take advantage of market development opportunities (Port Jackson Partners/ANZ, 2012).

Agriculture is still highly protected in many OECD countries
Despite some reductions in global barriers to trade over the past decade and a half, agriculture remains highly protected in many OECD countries. Meanwhile, Australian agriculture receives the lowest level of total government support measures among developed nations when expressed as a percentage of national GDP (Australian Farm Institute, 2012). Broad-based, multilateral reforms remain Australia’s priority and the WTO is the government’s preferred pathway to lowering agricultural subsidies and tariff and non-tariff barriers. Agriculture remains a high priority for Australia in the WTO Doha Round negotiations. Australia is working with members of the Cairns Group and other like-minded countries to negotiate reforms to market access, agricultural export policies and farm production subsidies that distort production and trade.

Free trade agreements have been the preferred way to increase global market access
Market access for Australian food and fibre has increased through free trade agreements. Regional and bilateral trade negotiations also feature strongly in Australia’s trade liberalisation policy approach. Australia has successfully concluded a number of bilateral and regional free trade agreements, which give concrete benefits and help agriculture and food exporters compete on a better footing. Australia has seven free trade agreements currently in force—with New Zealand, China, the United States, Chile, Singapore, Thailand, Malaysia, the United States, China, and with New Zealand) the Association of South East Asian Nations (ASEAN).

Australia is currently engaged in eight free trade negotiations—five bilateral negotiations with China, Japan, Republic of Korea, India and Indonesia, and three regional negotiations including the Trans-Pacific Partnership Agreement (TPP), the Gulf Cooperation Council (GCC), and a Pacific trade and economic agreement (PACER Plus) (ABARES, 2012b). Australia is continuing to work through the Asia Pacific Economic Cooperation (APEC) to encourage trade liberalisation by member economies. Over the past two decades, average tariffs of APEC members have declined from 16 percent in 1989 to around 6 percent in 2010 (Australian Government, 2012).

Australia could explore innovative ways to increase market access beyond free trade agreements. There is potential to explore more innovative ways to increase market access beyond free trade agreements, such as major strategic take-off agreements in return for capital investment (Port Jackson Partners/ANZ, 2012). Key growth markets such as China are increasingly concerned about food security. This has led them to pursue investments in foreign farmland and agricultural companies. In recent years, tightening land ownership policies around the world, for example in Brazil and Argentina, have led China to shift its strategy to securing strategic off-take agreements. These agreements involve investments in farm, processing or logistical infrastructure in return for output, without the need for ownership.

The Australian Government is exploring ways to improve Australia’s international market access through strategies such as deploying agricultural counsellors, a network of government representatives situated in key markets who work to gain and improve market access for Australian food producers (DAFF, 2012). The Australian Trade Commission (Austrade) also works to capture trade opportunities for Australian agriculture and food businesses by providing market development assistance, information and a range of market entry services. Austrade also works closely with agricultural sector bodies on international marketing and promoting awareness of Australian produce.

‘Market free from trade restrictions and with increased return in both money and desire, and an employment option that provides real challenge, diversity and career paths equal to other industries.’

- Blueprint Participant
SUMMARY OF ISSUES

The Blueprint has grouped the following issues under the Trade and Market Access Theme:

- trade distorting policies (high priority)
- lack of market access (high priority).

These have led to the following goals and strategies:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Priority</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce the impacts of trade-distorting policies</td>
<td>High</td>
<td>• Increase data gathering on the costs of non-completion of agreements and better communicate the need for tangible outcomes on trade agreements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase cross-sector cooperation to achieve free trade agreements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Investigate alternative trade approaches (such as take-off agreements) and work with governments to pursue these opportunities.</td>
</tr>
<tr>
<td>Improve access to key global markets</td>
<td>High</td>
<td>• Develop collective agriculture sector priorities for free trade agreements including bilateral and multilateral agreements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase advocacy around FTA priorities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase representation and advocacy for Australian agriculture in key markets.</td>
</tr>
</tbody>
</table>

WHAT WOULD SUCCESS LOOK LIKE?

Australia has established and completed multilateral and bilateral free trade agreements with key growth markets and improved overall access to key global markets. Australian agriculture has also developed other innovative ways to access global markets.

FURTHER READING

ABARES. (2012). Review of themes to support the National Farmers’ Federation Blueprint for Australian Agriculture (ABARES report to client). Canberra: ABARES.


‘Duties applied to export products in our major Asian trading partners are a critical issue now and in the future. Governments must become more aware of the specific issues and push for lower duties ... I am saying this with some understanding as I not only produce beef, I have sold it around the world in large quantities to some of our largest export countries and large import companies.’

- Blueprint Participant
This theme relates to the labour shortage in the agricultural workforce, how to build and maintain a flexible and skilled workforce in the short and long term, and how to find alternatives to labour.

‘I want the sector to grow. Food remains our most important human need and so investment into growing and producing food is vital. I would like to see more professional occupations within the sector, such as specialist scientists, who can help producers get the most out of their production and hopefully with minimal variability (this may be wishing for too much).’

- Blueprint Participant
BACKGROUND

A number of recent reports have identified rural labour shortages as one of Australia’s most pressing economic problems, with businesses in rural Australia struggling to secure both skilled and unskilled labour (Davies, Tomts, Troy, & Pelusey, 2009). The problem isn’t restricted to agriculture—other rural industries, including mining, are projected to fall far short of their labour needs in the near future.

Approximately 888,000 people are employed across five major employment areas: agriculture, horticulture and conservation land management; food, beverage and pharmaceutical manufacturing; meat processing and retail; seafood and racing.

Agriculture, forestry and fishing are relatively small employers, with a combined total of approximately 332,000 full time and part time workers, which is around 2.9 per cent of the total national workforce (Department of Education Employment and Workplace Relations, 2011). The largest contributor to employment in the agriculture sector is sheep, beef cattle and grain farming, which employ a total of 117,600 workers, while horticulture (particularly fruit and tree nut growing) employ a further 32,700 and dairy cattle farming 25,600.

Employment in the agriculture sector overall has decreased 27.2 per cent in the last ten years, the largest decline of any sector in Australia over this period. The number of Australian farmers has also fallen by over 100,000 in the three decades since 1981, yet the value of Australian agricultural exports in this time has grown from $8.2 billion to $32.5 billion (Australian Bureau of Statistics, 2012b).

While overall employment in the sector has declined, some segments of it have recorded employment gains. The largest growth in employment was in off-farm work, $1 billion in off-farm work, over 117,600 workers, while horticulture (particularly fruit and tree nut growing) employ a further 32,700 and dairy cattle farming 25,600.

The number of farmers in Australia has been declining for many decades as small farmers sell up to large-scale farming operations and fewer young people take over family farms, with almost 300 farmers per month leaving the land. Half of all farmers work more than 49 hours per week and more than half (56 per cent) are self-employed owner managers (Australian Bureau of Statistics, 2012a).

The majority of Australia’s farmers are male (72 percent), 89 percent of farmers were born in Australia, and the average farmer is 52 years old. Part-time employment for males in the agriculture sector has increased by 9.7 per cent in the last five years whereas full-time employment decreased by 5.2 per cent.

A study from some years ago showed that women contribute almost half of real farm income, comprising almost $14 billion in 1995-96—$4 billion in on-farm work, $1 billion in off-farm work, over $8 billion in household work and almost $500,000 in volunteer and community work (Australian Department of Foreign Affairs and Trade, 2002).

Australia’s farmers are considerably older than other workers and tend to work well beyond retirement age, which may reflect the decline in the number of younger people taking over family farms. The age profile of the workforce is a structural factor that is particularly significant. It is potentially the most serious and intractable cause of skill shortages in agriculture.

The on-farm agriculture sector is forecast to lose at least 30 per cent of its workforce over the next ten years, mainly due to ageing (Allen Consulting Group, 2012).

However, many of these statistics apply to farm owners, not to farm employees. The report Farmstaff 2008: finding, keeping and rewarding people in agriculture, notes that farm employees are evenly spread across the age groups up to age 56 (beyond which the number falls). Understanding what drives job satisfaction for this group will help farmers to provide desirable job opportunities (Holmes Sackett Pty Ltd, 2008) and developing a skilled agricultural workforce depends heavily on policy settings that target education, training and extension.

The agricultural employment future

The National Workplace & Productivity Agency commissioned Deloitte Access Economics (DAE) to model four scenarios for changes in the economy to 2025—see Table 1. The high-growth ‘long boom’ scenario is the only one that sees growth in employment in agriculture, forestry and fishing to 2025. In each of the scenarios, changes in employment numbers in this area is below the average for all industries.

Despite the overall depressed growth in employment in agriculture, forestry and fishing predicted by the DAE model in these scenarios, a number of key occupations are projected to experience significant growth. Employment in occupations relating to livestock farming will grow under all scenarios, driven in part by increased demand for protein-rich foods from the growing Asian middle class. Broadacre farming, on the other hand, is expected to require significantly fewer employees in the future, in part due to productivity, innovation and technology efficiencies—see Table 2.

What future employees are needed in agriculture? A Skills and Labour Needs Review survey, conducted by AgForce Queensland, identified that the list of skills needed to run an efficient enterprise was extensive, illustrating the complex nature of modern agriculture. The need for a significant number of multi-skilled full-time employees was identified, as was a trend toward the use of casual and part-time employees and the increased use of contractors. The Farmstaff report notes that the greatest deficit in people will be in the semi-skilled and unskilled categories, which are used widely in agriculture, and that these types of roles will have to change in the future, or there will be no growth in the number of people available to do them.

Table 1: Economics modelling of supply and demand for National Workplace & Productivity Agency

<table>
<thead>
<tr>
<th>Average annual growth in employment 2011 - 2025</th>
<th>Long Boom</th>
<th>Smart Recovery</th>
<th>Terms of trade shock</th>
<th>Ring of Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry and Fishing</td>
<td>0.9%</td>
<td>-0.2%</td>
<td>0.3%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>All industry average</td>
<td>2.0%</td>
<td>1.5%</td>
<td>1.6%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Table 2: Average annual employment growth

<table>
<thead>
<tr>
<th>Average annual growth in employment 2011 - 2025</th>
<th>Long Boom</th>
<th>Smart Recovery</th>
<th>Terms of trade shock</th>
<th>Ring of Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock Farmers</td>
<td>2.7%</td>
<td>1.7%</td>
<td>1.6%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Aquaculture Farmers</td>
<td>2.2%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other Farm, Forestry and Garden Workers</td>
<td>-1.1%</td>
<td>-1.5%</td>
<td>-1.4%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Livestock Farm Workers</td>
<td>1.5%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Mixed Crop and Livestock Farmers</td>
<td>0.7%</td>
<td>-0.5%</td>
<td>-0.6%</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Crop Farmers</td>
<td>0.6%</td>
<td>-0.3%</td>
<td>-0.4%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>Mixed Crop and Livestock Farm Workers</td>
<td>-1.1%</td>
<td>-2.0%</td>
<td>-2.1%</td>
<td>-2.7%</td>
</tr>
<tr>
<td>Crop Farm Workers</td>
<td>-2.7%</td>
<td>-5.6%</td>
<td>-3.7%</td>
<td>-4.2%</td>
</tr>
</tbody>
</table>
It is estimated by the NFF that agriculture needs to find some 90,000 people in the short term to build the industry back to pre-drought levels, and more than 15,000 people per year to replace those exiting the industry, which is considered highly unlikely (NFF, as cited in Holmes Sackett Pty Ltd, 2008).

Recent public inquiries

There are several recent public inquiries which have brought the ‘People in Agriculture’ issue to the forefront.

The Senate Standing Committee on Education, Employment and Workplace Relations (2012) conducted an Inquiry into ‘Higher education and skills training to support agriculture and agribusiness in Australia’. Key recommendations relevant to agricultural labour availability and skills included:

- remove impediments to participation in vocational education and training
- raise the profile of agriculture in schools
- improve knowledge transfer in agricultural research
- coordinating an ABARES analysis into the decline of extension services
- commission a study into the most appropriate framework for governance and funding of agricultural education.

The Victorian Parliament’s Education and Training Committee’s inquiry into agricultural education and training in Victoria also made a number of recommendations to improve education and training outcomes for agriculture (Education and Training Committee, 2012).

The Australia in the Asian Century White Paper identifies education as a priority. The Australian Government has expressed its commitment to building a highly skilled workforce through vocational training and education. It is working with the states and territories to implement a National Partnership Agreement on Skills Reform to ensure provision and is overseen by AgriFood Skills Australia. The Australian Council of Deans of Agriculture (ACDA) to promote agricultural careers.

Developing a collaborative approach

Based on the outcomes of these inquiries, it is evident that agriculture needs to develop a collaborative approach to addressing the issues. There are a host of groups involved in the education, training, skills and careers sector within the industry, working on their particular parts of the education chain. One of the issues identified by the sector is the lack of cooperation and coordination across those groups, and in response to this, the NFF has facilitated the formation of a taskforce to implement collaborative strategies. The National Agriculture Education, Skills and Labour Taskforce (NEST) has brought together key influencers in the agriculture-related education and training area to develop a collaborative strategy for raising awareness, interest and participation in all aspects of the agriculture supply chain. The Taskforce aims to:

- improve communication and engagement between industry, educators and government
- increase workforce participation in agriculture
- build workforce planning and human resource management capabilities
- improve data on the supply and demand of labour and skills in agriculture
- facilitate greater industry ownership and responsibility for solutions.

Funding through the National Workforce Development Fund will assist with the development of the National Workforce Development Plan under the direction of NEST. The fund was launched by the Australian Government in 2012 to build workforce capacity in sectors with a current or emerging skills need. Under this program, individual enterprises can access funding support for formal training for employees. The Skills for all Australians initiative, co-funded by Australian and state governments, includes several reforms to training and skills provision and is overseen by AgriFood Skills Australia.

A number of bodies are actively working to promote agricultural careers in schools

The Primary Industries Education Foundation (PIEF) and the Primary Industry Centre for Science Education (PICSE) were established in 2009 to advance the knowledge of and interest in agriculture among school-age students (The Senate, 2012). The Australian Government also works with the Australian Council of Deans of Agriculture (ACDA) to promote agricultural careers.

RIRDC has identified strategies for overcoming barriers to labour attraction and retention

According to RIRDC, regional and rural businesses have adopted various strategies for attracting labour. These have centred on four main themes: addressing negative perceptions about career and lifestyle opportunities, improving health and education facilities, improving housing options and increasing the competitiveness of employment packages compared with those offered in metropolitan areas. Strategies for attracting and retaining labour could include: providing competitive employment packages, improving the opportunities for structured career advancement pathways, generating activities and networks to overcome issues of social isolation, providing improved access to health and education facilities and addressing issues of limited housing options.

RIRDC notes that many of the strategies for addressing labour shortages were generated through volunteer efforts and were either funded by private business or through community fundraising. RIRDC’s report (Davies, et al., 2009) made the following recommendations:

- Labour attraction and retention activities should be coordinated at a regional level to avoid duplication of efforts and gain increased benefits from pooling resources
- Education and training programs should be tailored locally, regionally, statewide and nationally to recognise the nature of rural labour shortages, skill needs, and future development trajectories
- The shortage of affordable and quality housing should be addressed through local government and regional agencies engaging in efforts to encourage private investment in property development. To enable this, planning and land release guidelines should be reviewed to ensure that development goals can be achieved
- The inability of many small businesses to provide accommodation to employees as part of their employment package should be addressed through regional level collective housing schemes
- Negative perceptions about rural lifestyle and career opportunities should be addressed through targeted marketing activities coordinated at a regional level
- Local residents should be supported to establish small childcare operations. Training for operators should be fast-tracked and business start-up grants should be made available to assist new locally based operators.

‘Access to education and training is critical to both retaining populations in rural areas and ensuring that the skill base exists for the industry to ensure succession and a future workforce. The solution would be to retain education and training within industry and regional access to this.’

- Blueprint Participant

Several studies have been initiated to provide more information

There remains limited data on the agricultural workforce in Australia and several studies have been initiated. The National Rural Advisory Council (NRAC) has announced an assessment of agricultural employers’ workforce planning capabilities. The report, due for completion in 2013, will focus on the skilling and retention of existing employees in the sector, rather than the attraction of new entrants. Driving widespread adoption of better practices is a prerequisite for several parts of the agriculture sector if they are to secure skilled workers in a highly competitive labour market and longer term, reposition the industry as one of choice for new entrants.

The Farmstaff report has looked at employment issues in detail and recommends that agriculture focus less on competing with mining and more on building its own strengths and improving labour efficiency. To this end it includes information on salary levels, what motivates employees and what makes a good employer. Farm employees are motivated by having farming backgrounds, enjoyment of farming work, planning to build a career in the sector and the employment of their spouses on farms. Farm employers need to provide safe and rewarding work environments, understand salary expectations and how to quantify non-cash benefits, encourage input from employees in some decision-making and provide professional development opportunities (Holmes Sackett Pty Ltd, 2008).

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Agriculture employers should become employers of choice. The theory behind ‘employer of choice’ programs is not new to Australia and while there is no universal definition, it typically focuses on improving individual employers’ abilities to attract, retain and develop human capital. High performing workplaces, on the other hand, take a broader approach and consider people, processes, technology and plant in a bid to drive more effective employee involvement and commitment to achieving high levels of performance. Both approaches set up a chain of impact whereby improved practices with people ultimately generate far greater productivity.

The NSW State Government has also commissioned a review into agricultural education and training, due for completion in 2013. The review will consider the appropriateness of agricultural education and training at school, VET and tertiary levels, as well as career opportunities and workforce needs for the sector.

Some recent government reforms are aimed at improving labour availability.

Improving the availability of skilled and unskilled overseas labour has also been targeted under recent Australian Government migration reforms and the introduction of employer sponsored visas from 1 July 2012. The NFF has focused upon aligning working holiday-maker (visa subclass 417) and temporary business (visa subclass 457) with seasonal demands. NFF has requested that the government amend the Australian migration system as follows:

- align working holiday visa types to meet industry seasonal demands
- extend the seasonal workers program to all sectors of the industry
- realign the skilled occupational list (SOL) and consolidated skilled occupational list (CSOL) with industry demands underpinned by a yearly survey.

‘In 2050 I want to see a strong agricultural workforce continuing to provide food for domestic consumers and increasing demand. This global workforce will come from rural-return migration from people realising increasing city living causes stress, and migration from overseas to rural Australia. More returns from agriculture and mining and energy development ploughed back into rural Australia making the region more attractive for people to live and work and enjoy a reasonable livelihood for family.’

- Blueprint Participant

CURRENT ISSUES: PEOPLE THEME

The shortage of labour is affecting a range of industries, and rural areas are hard hit

While populations in capital cities, some coastal regions, provincial centres and mining towns have increased, the population of remote and very remote areas has declined (Productivity Commission, 2008).

According to a recent RIRDC report, industries and communities within rural Australia have particularly hard hit by labour shortages, with many small and medium businesses struggling to secure skilled and unskilled labour. While shortages of doctors and teachers have been widely reported, many industries are also affected, though there is geographic variability in the shortages (Davies, et al., 2009). The inability to find appropriately trained staff is having a moderate to significant impact on over 60 percent of rural employers (Davies, et al., 2009).

Skills shortages and workforce inflexibility limit productivity and limited access in agriculture as farmers are deterred from risky innovation. For example, uncertainty surrounding the availability of workers in the future can prevent ‘opportunity crops’ from being grown in response to favourable weather or market conditions (Grey, 2012).

There are numerous barriers to labour attraction and retention in rural areas

The barriers to labour attraction and retention are widely regarded as being the most critical factors underpinning labour shortages across rural Australia. In many respects, the challenges for attracting and retaining skilled labour in agriculture mirror those faced by rural Australia more generally (Allen Consulting Group, 2012). For example, poor accessibility and limited access to transport, medical services, local education, appropriate accommodation, information technology and telecommunications services have contributed to the migration of young people away from rural areas (Rural Skills Australia, 2008).

The most significant barriers to attracting and keeping workers relate to: negative perceptions of rural employment and lifestyle opportunities; limited health and education facilities and services; lower wages and cost of living considerations; and cost, availability and quality of housing (Davies, et al., 2009). Other factors include labour competition from other industries, and an ageing and declining rural population (Allen Consulting Group, 2012), with other influences including low levels of industry investment in education and training, poor promotion of agricultural pathways and the limited capacity of the current education and training system to deliver innovative training solutions (Industries Development Committee Workforce 2009).

Higher levels of pay can attract, but not always retain staff

There is a widespread perception that the mining industry, with its higher salaries, is better able to attract and retain workers. However although higher salaries help the mining industry attract workers, they don’t help it to retain them. The employee turnover rate in mining is much higher than in farming industries, with a recent inquiry hearing that attrition rates are one in three workers per year, and sometimes higher (The Sunday Times, 2012).

Agriculture is not able to compete with mining on salaries, but it has other positive attributes that help it to retain people. Agriculture has the opportunity to both build on these strengths, and improve its labour efficiency (Holmes Sackett Pty Ltd, 2008).

International studies show that increasing women’s participation leads to improvements in financial performance and other benefits

According to Ernst & Young, economic analyses by the World Bank, the United Nations, Goldman Sachs and other organisations provide compelling evidence that an increase in women can be powerful drivers of economic development. Several studies from a broad spectrum of organisations— including Catalyst, Columbia University, McKinsey, Goldman Sachs and The Conference Board of Canada – have examined the relationship between corporate financial performance and women in leadership roles. Their consistent conclusion is that having more women at the top improves financial performance (Ernst & Young, 2009). The Women of Influence Initiative found that women in rural and regional Australia are considerably under-represented in decision-making and management roles. Improving this situation will contribute to improved innovation and productivity in agriculture (Department of Transport and Regional Services, 2005).

The 2007 Standing Committee on Agriculture, Fisheries and Forestry report on the skills needed in rural areas strongly recommends that state and Australian governments combine with industry to improve education and training for rural women (House of Representatives Standing Committee on Agriculture, 2007).

Poor perceptions of agricultural careers are reflected in falling education enrolments

Poor perceptions of agriculture as a career choice are having an impact on the attraction of skilled labour. The McCall Report (1991) attributed the decline in enrolments in agriculture-related tertiary courses in Australia to negative perceptions towards agricultural careers held by the general public, and a failure of the sector to promote the courses.

More recent studies have also found that agriculture suffers from poor perceptions, based on a lack of understanding of what a career in agriculture entails (Allen Consulting Group, 2012).

The trend of fewer students enrolling in tertiary agriculture may be more volatile than predicted. However, preferences for agriculture degrees jumped by 15 percent at the beginning of 2013, coinciding with the end of the drought and indicating that the trend may be less predictable than expected, with positive implications for improving enrolments (Howden & Preis, 2013).

While education levels have improved, they are still low compared to other industries

While farmers are less likely than other occupations to hold educational qualifications higher than school level, growing numbers are pursuing further educational opportunities (Australian Bureau of Statistics, 2012a). Over the three years to 2011 the proportion of Australian farmers with non-school qualifications more than doubled, from 15 percent to 38 percent. The proportion of farmers with a certificate-level qualification also doubled over this period, while the proportion with a bachelor degree or above increased six-fold (ABARES, 2012a). Twice as many farm women as farm men hold tertiary qualifications (Gooday, 1995). However, more than 50 percent of farm workers still do not hold any formal qualifications post-secondary school, well above the economy-wide average (Allen Consulting Group, 2012). A number of training issues may limit the supply of skilled labour in rural industries, including low participation in vocational education and training (VET) and tertiary courses.

There is also a strong call for education and training to be delivered as skill sets—or ‘building blocks’—as opposed to full qualifications, due to agriculture having a strong preference for acquiring skill sets to perform specific functions or tasks. Greater flexibility and support is needed in the funding and delivery of these skill sets. The ongoing low qualification completion rates represent a lost opportunity for individuals, employers and governments.
More graduates are needed
The number of graduates completing agriculture and agriculture-related courses has been estimated at approximately 700 per year, well below the 4000 positions being advertised each year (Patley, 2012). Enrolments in agriculture have also declined from approximately 4,500 in 2001 to less than 2,500 in 2010 (Allen Consulting Group, 2012). In the field of agricultural science, in 2010, only 40 percent of advertised positions were filled and there were 1.1 applicants for each job. This is down from 65 percent filled vacancies and 1.4 applicants per job in 2009 (Elders, 2012).

There is an urgent need to address these issues because the sector requires more people with tertiary qualifications, and declining enrolments could lead to the loss of university facilities, leaving a permanent shortage of skilled workers and curtailing the ability of the sector to innovate and grow (Allen Consulting Group, 2012). In 2012, for example, the century-old undergraduate agriculture course at the University of Western Sydney’s Hawkesbury campus was discontinued after applications fell to about one-tenth the level of two decades ago (Howden & Preiss, 2013). The Allen Consulting Group’s report has identified 12 strategies for universities to apply to target young people, develop better product offerings and build links with the agriculture industry (Allen Consulting Group, 2012).

The Left Right Think-Tank believes that generating positive perceptions of the industry is vital to addressing the skills shortage
The Left Right Think-Tank, a non-partisan think-tank of young minds (15 – 25) founded in 2008, recommends that the Australian Government provide incentives for agricultural businesses to host undergraduate interns from a variety of disciplines (who may not have considered careers in agriculture) to demonstrate the diversity of the industry, provide hands-on experience, and address misconceptions about the agriculture industry and careers within it, incorporating funding into the ‘Study Assist’ program (Left Right Think-Tank, 2012).

SUMMARY OF ISSUES
The Blueprint has grouped the following issues under the People Theme:
• not enough people working in agriculture (high priority)
• not enough people with necessary skills working in agriculture (high priority)
• uncompetitive wages (medium priority).

These have led to the goals in the accompanying table.

WHAT WOULD SUCCESS LOOK LIKE?
Australian agriculture accesses a flexible workforce with the right levels of skill to meet the demand for labour. Farmers are best-practice employers and agriculture as a career is positively viewed. The industry has adapted to the challenge of a labour shortages through various methods, including improving labour efficiency, new technologies and different approaches to the workforce.

‘By 2050 the agricultural sector will have established a sustainable basis where government policy has been aligned with the needs of the industry on a wide front, ranging from control of chemical use to training and skills shortages. Current poor performing regulations (and regulators) will have been weeded out, so as to encourage innovation, remove non-compliant businesses at any level in the agricultural chain and work with industry to deliver world leading education to the entire Australian community on the critical importance of our agriculture industries.’

- Blueprint Participant
FURTHER READING


This theme relates to external perceptions of agriculture, and the need for the agriculture sector to build a shared understanding and information exchange with the rest of the community.

‘People that aren’t born and bred into a rural lifestyle have no idea what goes into running a farm and producing grain or meat/wool for a market. I believe city and country need to reconnect again somehow because there is no longer that link between city and country like there was 30 years ago. Educating the future workforce and convincing people to study agriculture to meet the workforce needs is paramount. The perception of agriculture is a key element.’

- Blueprint Participant
BACKGROUND

There is growing concern that the lack of awareness of many Australians as to where their food and fibre comes from, combined with the success of some activist campaigns, is leading to negative public perceptions of some sectors of the agriculture sector or their practices. Anecdotally, this is attributed to the declining role of domestic agriculture in Australian society due to decreasing numbers of farms, declining employment in the agricultural sector, increased urbanisation, increased diversification of the economy and increases in imported food.

A term that has been used widely in this debate is the ‘social licence to operate’, which means the ongoing approval of the broader community to carry out business. In the past, Australia’s agriculture sector has generally regarded its legal and social obligations as being the same, and that complying with relevant legislation was sufficient. Today, however, legal obligations are not synonymous with social obligations. Despite farming remaining a trusted profession in the eyes of the public (Readers Digest Australia, 2012) the agriculture sector is under increasing pressure from sophisticated non-government organisations (NGOs), activists and community groups to meet a new raft of social expectations.

Public perceptions of an industry can have real and significant impacts, and this is particularly true in the era of a 24-hour media cycle and active social media. Rapid public responses to concerns about industries and industry practices mean that public opinions and community movements to meet a new raft of social expectations.

The following issues have already generated public concern and are likely to continue doing so:

- Animal welfare
- Environmental sustainability
- Biotechnology
- Social responsibility
- Health and wellbeing
- Affordability of food.

CURRENT ISSUES: AGRICULTURE WITHIN SOCIETY THEME

It is useful to understand what drives public perceptions

Most, if not all commodity groups allocate substantial resources to providing information and educating consumers, particularly school children, about farming. Much of this involves providing factual information and explaining the scientific underpinnings of farming operations and management systems. However, providing facts and scientific evidence is not sufficient to establish consumer trust and confidence in agriculture. Research by the US Center for Food Integrity (CFI) has shown that for building consumer trust, establishing shared values is three to five times as important as demonstrating competence. CFI concludes that if consumers believe today's food production practices are aligned with what they believe those in the food system should do then they are more likely to trust those practices. There should be greater acceptance of scientific information if it is presented within the context of consumers' values-orientations (The Centre for Food Integrity, 2012).

Some community movements are trying to reconnect people and agriculture

Concerns about a lack of understanding between consumers and food producers have generated wider societal movements whose aims include reconnecting consumers and citizens with farming. These movements include:

- farmer's markets
- the kitchen garden movement
- paddock to plate agritourism.

There are six areas where public perceptions are having strong impacts

The following issues have already generated public concern and are likely to continue doing so:

- Animal welfare
- Environmental sustainability
- Biotechnology
- Social responsibility
- Health and wellbeing
- Affordability of food.

ANIMAL WELFARE

Animal welfare is defined by the World Organisation for Animal Health (OIE) as how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and is not suffering from unpleasant states such as pain, fear, and distress. The OIE Animal Welfare Policy is based on scientific, ethical, economic, cultural, religious and political dimensions and sets the world standard for animal welfare.

Knowledge and awareness of animal welfare has increased in recent decades, particularly in many developed countries. In some countries, including Australia, this growing awareness, combined with an increasingly urban population lacking practical understanding of animal-based food and fibre production, has driven changing expectations in the treatment of livestock.

This in turn has led to changes in animal husbandry practices, ranging from minor shifts to complete phasing out of practices in some cases. Whilst there is recognition that in some instances producers and others in the value chain have benefitted from these changes, in many cases this change has led to an increase in costs without any corresponding increase in income.

This ‘margin squeeze’ brought about in the name of animal welfare can be partially explained by a lack of willingness (and in many cases, the financial capacity) to pay more for products prepared through animal welfare practices, ranging from minor shifts to complete phasing out of practices in some cases.

The following reforms introduced to accommodate changes in consumer preferences. This perhaps signals that shopping on ethical grounds, although growing in Australia, may lack depth or conviction. On the other hand it also seems clear that the well-resourced and coordinated campaigns waged by animal rights/ liberation groups are having an influence on both consumers and retailers seeking a marketing edge.

A number of individuals, businesses and organisations in the sector are seeking to minimise the chances of further margin impacts by working with reputable animal welfare groups and retailers to provide product with a point of difference based on improved animal welfare – and in doing so, protect or improve their profit margins. However, while this opportunity remains out of reach or unrealistic for large tracts of the sector, this issue will remain a challenge.
ENVIRONMENTAL SUSTAINABILITY

There are many definitions of environmental sustainability. It is often considered to require the balance of environmental, social and economic needs, sometimes known as the 'three pillars' of sustainability or the triple bottom line. In relation to agriculture, public concerns are generally focused on the environmental sustainability of practices.

Consumers are increasingly interested in the world behind the product, with evidence for growing interest in sustainability values associated with Australian farm products (Ecker, 2008). Although over the past decade Australians have indicated that they are less concerned about the environment, there is an increasing proportion of the population that are using the term 'green' activities (Australian Bureau of Statistics, 2006).

Farmers and the sector as a whole are increasingly undertaking environmental activities with 94 percent of farms carrying out natural resource management (Australian Bureau of Statistics, 2008). A large number of sustainability programs are already in operation that assess sustainable farming practices and promote them to consumers, such as organic certification, specific products (such as Gippsland Environment), conservation programs (such as koala-friendly certification), and manufacturers’ sustainable sourcing programs (such as the Global Sustainable Agriculture Initiative which Australia joined in October 2007 and which includes McDonalds, Kraft, Sara Lee, Fontera, Doce and McCain and the Australian Food and Grocery Council’s Sustainability Commitment) and agricultural industry programs (such as the Rice Environmental Champions program, the Cotton Best Management Practice program, and the Strategic Framework for Keeping the Australian Dairy Industry in business for the long-term).

The National Food Plan Green Paper recognises that consumers are seeking more information on the environmental sustainability of food products and points out that this is a powerful feedback loop that encourages the food supply chain to respond to consumer demands (DAFF, 2012), which may have both positive and negative implications for the sector.

The current approach of the Australian Government is to support a range of non-regulatory and regulatory measures to improve the information available about agricultural produce and the agriculture sector, including labelling, industry codes of practice and Australian standards (DAFF, 2012).

BIOTECHNOLOGY

Biotechnology is the use of living things to make or change products. Biotechnology and the development of genetically modified crops provide an opportunity for the industry to meet future challenges, such as remaining competitive in international markets for food and fibre. The responsible and strategic application of biotechnology by the agriculture sector can result in significant benefits for Australian farmers, the environment, consumers and the Australian economy as a whole. Australian cotton growers, for example, have reduced the use of pesticides by over 90 percent over the last 10 years due to biotechnology and best management practices (NFF submission to National Food Plan Green Paper). Developments are also underway to produce plants that use less water to grow and so make them more suitable for changing climatic conditions, that is, drought-tolerant crops (Food Standards Australia New Zealand).

A recent survey of attitudes to biotechnology carried out for the Department of Innovation, Industry, Science and Research found that overall, support for applications of biotechnology to food and agriculture was lower than support for applications in health and medicine. In addition, overall support for genetic modification and other biotechnologies in food and agriculture was significantly lower in 2010 than in 2007 (5.2 out of 10 versus 5.7 out of 10 in 2007) (DIISR, 2010).

Surveys by Biotechnology Australia on attitudes to the use of gene technology, including genetically modified food and crops (Cormick & Ding, 2005), found five key factors influencing attitudes:

- levels of understanding of the technology
- confidence in regulation
- public consultation in the development of the technology
- consumer choice, enabled for example, through labelling of genetically modified (GM) foods
- individual or societal benefits from the application of GM.

Similarly, a series of studies of consumer attitudes (cited in Woodsdie, Ogumokun, & Brown, 2005) identified five factors influencing consumer perceptions about genetically modified (GM) food:

- health risks
- environmental risks
- perceived benefits of GM food
- credibility of government and industry guarantees
- free choice between GM and non-GM foods.

The evidence shows that consumer support for the use of GM in food and agriculture applications is highly conditional and depends on factors such as those listed. The implications are that consumers will continue to demand information to enable them to make informed choices about GM foods, including appropriate labelling.

Within Australia, strict regulatory conditions govern the research into, and use of biotechnology in agriculture. The role of the Office of the Gene Technology Regulator is to identify and manage risks to human health and the environment posed by, or resulting from, gene technology. In the context of food products, Food Standards Australia and New Zealand (FSANZ), has regulatory responsibility for carrying out assessments of GM foods to ensure they are safe for consumption.

The Food Standards Code requires mandatory labelling of GM food, including ingredients, food additives and processing aids as genetically modified; A Review of Food Labelling Law and Policy conducted in 2011 recommended that only foods or ingredients that have altered characteristics or contain detectable novel DNA or protein be required to declare the presence of genetically modified material on the label’ (Recommendation 29 Commonwealth of Australia, 2011). The Australian and New Zealand Food Regulation Ministerial Council agreed to support the continuation of this approach (ANZFRMC, 2011).

Biotechnology is an area of agriculture where different opinions within the community have the potential to impact on the sector’s access to new technologies. The Agricultural Biotechnology Council of Australia has been established by GRDC, NFF, AusBiotech and CropLife Australia to ensure that all Australians have access to credible, balanced and science based information in order to make informed decisions on biotechnology.

The use of biotechnology in agriculture will require the development of farming systems and supply chains that support its use and share the benefits. However, biotechnology will not suit all farmers and at a practical level steps need to be taken to ensure that the production decisions of individual farmers should not unreasonably impinge on the ability of other farmers to meet the requirements and expectations of their chosen markets.

SOCIAL RESPONSIBILITY

‘Social responsibility’ is the theory that individuals, organisations and other entities should act for the benefit of society at large. The concept of corporate social responsibility (CSR) encourages businesses to take responsibility for their actions and make a positive impact on the environment, consumers, employees and other stakeholders. CSR is often accompanied by structured forms of corporate reporting against particular headings, for example ‘triple bottom line’ reporting, which reports against social, environmental and economic performance.

Perceptions about the agriculture sector’s level of social responsibility are important—they can affect consumer choices about products, sales volumes and prices, as well as the ability of the sector to maintain a viable workforce.

In relation to the agriculture sector, social responsibility covers issues such as the ethical and fair treatment of employers and employees, producers receiving fair prices for their products, and workers having acceptable working conditions. In relation to the farm sector, Farmsafe Australia focuses on protecting the health and safety of farmers, farm family members, farm workers and farm visitors. Occupational health and safety is a particular issue for agriculture as the industry has a high accident rate overall, and the health of male farmers in particular is poor in comparison with the rest of the Australian community (Fragar and Franklin 2000).

Social responsibility also relates to the ‘social reproduction’ of the industry, meaning its ability to continue into the future. To continue, the agriculture sector must be able to maintain levels of employment and income sufficient for younger generations and other potential industry entrants to want to become employed in and continue working in the industry over time. This raises the need for appropriate education, skills and training to be available, for enough skilled people to want to enter or continue working in the industry, and for positive community perceptions of working in the industry.
Examples of social responsibility responses in the agriculture sector include:

- ‘country of origin’ labelling, which allows consumers to choose or avoid products from particular countries on the basis of perceptions about their trade and employment practices
- government and public reactions to the major retailers’ ‘milk price war’ (a Senate Inquiry was conducted, responding partly to perceptions that milk producers were being unfairly treated by not receiving a fair price for their milk)
- the responses of poultry farmers to consumer concerns about the conditions in which hens were kept, leading to considerable diversification in egg packaging and labelling.

Many labelling schemes represent the agriculture sector’s attempts to respond to consumer concerns in various domains (environmental sustainability, animal welfare etc.), and thereby maintain or improve the sales of particular products. Indirectly and collectively, these responses may contribute to improving the sector’s image and social sustainability. The sector can be proactive in voluntarily providing labelling information consumers indicate they want rather than waiting for government to regulate. These issues are also being addressed by producers outside of labelling schemes, through such initiatives as local food movements.

The concept of CSR and application of CSR policies may have wider applicability in the agriculture sector. Adopting CSR principles can both improve industry image overall and provide a market advantage for participating businesses anywhere along the supply chain.

‘Agriculture needs to be profitable, to be innovative and develop. Through profitability it will build social cohesion among rural communities who are educated, innovative and visionary. Profitable agriculture will enable more money for environmental protection and rehabilitation with less draw down of natural resources.’

- Blueprint Participant

### Health and Food Safety

Health values are related to the nutritional value of food, while food safety values are related to the contamination of food through the entire food production system and the transfer of infectious diseases from animals to humans. However, health and food safety are not mutually exclusive. It is well documented that people’s values in regard to health and food safety have influenced public perceptions of agriculture and led to closer scrutiny of agricultural practices, and health, wellness, taste and convenience are growing in their influence on consumer food choices and buying decisions (CSIRO, 2011; PMSEIC, 2010).

Australia’s food regulatory system ensures Australia has one of the safest food supplies in the world (FSANZ 2010, cited in DAFF, 2012). To ensure public health and safety, Australia adopts a risk-based approach to managing the production of safe food and regulates food safety in line with international obligations through objective best-practice science-based risk analysis (DAFF, 2012, p. 106).

The food regulatory system has three components:

- policy development—responsibility of the Forum on Food Regulation (FoFR)
- standard setting—responsibility of the Food Standards Australia New Zealand (FSANZ)
- enforcement—responsibility of state and territory food regulatory enforcement agencies and DAFF Biosecurity.

To support Australia’s food supply systems, the Australian Government continues to foster partnerships with all state and territory governments (through the Food Regulatory Agreement) and a treaty with the New Zealand Government (the Agreement between the Government of Australia and the Government of New Zealand establishing a System for the Development of Joint Food Standards) (DAFF 2012).

The public’s perception of health and food safety related to food production, processing and distribution can potentially have a negative impact on the agricultural sector. For example, a loss of trust by the community in the safety of food due to unacceptable levels of chemical residues or infectious disease can have severe long lasting impacts on the agricultural sector. Food safety incidents can also affect access to export markets (DAFF, 2012).

However, there is evidence that the Australian public has a positive view of food production in Australia and that farmers are producing clean safe food (ANU 2009 and PMSEIC 2010). Changes in people’s values in regard to food and dietary habits can present opportunities for the sector, for example, the increase in demand for products sourced directly from farmers.

### Affordability of Food

Food costs influence purchasing choices, particularly in lower socio-economic status households. This is particularly relevant where fresh food is perceived as less affordable than fast food. Affordability can also influence where consumers choose to purchase food. Families’ markets potentially impacted by consumer perceptions of affordability compared to supermarkets. Affordability can also have an impact on people’s decisions to grow their own food and develop alternative food markets.

Most Australians still state a preference for purchasing local produce according to a 2012 Roy Morgan survey with 90 percent preferring to purchase Australian made or grown food over cheaper imports (AFN, 2012). However, studies of supermarket consumption patterns show that most people actually buy the cheapest food products. Choice Magazine ran a survey of processed fruit and vegetable products being sold under the ‘private label’ brands (similar to Home Brand), and found that only between 38 and 55 percent of products surveyed were locally made or grown, impacting on the ability of Australian farmers to remain viable food producers (Choice, 2012).

The cost of food as a proportion of household expenditure has been falling since 1959–60. In that year it was 18 percent of household expenditure, and it fell steadily to 10.4 per cent in 2009–10 (Productivity Commission, 2012b). Overall food costs dropped dramatically between September 2011 and September 2012, falling by 2.7 percent in that time, after Australia had the fastest rising food prices of the world’s developed nations between 2000 and 2009 (Pfieffer, 2013). However costs as a proportion of expenditure vary between households. In a recent study by Flinders University, the affordability of food measured using the Healthy Food Basket (HFB) methodology, found that the proportion of household income spent by lower socio-economic status groups on the ‘healthy food basket’ was three times higher than that of households which were better off financially (Nard, Coverey, Verity, Carter, & Schilling, 2012). In rural and remote areas of Australia, healthy food was found to be less affordable than in metropolitan areas. Similarly, the Household Expenditure Survey (2009–10) by the Australian Bureau of Statistics shows that food and non-alcoholic beverages accounted for 39 percent of the expenditure on goods and services in lowest quintile disposable income households, compared to 15 percent for households in the highest quintile.

The National Food Plan Green Paper notes that a large segment of consumers are primarily motivated by factors such as price, convenience and quality (DAFF, 2012). The Plan acknowledges that people in remote communities, those living on low incomes and people with limited mobility may face difficulties in accessing nutritious and affordable food (DAFF, 2012). Actual and perceived affordability and convenience will remain key factors influencing consumer choices about food.

A key tension identified during the Blueprint process was the relationship between cheap, affordable food for consumers and a sustainable food supply chain in this country. Given Australian farmers supply 93 percent of Australia’s domestic food supply, ensuring food prices are fair to producers is a critical factor in ensuring a strong, sustainable industry.

‘Agriculture in Australia should be considered as the most important natural resource provider we have—good quality food and fibre available on our doorsteps. For this to happen, the divide between city and country needs to be broken down, the perception of agriculture (our practices and products) needs to be addressed, the competitive advantages (top quality and proximity) that Australian agriculture has and will always need to be reinforced (and our grocers need to promote home-grown rather than cheapest), and the practitioners should be highly trained and accredited at either vocational or university level to ensure best practice is the norm. There is a role for family farms but I suspect that corporates will dominate—this can be good because they will be more inclined to employ people and want those people well trained.’

- Blueprint Participant
SUMMARY OF ISSUES

The Blueprint has grouped the following issues under the Agriculture within Society theme:
- lack of understanding of consumer perception of agriculture (high priority)
- belief there is a poor consumer perception of agriculture (high priority)
- increased influence of activist groups (high priority)
- fragmented and at times poorly resourced

These have led to the following goals and strategies:

### WHAT WOULD SUCCESS LOOK LIKE?

Australian agriculture has built better understanding and closer links with the rest of society. Public understanding and trust of agriculture is high. The industry speaks with a clear, consistent voice on key issues, using appropriate technologies and mediums to reach audiences.

**Goal** | **Priority** | **Strategies**
--- | --- | ---
Build better community understanding of and trust in agriculture | High |  
- Develop a cross-sectional, whole of industry strategy to build a clear understanding of and address community perceptions of agriculture, including funding and implementation.  
- Develop, use and demonstrate the use of best practice guidelines such as Australian Animal Welfare Standards and Guidelines (Model Codes of Practice).

Improve credibility, cooperation and goodwill, including with activist groups | High |  
- Identify key influencing groups and build relationships to improve credibility, cooperation and goodwill and understanding of key issues.

Develop coordinated and proactive approaches to communication | High |  
- Utilise and engage in existing sector forums and networks to communicate industry policy and action on key issues.  
- Critically analyse current representation and develop mechanisms for the industry to speak with a consistent voice on key issues.

FURTHER READING

This theme relates to the need for sustainable management of Australia’s natural resources, the role of farmers as stewards, and the tensions arising from trying to balance environmental, social and economic imperatives.

‘I want to see Australia lead the world in environmentally conserving agricultural production that not only respects the natural resources it uses and keeps them in a renewable state but produces high quality science and food and fibre from people who are passionate and form communities of intelligence, fun, relationships and resilience.’

- Blueprint Participant
BACKGROUND

The maintenance and improvement of Australia’s natural resource base is essential to its capacity to produce food sustainably over the long term. The agriculture sector oversees 61 percent of Australia’s landmass (Department of Agriculture, 2010), and farmers play an important and positive role in managing Australia’s natural resources. The sector also contributes more widely through the management and use of resources and disposal of waste. Policy initiatives and decisions relating to the access and use of the environment and natural resources will directly impact Australian agricultural producers, with flow-on implications for the agricultural supply chain.

At the highest level, the concerns about the environment generally related to access, use and management of the broad range of natural resource issues. There is a high degree of contention around some environmental issues such as the potential impacts of climate change and the future of water management in Australia. Rather than focusing on the immediate policy imperatives, this theme covers some of the general principles underlying how agriculture is responding to issues of natural resource management and sustainability.

While many of the issues surrounding access and use of natural resources are primarily managed at the state and territory jurisdictional level, the Australian Government has specific responsibilities through regulation, policies and programs across the areas of water, environment, climate change, mining and on-shore petroleum and native title. The Australian Government now has a significant $15 billion investment in the environment, including the Water for the Future, Caring for Our Country and Clean Energy Future packages. The level of investment is significant by international standards—$6.51 billion over the period from 1990 to 2013, but despite this, there are ongoing uncertainties to be resolved by governments about their respective roles and investment, and how to leverage private sector investment (HC Coombs Policy Forum and the Fenner School of Environment and Society, 2011). The multiplier effect of this investment has been conservatively estimated at an additional $4 for each $1 of government investment (Green, 2006).

The agriculture industry plays a critical role in natural resource management, as evidenced by examples such as the continuation of Landcare (initiated as a joint national project between the NFF and the Australian Conservation Foundation in 1989, after an earlier Victorian version), and the high level of investment and activity undertaken by the sector from ‘paddock to plate’ daily.

CURRENT ISSUES: NATURAL RESOURCES THEME

The sector is facing constraints in access to natural resources

The sector enjoys access to natural resources such as soil to grow crops and water for processing agricultural products. Over recent decades, governments and the judicial system have constrained this access through legislation and other decisions. Private landholder duty of care is poorly defined, particularly when the requirement of delivering outcomes to the community comes at a cost to individuals. While in some cases there has been improved clarity regarding land and water access rights over recent years, gaps remain, particularly in relation to water. The significant investment in programs such as Landcare and the Environmental Stewardship Program under Caring for Our Country and the Biodiversity Fund signifies the rising prominence of an incentive-based approach alongside the existing regulatory regime.

At present, the agricultural sector is facing increasing constraints to, or competition for, land and water access. The Murray-Darling Basin Plan seeks to deliver an improved environment but this will result in less water available for productive agriculture. The rights of mining and onshore petroleum to access and extract minerals, coal seam gas and soon, shale gas, have become highly contentious. Agricultural land is being acquired and altered to deliver environmental offsets. This may imply a future of declining land area available for agricultural production and contention about multiple current uses. The movement towards ‘co-use’ (where multiple outcomes are sought from the same land and habitat) appears to have lost ground in favour of one use gaining prominence over another. Many respondents throughout the Blueprint consultation process have lamented this development, with discussion centred on better information and planning for future land use.

In addition, following many years of improved relationships between native title claimants and respondents, there has been recent uncertainty over the status of historical extinguishment of native title rights in some areas due to government policy change.

Climate variability and change are having increased effects

According to the 2011 State of the Environment report, Australia is particularly vulnerable to the potential effects of climate change. We face a significant challenge in understanding the implications of climate change, and how we might mitigate those impacts or adapt to them. This challenge is complicated by inadequate information and data gaps.

It is likely we are already seeing the effects of climate change, with indications including higher average surface temperatures and changes in rainfall trends. Climate models project that, by 2030, average annual temperatures across Australia are likely to rise by 1°C (above 1990 temperatures), with warming of 0.7–0.9°C in coastal areas and 1.1–1.2°C inland. Drying is likely in southern areas of Australia, especially in winter, and in southern and eastern areas. Changes in summer tropical rainfall in northern Australia remain highly uncertain (State of the Environment 2011 Committee, 2011).

The impacts on Australian agriculture are likely to be spatially and temporally diverse, with many regions likely to experience more significant adverse consequences than others. The rate and extent of warming will be a key determinant and will affect the success of adaptation strategies while investment in R&D and innovation will be important (Kingwell, 2006). This could bring both negative and positive results, such as a gradual shift southwards for temperate agriculture. In the southern rangelands, animal production is likely to decline while the converse is true in the northern rangelands. Regions currently constrained for cropping, for example due to frost, waterlogging or grain sprouting, may become viable, which will impact the supply chain. The entire industry will require adjustment, as regional changes in production will affect input supplies and the location of processors and other industry assets.

Earlier investment in adaptation will reduce the cost of mitigation and sequestration. The challenge is to mitigate the degree and potential impacts of climate change— for the sector and the environment—and to ensure farm, industry and transformation (or ‘radical change’) climate change approaches, such as shifting regions industries to new regions, continue to evolve.

Issues around the management of Australia’s inland water resources are complex and controversial

Many of Australia’s inland water environments are modified and some are in a degraded condition. In southern Australia, and particularly the Murray–Darling Basin, this is the result of relatively high levels of water resource development, compounded by an extended drought (State of the Environment 2011 Committee, 2011). In other areas of Australia, such as Tasmania and Northern Australia, river systems are less developed and are in better condition.

The past decade has been Australia’s most ambitious period of water policy reform. All states and territories have now committed to the principles of the National Water Initiative, including providing secure water for sustaining the environment (State of the Environment 2011 Committee, 2011). Implementation of the National Water Initiative has been difficult and although it has delivered significant and tangible benefits, some of the potential economic and environmental benefits have been limited (National Water Commission, 2011).

Water reform has been at its most contentious in the Murray-Darling Basin. The process of the Murray Darling Basin Plan has taken several years and involved numerous inquiries, consultations, meetings, meetings and briefings, along with some 12,000 submissions. While there is strong support for the concept of a Basin Plan, many elements of the plan have been challenged and the community remains polarised over questions about the amount of water to be returned to the river system, and what methods will be used to recover water (NFF, 2012).

With implementation now shifting to the states of the Murray-Darling Basin, the Australian Government’s focus will be on closing the gap between the sustainable levels of development (known as the sustainable diversion limit or SDL) prescribed in the plan and current levels. A clear focus for the sector will be how to ensure least impact from direct purchase of water entitlements by ensuring the infrastructure program is both efficient and effective.

The Basin Plan is likely to provide direction for future water plans across Australia under the agreed COAG water planning framework. This framework must be informed by learnings from the Basin Plan process and improved through more meaningful engagement with industry and communities.
Biosecurity risks are increasing over time. Australia’s privileged pest and disease-free status confers significant economic, environmental, and community benefits. It assists the competitiveness of Australia’s agricultural exports in global markets. According to the Independent Review of Australia’s Quarantine and Biosecurity Arrangements, the task of managing Australia’s complex biosecurity regime has become more challenging in recent years, with risks increasing because of globalization (increasing the volume and range of products traded internationally); population spread; increasingly intensive agriculture; growth in tourist passenger and cargo movements; the potential risk of agri-terrorism; increasing global movements of genetic material as farmers endeavour to increase productivity; climate change (expanding range or habitats, changing migratory bird patterns, and weather events supporting the spread of disease vectors); an emerging shortage of qualified plant and animal pest and disease professionals; physical constraints on border interception activities; and financial constraints, as governments allocate scarce revenue among many competing demands (Beale, Fairbrother, Inglis, & Trebeck, 2008).

While there is a strong focus on biosecurity (including guarding against pests, weeds and diseases) at Australia’s borders, considerable attention and resources are also being applied to the management of pests, weeds and diseases within Australia. For the industry, these issues are front of mind because of the costs to the sector and the impact of pests and weeds coming from public lands. The impact and control of weeds alone costs more than $4 billion per year while the cost to agriculture from wild dogs, rabbits, foxes, pigs, pest bird and mice is estimated at $745 million per annum (Department of Agriculture, 2010).

There is a strong view that insufficient resources are available for managing pests, weeds and diseases on Australia’s public land estate, and there is a split-over of these problems onto private land. In some instances, Australia’s indigenous animals can become pests (e.g. Tamar wallabies on King Island have required culling). Innovative ways of managing environmental constraints on border interception activities; and financial constraints, as governments allocate scarce revenue among many competing demands (Beale, Fairbrother, Inglis, & Trebeck, 2008).

Improvements in the environment, in balance with agricultural production, will determine how governments manage incidents and share this cost), ensuring timely management of incursions (for instance, the recent Myrtle Rust incursion), and improving knowledge and information about the extent and spread of weeds, particularly under climate change scenarios.

There is a higher expectation from governments and communities on agriculture to actively care for the environment. As noted under the Agriculture within Society theme, people are increasingly interested in the production methods behind agricultural products, and there is evidence of a growing interest in sustainability values associated with Australian farm products (Ecker, 2008). DAFF’s National Food Plan Green Paper recognises that consumers are seeking more information on the environmental sustainability of food production, including information about ‘carbon footprint’ (DAFF, 2012). Agriculture’s social licence to operate now requires farmers to do more than just comply with legislation. There is a strong expectation now that they will produce food in socially, ethically and environmentally responsible ways. In some cases, the industry has already acted, with programs like the Environmental Stewardship Program, Landcare and industry-specific projects like the Cotton Best Management Practice program. The most successful stewardship and sustainability programs are those that closely align with these expectations, while delivering production and profitability outcomes.

There is potential to expand and promote the environmental stewardship role of the sector. Improvements in efficiency, collaboration and accountability will result in environmental improvements. Finding ways to reward farmers for good environmental stewardship, and creating markets for the ecosystem services that farmers provide, will help ensure the sustainable management of natural resources.

A largely untapped area for Australia is philanthropic and/or private investment in stewardship programs. Successful international examples include 300 farmers in New York City’s catchment being paid $US57 million to manage nutrient and pathogen run-off into adjoining waterways that are the source of New York’s water, and UK farmers being paid £UK450 per hectare to plant a pollin and nectar seed mix on marginal land to increase bumble bee populations (Archer, 2009).

**SUMMARY OF ISSUES**

The Blueprint has grouped the following issues under the Natural Resources theme:

- **security of access to the use of natural resources** (high priority)
- **higher expectations for environmental care** (high priority)
- **impact of climate variability and extreme climatic events** (high priority)
- **increased risk of domestic diseases and pests** (moderate priority).

These have led to the following goals and strategies:

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**WHAT WOULD SUCCESS LOOK LIKE?**

Australian agriculture has brought about genuine improvements in the environment, in balance with economic and social needs. The industry is being recognised for its work in environmental care, including through income streams for providing ecosystem services.

‘It is critical in my mind that in 2050 Australian agriculture is still owned and operated by Australia for Australia. Our priority will be to continue to provide food and shelter security to ourselves firstly and then to as much of the globe as we are able, while being vigilant in managing our natural resources, most critically, our soils. That will ensure a vibrant and appreciated industry for our next generation.’

- **Blueprint Participant**
FURTHER READING


‘Farming and grazing industries that utilise natural resources without compromising the integrity of those resources, with investment back into the re-vitalisation of degraded systems. Systems built on natural constraints and opportunities. We must live and produce within the limits of the earth’s natural functions.’

- Blueprint Participant
THEME SEVEN:
TRANSFORMATIONAL ISSUES

This theme relates to how the Blueprint can incorporate and deal with the uncertainties of the future, and consider high level and potentially significant changes facing the sector.

‘The agricultural sector should be proactive in engaging in a positive way with the community—as consumers and as a potential source of the future expertise and enthusiasm required to enable us to provide the products needed in ever more efficient ways. Willing to make use of new technology to force greater transparency into supply chains and enable fair competition and fair rewards for all in the chain, as well as an awareness of the social and environmental credentials of agricultural products.’

- Blueprint Participant
BACKGROUND

A number of issues raised during the Blueprint consultation have been grouped under the theme of transformational issues because of their longer term or future-focused strategic importance. They represent high-level and potentially significant changes facing the sector (and the community as a whole). Accordingly, they will require specific attention from the agriculture sector, along with input from relevant stakeholders such as sections of the science community, or employee bodies. They have not been given priority rankings due to the uncertainty around them, and responses have been grouped together as ‘approaches’ rather than specific strategies.

The background to these issues is the ‘likely future’. The Futures Thinking workshop considered possible and ‘out there’ futures for Australian agriculture. The group believes that the likely future will consist of a world driven by:• strong population growth, with continued urbanisation of that population• significant climate change effects• high levels of price volatility• significant challenges in the availability of labour• sufficient telecommunications availability for business processes• a significant requirement for R&D investment to meet the challenges ahead• tight profit margins in the sector• continued high levels of trade restrictions• low impacts from foreign ownership, urban farming, changes to customer cultural values, and biofuel demand• significant uncertainty around economic growth, energy costs, farm ownership structures, and consumer attitudes to natural vs technologically enhanced products• the impact of policy, regulation and legislation.

CURRENT ISSUES: TRANSFORMATIONAL THEME

The Blueprint must be flexible to account for future uncertainty.

The Future Thinking workshop recommended that the Blueprint should be less detailed and focus on a shorter-term horizon than first envisaged, given the impossibility of imagining ahead to 2050 and the difficulties in making long-term predictions amidst a high level of uncertainty (Higgins, 2012). Rather than being overly prescriptive the view at the workshop was that the Blueprint should ‘feel its way forward’ and encompass exploratory projects that examine possible futures and devise strategies to deal with them. In addition, in its implementation, it was felt the Blueprint should take into account areas where the market has failed to reach solutions and focus on a small group of issues and strategies with potential to make a major difference to the sector, rather than attempt to be all things to all people.

The Blueprint needs to keep an eye on developing issues that could have major impacts on Australian agriculture in the future. The Blueprint process identified key issues that need to stay on the radar because of their potential to bring about significant changes:

- climate change
- new technology developments that could impact on labour, such as robotic technology development
- new technology developments that could impact on production, such as human genomics, laboratory production of meat, 3D printing of food
- changes to population growth estimates, as shown by leading indicators such as fertility rates and longevity technologies
- economic growth and volatility (e.g. a prolonged period of instability and poor growth)
- cultural changes influencing eating habits related to animal protein
- urban farming
- reduction in government support for research and development.

Some potentially high-impact issues, such as climate change, require action and planning because the risks associated with not taking action are too high. In the face of uncertainty about the effects of climate change, the risks involved in waiting until the level of change is clear are too high. There are significant possibilities that climate change impacts on the sector could be much greater or much smaller than anticipated, with significant regional variations. While this may make it difficult to devise a long-term strategic response, this should not stop preparatory work from being carried out.

New technologies (such as robotics) and new approaches to labour (such as some of those used in mining) could lead to alternative labour models. Robotics and artificial intelligence are able to perform a large range of jobs and tasks. Agriculture could develop an industry-wide pilot project to develop and adapt robotic technologies that could ease the need for human labour. While being cognisant of the need for sustainable rural communities, agriculture could also follow some of the advances made by mining in building a different kind of labour force, incorporating some or all of the following characteristics:

- a mobile workforce that could move from area to area or work across different businesses
- a more highly paid workforce, making the sector and the mobile nature of the work more attractive
- a fly-in fly-out work force
- a connected workforce that could use the internet to collaborate and problem solve from a distance
- a lower-skilled immigrant workforce on short-term visas for specific work.

New technologies around food and fibre production could dramatically open up opportunities for agriculture.

The adoption of new technologies, particularly those related to biotechnology, may be necessary to respond to the challenge of feeding and clothing the 9 billion people we expect on the planet in the next 40 years. If those challenges are tied to likely price rises due to supply constraints, and the development of personal health/nutrition plans for individuals based on their individual genomes, it is possible that consumer attitudes to the adoption of those technologies will significantly change.

Beyond the short term, agriculture is likely to see new technologies such as the production of protein-based food products without animals (via laboratory based technologies), and 3D printing of food being adopted.

In fibre industries, the development of embedded technologies and smart fibres with a greater range of functionality could mean that implementing genetic manipulation technologies may be the only way to remain competitive.

New technologies could transform the way education and training is delivered, leading to improved approaches within the following areas:

- the development of the ‘bring your own device’ (BYOD) trend where most people have a portable smartphone or a tablet
- development of ‘app’ ecosystems, which create easy-to-use software applications that are intuitive to use and can easily collect data.
- augmented reality technologies that allow: - visual recognition systems to identify machinery types and problems and supply schematics, and instructional videos - people to connect to problem-solving specialists
- the explosion of educational innovators around the world such as the Khan Academy[1], the Code Academy[2], Coursera[3], Stanford’s Artificial Intelligence Courses, and new start ups from systems such as Launch Education[4].

Developments in data collection technologies mean new opportunities for R&D collaboration and communication:

Over the next decade the reduced cost and power requirements of sensors may mean they could be embedded in every part of the supply chain, measuring everything from the production of farm input materials, to farming systems, and events post-farm gate. In addition, there will be more individualised data on customers, and the capacity to tailor products for individuals or small groups (such as through genome sequencing and personal indicator tracking systems using biometric patches and internal sensors). These factors will mean a vast increase in the amount of data and insights available, and consideration needs to be given to how to harness the value of such systems.

Utilise Australia’s economic situation more effectively to position ourselves better in the future—invest in infrastructure—roads, port, bridges etc. while we are doing okay.’

- Blueprint Participant

SUMMARY OF ISSUES

The Blueprint has grouped the following issues under the Transformational Issues theme:

- lack of priority afforded to food and fibre on the national stage
- under-utilisation of natural resources
- new information and technologies.

These have led to the following goals and broad approaches:

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<th>Goal</th>
<th>Strategies</th>
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| Ensure food and fibre industries remain a high priority on the national stage | • Establish a joint industry-government food and fibre ‘think tank’
• Establish an Australian Ministry of Food and Fibre with responsibilities through the supply chain
• Ensure all policies/legislation are viewed through a food and fibre lens (via the Parliamentary Budget Office) |
| Sustainably utilise natural resources, including those previously under-developed | • Identify priorities and methods of sustainability utilizing natural resources in less developed regions (such as from remote Australia)
• Identify realistic opportunities to reduce dependence on existing energy, fuel and water sources and expand potential new sources without substantial cost increases
• Raise adequate government and industry resources to develop these priority areas |
| Track issues that are likely to have key future impacts | • Develop tracking mechanisms for the identified issues (and other unforeseen issues) and regularly incorporate them into the Blueprint strategies |
| Explore and develop alternative labour models | • Develop an industry-wide robotics development project
• Explore ways new technologies could change the labour issues facing agriculture |
| Explore and develop production technologies for food and fibre | • Coordinate existing R&D bodies to investigate potentially transformational technologies (including biotechnology and nanotechnology) and the impediments/opportunities presented |

‘Consumers appreciate where their food and fibre comes from, farmers respect the consumer and people who come from other parts of Australia. Farmers are viewed as environmental champions who are custodians of biodiversity. There are local supply chains across regional Australia, due to the cost of transport, processing of meat/milk is done in regional locations. The export international vision is that we have joint ventures with China, India, USA, we supply the highest quality customised produce to these and add value along the way, our land is nurtured and leased by our joint venture partners. Young entrepreneurs are scrambling to get into the sector, the best minds are looking at how to drive agriculture further, as they work in the most ‘sexy’ diverse industry on the planet. The government supports the industry with infrastructure and proactive policies to enable the world’s hunger for the best quality produce to be responded to effectively and efficiently.’

- Blueprint Participant

WHAT WOULD SUCCESS LOOK LIKE?

A flexible and innovative industry that adopts and exploits new technologies and responds swiftly and proactively to changes—both expected and unforeseen.
WHERE TO FROM HERE?
NEXT STEPS

The Blueprint for Australian agriculture sets out a vision for the longer-term future, and some of the steps required to get there. As an industry-led initiative, the Blueprint’s main value lies in bringing the players in agriculture together and on to the ‘same page’ in terms of a desired future for the industry, and coordinating their actions to bring this about.

The next formal steps in the Blueprint process are a series of stakeholder forums coordinated by NFF during 2013 to take the broad strategy ideas from this document, turn them into specific, time-bound actions, assign responsibility for carrying them out, and identify what resources will be needed to do so.

As with any plan, making the Blueprint targets specific, measurable, attainable, relevant and time-bound will help us assess how well the plan is performing in the future.

AREAS OF RESPONSIBILITY

Responsibility for implementing the Blueprint lies at all levels of agriculture, from the highest sector level down to each individual farmer.

To support the vision for agriculture identified in the Blueprint:

- **Industry bodies** can proactively promote their industries, disseminate knowledge to improve performance, improve coordination and share knowledge.
- **Agribusinesses** can drive investment in their supply chains, build trust with farmers, disseminate knowledge on global best practices and market requirements and invest in the future of the industry.
- **Farmers** can focus on volume growth and optimising production for higher margins, by delivering higher-value products and increasing output-driven productivity. In addition to improving their own performance they can build stronger networks to strengthen industry bargaining power.

RESOURCES FOR THE BLUEPRINT

Some of the strategies proposed in the Blueprint will involve public and private costs. Raising resources—or allocating existing resources—to implement those parts of the plan will be one of the tasks of stakeholders. By providing a common vision, goals and strategies, the Blueprint helps set the agenda for allocating public and private resources.

DEFINING BLUEPRINT SUCCESS

The Blueprint intends to strike a balance by setting a long-term agenda and taking a non-prescriptive and flexible approach to dealing with future uncertainty—while having enough substance to guide actions and efforts over the coming years, and to influencing policy decisions and resourcing. Regular ongoing evaluation and strategy update forums should take place to adapt the Blueprint to changing circumstances, and assess whether it is achieving its goals.

WHAT WOULD SUCCESS LOOK LIKE?

- **Innovation and RD&E**
  Food and fibre RD&E is enjoying increased levels of real government and private investment and an increase in the share of the total RD&E spend. Due to a strong focus on the adoption of research outcomes the sector is embracing proven biotechnologies.

- **Competitiveness**
  Australian agriculture has a reliable supply chain and access to critical infrastructure. Access to advanced telecommunications is driving adoption of new technologies and practices. Along with improved availability of capital (foreign and domestic) and shifts in ownership models, the industry has become more highly competitive in global markets.

- **Trade and Market Access**
  Australia has established and completed multilateral and bilateral free trade agreements with key growth markets and improved overall access to key global markets. Australian agriculture has also developed other innovative ways to access global markets.

- **People**
  Australian agriculture accesses a flexible workforce with the right levels of skill to meet the demand for labour. Farmers are best practice employers and agriculture as a career is positively viewed. The industry has adapted to the challenge of a labour shortage through various methods, including improving labour efficiency, new technologies and different approaches to the workforce.

- **Agriculture within Society**
  Australian agriculture has built better understanding and closer links with the rest of society. Public understanding and trust of agriculture is high. The industry speaks with a clear voice on key issues, using appropriate technologies and mediums to reach audiences.

- **Natural Resources**
  Australian agriculture has brought about genuine improvements in environmental, economic and social health through improved understanding of land and water use systems and the use of sustainability indicators for agricultural production. Farmers are receiving sustainable income streams for their work in environmental care.

- **Transformational Issues**
  A flexible and innovative industry that adopts and exploits new technologies and responds swiftly and proactively to changes—expected or unforeseen.
In the face of major challenges and opportunities for the future, the agriculture industry in Australia has a choice—to approach this future in a fragmented way or to make more of the opportunity by forging greater cooperation across the sector. The Blueprint provides a starting point for this discussion, for this collaboration on the issues that are shared across the sector.

Building on its long tradition of contributing to Australia’s social fabric, while remaining modern, innovative and flexible, the industry can be seen by communities and the government as a vital and valued part of Australian life, forming the backbone of true prosperity in Australia’s regions. Success won’t be easy. Achieving the long-term goals identified in this Blueprint will require leadership, coordinated effort, and resources.

While NFF is spearheading the effort, this is an industry-wide initiative that will depend on the will and capacity of all involved in agriculture to implement it. From governments to individual farmers, everyone has a role to play.

Let’s get on with it.
REFERENCES


ABARES. (2012b). Review of themes to support the National Farmers' Federation Blueprint for Australian Agriculture (ABARES report to client). Canberra: ABARES.


APPENDIX: SURVEY METHODOLOGY AND DEMOGRAPHICS

Extract from The Blueprint for Australian Agriculture: Initial findings (National Farmers’ Federation 2012)

Methodology
The results of the Blueprint consultation have been split into two data sources: those collated via forums and the online survey and those collected via the telephone survey. The results of these two data sources have been aggregated to provide an overview of the responses.

Data collected via the forums and online surveys contained 2,052 valid responses, of which 1,295 respondents (63 percent) identified their area within the supply chain as farming business, farming lifestyle or agribusiness. Of the 2,052 valid respondents, 594 respondents (29 percent) identified their area within the supply chain as transport, processing, retailing, exporter and commodity trader; rural community organisation; government; education and training; research; policy; consumer; information technology or not-for-profit. A further 160 respondents (8 percent) identified their area within the supply chain as ‘other’, including media, students, banking/finance, veterinarians, health, energy, retired farmers and tourism.

The telephone survey data contained 1,710 valid responses from farmers. The survey sample was developed through a random sample taken from a database containing about 100,000 records of farmers. The sample was weighted based on industry, location and size of landholding.

Who participated?
Characteristics of participants
All participants in the telephone survey were farmers, while participants in the forums and online survey consisted of farmers and agriculture stakeholders (this is why the data has been split into two separate categories).

Agriculture stakeholders included government representatives, researchers and supply chain representatives. Other participants in the online survey included representatives from the media and agricultural communications sectors, university students, veterinarians, finance professionals, health professionals, community advocates and members of natural resource management organisations (Figure 1).

Figure 1: Participants’ roles in the supply chain (forums and online survey)
DEMOGRAPHICS

- The age distribution of participants shows the telephone survey sample had a higher proportion of participants who were older than 55 years than the online sample (Figure 2).
- 18.6 percent of participants in the forums and online survey were under 34 years of age compared with only two percent in the telephone survey.
- 10.9 percent of participants in the online survey were over 64 years of age compared with 28.3 percent of participants in the telephone survey.

Participants’ industries

Beef graziers comprised the majority of farmers across both samples (Figure 3 and Figure 4). This is comparable with the Australian Bureau of Statistics results from the 2011 Agricultural Census in which beef graziers were the largest commodity group.
ISSUES: YOUR RESULTS

Overall
Respondents across both the forums and online surveys and the telephone surveys identified the three biggest issues currently facing the agricultural industry as:
- government policy funding and decision-making
- commodity prices and the Australian dollar
- the community’s perception of agriculture.

Table 1: Top 10 issues, now and in the future, across both surveys

<table>
<thead>
<tr>
<th>Issues</th>
<th>Online Survey</th>
<th>Phone Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government policy, funding and decision-making</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Commodity prices and Australian dollar</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Perception of agriculture among the wider community</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Climate variability and drought</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Consumer demands and expectations</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Industry representation and structure of the wider supply chain</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Fuel and energy costs</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Land use change</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Rural community support</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Land and input prices</td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>

Note: This table is based on the number of times respondents selected an issue.
✔️ = in top 10 issues