



Farming smarter

The Government wants Australian agriculture to continue to have access to the most advanced farming technologies and practices, as well as the skills and labour to drive innovation and growth. Farming smarter also means achieving the right balance between the environment and growth, with sustainable resource management at the heart of this.



CHAPTER FOUR

Farming smarter

Action 4 Strengthen the research, development and extension system, improve skills and sustainably manage our natural resources

4A Partnering with industry on research, development and extension

Australia's unique partnership between industry and Government for agricultural research and development has provided us with one of the world's strongest rural research, development and extension (RD&E) systems. Together, the Government and industry are expected to provide around \$5.5 billion over the next 10 years through the rural Research and Development Corporation (RDC) system. This will deliver real and tangible benefits for farmers, for industries and for the community. The system provides an average return of over \$10 for every dollar invested (CRRDCC 2010).

But we need to ensure we are getting the best outcome for our investment—the biggest bang for our buck. The issues facing agriculture often go beyond single commodities and require collaboration, cross-sectoral and transformational research, and more extension and adoption. The Government's \$100 million Rural R&D for Profit Programme enables such solutions, but it expires in 2017–18.

The Government will invest a further **\$100 million to continue the Rural R&D for Profit programme** between 2018–19 and 2021–22. The programme will emphasise collaboration and adoption. This will represent, in total, \$200 million additional investment (beyond the normal levy matching) by the Government in rural research and development (R&D) over the eight years to 2021–22. Long-term investment will generate long-term rewards for agriculture.

The Government is also updating the **rural RD&E priorities** to better reflect industry and community needs. The new priorities will include a stronger focus on advanced technology; biosecurity; soil, water and management of natural resources; and the adoption of R&D. We will **continue to improve the operation of the RDCs** to deliver more efficient, targeted and transparent RD&E outcomes for rural industries.

The Government will provide **\$1.4 million to match new industry levies** in the export fodder and tea tree oil industries, which will promote productivity in existing and emerging agricultural industries. We will also **boost funding by \$1.2 million for the Rural Industries Research and Development Corporation** to provide services to small agricultural industries.

4B Technology and global orientation driving the sector's workforce needs

Skilled labour is vital to ensure agriculture has the workforce needed to remain internationally competitive. The Government is committed to ensuring all Australian industries, including agriculture, have access to a skilled and flexible workforce. In higher education, the Government has set out a significant reform agenda that will allow our higher education institutions to respond more flexibly to the needs of industry.

In vocational education and training (VET), the Government is delivering an ambitious reform agenda that will lift quality, ensure training leads to jobs and improve the status of the VET system. This includes working with the States and Territories to further the objectives of the VET reform process through the publicly subsidised training system.

The Government is investing \$664.1 million in the **Industry Skills Fund** to support up to 250,000 training places and support services to meet specific business needs. As one of the identified growth areas of the economy, the food and agribusiness sector has priority access to this programme. The Government supports and encourages the development of agricultural-specific consortiums—led, for example, by eligible peak industry bodies—to undertake Industry Skills Fund projects to the benefit of consortium members (including individual farmers) who might not otherwise be eligible under the Fund.

As included in Chapter 1—A fairer go for farm businesses, the Government is also investing \$13.8 million to strengthen farmer awareness and knowledge about innovative business models, such as cooperatives, under a two-year pilot programme to commence in 2015–16.

Where local labour is not available, especially during seasonal peaks, the Commonwealth supports access to foreign workers through visa programmes. The Government is expanding the **Seasonal Worker Programme** to all agricultural industries and opening it to more partner countries.

The Government is continuing to assist the agriculture sector by allowing those visiting Australia on **Working Holiday (subclass 417) visas** to extend their visa if they work in selected industries including agriculture. The Government is also working to increase the number of partner countries participating in the **Work and Holiday (subclass 462) visa programme** and giving 462 visa holders access to a second 12 month visa if they work for three months in agriculture or tourism in northern Australia.

Foreign workers have the same wages, rights and conditions as any other Australian worker. The Government is conscious of ensuring workers are not exploited. The Fair Work Ombudsman is being proactive in assisting overseas workers in the agriculture sector. The 'Cadena Taskforce' is investigating allegations of fraud and worker exploitation of temporary foreign workers.

4C Sustainable resource management by farmers

Australia's competitiveness in agricultural production depends on a sustainable natural resource base. Farmers are stewards of 53 per cent of Australia's landmass (ABS 2015b), use 65 per cent of consumed water (ABS 2014c) and are the front line natural resource managers in Australia. From 2015–16 the Government is providing around \$1 billion over four years for the **National Landcare Programme** and around \$700 million over four years for the **Green Army** to deliver practical projects for environmental benefit and provide training in conservation management.

Pest (including feral) animals and weeds cost farmers more than \$4.7 billion a year in management and lost production (Australian Biosecurity Group 2005). The Government will provide **\$50 million to manage established pest animals and weeds**.

An outbreak of a serious exotic disease could result in significant costs to industry and the community, including lost overseas markets. A rapid and effective response is needed. The Government will respond to such events by providing **\$50 million for increased emergency eradication and national response capability**.

Partnering with industry on research, development and extension

Farming is a highly technical, innovative and internationally-connected business. Australian farmers are rapidly adopting new technologies. The uptake of this technology is transforming Australian agriculture. The future success of Australian agriculture depends on smarter farming practices. Technological innovations and adoption of research and development (R&D) on-farm are central to productivity growth. Almost two-thirds of the value of broadacre agricultural production in recent years can be attributed to productivity improvements. ABARES estimates that almost two-thirds of that productivity growth has been contributed by public investment in research, development and extension (RD&E) (Sheng et al. 2011). Australians are known for their innovative R&D, but we need to ensure this is getting out of the laboratories and onto the farms.

While maintaining its strong commitment to the current Government–industry partnership system, the Government is adopting a three-pronged approach to building stronger RD&E. This involves:

1. **Investing in the right RD&E** by setting the right priorities.
2. **Addressing the gaps in the system** through more funding for collaborative research and adoption.
3. **Improving the efficiency of the system** by reducing administrative costs and improving governance.

The existing agricultural RD&E system has a strong advantage in focussing on the needs of levy payers in each agricultural industry. Innovations are therefore appropriately targeted at particular

industries. Examples include making genetic improvements to help beef and sheep producers lift their productivity, pasture research for better milk production in dairy herds, minimum tillage and genetic modification in the grains industry to increase productivity, and selective breeding in the sheep industry to phase out the need for mulesing.

RD&E is also helping producers innovate throughout the supply chain. Examples include electronic livestock identification, researching consumer preferences in the domestic market, market and product testing overseas, improving the shelf-life for exported products, or developing innovative new packaging materials to improve food safety and reduce costs or waste. The ability of Australian agriculture to innovate and form successful research collaborations will continue to support a stronger Australian economy with sustainable food security.

But the Government recognises the need for investment in cross-cutting applications such as digital technology, sensor technology, robotics, communications and management of natural resources. The Government's investment in the National Broadband Network (NBN) will mean advances in digital technology are available to all farmers (see Chapter 2—Building the infrastructure of the 21st century for more detail).

The Sense-T project is a good example of the benefits of advanced communications technology. Sense-T is helping to build an economy-wide sensor network and data resource in Tasmania, creating a digital view of the state and giving industry, governments and communities the tools to solve practical problems and make better decisions. In agriculture, commercial sensor systems use a wireless network within each farm, and the NBN or 3G, to draw real-time data into a 'cloud' to be aggregated with historical and spatial data. This creates a real-time digital view that is helping Tasmanian farmers manage their farms, minimise their environmental impact and maximise their access to markets. (University of Tasmania 2015)

We also need to get other technologies out to farmers. Productivity growth in agriculture has slowed over the past 15 to 20 years (Gray, Oss-Emer & Sheng 2014). Productivity improvements in agriculture depend on effective uptake of R&D (PC 2011; Sheng et al. 2011). State and Territory governments, who traditionally invested strongly in RD&E, have reduced their efforts. The private sector is stepping into extension services but not consistently across all sectors and regions. The Government considers that the RDCs need to work with other extension providers to facilitate farmers' adoption of R&D. Roles and responsibilities will vary depending on the circumstances in different industries, but RDCs must demonstrate that farmers will have a pathway to adoption for the R&D they fund.

Future productivity gains are most likely to come from better extension efforts, increased efficiency in the RD&E system, building human capital through labour and skills, and reducing regulatory burden (Gray, Oss-Emer & Sheng 2014). The Government is focused on addressing these gaps

by improving cross-sector and transformational research, collaboration (both among RDCs and between RDCs and other rural research providers) and extension services to facilitate the adoption of innovation by farmers.

We have delivered

We have a strong rural RD&E system based around joint Government and industry investment.

Public investment in research, development and extension

The Government is investing over \$240 million a year in the RDCs by matching industry levies. (Department of Agriculture 2015f)

This is being supplemented by investing in priority agriculture research areas through the \$100 million Rural Research and Development for Profit programme. (Department of Agriculture 2015g)

The Government supports six ongoing agricultural Cooperative Research Centres with total funding of \$139.5 million. (Australian Government 2015d)

In addition, the Government has announced \$75 million to establish a new CRC to bring businesses, governments and researchers together to find northern solutions for northern problems. Building on the growNORTH proposal, the CRC will have an initial focus on agriculture, food and tropical health. (Commonwealth of Australia 2015i)

The Government has invested \$37.5 million through the Natural Resource Management Planning for Climate Change Fund. (Department of the Environment 2014a)

The Government is also now investing \$23.8 million through the Northern Australian Environmental Resources Hub, as part of the \$142.5 million National Environmental Science Programme. (Department of the Environment 2014b)

Encouraging private investment

The Government provides the R&D Tax Incentive to stimulate Australian industry investment in RD&E. (Australian Government 2015e)

On 26 May 2015, the Government launched the Boosting Commercial Returns from Research Strategy which aims to improve business and research sector collaboration, support economic growth and enhance Australia's competitiveness into the future. (Department of Industry and Science 2015)

Post-farmgate the Government is bringing together industry and research providers through the new Food and Agribusiness Industry Growth Centre. This is one of five Industry Growth Centres in which the Government is investing \$188.5 million. The Food and Agribusiness Industry Growth Centre will assist in identifying priorities that will inform the science and research community of industry's needs and commercialisation opportunities. (Australian Government 2015a)

White Paper actions

Setting the right RD&E priorities

Australian agriculture faces huge challenges, but also opportunities. A stronger RD&E system will give our farmers access to the latest innovations, new technologies and best management knowledge available to seize those opportunities.

The Government has developed **clear, farmer-oriented priorities to target rural RD&E funding**. They will deliver tangible and sizeable on-farm benefits that improve farm gate returns. The new priorities are:

- **advanced technology**, to enhance innovation of products, processes and practices across the food and fibre supply chains through technologies such as robotics, digitisation, big data, genetics and precision agriculture;
- **biosecurity**, to improve understanding and evidence of pest and disease pathways to help direct biosecurity resources to their best uses, minimising biosecurity threats and improving market access for primary producers;
- **soil, water and managing natural resources**, to manage soil health, improve water use efficiency and certainty of supply, sustainably develop new production areas and improve resilience to climate events and impacts; and
- **adoption of R&D**, focusing on flexible delivery of extension services that meet primary producers' needs and recognising the growing role of private service delivery.

These new Australian Government RD&E priorities for agriculture are consistent with the national Science and Research Priorities announced on 26 May 2015. The national priorities align areas of research excellence with Australia's comparative advantages, including food, soil and water, and environmental change.

While the agriculture priorities do not cover all of the important issues facing primary industries, they are the highest priority research areas based on stakeholder feedback. The Commonwealth will engage further with State and Territory governments to determine whether the rural RD&E priorities can be adopted nationally.



For Farmers

Improved RD&E priorities will direct levy funds to areas that will improve farm gate returns.

All research projects must consider how the information will be delivered to farmers and translated into real, on-farm practices.

Extending the Rural R&D for Profit programme

The Government established the \$100 million Rural R&D for Profit programme funding collaborative research projects to deliver cutting-edge technologies, applied research and on-farm adoption. The first application round approved up to \$26.7 million, which will leverage a total RD&E investment of almost \$60 million to benefit farmers.

The Government recognises that long-term productive growth requires a long-term commitment to RD&E.

The Government will commit a **further \$100 million over four years from 2018–19** to enable this programme to run continuously until 2021–22. Extending the programme will also provide more certainty of support for longer-term projects. The programme will continue to focus on cross-cutting issues, collaborative research and extension.

Adoption of research outputs is key to the success of the programme. The Government is requiring the RDCs and research partners to consider how farmers will use the research outcomes and to build an extension component into projects.

Improving RDC governance

To ensure rural RD&E investments deliver maximum returns, the Government will work closely with **RDCs to improve their efficiency, transparency and accountability**. This includes requiring the RDCs to:

- have a greater focus on the extension and adoption of R&D outcomes by primary producers; and
- increase co-ordination in their administrative functions, particularly back office functions such as HR, payroll, accounting and travel.

Improvements in these areas will mean farmers and the community will get maximum value from their investment in RD&E. Reduced administration costs will leave more money for RD&E.

The Commonwealth will continue to explore and consult on options for decentralisation of Government agencies, including RDCs, to regional areas to invigorate jobs and growth.



For Farmers

Farmers will benefit from getting research out of the laboratory and onto the farm, which is key to productivity growth. Projects will have a strong delivery focus.



For Farmers

Farmers will benefit from a greater focus on extending outcomes to the farm gate. Reduced administration costs will leave more money for RD&E.

Managing new RD&E levies

The establishment of new levies is driven by industry. There are currently more than 90 levies across 69 commodities and there continues to be industry requests to establish new levies.

The Government will continue to deliver on its long-standing policy of supporting rural RD&E by matching industry expenditure for RD&E. This policy has long-term benefits for agricultural industry growth, sustainability and resilience.

Demonstrating this continued commitment, the Government is providing **\$1.4 million to match new industry levies** in the export fodder and tea tree oil industries.

The Government will also boost funding by **\$1.2 million for the Rural Industries Research and Development Corporation (RIRDC)** to assist it in its provision of RD&E to small agricultural industries.



For Farmers

A research boost will be provided to the export fodder and tea tree oil industries with new, matched RD&E levies; and small agricultural industries will benefit from additional RD&E funds to RIRDC.

Technology and global demand driving the sector's workforce needs

A competitive agriculture sector requires access to skilled labour and modern education and training systems. To be successful, people who manage farm enterprises may need skills across a wide range of disciplines, including finance and business management, marketing, information technology, crop management, animal husbandry and management of natural resources. As the agriculture sector uses more specialised technology and implements cutting edge research and development, there will be greater need for a more highly skilled workforce. Manual labour is increasingly being replaced by GPS-guided tractors, computerised irrigation systems, laser levellers and sophisticated harvesting technology. The new workforce requires specific technical skills (NRAC 2013). Post-school education for farmers and their workers can significantly enhance their productivity.

Acquiring new skills can help employees to better perform their jobs, but also to feel trusted and valued by their employers as they take on greater responsibilities. A joint study by Meat & Livestock Australia and Australian Wool Innovation found that managers are one of the greatest influences on workforce engagement and retention, rather than rates of pay (MLA 2008). The National Rural Advisory Council suggests that by understanding and responding to workforce skills needs, employers can better identify the drivers of job satisfaction to retain employees (NRAC 2013).

To meet projected demand and exploit market opportunities, the agriculture sector needs both skilled farmers and a skilled and available workforce. However, agriculture has struggled to attract

and retain the skilled labour it needs to prosper. This was particularly so when the mining industry was booming. Other factors contributing to this have been declining rural populations as people have moved to larger towns and cities, outdated perceptions of agricultural career paths, and relatively low rates of participation in agriculture-related education.

Improvements to training and skills

The Government has set out a significant reform agenda that will allow our higher education institutions to respond more flexibly to the needs of industry. Farming in the 21st century will bring with it new environmental, social and financial challenges. Innovation, a hallmark of Australian agriculture, will be essential to meet these challenges. Higher education has a role to play in driving innovation and in equipping farm businesses with the skills and knowledge necessary to capitalise on an increasingly globalised and connected trading environment.

The Government is implementing a number of economy-wide initiatives targeted at ensuring all industries, including agriculture, have access to a skilled and flexible labour force.

The Commonwealth has embarked on a Vocational Education and Training (VET) Reform Agenda to improve the quality and status of VET training and to ensure real links between training and jobs. Lifting the quality of training providers and their courses will improve the contribution of VET to the employment prospects of students. The reforms are multi-faceted and will drive industry engagement, remove red tape for training providers, and, by working with the States and Territories, improve outcomes for the publicly subsidised training system.

The Government plans to reform higher education. The reforms would make more subsidised places available at a wider range of institutions, including TAFEs and private agricultural institutions like Marcus Oldham College in Victoria. The reforms would also capture a wider range of undergraduate courses, including agriculture-related higher education diplomas, advanced diplomas, associate degrees and bachelor degrees. Subsidies would be available for full- and part-time online courses as well as those offered face-to-face. The Government's reforms would see higher education institutions offering more scholarships to assist disadvantaged students with the costs associated with their study, including accommodation, travel and learning support. Changes to means testing for Youth Allowance and ABSTUDY Living Allowance will better support farming families and encourage rural youth into further study (Box 10).

The Government is also providing additional business training for farmers through the Cooperatives and Innovative Business Model Knowledge Programme (Chapter 1—A fairer go for farm businesses provides details).

The Government supports industry-led solutions, such as the National Farmers' Federation's National Agricultural Workforce Development Plan which maps the industry's future labour, skills and education needs.

Box 10 Helping young people from farming families to continue further study

Higher education supports growth in economic productivity and social well-being. Living in a rural or remote area should not prevent young Australians from having further education and training.

As part of the 2015–16 Budget, the Government introduced a simplified and more generous means testing arrangement for Youth Allowance and ABSTUDY Living Allowance payments. The Government removed the Family Asset Test and the Family Actual Means Test from the Youth Allowance Parental Income Test. These changes will assist all Australian families, particularly children, from regional and remote areas, who often face higher costs of further study due to the need to move away from home.

Farm assets will no longer be counted in parental means testing for youth income payments. The change will help more farming families to support their children undertaking further study.

A workforce that supports agriculture to grow, prosper and employ

The agriculture sector's commercial realities often involve split shifts and constant production during peak periods. It is therefore fundamentally important to ensure the Fair Work laws work for everyone. In December 2014 the Government tasked the Productivity Commission with assessing the performance of the workplace relations framework, including the *Fair Work Act 2009*. A key consideration will be the capacity of the workplace relations framework to ensure workers are protected and businesses can grow, prosper and employ. The final report is due to Government in November 2015.

The Government will carefully consider the findings. If a good case exists for sensible and balanced changes, these will be taken to the next election before being implemented. In the meantime, the Government is monitoring the Fair Work Commission's first four-yearly review of modern awards. The review is an opportunity for industry participants to raise concerns about flexibility restraints inhibiting the competitiveness of agricultural businesses.

For example, milking shifts in the dairy industry can be performed in less than three hours yet the Pastoral Award 2010 requires staff be engaged for a minimum of three hours (Australian Dairy Farmers 2015). Changing this requirement could assist productivity and lower employers' labour costs. The Government encourages industry to work closely with the Fair Work Commission to ensure modern awards appropriately reflect labour requirements and take into account business concerns about productivity and labour costs.

Australian workers are not always available to meet the labour demand of the agriculture sector due to seasonality, remoteness and relative appeal of urban jobs. This results in gaps in the labour market and the agriculture sector being reliant on foreign workers to supplement labour requirements in peak periods.

The Government has a wide range of visa programmes that help to meet agricultural workforce needs for short-term unskilled work. Agriculture is a major employer of backpackers, for example over 70 per cent of horticulturalists reported backpackers as their main source of labour in a 2011 survey (Hay & Howes 2012). In 2013–14 over 239,000 backpackers came to Australia under 417 or 462 work visas (DIBP 2014). Backpackers working in Australia under a 417 visa can access a second-year visa if they spend three months working in regional areas in agriculture, mining or construction.

The Government will make changes to Working Holiday visa and Work and Holiday visa (subclass 417 and 462 respectively) to allow employers in northern Australia to retain backpackers for an additional six months each visa year if they work in high demand areas, including the agriculture sector. The Government will also give Work and Holiday (subclass 462) visa holders access to a second 12 month visa if they work for three months in agriculture or tourism in northern Australia.

The Seasonal Worker Programme (supported by the 416 visa) also provides valuable unskilled and low skilled labour to meet short, peak demands. This programme currently allows Australian horticulture, sugar cane and cotton producers to seek access to workers from Pacific Islands and Timor-Leste. Importantly, it may allow workers to return each year. Seasonal workers are highly productive and, because they can return each year, farmers fully benefit from any training they provide.

From 1 July 2015 the national cap (currently set at 3,250 places) on the number of workers participating in the Seasonal Worker Programme will be removed entirely so that businesses are no longer constrained from accessing seasonal labour they cannot find domestically. The Government will expand the programme to the broader Australian agriculture sector on an ongoing basis to allow all farmers to access seasonal labour. Seasonal workers can provide growers across Australia with a motivated, reliable workforce for the duration of their peak harvest period, able to return in following seasons.

The Government is also making the programme more attractive to employers. The minimum stay requirement of 14 weeks will be removed, provided workers receive a net financial benefit of at least \$1,000 during their stay. The Government will simplify cost sharing arrangements by combining the employer's contribution to the seasonal workers' international and domestic airfare to a total of \$500.

Subject to the conclusion of the Pacific Agreement on Closer Economic Relations, the Government will also invite additional Pacific Island Forum countries to participate in the Seasonal Worker Programme, potentially adding the Cook Islands, Federated States of Micronesia, Niue, Palau and

Republic of Marshall Islands. Domestic workers need to be given first opportunity at getting jobs, so employers will still be required to test the local labour market to see if Australian workers are available. Further, the Government will have the discretion to cap, exclude and review the placement of seasonal workers in areas with high unemployment and low workforce participation.

In addition, the Government provides the Harvest Labour Service (HLS) and the National Harvest Labour Information Service (NHLIS) to help Australian job seekers and travellers find work harvesting fruit and other crops. The HLS helps to source the labour necessary to meet the harvest requirements of growers and mobilise people from outside the harvest region. Historically, between 20,000 and 24,000 HLS placements are filled nationally each year. The NHLIS provides national coordination, development and dissemination of comprehensive information on harvest-related work opportunities across Australia including those areas not serviced by the HLS.

Parts of the agriculture sector continue to find it difficult to fill some skilled roles. The Temporary Work (Skilled) (subclass 457) visa programme could assist with these shortages but has not been widely used by agriculture to date. The agriculture sector has raised concerns that the current framework does not adequately recognise skilled occupations where skills are predominantly developed through on-the-job training. In response to an independent review of the 457 programme, the Government has tasked a new Ministerial Advisory Council on Skilled Migration with reviewing the list of occupations available for sponsorship under the programme and making the scheme more flexible and better able to meet genuine market needs.

The Government encourages agricultural industries to continue to work closely with it to establish industry labour agreements. A labour agreement is a formal arrangement negotiated between an employer (or through an industry) and the Commonwealth. It provides a flexible, tailored skilled visa option for sectors with specific needs, which may not be properly recognised in mainstream categories for skilled migration. The Australian pork industry has successfully developed an industry labour agreement for pork producers, who now have access to workers with skills relevant to industry.

The Government acknowledges community concerns that foreign workers are being exploited. All temporary visa holders, including 417 visa holders, must be engaged in accordance with applicable Australian workplace law and receive the same protections as Australian citizens. The Fair Work Ombudsman and the Department of Immigration and Border Protection (the 'Cadena Taskforce') are currently investigating allegations of exploitation and underpayment of Working Holiday (subclass 417) visa holders in the agriculture sector (including by employers and labour hire firms). The Fair Work Ombudsman is taking proactive steps to assist overseas workers in the agriculture sector, including undertaking targeted compliance activity through the three-year Harvest Trail and one-year Working Holiday projects.

We have delivered

Skills and education

Through the Assistance for Isolated Children Scheme, the Government is continuing to support remote families to send their children to school. It is also providing new outreach and information for parents. (Department of Human Services 2015b)

The Government is ensuring young Australians learn the importance of agriculture and career opportunities through the Agriculture in Education programme. The programme provides \$2 million over two years to assist teachers in educating children on the products and processes associated with food and fibre production. (Department of Education 2015a)

In higher education, the Government has set out a significant reform agenda that will allow our higher education institutions to respond more flexibly to the needs of industry. (Department of Education 2015b)

The Government is also implementing the VET Reform Agenda. This includes the \$664.1 million investment in the Industry Skills Fund to support up to 250,000 training places and support services to meet specific business needs. Consortiums (led for example by agricultural peak industry bodies) may be eligible to apply to undertake Industry Skills Fund projects, to the benefit of individual farmers who might not otherwise be eligible under the Fund. (Australian Government 2015f)

The Trade Support Loans programme provides loans of up to \$20,000 to help apprentices with the cost of living to complete certain qualifications in agriculture or horticulture in regional areas. The Government is also ensuring industry can play a stronger role in advising on skills and competencies the sector needs. (Australian Government 2015g)

Domestic and foreign labour

From 1 July 2015, the Government's new employment services model, jobactive, will help more people find work and employers find staff for their business, at no charge to them. The more tailored online services will help employers fast-track advertising and manage vacancies, find and manage suitable candidates and connect with jobactive organisations. (Department of Employment 2015)

The Government is reducing the compliance burden of superannuation contributions for businesses, including for farmers. From 1 July 2015, employers will no longer have to offer a standard superannuation fund choice form to temporary resident employees. This will reduce unnecessary red tape and prevent employers who do not supply the form incurring penalties. (The Treasury 2015b)

The Government is helping small businesses to meet their superannuation guarantee obligations by expanding the eligibility of the Small Business Superannuation Clearing House. The clearing house is a free online service allowing employers to pay superannuation contributions in one transaction to a single location. From 1 July 2015, all businesses with an annual turnover below the small business entity threshold (currently \$2 million) or with fewer than 20 employees will be able to use the clearing house. (ATO 2015b)

Where local labour is not available the Government is supporting the agriculture sector's access to foreign workers by improving access to a range of visa programmes, as outlined earlier.

Sustainable resource management by farmers

Farmers manage 53 per cent of Australia's landmass (ABS 2015b) and account for the majority of our water diversion or extraction (ABS 2014c). Understanding and managing natural resources (such as water efficiency and soil health) are essential to farming. Australian farmers work under extremely variable conditions and with some of the world's poorest soils.

The Government is keen to ensure, through improved management of our natural resources, that environmental and agricultural outcomes are appropriately balanced. Future natural resource challenges include: natural limits on expansion of land and water development; competing uses for natural resources; climate change, including extended drought; increases in pests, diseases and weeds; and increasingly constrictive community expectations about how the land is managed.

Adopting appropriate farm practices will be the key to Australia's ongoing competitiveness. These practices include: reducing soil loss through wind and water erosion; increasing soil health by reducing acidification and improving carbon content; undertaking landscape scale conservation (including management of native vegetation); making advances in water infrastructure (for example, more efficient reticulation) and increasing water use efficiency; and improving pest and disease management (including management of feral animals). Australian farmers need access to the latest knowledge and techniques for resource use and weed and pest management. This will ensure farmers continue to be best-practice managers and safeguard the future productivity and competitiveness of our farms.

Australia has a wealth of natural resources and the Government recognises the need to balance competing land uses carefully. It is in Australia's national interest to ensure that natural resources are developed responsibly and prudently. The Government released its Domestic Gas Strategy in April 2015, which provides a framework for the responsible onshore development of unconventional gas resources (Commonwealth of Australia 2015k). The Government's three principles for coexistence of farming and the development of unconventional gas resources are:

- access to agricultural land should only be done with the farmer's agreement and farmers should be fairly compensated;
- there must be no long-term damage to water resources used for agriculture and local communities; and
- prime agricultural land and quality water resources must not be compromised for future generations.

Managing soils for ongoing productivity

The Commonwealth recognises the importance of healthy soil for agriculture. Australia's soils are a major national asset underpinning our agricultural productivity and our ability to be a net exporter of food. Soils are important to issues such as food security, climate change adaptation and mitigation, regional sustainability and ecosystem service provision.

Improving soil condition will be important for ongoing agricultural productivity. Soil is essentially a non-renewable resource because it not only forms and regenerates slowly but can degrade rapidly. Erosion, soil carbon depletion, desertification and soil acidification are key factors affecting soil health. Soil acidity is a particular problem in Australia, and resulted in a loss of \$1.58 billion in agricultural production in 2001, about eight times the cost of soil salinity (State of the Environment Committee 2011).

Approximately 53 per cent of Australia's land mass is managed for agriculture. The Government recognises that community expectations are that well-managed agricultural landscapes will deliver high quality ecosystem services; such as healthy soils, clean air and water, and biodiversity while also delivering food and fibre products. To help Australian farmers to improve their soil management practices, the Government provides ongoing funding of a range of initiatives (see Box 11).

Box 11 Healthier soils

Good soil management is essential to maintain the future productivity of Australian agriculture. The Government supports a wide range of initiatives to improve Australia's soils, including through RD&E. A 2010–11 survey estimated \$124 million was spent on soils RD&E in Australia, \$24 million of which was provided by the rural RDCs. Current initiatives include:

A National Soil RD&E Strategy

In March 2014, the Minister for Agriculture announced the release of the National Soil RD&E Strategy, Australia's first national, collaborative, forward-looking approach to soil management. The strategy's vision is to secure Australia's soil for profitable industries and healthy landscapes. It will work to: improve the effectiveness of co-investment to generate and apply new soil knowledge; improve the quality, availability and access to soil data and information; improve the communication and exchange of soil knowledge; adopt a national approach to building future skills and capacity; and collaborate on the development and use of physical infrastructure for soil research.

Soil RD&E research priorities will be released shortly. These are aimed at increasing coordination and collaboration amongst organisations funding and undertaking soil research.

A National Advocate for Soil Health

The Government has extended the appointment (for 2015) of the National Advocate for Soil Health, former Governor-General Major General the Hon. Michael Jeffery, AC AO (Mil) CVO MC (Retd). The Advocate works to educate and inform the broader community of the importance of healthy soil, water and vegetation and the benefits these provide for all Australians.

The Emissions Reduction Fund – Carbon Farming Futures programme

Under its Emissions Reduction Fund (ERF), the Government is funding the Carbon Farming Futures programme to deliver research—including on-farm trials and communication activities that support on-farm emissions reduction. The programme supports land management technologies and techniques, including soil research. The programme allows farmers and land managers to benefit from the economic opportunities under the ERF while assisting Australia in achieving its long-term emission reduction targets.

Ground Cover Monitoring for Australia

The Government provides funding for the Ground Cover Monitoring for Australia Project to develop a nationally-agreed, reliable basis for measuring and mapping ground cover using satellite imagery. Nationally consistent ground cover information is essential to assess long-term soil erosion and the benefit of different land management techniques.

Improving soil information for decision making

Farmers, scientists and policy makers need access to the best available information and tools for soil management. This access helps support the long term viability and productivity of farm businesses, and can provide positive environmental outcomes.

The Australian Collaborative Land Evaluation Program (ACLEP) collects, manages, disseminates and analyses nationally consistent, integrated data and information on soil and land resources. ACLEP brings together the CSIRO and States and Territory governments to improve availability and accessibility of national soil information. ACLEP has developed the iPad app 'SoilMapp' to provide accurate soil information at farmers' fingertips.

On 25 June 2015, the Minister for Agriculture announced \$1.5 million for the CSIRO to partner with farming groups and others to provide practical advice to farmers on the best options for improving production in their cropping paddocks and pastures. The interactive system being developed will give farmers near real time information about their farms. Farmers will be able to examine options for different crop varieties and inputs to make the most of soil moisture available for the coming season, and to obtain updates as the season progresses. This project will start to increase the digital connections between climate, soil and other information. Better information about individual paddocks will help farmers reduce input costs and optimise their production in highly variable climates.

Managing water for agricultural production

Management of Australia's inland water resources is complex. Water is critical for agricultural production. Farmers need secure water rights and certainty of water access. Australian farmers have been improving water use efficiency for years. For example the Australian Export Grain Innovation Centre (2015) indicate that between 1982 and 2012 more than half of Australia's wheat-growing regions have improved their water use efficiency by at least 50 per cent. The Government is investing in water infrastructure for the future. Chapter 2—Building the infrastructure of the 21st century has further detail on the Government's investment in water infrastructure and approach to water management.

Adaptation to climate change

Climate change presents particular challenges for sectors such as agriculture where productivity and profitability are closely linked to natural resources. Recent projections from the CSIRO and the Bureau of Meteorology (the Bureau) confirm that Australia's climate has changed and will continue to change into the future. Average temperatures are expected to increase, with more heat extremes and fewer cold extremes. In southern Australia, severe droughts are expected to be more frequent and cool season rainfall is expected to decline. Overall, extreme rainfall events that lead to flooding are likely to become more intense. Farm management practices need to be adapted to build resilience in light of the challenges presented by such long-term trends.

The Commonwealth provides funding to institutions like the CSIRO and the Bureau, which provide valuable information to the farming community in the form of short-term and seasonal forecasts, and long-term climate projections that can be used to support risk assessment and adaptive farm management practices.

The Commonwealth continues to assist farmers to become more responsive and resilient to climate impacts, including through RD&E. For example, under the first round of the Rural Research and Development for Profit Programme the Government will support improvements in the Bureau's seasonal forecasting model to increase farmer profitability (further detail in Chapter 3—Strengthening our approach to drought and risk management).

The Government is also working internationally to mitigate future climate risks. Australia is on-track to reduce greenhouse gas emissions by 5 per cent below 2000 levels by 2020 (13 per cent below 2005 levels) and the Emissions Reduction Fund (ERF) is helping Australia meet that target.

The Government will shortly announce Australia's post-2020 emissions reduction target. The target will represent Australia's fair share of the global effort to respond to climate change as part of the new post-2020 international climate change agreement under the United Nations Framework Convention on Climate Change. The Government is consulting the agriculture sector on our post-2020 target—submissions received have outlined policies to reduce emissions while improving productivity and profitability.

Minimising the cost of pests, diseases and weeds

Established pest (including feral) animals and weeds represent a high ongoing cost to agriculture, and they affect the environment and the natural resource base. The cost of production losses attributable to pest animals was estimated at more than \$620.8 million per annum in 2009 (Gong et al. 2009). It has been estimated that weeds cost Australian farmers around \$1.5 billion a year in weed control activities and a further \$2.2 billion a year in lost agricultural production (Sinden et al. 2004). The presence of pests, diseases and weeds can also hamper access to domestic and overseas markets. Common pest animals include wild dogs, foxes, feral cats and feral goats. Common established pest plants include serrated tussock, rubber vine and prickly bushes (for example mimosa and parkinsonia).

Given the cost of containment and management, it is generally more cost-effective to prevent entry or to eradicate new and emerging pests, diseases and weeds before they become established or spread.

The Government has a particular role in addressing pests, diseases and weeds of national significance. The Government is committed to the Australian Weeds Strategy. As part of this, we provide national policy leadership and direction for Weeds of National Significance. The National Biosecurity Committee, which includes the Commonwealth, State and Territory governments, has agreed to principles to assess whether a pest, disease or weed is of national significance and whether a nationally-coordinated response is in the national interest. The principles outline considerations for determining the significance of the pest, disease or weed impact. Impacts are assessed on the economic health of the nation, human health, the natural environment or trade, and the criteria for determining the appropriateness of a national response. These include the availability and cost-benefit of potential control measures.

Over the last 14 years, the Commonwealth has invested more than \$310 million on responses associated with cost-shared national eradication arrangements. The value of this investment is demonstrated by the successful eradication of Equine Influenza in 2007 and Highly Pathogenic Avian Influenza at Maitland and Young in 2012 and 2013 (OIE 2012, 2013). In addition, Australia is the only country to have successfully eradicated cocoa pod borer (Department of Agriculture 2014).

With the growth of agriculture, and expansion of trade, the Plant Biosecurity Cooperative Research Centre (2014) estimates that over the next 15 years there will be more than 300 responses to exotic plant pests, more than 40 trade incidents related to plant pests and at least five occurrences of loss of area freedom resulting in export challenges. Pest, disease and weed incursions are closely linked to a sound biosecurity system (see Chapter 5—Accessing premium markets for detail on new biosecurity initiatives).

Emergency response capability and management are critical to ensure early, effective action against pests, diseases and weeds. The Government will provide a secure and increased funding base to

ensure rapid and effective responses to potentially devastating pests, diseases and weeds. Improved pest, disease and weed management and emergency response arrangements will increase the likelihood of eradication, minimise the response cost and limit the impact on trade.

The Government will also increase the capacity of farmers, land managers and industries to manage established pest animals and weeds and to deal with incursions of exotic pests and diseases. There is little value in one farmer managing the pests, diseases and weeds on their farm if there is not similar action by neighbouring farms and other land-holders (including national parks). The Government will provide funding to drive common action to deal with a common threat.

We have delivered

The Commonwealth is delivering improvements in managing natural resources.

National Wild Dog Action Plan

The Government is providing an additional \$1.35 million to support the continued implementation of the National Wild Dog Action Plan over the next two years. This builds on start-up funding of \$280,000 towards the Plan, which funded a number of outcomes including the updated PestSmart Connect National Wild Dog Action Plan portal web site.

Developed by the Invasive Animals Cooperative Research Centre, PestSmart Connect is a one-stop-shop for farmers and the community to easily access the information they need on best practice management of wild dogs and other pest animals. Resources include a wild dog management glovebox guide and videos. Farmers can also connect with each other and find assistance in their region to help them tackle wild dogs and other pest animal problems. (Invasive Animals CRC 2015)

Green Army

The Government is providing \$704.4 million over four years from 2015–16 for the Green Army programme to deliver practical projects for environmental benefit and provide training in conservation management. The programme provides opportunities for young Australians (aged 17–24) to gain training and experience in environmental and heritage conservation fields, while participating in projects that generate benefits to the environment.

Through the first three application rounds, 704 projects have been committed. Of these projects, 486 are in regional Australia, engaging up to nine participants per project. The Green Army will create Australia's largest-ever environmental workforce, building the skills of up to 15,000 individuals annually from 2018–19, capable of delivering 1,500 on-ground environmental projects. Future rounds are still to be announced. (Department of the Environment 2015h)

National Landcare Programme

The Government is investing around \$1 billion in the period to 2017–18 for the National Landcare Programme to drive sustainable agriculture and the protection, conservation and rehabilitation of Australia's natural environment. The National Landcare Programme provides an approach to land management so communities and farmers across Australia can take practical action to improve their local environment and productive landscapes across regional Australia.

The National Landcare Programme consists of two funding streams (national and regional) for projects that address environmental and sustainable agriculture issues. A significant proportion of the investment is provided to the 56 regional natural resource management organisations through the regional stream of the programme. These organisations are contracted to act as a central source of support for farmers, local community and environmental groups to take practical action to improve their environment and implement sustainable land management practices.

The national stream is comprised of a range of initiatives that are protecting and restoring the environment and making agriculture more sustainable and productive. Across Australia, the National Landcare Programme is supporting sustainable land management practices to deliver long-term benefits to our communities, our environment, our economy and our country. (Australian Government 2015h)

Emissions Reduction Fund

The \$2.55 billion Emissions Reduction Fund (ERF) works alongside other Government programmes to reduce growth in Australia's greenhouse gas emissions. The ERF purchases low-cost emissions reductions from across the economy—including agriculture—through reverse auctions.

The Clean Energy Regulator held the first ERF auction in April 2015, awarding 107 contracts to deliver more than 47 million tonnes of emissions reductions. The awarded contracts included 75 contracts for vegetation and agriculture-based activities, such as destroying methane from piggery waste, vegetation sequestration projects and building soil carbon in grazing systems. (Department of the Environment 2015g)

White Paper actions

Boosting our emergency response capability

The Commonwealth already works with State and Territory governments to coordinate a national response to emergency eradication of pests and diseases. However, due to the increased number of pest and disease occurrences in recent years, the current funding allocated for eradication cannot meet demand. The Government recognises that emergency pest and disease eradication and management is a critical investment for the future productivity of the agriculture sector.

The Government will invest **\$50 million over four years (starting 1 July 2015) to support nationally significant agricultural and environmental pest and disease eradication programmes and enhanced response capability.** This funding will include an allocation to the National Plant and Animal Disease Eradication Programme to combat new incursions.

The effective management of incursions requires prompt action to gather information, contain and eradicate where possible. The faster the response, the better our chances of containment and eradication. Therefore the Government has established the Immediate Assistance Fund to support deployment of and access to national and international experts and specialised equipment required for pest and disease eradication.

Fighting pest (including feral) animals and weeds

The Government will provide **\$50 million over four years (starting 1 July 2015) to improve the way pest (including feral) animals and weeds are managed** and to increase the capacity of farmers to deal with these threats. Common pest and feral animals include wild dogs, foxes, feral cats and feral goats.

The Government will help develop and promote better technologies and tools (including chemical and biological options) for controlling priority species. Developing cost-effective new methods of control requires targeted research.

Funding will also provide information and raise awareness among landholders and the community about the benefits of pest animal and weed control and the cost of inaction. Coordinated and credible information will promote efficient management.



For Farmers

The Government will be better placed to tackle pest and disease incidents and to enable future containment and eradication programmes to be put in place, when needed.



For Farmers

Farmers will have access to better tools and control methods for managing pest (including feral) animals and weeds, as well as support from Government for pest and weed management.

On-ground mitigation is best led by the community and industry. This can be supported by contributions from government to build the commitment, skills and capabilities of landholders (for example through demonstration sites). The Government recognises that improving on-farm management of pest animals and weeds to reduce their impacts on agricultural production and on the environment has public benefit.

The Government will also develop national consultative and collaborative arrangements for joint government, community and industry action on priority pest animals and weeds.

