

# Objective 1: Create the conditions for successful agribusinesses and supply chains which encourage innovation and productivity

Creating conditions that lift productivity and encourage innovation positions Queensland as a place where government, industry, universities and entrepreneurs collaborate to turn ideas into investable products—helping to grow businesses and create jobs now and into the future. We work with producers, industry and all levels of government to capitalise on opportunities to improve supply chains and deliver on the benefits of free trade agreements and the Queensland Government’s Advance Queensland initiative.

Our services provide the policy and regulatory instruments and the research and development (R&D) needed to underpin the long-term productivity growth and export potential of Queensland’s agriculture, fisheries and forestry sector. Our research and biosecurity systems work to protect the integrity of food and fibre products, enabling and growing market access.

The reforms to fisheries resource management under the *Queensland sustainable fisheries strategy 2017–2027* are aimed at improving the sustainability of Queensland’s fisheries, which support thousands of Queensland jobs, improving the profitability of businesses and providing greater certainty to industry on how fisheries are managed.

## Strategic risks and opportunities

- Economic, market, consumer and environmental trends—sourcing the best available information and data to provide timely responses to merging opportunities and challenges to help our industries adapt and grow
- Better return on investment—partnering with like-minded organisations and investors and evaluating the impact of major programs and services
- Innovation—exploiting data and new technologies and empowering our people and partners to try new things
- Stakeholder and community trust—being inclusive in policy setting with a clearly understood engagement strategy

## Key performance indicators

- Market and investment opportunities facilitated by the department
- Percentage return on RD&E investment
- Regulatory frameworks continually improved

## Cross-government commitments

The following intergovernmental agreements and whole-of-government strategies influence the way we deliver these services.

### Advance Queensland

Advance Queensland is a Queensland Government initiative designed to create the knowledge-based jobs of the future, drive productivity improvements and build on Queensland’s natural advantages. DAF’s actions align with Advance Queensland priorities for developing innovative industries and businesses. DAF works closely with the *Advancing trade and investment: Queensland trade and investment strategy 2017–2022* to promote export and investment opportunities in the agriculture, fisheries and forestry sector. DAF is represented on the Advance Queensland Interdepartmental Committee.

## National RD&E framework

The National Primary Industries Research, Development and Extension Framework provides a guide for research leadership to maximise the outcomes from agri-science investment and make the best use of available expertise across the nation. Queensland leads the beef and sugar strategies, in partnership with the relevant industry organisations. Leadership is also delegated to Queensland for specific sector areas within the grains and horticulture strategies.

## Regulation of agricultural chemicals and veterinary medicines

An intergovernmental agreement for a single national regulatory framework for regulation of agricultural chemicals and veterinary medicines was signed by the Queensland Government in 2013. DAF is represented on the national working groups developing implementation plans for the framework, which is expected to be finalised in 2017.

## Results and work program

### KPI Market and investment opportunities facilitated by the department

Performance monitored by a number of DAF business measures

Trade missions: 2	Investment showcases: 3	Incoming trade delegations: 19
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### Strategy

#### Grow markets and investment to support the flow of trade and capital

##### Contributing impact areas

strategic policy and planning	rural economic development	horticulture and forestry science	crop and food science
animal science	plant biosecurity and product integrity	animal biosecurity and welfare	

Trade missions provide a valuable opportunity to build better international trade relationships and stronger partnerships with overseas trading partners, and to gain greater understanding of the needs of our markets. These missions help to promote investment opportunities, leverage free trade agreements and showcase new, niche and emerging products.

During the year, we supported our former minister's trade mission to Indonesia and China. This focused on opportunities for selling Queensland fruit and vegetables to growing Asian markets and accessing opportunities opened by the free trade agreement with China. A highlight was Queensland's exhibition at Asia Fruit Logistica (in Hong Kong), which is Asia's leading trade show for the international fruit and vegetable sector and supply chains.

In March 2017, the Deputy Director-General, Agriculture attended the Australia–Japan Public and Private Sector Forum on Northern Australia Agricultural Development and signed a memorandum of cooperation on behalf of the Queensland Government with the Japanese Ministry of Agriculture, Forestry and Fisheries. This will provide new opportunities for growth and investment in Queensland's agriculture and aquaculture industries.

### Supporting incoming trade delegations

We hosted 19 trade delegations and participated in 3 international exchanges. This included:

- hosting delegations from Hong Kong, China, Singapore and Taiwan with a focus on investment attraction in Queensland agriculture
- hosting the Farm to Feast event to profile Queensland's fruit, vegetable and nut growing regions and produce to trade delegates from China, Japan, India and Thailand
- participating in market access and trade development discussions such as the Primary Industries Technical Market Access and Trade Development Task Group, and various bilateral meetings.

### KPI Percentage return on RD&E investment

Performance monitored by a number of DAF service standards

Table 1: RD&E investment performance indicator and complementary service standards

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Strategic plan and service standard</b>	Percentage return on RD&E investment through royalty returns	4.98%	4%	4.32%	4.54%	8.12%
<b>Service standard (effectiveness)</b>	Level of funding partner satisfaction that research outcomes contribute to industry productivity growth	Not measured	Not measured	79%	100%	100%

**Note:** The royalty return is well above trend largely due to accumulated chickpea royalties being received in one financial year and favourable seasonal conditions for grains and mangoes. DAF-bred strawberry varieties are also starting to take over market share from overseas varieties, increasing runner sales that generate royalties.

## Strategy

Support the discovery, application and commercialisation of new ideas and technologies

### Contributing impact areas

research infrastructure strategy and business	animal science	crop and food science
horticulture and forestry science	invasive plants and animals	

### RD&E investment prioritisation

In 2016–17, Agri-science Queensland spent \$121.9 million on agricultural RD&E to build Queensland's competitive advantage. The department undertakes RD&E itself, as well as providing funding to university alliances (\$9.89 million) where they have expertise to deliver the department's RD&E priorities. Our investment in RD&E partnerships with the university sector and Sugar Research Australia included:

- \$7.54 million with UQ in QAAFI, which is a research collaboration between UQ and the Queensland Government to work together on key agricultural industry challenges
- \$0.26 million with UQ for the Centre for Future Timber Structures, providing solutions to issues inhibiting the widespread adoption of massive timber construction in medium- to high-rise construction
- \$0.1 million with QUT for research into tropical pulses to develop more productive, profitable and resilient chickpeas, mung beans and other pulses for growers and industry

- \$0.5 million with QUT as support for the Australian Centre for Robotic Vision, which is helping the agricultural sector use robots and autonomous systems to make farms of the future more productive, profitable, sustainable and safe
- \$0.9 million with the University of Southern Queensland for research in wheat and summer grain pathology, agricultural systems modelling, agricultural engineering and winter crop nematology
- \$0.36 million with the University of the Sunshine Coast in pre-harvest forestry research
- \$0.23 million with Central Queensland University to co-fund research positions in vegetable crop protection and farming systems research
- \$2.85 million with Sugar Research Australia to undertake sugarcane RD&E.

### ***The 10-year agriculture and food RD&E roadmap***

The discussion paper on the agriculture and food RD&E 10-year roadmap was developed and released for public consultation in June 2017 to better inform agricultural RD&E priorities.

The discussion paper focuses on identifying Queensland's current agriculture and food RD&E strengths, preparing the agriculture and food sector for future challenges and capitalising on opportunities for the sector. It looks at how to maximise existing and new investment in RD&E, to ensure investment aligns with emerging opportunities and adoption of RD&E outcomes and initiatives.

The consultation will inform development of the agriculture and food RD&E roadmap and action plan as an initiative under Advance Queensland. Consultation will be completed early in the new financial year.

Our industry and funding partners continue to be highly satisfied that our RD&E, and that of our partners, is contributing to industry productivity growth.

### ***Discovery and application***

Examples of our RD&E are outlined throughout this report to highlight how it addresses challenges facing agricultural, fishing and forestry producers.

### ***Return on investment***

We received approximately \$4.7 million in royalty revenue, which equated to a return on investment of 8.12%, as noted in Table 1.

Establishment of the Technology Commercialisation Fund was announced as an Advance Queensland initiative in the 2016–17 Budget. This is a pilot project to trial a new and innovative approach to commercialising intellectual property developed by DAF and our research collaborators. It is designed to unlock the inherent value of the intellectual property and increase the number of new technologies available to industry through commercialisation.

In 2016–17, the program focused on identifying suitable trial technologies and establishing effective and appropriate governance arrangements to ensure a successful trial. A portfolio of about 12 technologies is being transformed into a suite of business cases to take to the investor market in late 2017.

## Strategy

Continue to build Queensland's biosecurity capability to protect the economy, the environment and community from biosecurity risks

### Contributing impact areas

biosecurity strategy and business	animal biosecurity and welfare	fisheries
plant biosecurity and product integrity	invasive plants and animals	

Queensland is on the front line for biosecurity in Australia, combating more biosecurity incursions each year than any other state. Recent disease and pest incursions have demonstrated the pressure our biosecurity system is under, with unparalleled challenges to our capability and capacity to respond to the increasing number, scale and scope of exotic biosecurity pests and diseases.

The Queensland Biosecurity Capability Review conducted in 2015 raised concerns about the adequacy of then existing biosecurity systems and practices. The review found that a new approach was needed to optimise Queensland's biosecurity system. In response to the findings of the review, the government allocated an additional \$10.8 million over 4 years to commence implementing the priority matters. In addition, DAF is investing \$19.4 million over the 4-year period to contribute to achieving the goals set out in the review. The new model proposed to increase stakeholder influence on the strategic direction of the biosecurity system and for all stakeholders to partner with government to help manage these increasing risks.

### ***Biosecurity strategy and action plans***

The *Draft Queensland biosecurity strategy: our next five years 2017–2022* was released for public consultation on 13 June 2017. Feedback will help determine whether the draft strategy reflects the visions of industry and the community for biosecurity.

A joint initiative of the Queensland Government, local governments and industry organisations, the strategy is a first step toward more detailed action planning to address agreed biosecurity priorities. The strategy and action plans will ensure that Queensland builds the capability needed to address the increasing prevalence of animal and plant pest and disease threats. They provide a roadmap for co-managing the biosecurity system with industry, local government bodies and all members of the community by setting the strategic goals and direction for biosecurity in Queensland from 2017 to 2022.

The strategy implements the first recommendation of the Queensland Biosecurity Capability Review. It is the outcome of the work of over 33 organisations and 100 government, stakeholder and community representatives—the capability review recommended that the document be co-developed, co-owned and a whole-of-system strategy, not a government strategy. This co-production model for setting priorities and direction is considered to be best practice in public sector administration. The six strategic themes of the strategy are shown in Figure 5.

		<b>Collaborative governance and leadership</b> —creating a partnership between government, industry and the community to improve joint decision-making about biosecurity
		<b>Every Queenslanders plays their part</b> —effecting change by improving community awareness of good biosecurity, using partnership and behavioural science
		<b>Empowered to act</b> —ensuring Queenslanders have the right skills, information and tools, and are given the capacity to take up their role in the biosecurity system
		<b>Bright ideas and better ways</b> —adopting new processes, services, products and technologies for Queensland to remain at the forefront of emerging and rising trends and risks
		<b>Valuing and building on our investments</b> —making better use of our existing resources and encouraging participation by demonstrating the value of good biosecurity
		<b>Better intelligence systems</b> —improving our predictive and analytic capability, and ensuring our systems are optimised for sharing information across the system

Figure 5: The strategic themes of the draft biosecurity strategy

In tandem with the development of the strategy and the action plan, the Biosecurity Queensland Ministerial Advisory Council will make recommendations for monitoring and reporting.

The strategy builds upon the program already established to support the changes that took effect on 1 July 2016 with the commencement of the *Biosecurity Act 2014* and the *Exhibited Animals Act 2015*. The comprehensive communication program (including awareness training and tools), which commenced in 2015–16, continued this year. In addition, industry liaison officers were placed in AgForce and the Queensland Farmers’ Federation to undertake education and raise industry stakeholder awareness about the changes.

Regional biosecurity plans are proposed to build shared responsibility and capability. Locations for these will be determined by expression of interest. These plans will outline regional priorities and responsibilities to better target and coordinate the efforts of diverse local groups working to support biosecurity outcomes.

Biosecurity information management has been improved by further development of the Biosecurity Online Resources and Information System, formerly known as the Biosecurity Information Management System. This system is a one-stop shop, housing a range of data from compliance and authorisations to maps and incident information, to speed up access to information in support of emergency responses and the implementation of the *Biosecurity Act 2014* and *Exhibited Animals Act 2015*. It is due to be completed by November 2017.

Biosecurity Queensland developed a prototype risk-based investment allocation model to help decision-makers understand where resources are best allocated to manage biosecurity risks and ensure an optimal return on investment. This prototype will be tested in 2017–18.

## KPI Regulatory frameworks continually improved

Performance monitored by a business measure (Table 2) together with a DAF service standard (Table 3)

While we have extensive responsibilities maintaining and managing portfolio legislation (see Appendix 4), our regulatory frameworks principally encompass four areas:

1. agricultural chemicals and veterinary medicines
2. animal welfare and management
3. biosecurity
4. fisheries management.

Table 2: Business measure—self-audit against six KPIs of the Australian Government Regulator Performance Framework (performance score: 1 = poor to 5 = excellent)

Regulatory area	KPI 1 Regulators do not unnecessarily impede the efficient operation of regulated entities	KPI 2 Communication with regulated entities is clear, targeted and effective	KPI 3 Actions undertaken by regulators are proportionate to the risk being managed	KPI 4 Compliance and monitoring approaches are streamlined and coordinated	KPI 5 Regulators are open and transparent in their dealings with regulated entities	KPI 6 Regulators actively contribute to the continuous improvement of regulatory frameworks
Agricultural chemicals and veterinary medicines	<b>Performance score: 4</b> Improvement focus in 2016–17 was driving key legislative changes to allow access to new technology (e.g. remotely piloted aircraft)	<b>Performance score: 3</b>	<b>Performance score: 4</b>	<b>Performance score: 4</b>	<b>Performance score: 4</b>	<b>Performance score: 5</b> Improvement focus in 2016–17 was ensuring synergies exist between regulating agencies at local and national levels
Animal welfare and management	<b>Performance score: 4</b>	<b>Performance score: 4</b> Improvement focus in 2016–17 was having a comprehensive engagement with stakeholders	<b>Performance score: 4</b>	<b>Performance score: 4</b> Improvement focus in 2016–17 was to collaboratively develop an approach that is consistent with existing activities to minimise local government costs	<b>Performance score: 4</b>	<b>Performance score: 4</b>

(Continued)

(Table 2 continued)

<b>Regulatory area</b>	<b>KPI 1</b> Regulators do not unnecessarily impede the efficient operation of regulated entities	<b>KPI 2</b> Communication with regulated entities is clear, targeted and effective	<b>KPI 3</b> Actions undertaken by regulators are proportionate to the risk being managed	<b>KPI 4</b> Compliance and monitoring approaches are streamlined and coordinated	<b>KPI 5</b> Regulators are open and transparent in their dealings with regulated entities	<b>KPI 6</b> Regulators actively contribute to the continuous improvement of regulatory frameworks
<b>Biosecurity</b>	<b>Performance score: 4</b> Improvement focus in 2016–17 was making legislative amendments necessary to correct unintended consequences from the Biosecurity Regulation 2016	<b>Performance score: 5</b>	<b>Performance score: 4</b>	<b>Performance score: 3</b> Improvement focus in 2016–17 was rolling out the implementation of the <i>Biosecurity Act 2014</i>	<b>Performance score: 4</b>	<b>Performance score: 4</b>
<b>Fisheries management</b>	<b>Performance score: 2</b> Improvement focus in 2016–17 was better management responsiveness and efficiency, to be achieved through the <i>Queensland sustainable fisheries strategy 2017–2027</i> finalised in June 2017 (following a public discussion paper released in July 2016)	<b>Performance score: 4</b>	<b>Performance score: 3</b>	<b>Performance score: 3</b>	<b>Performance score: 3</b>	<b>Performance score: 3</b> Improvement focus in 2016–17 was better stakeholder engagement, to be achieved through the <i>Queensland sustainable fisheries strategy 2017–2027</i> finalised in June 2017 (following a public discussion paper released in July 2016)

Source: Commonwealth of Australia, 2014 , <[www.pmc.gov.au/resource-centre/regulation/regulator-performance-framework](http://www.pmc.gov.au/resource-centre/regulation/regulator-performance-framework)>.

Table 3: Service standard—average cost to conduct regulatory policy and reform activities

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (efficiency)</b>	Average cost per hour to conduct regulatory policy and reform activities	Not measured	Not measured	Not measured	\$70	\$69

**Note:** The average cost of employment per hour is lower than originally forecast due to flexible staffing arrangements, which have reduced the overall cost of service provision.

## Strategy

Ensure department activity/regulation provides the foundations for a strong business environment, balancing economic, environment, social and biosecurity imperatives

### Contributing impact areas

strategic policy and planning	animal biosecurity and welfare	plant biosecurity and product integrity
invasive plants and animals	biosecurity strategy and business	fisheries

Industry, enterprises and individuals benefit from a stable regulatory framework, as it provides certainty around legislative requirements and clarity on the obligations of individuals and businesses.

On 2 November 2016, the Queensland Government tabled in Parliament a report from the Red Tape Reduction Advisory Council. The government's response included a report from the Queensland Productivity Commission supportive of a recommendation to 'investigate and implement a regulatory performance framework to monitor and provide an innovative approach to improving the performance of regulatory agencies'. In response, we undertook a self-assessment of our regulatory performance (as reported in Table 2).

The following sections give more detail about improvements to the regulatory frameworks in our four main areas of regulatory activity during 2016–17.

### ***Agricultural chemicals and veterinary medicines***

- We contributed to the development of implementation plans that will deliver harmonised legislation under the intergovernmental agreement for a single national framework for the regulation of agricultural chemicals and veterinary medicines. The current program is due to be completed in early 2018. Key reform deliverables include national harmonisation of recordkeeping requirements and user training requirements for restricted chemical products and scheduled dangerous poisons. Future implementation will involve amendments to portfolio legislation over several years.
- We implemented reforms to the *Agricultural Chemicals Distribution Control Act 1966*, which took effect on 23 October 2016. Associated regulation changes brought the legislation up to date with the national licensing framework for people operating aircraft and the use of new remotely piloted technologies to apply agricultural chemicals.

### ***Animal welfare and management***

- We introduced registration requirements under the *Animal Management (Cats and Dogs) Act 2008*, which commenced on 26 May 2017. This registration will identify and locate dog breeders so that cruel 'puppy farms' can be closed down.
- We prescribed Dogs Queensland, Gold Coast City Council and Logan City Council as approved entities that could accredit breeders under the *Animal Management (Cats and Dogs) Regulation 2017* from 26 May 2017.
- We implemented major reforms in management of exhibited animals from 1 July 2016, when the *Exhibited Animals Act 2015* and its supporting *Exhibited Animals Regulation 2016* commenced. Transition of exhibitors from holding a wildlife licence under the *Nature Conservation Act 1992* to holding and exhibitor licence is ongoing.

## Biosecurity

- We implemented major reforms in biosecurity when the *Biosecurity Act 2014* and its supporting Biosecurity Regulation 2016 commenced on 1 July 2016, consolidating previous legislation and providing for a proportionate, risk-based approach and greater flexibility with compliance options.
- The *Farm Business Debt Mediation Act 2017* amended:
  - the *Biosecurity Act 2014* to provide for third-party biosecurity accreditation systems as an alternative to government accreditation of certifiers and government certification of animals, animal products, plants, plant products and other biosecurity risk items
  - the *Biological Control Act 1987* to provide for the declaration of viruses and subviral agents as agent and target organisms—this was necessary before the release of new strains, such as calicivirus to control rabbits.

## Fisheries management

- We implemented changes to protect the sustainability of scallop stocks, including closing existing scallop replenishment areas and implementing a winter spawning closure from 1 May to 31 October each year in East Coast Trawl Fishery waters under the Fisheries (East Coast Trawl) Management Plan 2010.
- We clarified the requirements for turtle excluder device escape holes in trawl nets under the Fisheries (East Coast Trawl) Management Plan 2010, providing greater protection for sea turtles and reducing the ecological risks that have been attributed to trawling.

## Other reforms

There were also regulatory reforms to legislation outside these four main areas of activity:

- The *Farm Business Debt Mediation Act 2017* provides a process for the efficient and equitable resolution of farm business debt matters between mortgagees and farmers. It is supported by the Farm Business Debt Mediation Regulation 2017, which provides for how mediators are chosen. Both commence on 1 July 2017.
- Amendments to the *Drugs Misuse Act 1986* enable licenced researchers and growers of industrial cannabis in Queensland to supply seed to licence holders under a national licensing system to cultivate medicinal cannabis.
- Amendments to the *Rural and Regional Adjustment Act 1994* provide for the transition from QRAA to the Queensland Rural and Industry Development Authority from 1 July 2017, with expanded functions.

## Strategy

### Optimise benefits from fisheries and state-owned forestry

#### Contributing impact areas

fisheries

forestry

Fisheries and state-owned forest products are community resources belonging to all Queenslanders. We are responsible for managing these resources in a way that optimises the benefit for Queenslanders today while ensuring that future generations will continue to benefit from the resources. The *Queensland sustainable fisheries strategy 2017–2027* (discussed in Objective 3) outlines actions in place to broaden the economic and social opportunities from charter and other recreational fishing pursuits.

We continued to meet all sales permit/contract obligations for the supply of state-owned forest products, oversaw the 99-year licence with HQPlantations and worked with industry to implement agreed programs to help develop the industry.

We met contracted supply commitments for native forest log timber, other forest products and quarry material, delivering expected financial returns while meeting environmental and community expectations.

Around 35 000 hectares of state-owned native forests are selectively harvested each year, supplying around 14% of Queensland's domestically produced log supply.

Our native forest timber sales saw around 7500 cubic metres harvested to provide timber poles for railway, bridge and electricity infrastructure.

The department's quarry material sales are the source of some 16% of the quarry material used in Queensland each year, and these sales play a key role in supporting infrastructure, mining, industry and commercial development across the state. Quarry material sales for 2016–17 were about 4.02 million cubic metres.

Funding of \$2.7 million was allocated to implement a range of actions to help develop the industry—this included \$1.4 million towards industry research priorities. Actions align with the priorities of job creation, growing existing economic strengths, value adding, innovation and supporting regional and rural Queensland. Significant progress has been made in implementing the actions, including:

- supporting industry to promote the forest and timber industry to jobseekers and the broader community as a long-term career by funding the Timber and Building Materials Association *Queensland forest & timber workforce development plan 2016–2020*
- progressing an extension project to support private landholders to better manage their forests for both environmental and timber production outcomes.

## Priorities for 2017–18

- Undertake initiatives that support rural economic development, including:
  - implementing the Growing Queensland's Food Exports initiative
  - establishing the Rural Economies Centre of Excellence.
- Promote export opportunities and showcase Queensland's agricultural products by:
  - supporting government-sponsored outbound trade missions
  - holding an agricultural investment summit and leveraging promotional activities and international events associated with Beef Week 2018 and the 2018 Gold Coast Commonwealth Games.
- Drive innovation in Queensland's agricultural and food industries and attract private-sector capital into RD&E by implementing:
  - the final agriculture and food RD&E 10-year roadmap and action plan
  - the Technology Commercialisation Fund.
- Release and implement the final *Queensland biosecurity strategy: our next five years 2017–2022* and commence the action planning process.
- Develop (with industries) accredited industry-led quality assurance schemes, which will enable market access for Queensland producers under contemporary biosecurity legislation.
- Implement the forest and timber industry RD&E program in consultation with industry.
- Oversee the plantation licence held by HQPlantations Pty Ltd, as well as the related agreements.

## Objective 2: Assist people in agribusinesses to respond to challenges and protect environmental values

Droughts, floods and animal and plant pests and diseases are regular features of agricultural production, with impacts along the supply chain. Our programs and initiatives help agribusinesses prepare for and mitigate risks and maintain continuity in the face of climate variability, biosecurity threats and disruption from technological change. Proactive implementation of climate risk management practices supports recovery and rebuilding. Effective leadership of biosecurity responses and delivery of drought assistance and extension services all improve the capacity and resilience of rural businesses.

The dependency of many rural economies on agriculture led to the department placing a more specific focus on rural economic development. We work with rural communities to identify and secure funding for projects that support local economic priorities and strengthen rural communities.

### Strategic risks and opportunities

- Major climatic events and biosecurity threats—being prepared for events, managing the continuity of business and effectively sharing responsibility for risk management
- Economic, market, consumer and environmental trends—sourcing available data and information to provide timely responses to emerging opportunities and challenges to help our industries adapt and grow

### Key performance indicators

- Business improvement attributed to DAF's products and services
- Significant biosecurity response programs deliver nationally agreed outcomes

### Cross-government commitments

The following intergovernmental agreements influence the way we deliver these services.

#### Intergovernmental Agreement on National Drought Program Reform

Under this intergovernmental agreement, the states and territories are required to deliver farm business training, coordinated and collaborative social services, and tools and technologies to inform farm decision-making, with the aim to increase producer drought preparedness. The range of measures introduced during this drought as part of the Drought Assistance Package supports some of the objectives of the intergovernmental agreement.

## Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin

The Queensland Murray–Darling Basin Regional Economic Diversification Program, a part of this agreement, is designed to stimulate economic activity and jobs in areas affected by reductions in irrigation water allocations that have occurred as part of the Basin Plan 2012. DAF administers two projects under this program:

1. The High Value Horticulture Value Chains project is developing new export-oriented horticulture value chains in the region to maximise economic return from each megalitre of available irrigation water.
2. The Improved Economic Productivity from Irrigated Agriculture project works with existing irrigators, mainly in the cotton and grains industries, to demonstrate and evaluate new irrigation practices and technologies, and implement an irrigation benchmarking program so irrigators can measure the efficiency of their irrigation systems.

## Intergovernmental Agreement on Biosecurity

The Intergovernmental Agreement on Biosecurity establishes nationally agreed approaches to mitigate risks across the biosecurity continuum and identifies national priorities for action. The agreement helps the federal, state and territory governments avoid unnecessary duplication of biosecurity activities, improve the efficiency of resource use and clarify their respective roles and responsibilities. National cost-sharing arrangements are outlined in subsidiary response deeds and agreements. The Intergovernmental Agreement on Biosecurity is linked to international agreements.

## Results and work program

### KPI Business improvement attributed to DAF's products and services

Performance monitored by a DAF service standard, together with qualitative case studies of our work in innovation, growth, exports, production risks and changes in climate

Table 4: Service standard—improvements due to RD&E

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Percentage of customers indicating that participation in an RD&E activity contributes to business improvements	54–60%	54–60%	60–73%	64%	69%

**Note:** This was a new measure replacing two measures that focused on improvements adopted post-RD&E participation, which were discontinued measures in 2015–16. The earlier results are indicative of trend but not directly comparable. The prior years show the range of results achieved from the former two measures. In 2016–17, over 2000 participants completed relevant surveys. A total of 69% indicated that they would make business improvements as a result of participating in the RD&E activity. This is a 5% increase from 2015–16 and is consistent with historical trends.

## Strategy

### Support development of a modern and capable workforce to meet agribusiness labour needs

#### Contributing impact area

rural economic development

We have established the successful Queensland Agriculture Workforce Network and Rural Jobs and Skills Alliance to address labour market needs and challenges, and provide assistance with workforce development.

The industry-led Rural Jobs and Skills Alliance has developed strong links with state and federal employment and training agencies, and has established itself as the key source of labour market and training intelligence and advice to government. The initiative is a \$3.57 million investment in industry-led workforce programs between 2015 and 2018.

In 2016–17, our work continued support to the Queensland Agriculture Workforce Network, the AgForce-managed Schools to Industry Partnership Program and the Gateway Schools program to promote agribusiness training and career options.

## Strategy

### Engage and partner with agribusinesses to capitalise on opportunities for innovation, growth and export development

#### Contributing impact areas

animal science

crop and food science

horticulture and forestry science

plant biosecurity and product integrity

rural economic development

RD&E innovations in production support the growth of the Queensland agriculture and food sectors, which flow on to generate jobs in rural communities and across the supply chain. The following case studies illustrate how product innovations from DAF's breeding programs deliver benefits to producers and consumers. We engage with producers through forums, field days, workshops and printed and online resources (including social media) to foster the uptake of new varieties and improved production and land management practices, and encourage producers to join trials.

## *New horticulture varieties*

The Horticulture and Forestry Science unit's breeding programs continue to deliver new varieties to Queensland industries that improve productivity and consumer appeal. This leads to enhanced bottom-line profitability for individual businesses and overall growth of the industries. New breeding techniques such as genome sequencing and identification of genetic markers for desirable productivity and quality traits are being applied to help speed up the process of delivering improved varieties.

Increasingly, consumers are looking for new eating experiences in their fruit and vegetables. To address this growing demand, researchers are focusing on improving custard apple varieties by increasing yield potential, offering a range of fruit quality options (such red/pink and green-coloured skin, and lower seed counts) while retaining the creamy sweet flavour for which custard apples are well known. Large-scale semi-commercial testing of the elite selections will soon see commercial release of improved green-skinned varieties and the novel red-skinned varieties.

This year also saw the release of four new macadamia varieties. It has taken researchers 20 years to select and breed superior varieties that yield up to 30% more nuts than the current industry standards. All of these varieties have superior nut quality and desirable tree characteristics to ensure efficient production and harvesting. High yields and reduced production costs will enable the Australian macadamia industry, which exports over 70% of the crop, to be more competitive on the world market. These varieties are being commercially released to the industry through our commercialisation partner, Queensland Strawberry Growers Association Ltd.

Three new superior low-seeded mandarin varieties are in the final stages of assessment in large-scale blocks on commercial farms in Queensland.

These varieties have much lower seed counts than previous varieties produced in the subtropics. They also have superior flavour characteristics compared to other mandarins on the market. Both domestic and international consumers favour mandarins with good taste, no or low seed counts and easy peeling.

The berry category is the fastest growing fruit category in the world. In response to this demand, the Queensland strawberry industry continues to grow and now produces strawberries for 12 months of the year. Strawberries are also commercially grown from Bundaberg to the Granite Belt, with another small production area on the Atherton Tableland. The breeding program focuses on producing berries that have significant consumer appeal while being highly productive. The focus is also about providing varieties to extend the production season and avoid production peaks that have historically seen low returns to the growers. Two new subtropical varieties have been released to the industry this year—Scarlet Rose-ASBP and Sunglow-ASBP. New temperate varieties, suitable for production in the Granite Belt, are close to being commercially released.



Figure 6: Red-skinned custard apple variety

## *Next-generation beef producers develop ‘whole of business’ skills*

The NextGen program specifically links young beef producers (mentees) to experienced producers (mentors) who successfully manage the seasonal, financial, herd and grazing management constraints faced in the beef industry. In addition to experience gleaned from leading producers, the mentees also network with a range of industry experts in animal nutrition, grazing land management, marketing, business skills, wealth management and personal communication/development.

In 2016, the NextGen concept was developed by DAF in collaboration with the Northern and Southern Gulf natural resource management bodies and leading producers. Following an expression of interest process, 32 young producers signed up for the 12-month program. Mentees varied in age from 18 to 35 years. The participants had a broad skill base ranging from property managers, the next generation taking over the family business, jillaroos, jackaroos, overseers and corporate company employees. The group of mentees have direct links to 33 properties covering 1 446 000 hectares carrying approximately 151 000 head of cattle. The DAF \$avannaPlan-Beef\$ense delivery team supported the mentee learning programs through customised on-property services, group forums and webinars.

Part of the program output was the development of 32 action plans that enabled each mentee to identify, timetable and monitor their learning program. These action plans also allowed the delivery team to efficiently plan and deliver training through one-on-one, group or online events.

Evaluation of the learning process indicated that the most valued aspects of the program included:

- networking with others and with the \$avannaPlan-Beef\$ense team
- tailored training sessions just for the NextGen group
- assistance to find and engage with industry mentors
- one-on-one support and follow-up.

Of the survey respondents, 90% stated that they would like to remain involved with the NextGen program beyond June 2017. Improvement feedback suggested future NextGen programs should focus more fully on all aspects of running a successful beef business, with particular emphasis on personal development/communication skills, breeder/weaner management, livestock nutrition, bookkeeping skills, pasture management and property management.

As a result of the initial success of the NextGen program, a regional consortium—including the Gulf Cattleman’s Association, Northern Gulf Resource Management Group and the \$avannaPlan-Beef\$ense team—has applied for federal government Leadership in Agricultural Industries funding to continue the program until 2020.



Figure 7: NextGen group on the Central Queensland tour

DAF's network of regional officers also worked with industry sectors and rural communities to develop strategies and projects designed to stimulate economic activity and jobs in areas faced with a range of opportunities and challenges, including:

- facilitating the 'Preparing for Future challenges—where will your business be in 2025' conference for pork producers and industry partners, which had more than 150 national delegates presenting regional opportunities to grow the pork industry, including the potential use of the Brisbane West Wellcamp Airport for export
- collaborating with Avocados Australia and Horticulture Innovation Australia on the national Qualicado program, which focuses on continuous improvement of the supply chain across Australia
- continuing to support communities involved in the Murray–Darling Basin Regional Economic Diversification Program.

### *High-value crops help the Murray–Darling adapt to water constraints*

The High Value Horticulture Value Chains project is developing new export-oriented horticulture value chains in the Murray–Darling region to maximise economic return from each megalitre of available irrigation water. The Australian Government has provided \$15.055 million over 3 years, with in-kind contributions from Queensland of approximately \$4 million.

The industry development project led by DAF and Trade and Investment Queensland has seen irrigated crop producers in communities such as Inglewood and St George grow and export new crops, including sweet corn, broccoli, blueberries and garlic. They are much more water efficient than the traditional crops previously grown in these areas. The new production systems have also led to the establishment of new businesses and employment opportunities in rural communities, such as packaging and processing facilities. Over 30 businesses in the

project area are now producing new crops or using more intensive production practices due to the support of the project, and the information and experienced generated will lead to further regional diversification in the future.



Figure 8: Blueberry crops in St George for export

## Strategy

### Increase the capacity of agribusinesses to respond to production risks and adapt to changes in climate

#### Contributing impact areas

animal science	crop and food science	horticulture and forestry science
research infrastructure, strategy and business	rural economic development	

Agribusiness faces a range of risks to production, including weather and biosecurity events. In 2016–17, we worked with industry and across all levels of government to support communities and producers address these challenges by providing drought assistance and in areas such as increasing plant and animal disease resistance, development and introduction of new technologies, and creating efficiencies in production.

#### *Climate impacts*

Tropical Cyclone Debbie crossed the coast on 28 March 2017. The estimated damage across all agriculture and fisheries industries within the Whitsunday and Mackay areas was over \$300 million. Producers lost crops, stock and infrastructure in the cyclonic winds and associated flooding. Other areas significantly impacted were parts of Central Queensland (including the Clarke Creek area) and parts of South East Queensland (in particular, the Logan and Albert river region). In all, the total cost was estimated to be approximately \$450 million.

In response to this disaster, we requested activation of the joint federal–state Natural Disaster Relief and Recovery Arrangements (category B and C) to assist affected primary producers. Applications for this assistance are managed by QRAA.

We were well prepared to respond to extreme weather events such as cyclones and flooding, as we had:

- conducted successful test exercises (by departmental District Disaster Management Groups in Roma, Brisbane and Mount Isa)
- developed a Rapid Damage Assessment Tool (using the Collector for ArcGIS app to assist DAF officers in the collection and provision of damage impact information)
- evaluated the effectiveness of training programs.

We provided \$7.2 million in drought relief under the Drought Relief Assistance Scheme (DRAS), processing 1636 DRAS claims.

DRAS is the largest component of the multi-agency Drought Assistance Package. The Drought Assistance Package also provides relief for electricity charges, land rent and water licence fees, rural financial counselling and mental health support, and community and educational assistance.

DRAS comprises freight subsidies (\$4 million in 2016–17) and emergency water infrastructure rebates (\$3.2 million in 2016–17), as well as charity payments and the provision of rural financial counselling services. Table 5 provides an overview of DRAS responsiveness.

The Queensland Government is currently participating in the national review of drought policy, with the Intergovernmental Agreement on National Drought Program Reform between all state, territory and federal governments due to expire on 1 July 2018.

Since April 2013 when the drought commenced, the Queensland Government has spent over \$120 million to support farm businesses, families and communities through the Drought Assistance Package.

Table 5: DRAS performance

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
Condition	Percentage of state drought-declared	< 1%	79%	80.3%	83.9%	66.27%
Service standard (quantity)	Number of applications received	15	6165	7636	4294	1691
Service standard (effectiveness)	Percentage of customers whose application for business assistance as a result of natural disaster or drought is processed within 21 days	Not measured	36%	90%	97%	98%

**Note:** Assistance is available annually and the amount of assistance rises if the producer has a drought management plan in the third and subsequent year of drought. Due to the high number of applications received in 2013–14, claims received in the first three quarters of that financial year were not processed within the required time frame.

### Rural Assistance Package

We are committed to assisting rural producers and communities across the state that are affected by unprecedented drought conditions and high debt—some producers have been in drought for more than 4 years. The Rural Assistance Package will provide total funding of \$77.96 million over 5 years from 2015–16. Outcomes progressed in support of the Rural Assistance Package during 2016–17 included:

- the introduction of a legislated Farm Business Debt Mediation process before bank enforcement action, which commences 1 July 2017
- continued pest and weed management programs through the Feral Pest Initiative, including establishing two Wild Dog Commissioners in Western Queensland, and wild dog exclusion and cluster fencing funding of \$31.2 million over 2 years, the result of which has seen improved lambing rates produce an additional 213 000 sheep in the state flock and generate 45 full-time jobs worth approximately \$2.5 million
- the Crop Insurance Research Program, which provided research grants for farm production data collection and analysis to support the development of the crop insurance industry, with grants of \$150 000 paid
- the extension of transfer duty concessions for the intergenerational sale of the family farm to further facilitate succession planning
- amendment of the *Rural and Regional Adjustment Act 2011* and Regulations to transition QRAA to the Queensland Rural and Industry Development Authority and increase the loan limits under the Primary Industry Productivity Enhancement Scheme program
- opening applications for Financial Management and Climate Risk Mitigation research grants.

Following reallocation of government portfolios, including designation of a ministerial rural economic development portfolio, the government indicated an intention to establish a new Rural Economies Centre of Excellence. The centre will undertake integrated research and specialised programs to deliver the sustainable growth of Queensland’s rural communities. Following stakeholder consultation, a proposed Office of Rural Affairs, to be established under the Rural Assistance Package, was assessed as duplicating functions now managed at the DAF portfolio level.

### Drought and Climate Adaptation Program

The Drought and Climate Adaptation Program provides funding for RD&E services to promote drought preparedness and climate risk mitigation. The program is funded for 6 years, with \$3.5 million available each year.

The Queensland Drought Mitigation Centre (formally launched in June 2017) is the largest component of the Drought and Climate Adaptation Program, and is a partnership between DAF, the Department of Science, Information Technology and Innovation and the University of Southern Queensland. The centre works with Australia’s and the world’s best climate modellers to improve seasonal forecasts and weather reports for

agriculture in northern Australia. Examples of work include extending seasonal forecasts, research into multi-year droughts, improving our knowledge of Queensland's climate before European settlement, options for multi-peril crop insurance, regional climate change projections and workshops on managing farm businesses in our variable and changing climate.

The main extension component of the Drought and Climate Adaptation Program is the Grazing Futures project, which held 39 training, skill development and mentoring activities involving 758 producers during 2016–17. These activities involved 541 grazing businesses that managed over 790 000 cattle and over 540 000 sheep across 12.8 million hectares of Queensland's pastoral regions. Participation of over 360 agribusiness professionals multiplies the impact of these Grazing Futures project activities within their networks of landholder client groups and through the supply chain.

## Strategy

### Build capability to adjust to market disruptions driven by technological innovation

#### Contributing impact areas

research infrastructure, strategy and business	animal science	crop and food science
horticulture and forestry science	strategic policy and planning	

In 2016–17, we hosted the AgFutures Conference with a total of 356 attendees. The innovation and investment theme of the conference aligned with the government's Advance Queensland strategy and developing the knowledge-based economy of the future. Attendees heard from over 30 national and international world-leading experts on agri-technology innovation and investment and the future of agriculture. Demonstrations were given on pioneering agricultural technologies, including robotics, greenhouse gas monitoring systems, drought and disease-resistant crops and new biofuel and biochemical production methods.

We provided forums to share home-grown innovations, and to provide a platform for industry champions to come together to discuss advancements, emerging trends and future investment. Once considered revolutionary, sensor and unmanned aerial technologies are rapidly being adopted in agricultural production.

#### ***Novel sensor technology to improve effluent management in the pork industry***

DAF scientists launched a prototype device, 'Susbot', at a commercial piggery. Susbot is designed to automatically relay information from the effluent sump back to the producer about in-shed production factors, including effluent solids concentrations, feed wastage and the

presence of odorous compounds. The pilot trial ran successfully, with Susbot effectively capturing and analysing samples from the site's effluent sump. Data captured by Susbot is now being analysed to explore ways to optimise the device for improved automated performance.

## *Drone imagery changing the way crop yields and plant diseases are predicted*

A proof-of-concept project on unmanned aerial vehicle (UAV) technology demonstrated the potential application of UAV multispectral imagery to map fungal disease and predict yields in vegetable crops. The Agri-Science Queensland innovation project used spatial maps based on a normalized difference vegetation index—as an indicator of crop growth and vigour—to map the presence of the fungal disease *Sclerotinia* in green beans, and to predict yield and final crop parameters in lettuce and sweet corn.

The trial showed that early season crop variability was maintained through to maturity, suggesting that early season data measurements could be used to predict final yield and crop characteristics. Automated counts of lettuce from imagery were 98% accurate relative to manual counts. Field measurements of crop parameters (plant and head diameter and final weights) were also highly correlated with harvest data. The trial generated important proof-of-concept data and provides a basis for further exploration of the use of drone technology to improve farming productivity and profitability.

DAF is working with drone technology companies, supporting farmers to trial drones, and working with other regulators to make the rules associated with their use easier. Drones can collect large amounts of information at low cost. Drone technology is being developed to improve sorghum varieties and to monitor broadacre crops in the cotton and grains industries for possible signs of disease and nutritional deficiency. We have experimented with drones to spot forest fires and evaluate their benefits in managing feral animal pests (cats, wild pigs, deer and goats) and assisting with plant biosecurity outbreaks (such as citrus canker, Panama disease tropical race 4 and tomato potato psyllid)—where one of the biggest impediments to rapid response is identifying where host crops and infestations are located and their extent. The use of mapping technology can help target responses making them more efficient and more effective.



Figure 9: Normalized difference vegetation index imagery of sweet corn (left) and size of green bean plants from each of the areas indicated (centre right)—green beans harvested from 1 metre of plants from highest yielding plot (top right) and lowest yielding plot (bottom right) sampled from the areas indicated by the arrow tips

## KPI Significant biosecurity response programs deliver nationally agreed outcomes

Performance monitored by a range of DAF service standards

Table 6: Performance indicator and complementary service standards—significant biosecurity responses

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Business measure (activity)</b>	Number of significant response programs	Not measured	Not measured	6	7	7
<b>Service standard (effectiveness)</b>	Percentage of significant response programs on track to deliver nationally agreed outcomes (on time and on budget)	100%	100%	100%	100%	100%
<b>Service standard (efficiency)</b>	Average cost per hour to deliver biosecurity services for Queensland	Not measured	Not measured	Not measured	\$48	\$52.40

**Note:** The number of significant response programs is based on the type and nature of detections made. Due to changes in definition it is not possible to provide comparable figures before 2014–15. The increase in cost per hour to deliver biosecurity services for Queensland between 2015–16 and 2016–17 reflects the additional costs incurred to undertake response programs such as white spot disease in prawns.

## Strategy

### Lead Queensland's biosecurity preparedness and responses

#### Contributing impact areas

animal biosecurity and welfare  
invasive plants and animals

plant biosecurity and product integrity  
biosecurity strategy and business

There are recognised benefits to a coordinated and aligned approach to the management of animal and plant pests and diseases—a shared responsibility between all levels of government, industry and the community.

During the year, Biosecurity Queensland led seven programs under national cost-sharing agreements:

1. National Red Imported Fire Ant Eradication Program—South East Queensland
2. National Red Imported Fire Ant Eradication Program—Brisbane Airport
3. National Red Imported Fire Ant Eradication Program—Yarwun
4. National Four Tropical Weeds Eradication Program
5. National Red Witchweed Eradication Program
6. Exotic Fruit Flies in Torres Strait Program
7. Varroa Mite Eradication Program.

Contractual arrangements with the federal, state and territory governments and relevant industry groups provide for cost-sharing and defined accountabilities when responding to emergency pest and disease events. These arrangements enable coordinated responses across jurisdictional boundaries and are outlined in the Emergency Animal Disease Response Agreement, the Emergency Plant Pest Response Deed and the National Environmental Biosecurity Response Agreement. During the year, the Queensland Government received funding to support its significant response programs in accordance with these agreements. The Queensland Government also met its obligations to cost-share funding for national responses being managed by other states and territories, including red imported fire ants (New South Wales), browsing ants (Northern Territory), banana freckle (Northern Territory), giant pine scale (Victoria, South Australia) and Khapra beetle (South Australia).

### *Continuation of the Red Imported Fire Ant Program*

Since 2001, more than \$353 million has been invested in Queensland on behalf of the federal, state and territory governments to eradicate red imported fire ants. To date, the ants have been successfully eradicated at Gladstone and separate infestations around the Port of Brisbane, but the biosecurity zone remains in place in and around Brisbane.

An independent review of the program, undertaken in 2015–16, found that eradication of fire ants in South East Queensland is still possible but there is a small window of opportunity left to achieve this. If no further action was taken, the cost to the community would be up to \$35 billion over the next 30 years. Biosecurity Queensland developed a detailed draft 10-year eradication plan, and is negotiating with the other jurisdictions to secure a 10-year funding commitment for the program from 2017–18 to 2026–27.

Biosecurity Queensland also delivered non-national cost-shared responses for:

- Panama disease tropical race 4—invested \$5.8 million in measures to prevent the spread of the disease in bananas, including research and surveillance across the entire northern banana production zone to determine the extent of the outbreak and the *Banana best management practices: on-farm biosecurity manual* launched in May 2017
- electric ants—invested \$1.291 million in the eradication program
- the anthrax incident in the St George district
- cucumber green mottle mosaic virus—to help reduce impacts to the approximately \$150 million melon and cucurbit industry in the Bundaberg region
- white spot disease in prawns—the largest response to an aquatic disease in Australia’s history affecting the \$92 million aquaculture industry
- Asian green mussels—a detection south of Weipa
- Hendra virus—a single incident of Hendra virus infection in the Gold Coast Hinterland in May 2017.

## *Response to white spot disease in prawns*

The response to the outbreak of white spot disease in commercial prawn farms in South East Queensland has been the largest response to an aquatic disease in Queensland's history.

White spot disease was first detected in a prawn farm on the Logan River in late 2016 and, over time, spread to six neighbouring premises. Upon detection of the exotic disease, Biosecurity Queensland responded quickly to protect this valuable industry, including:

- destruction of all prawn stock on the seven affected premises on the Logan River using over 6.8 million litres of chlorine
- application of legislative tools under the *Biosecurity Act 2014* to restrict the movement of uncooked crustaceans
- testing of over 50 000 samples comprising 24 000 crustaceans from the affected prawn farms and over 23 000 crustaceans from the wild as part of a comprehensive surveillance program.

An extensive engagement and communication program was implemented to keep the industry and community informed. Information packs were emailed and posted to 3300 commercial prawn, crab and worm licensees in Queensland, 332 aquaculture operators, 30 seafood wholesalers and processors, 16 seafood industry associations and 41 local councils. This was supported by weekly updates to 1730 e-subscribers, radio and television advertising, 100 boat ramp signs, jetty and foreshore engagement events, a social media campaign and patrols by the Queensland Boating and Fisheries Patrol. The formation of a White Spot Industry Communication Working Group, comprising members from key commercial and recreational representative industry groups, was crucial to maintaining public awareness of restrictions.

DAF is delivering an eradication program on behalf of industry, overseen by a national expert committee. Surveillance testing of prawns in the wild has been extensive, including within Moreton Bay and along the entire east coast of Queensland. Ongoing protection requires industry to plan for the future and adopt minimum biosecurity standards on all farms in Queensland. This will involve infrastructure upgrades, restructuring of farms and a heightened awareness for future scenario planning. This will be a difficult transition for the prawn farming industry, but with it we will see increased long-term confidence for investment and a platform for future growth.

To further enhance Queensland's biosecurity prevention and response, the department:

- delivered biosecurity workshops to producers of targeted industries, including free-range egg production
- established the Queensland Marine Pest Governance Group and worked with port authorities, the commercial and marine industry, ship maintenance and cleaning sectors, conservation interests and the boating community to improve Queensland's marine pest biosecurity
- formed the Biosecurity Emergency Response Group, which was a recommendation of the Biosecurity Capability Review—the group comprises trained DAF staff who will provide the first wave of frontline support in emergency biosecurity incursions
- supported a simplified and stronger cattle tick management framework with the introduction of a new tick line and more flexible options for crossing the line
- provided input into the government response to the parliamentary Agriculture and Environment Committee inquiry into *Hendra virus EquiVac® vaccine and its use by veterinary surgeons in Queensland*
- commenced or maintained surveillance programs for pests and diseases, such as tomato potato psyllid, to maintain access to domestic and international markets for Queensland producers
- participated in local and district disaster management group exercises.

## Priorities for 2017–18

- Progress initiatives of the Rural Jobs and Skills Alliance under the collaborative agreements established with industry bodies.
- Continue drought relief arrangements and invest in the Queensland Drought and Climate Adaptation Program to improve farm business capacity, seasonal forecasting and decision support tools to better manage climate risk.
- Develop an updated model for drought support consistent with the National Drought Policy Review that encourages farmers to improve self-reliance and resilience to climate variability.
- Continue to implement the Rural Assistance Package, aimed at reducing financial stress and improving the financial sustainability of rural communities.
- Continue national and other significant biosecurity responses and eradication programs, including red imported fire ants, electric ants, Panama disease tropical race 4, cucumber green mottle mosaic virus, red witchweed, four tropical weeds and exotic fruit fly in the Torres Strait, Hendra virus, anthrax and white spot disease in prawns.
- Boost Queensland's marine pest preparedness and prevention, and enhance plant diagnostic services.
- Continue assistance to better control weeds and pest animals affecting regional communities, including cluster fencing to control wild dogs and improved management of Navua sedge weed.

## Objective 3: Ensure the sustainable management of natural resources to underpin productivity and protect the environment

Ensuring the balanced use of natural resources provides immediate and ongoing economic, social, environmental and cultural benefits. We support the sustainable and productive use of the fundamental natural resources of land, water, fish and forests. DAF advocates for the safeguarding of agricultural land and water, provides economic support and decision-making tools for agricultural producers, and supports the continuation of critical programs, including pest and weed management and best management practice programs to protect the Great Barrier Reef. We also have responsibilities in regulating access to fisheries resources and allocating native forest resources.

To this end, we maintain specific accreditations to ensure the viability of management practices, including certification of forest management practices under internationally recognised standards. Our engagement with industry and the community ensures more responsive decision-making, and drives equitable access to these resources to ensure they remain available to future generations.

We also have a role in community education and safety through our shark control and boating and fishing awareness programs.

### Strategic risks and opportunities

- Environmental trends—sourcing the best available information and data to provide timely responses to emerging opportunities and challenges to help our industries adapt and grow
- Major climatic events and biosecurity threats—being prepared for events, and managing the continuity of business and effectively sharing responsibility for risk management
- Better return on investment—partnering with like-minded organisations and investors and evaluating the impact of major programs and services
- Innovation—exploiting data and new technologies, and empowering our people and partners to try new things

### Key performance indicators

- DAF's effectiveness in influencing planning and development
- Adoption levels of best management practice in Reef catchments
- Status of key Australian fish stocks
- Accreditation of our fishery and forest management systems

### Cross-government commitments

The following intergovernmental agreements influence the way we deliver these services.

#### Reef 2050 Plan

The *Reef 2050 long-term sustainability plan* (Reef 2050 Plan) provides the framework for the actions of the Australian and Queensland governments to protect and manage the Great Barrier Reef. DAF continues to contribute to 31 of the 139 actions in the Reef 2050 Plan. DAF's actions aim to improve Reef water quality and implement ecologically sustainable fisheries policy.

## Accreditation of aquaculture discharge adjacent to the Great Barrier Reef Marine Park

Queensland law is accredited under the federal Great Barrier Reef Marine Park (Aquaculture) Regulations 2000. Based on this agreement, permission from the Great Barrier Reef Marine Park Authority is not required to operate any land-based aquaculture facility that discharges aquaculture waste to a waterway leading to the Great Barrier Reef Marine Park.

## Great Barrier Reef Marine Park Authority Intergovernmental Agreement

Schedule E of this agreement recognises Australia's international responsibilities for the Great Barrier Reef World Heritage Area under the World Heritage Convention, Offshore Constitutional Settlement arrangements, the intergovernmental agreement, associated Australian and Queensland government legislative provisions and the role of the Ministerial Forum to ensure both governments apply the guiding principles established in the intergovernmental agreement to fishing and collection of fisheries resources in the Great Barrier Reef World Heritage Area.

## Conservation agreement for assessment of applications under the *Great Sandy regional marine aquaculture plan*

The conservation agreement between Queensland and Australian government ministers for the *Great Sandy regional marine aquaculture plan* means that applications for aquaculture that comply with the plan do not require a separate assessment or approval under the *Environment Protection and Biodiversity Conservation Act 1999*. Instead, matters under the Act are covered through the issue and conditions of the development approval (currently under the *Sustainable Planning Act 2009*, which will be replaced by the *Planning Act 2016* commencing 3 July 2017) and resource allocation authority (under the *Fisheries Act 1994*), which are assessed under the plan.

## Shared waters

Management arrangements for commercial fisheries are established under the Offshore Constitutional Settlement 1995 agreement and resulting memorandum of understanding between the Queensland, Northern Territory and Australian governments to manage shared waters.

The Queensland Fisheries Joint Authority (established in 1995) manages some northern finfish stocks within offshore waters in the Gulf of Carpentaria.

The Torres Strait Protected Zone Joint Authority (established in 1984) manages all commercial fisheries in the Torres Strait Protected zone.

There are no joint authorities operating in the Queensland East Coast.

## Results and work program

### KPI DAF's effectiveness in influencing planning and development

Performance monitored by a range of DAF service standards

Table 7: DAF's effectiveness in influencing planning and development

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Proportion of stakeholders who have a high level of satisfaction with agriculture policy and planning, and consultation and engagement processes	75%	Not measured	Not measured	Not measured	70%

**Note:** The survey has only occurred periodically over the last 5 years. In 2015–16 the intention was to introduce regular surveys, but that year the survey only received very limited returns. Therefore, a valid response was not obtained. In 2016–17, the survey was sent to 141 recipients with a total of 28 responses received. Based on the results of the survey, a result of 70% has been reported but it should be noted that this result has low statistical validity. This measure also assesses consultative processes related to policy and regulatory changes under Objective 1.

Table 8: Regional agricultural advocacy

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (efficiency)</b>	Average cost of regional agricultural advocacy activities	Not measured	Not measured	Not measured	\$839	\$754

**Note:** This measure was set close to the achievement for 2015–16, with a conservative margin as contingency allowing for annual variation. The average cost of regional agricultural advocacy activities is trending near \$800 per activity, which is consistent with the 2015–16 result.

Table 9: Percentage of applications for development-related approvals progressed within agreed time frames

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Percentage of applications for development-related approvals progressed within agreed time frames	n/a	100%	100%	100%	100%

## Strategy

### Advocate for agriculturally important land, energy and water

#### Contributing impact areas

strategic policy and planning	rural economic development
fisheries	forestry

Land that is suitable for a wide range of current and potential crops with minor or no limitations to production makes up just 2.5% of Queensland. We advocated for agriculturally important land and resources needed to sustain agricultural production by:

- contributing \$125 000 to AgForce's Landholder Education Program, which provides landholders with information and support to negotiate mutually beneficial land access agreements with resource companies
- providing advice on over 40 environmental impact statements and associated development assessment referrals
- completing assessment of an application to undertake resource activities in priority agricultural areas under the *Regional Planning Interests Act 2014*
- finalising and executing agreements totalling \$1.18 million from the Strategic Cropping Land Mitigation Fund.

Our network of regional officers ensures that the interests of agriculture are considered in statutory planning processes, water allocation and energy policy, including those processes administered by other state and federal government agencies. The Department of Natural Resources and Mines has responsibility for policy, planning and management of the state's water resources. The Department of Energy and Water Supply is the lead agency for Queensland water infrastructure and related water charging. It is also the agency responsible for energy policy and regulations. We engage with these departments on key energy and water policy issues, including the *Queensland bulk water opportunities statement* and the Lower Burdekin Groundwater Strategy project. Irrigators have been supported through amendments to Queensland's *Water Act 2000*, which are expected to encourage increased agricultural production while ensuring ecologically sustainable development.

We also work closely with the State Assessment and Referral Agency to ensure developments that may have an impact on marine habitats are assessed. We provide advice and assess applications and plans in a timely manner to ensure infrastructure does not negatively impact on fish habitats. As part of the new *Planning Act 2016*, the department has successfully transitioned to new arrangements that commence on 3 July 2017.

## Strategy

### Leverage changes in water and land use to develop new agricultural and aquaculture opportunities

#### Contributing impact areas

strategic policy and planning	regional economic development	fisheries
animal science	crop and food science	horticulture and forestry science

We established a one-stop service to facilitate private sector initiatives in developing appropriate water and land resources in North Queensland on a sustainable basis. It is specifically designed for proponents of small to medium-sized agricultural developments.

The service comprises an information web portal and a client management interface, and was developed using input from the northern agribusiness community. Potential developers and project proponents have access to advice and support tailored to agricultural and associated supply chain projects. The service complements existing systems and processes, including those of the State Assessment and Referral Agency. A paired client management service gives direct access to our Regional Directors for help with the approvals processes necessary for agricultural expansion, diversification and development.

In relation to the federal government's *Our north, our future: white paper on developing northern Australia*, we have:

- worked with industry to develop eight proposals for first-round funding of the Cooperative Research Centre for Developing Northern Australia, which provides for collaborative research to address challenges that have constrained agricultural and broader development in the north
- partnered with the Department of Natural Resources and Mines to optimise the benefits from water releases in the Flinders and Gilbert rivers
- progressed the Gulf Rivers Agricultural Development Zone, engaging with development proponents in the Gilbert River and Laura to enable trial sites to support the development of sustainable agriculture systems for a variety of crops
- commenced development of a framework for assessing plant biosecurity risks and evaluating plant pest and disease pathways in northern Australia, in conjunction with the Department of Agriculture and Water Resources, to inform surveillance priorities for northern Australia, build industry biosecurity capacity and protection, and enhance biosecurity education and awareness
- engaged with Indigenous proponents in northern Cape York, and other parties, to establish successful native forest timber harvesting and processing businesses in the region, which will generate positive regional employment and training opportunities, particularly for local Aboriginal peoples and Torres Strait Islanders.

### ***Implementation of the Queensland aquaculture policy statement***

The *Queensland aquaculture policy statement*, released in April 2016, provides a framework for the future development and growth of a sustainable, diverse and innovative aquaculture industry in Queensland. The framework is supported by the government's response to the Queensland Competition Authority's (now the Queensland Productivity Commission) *Aquaculture regulation in Queensland* report released on 22 April 2016. The response supported a number of the recommendations detailed in the report, including the identification of 450 hectares of terrestrial aquaculture development areas suitable for aquaculture operations.

The Aquaculture Advisory Committee was established in 2016–17 to oversee implementation of the government-supported recommendations. We have conducted a geographic information systems desktop assessment to identify potential aquaculture development areas, and developed options for streamlining approval processes.

Targeted consultation with local government, industry and relevant government agencies will commence in the second half of 2017 regarding the initial mapping of aquaculture development areas and to help refine the proposed areas.

## KPI Adoption levels of best management practice in Reef catchments

Performance monitored by a DAF service standard

Table 10: Service delivery standard—best management practice

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Percentage of primary producers in Reef catchments who adopt best management practices after participation in DAF extension programs	n/a	20%	74%	58%	68%

**Note:** In 2013–14, this result related to canegrowers only. A graziers survey was delayed due to priorities related to drought activities. In 2015–16, this measure was broadened in scope and reworded from ‘graziers and canegrowers’ to ‘primary producers’. This allowed for data to be collected in relation to primary producers other than graziers and canegrowers (e.g. horticulture producers). For this reason, the data for the years 2014–15 and 2015–16 are not strictly comparable.

In 2016–17, poor seasonal conditions over the past 2–3 years were expected to constrain adoption levels in the grazing sector, but this did not occur. There was a marked increase in the adoption rate in the sugarcane sector in 2016–17. It is likely that more explicit targeting of extension effort (both spatially and in terms of specific management practices) resulted in better than expected adoption results in both the sugarcane and grazing sectors.

## Strategy

### Moderate the impact of agriculture, pests and weeds on the environment and the Great Barrier Reef

#### Contributing impact areas

rural economic development	crop and food science	animal science
plant biosecurity and product integrity	invasive plants and animals	strategic policy and planning

### Protecting the Great Barrier Reef

We committed \$3.5 million in funding and leveraged a further \$13.4 million from Great Barrier Reef funding programs to lead and support actions of the *Reef water quality protection plan 2013*, and to continue to deliver a number of key milestones for the Reef 2050 Plan. During 2016–17, we:

- responded to the recommendations of the Great Barrier Reef Water Quality Taskforce, leading the implementation of recommendations on enhanced extension and education
- delivered on-ground practice change, improved agribusiness profitability and improved the health of the Great Barrier Reef through best management practice (BMP) programs.
- evaluated the effectiveness of the Australian and Queensland government investment in improving management practices in Reef catchments, information fundamental to the development of the annual Reef report cards, which track progress towards the Reef 2050 Plan’s management practice and water quality targets
- received the Premier’s Award for Excellence for the Burdekin Nitrogen Trials to prove the value of an industry nutrient management standard

- worked in collaboration with the Department of Environment and Heritage Protection and Department of Science Innovation and Technology through the Reef Pesticide Working Group to identify actions that help improve the use of pesticides in Reef catchments (DAF is the agency responsible for the *Chemical Usage (Agricultural and Veterinary) Control Act 1988*)
- released and commenced implementation of the *Queensland sustainable fisheries strategy 2017–2027*, which will deliver on two actions under the Reef 2050 Plan.

We continue to support our partner agency, the Department of Environment and Heritage Protection, in contributing to the whole-of-government response to the Great Barrier Reef Water Science Taskforce final report (May 2016) on how the Queensland Government’s ambitious Reef water quality targets (reduce nitrogen run-off by up to 80% and sediment run-off by up to 50%) may be achieved and identifying the priority areas for investing an additional \$90 million of new funding over 4 years.

### ***BMP programs***

The industry-led, voluntary BMP programs operate in Reef catchments to help producers reduce nutrient and sediment load onto the Reef, and provide an accreditation process to demonstrate producers’ success.

The grazing program has been delivered in the priority Reef catchments of the Burdekin, Fitzroy, Burnett and Mary river catchments—the major catchments flowing to the Reef—and has been expanded beyond Reef catchments into South East Queensland and drought-affected shires in northern and western Queensland.

The industry-led program allows graziers to benchmark their current business practices and stewardship performance, and anonymously compare their results with the rest of the industry. A total of 560 businesses managing just over 10.2 million hectares participated in the program in 2016–17. In 2016–17, 42 businesses were accredited and three renewed their accreditation. An independent survey (undertaken from March to May 2017) of 58 producers participating in the statewide Grazing BMP program found that 90% had considered changes in their management practices and 74% had commenced or completed changes.

In order to minimise the impact of sugarcane production on the Great Barrier Reef, we undertake RD&E activities in collaboration with CANEGROWERS (the industry peak body) and the broader cane industry to support the implementation of the Smartcane BMP program and modern farming practices.

During the year, we investigated the viability of reducing nitrogen applications of traditional application fertiliser products and assessing enhanced efficiency fertiliser formulations in 30 replicated experiments across all Reef catchments. We explored the potential of unmanned aerial vehicles for identifying and mapping weed pressure, and undertook pest and weed management training across the Reef regions in association with Sugar Research Australia. We also investigated an innovative new press wheel designed to seal fertiliser and pesticides into the ground to reduce losses in run-off water. The financial and environmental benefits of Smartcane BMP practices were validated through case studies of BMP accredited growers.

### Protecting the environment—control of weeds and pest animals

Invasive weeds and pest animals have significant impacts on the environment and agricultural production through their capacity to diminish the effective use of land and other resources. We have made significant contributions to limit their adverse impact now and into the future. To manage the impact of agriculture, pests and weeds on the environment, we:

- continued the ‘War on Western Weeds’—a 5-year project (2013–2018) managed by Biosecurity Queensland with collaboration from Southern Gulf NRM and Desert Channels Queensland to provide innovative local weed management solutions and additional biological control agents (for prickly acacia in particular)
- assessed the effectiveness and cost of keeping property boundaries free from prickly acacia bushes to avoid the spread by cattle onto neighbouring properties
- obtained \$306 550 from the Australian Government’s Department of Agriculture and Water Resources for a ‘War on Northern Invasive Weeds’ project, to run from May 2016 until December 2017 as a complement to the ‘War on Western Weeds’—expanding a range of initiatives, including refinement of new herbicide delivery systems, innovation field days and community-based social marketing to improve the uptake of new technology
- administered \$5.6 million of federal government funding through 20 regional projects to help landholders in drought-declared areas manage the impacts of pest animals—just over 65% of the funding was used for control of wild dogs, approximately 30% used for feral pigs and the remainder for rabbit and feral deer control
- managed feral pest initiatives, including research into methods to control feral cats, and over \$13.1 million in funding to help producers build wild dog exclusion fencing and manage wild dog populations
- continued to develop biocontrol agents for weed species such as parthenium and giant rat’s tail grass
- undertook detection and removal of prohibited weed and pest animal species.

#### KPI Status of key Australian fish stocks

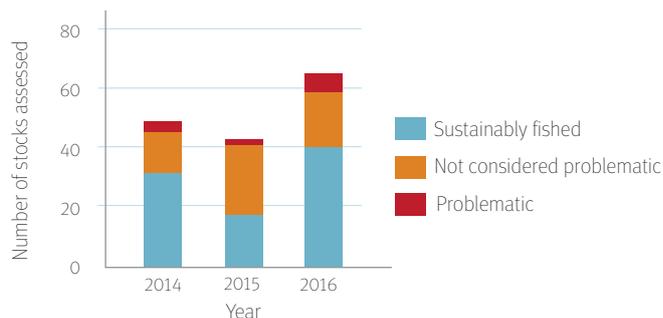
Performance monitored by a DAF service standard

#### KPI Accreditation of our fishery and forest management systems

Performance monitored by a business measure

Table 11: Sustainability of Queensland fish stocks

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Percentage of key Queensland fish stocks assessed as having no sustainability concerns	Measured under a different methodology		94%	93%	91%
<b>Note:</b> In 2014–15, the methodology for assessing fish stock status was altered to align with a nationally consistent approach. Early methodologies report similar findings on status outcomes.						



**Note:** The *Queensland sustainable fisheries strategy 2017–2027* sets the government’s reform agenda for the next 10 years. It sets targets to be achieved by 2020 and 2027, including a target to have no overfished stock by 2027. The 2016 assessment will be used as baseline for determining the impact of the strategy in future years. This chart indicates current status and what has been achieved so far.

Figure 10: Assessment of fish stock summary

Queensland reports annually on the status of fish stocks. The monitoring and evaluation process constantly evolves to ensure adequacy and reliability of data collection and assessment techniques.

The national status of Australian fish stocks reports are coordinated by the Fisheries Research and Development Corporation with guidance from an experienced national advisory group, including a delegate from Queensland. The assessments are conducted and published every 2 years. The last status of Australian fish stocks assessment was completed and published in December 2016.

Every other year, we conduct stock status assessments on any important Queensland fish stocks that are not included in the national process. This ensures that the status of all key Queensland fish stocks are assessed against nationally agreed criteria at least once in every 2-year period. Stock status assessments combine catch, effort and biological data to assign a status to each fish stock, using a weight-of-evidence approach against clearly defined criteria. In Queensland, the majority of fish stocks are classified as ‘sustainable’ or ‘undefined’. Undefined means that there is insufficient information to confidently assign a status, but no immediate sustainability concerns are evident.

The 2016 stock status process identified sustainability concerns for six Queensland fish stocks and the following actions are being undertaken:

1. snapper—east coast stock classified as ‘overfished’ in 2009; quantitative stock assessment is currently underway and is due for release by the end of 2017
2. pearl perch—east coast stock classified as ‘transitional depleting’ in 2015; a quantitative stock assessment was completed and publicly released in May 2017
3. king threadfin—Gulf of Carpentaria stock classified as ‘transitional depleting’ in 2015; additional biological monitoring commenced in late 2015, with quantitative stock assessment planned for 2018
4. saucer scallop—stocks classified as overfished in 2016; urgent management measures were implemented in 2017 and additional monitoring commenced, with a more detailed assessment planned for 2018
5. mangrove jack—Gulf of Carpentaria stock classified as ‘overfished’ in 2016; new management arrangements including species-specific quotas and independent validation of catch implemented, with monitoring for signs of recovery
6. barramundi—southern Gulf of Carpentaria stock classified as ‘transitional depleting’ in 2016; a quantitative stock assessment was undertaken and will be publicly released by the end of 2017.

All species with sustainability concerns will be reassessed as part of the 2017 stock status process, with results due to be released in December 2017.

Table 12: Accreditation of our fishery management systems

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Business measure (effectiveness)</b>	Queensland fisheries accredited for export	19	19	19	19	19

**Note:** There has been no change in fisheries export accreditations since 2012–13, when the department withdrew the rocky reef finfish fishery from the accreditation process as there had been no export from that fishery. In the same year, the coral reef and deepwater finfish fisheries were combined. Accreditation to export is granted by the Australian Government’s Department of the Environment and Energy under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

## Strategy

### Implement the sustainable fishing policy

#### Contributing impact area

fisheries

Significant stakeholder and community consultation was undertaken in 2016 to continue to progress the policy direction of the Queensland Government’s sustainable fishing policy. The *Green paper on fisheries management reform in Queensland* was released for public consultation from July to October 2016 to seek the views of everyone in the community about their expectations of fisheries management—where we are now, where we wanted to be and how we were going to get there. The government received more than 11 800 submissions and the overwhelming message was that all stakeholders wanted reform in the way we manage fisheries.

### *Sustainable fisheries strategy 2017–2027*

Feedback on the green paper helped shape the *Queensland sustainable fisheries strategy 2017–2027*, which was released on 9 June 2017, paving the way for Queensland to have a world-class fisheries management system. The strategy outlines 33 actions to be delivered across 10 reform areas and set targets to be achieved by 2020 and 2027.

The Queensland Government will invest \$20.833 million over 3 years to support the reforms. This funding will deliver more compliance (including an additional 20 compliance officers and vessel tracking on all boats), more monitoring and research, better engagement and more responsive decision-making.

Some of the actions in the strategy include initiatives like harvest strategies for all fisheries, satellite tracking on all commercial fishing boats, regionally specific fishing rules and using new technologies more effectively.

The reforms address a number of election commitments and actions under the Reef 2050 Plan, highlighting the government’s commitment to the Great Barrier Reef.

A Sustainable Fisheries Expert Panel is to be established to provide independent advice to the Minister on best practice fisheries management, while fishery-specific working groups will provide operational advice and assist with the development of harvest strategies. The panel and working groups will commence operations in August and September 2017.

The *Queensland sustainable fisheries strategy 2017–2027* delivers on the government’s election commitments to review the regulatory structure of commercial fishing and develop a fisheries resource allocation policy based on maximising economic value.

The strategy is the biggest fisheries reform in Queensland’s history. These reforms will ensure healthy fish stocks that will support thousands of Queensland jobs.

A number of other government commitments have also been delivered. The outcome of establishing net-free zones in Cairns, Mackay and the Capricorn Coast shows that the satisfaction of recreational fishers with their fishing experience, including the size and number of fish caught, increased by 25% from November 2015 to November 2016. During the period 8 August 2016 to 19 September 2016, a second round of the commercial fishing licence surrender scheme was conducted, resulting in the purchase of an additional 19 commercial fishing licences at a cost of \$2.614 million. Investigation of options for a net-free zone in Moreton Bay resulted in a proposal that regionally specific rules could be implemented, consistent with the *Queensland sustainable fisheries strategy 2017–2027*. A working group will be established in 2018 to progress this proposal.

A discussion paper on a charter fishing action plan was released on 27 June 2017 for public consultation. The vision and actions set out in the discussion paper aim to help grow a world-class charter fishing industry in Queensland. Currently there are 339 charter licences issued to enable charter fishing businesses to operate in Queensland’s tidal waters. Feedback on the discussion paper will inform the final plan, to be considered later in 2017.

## Strategy

### Balance economic fisheries resource use with environmental and social values

#### Contributing impact areas

fisheries

animal science

To ensure sustainable fisheries resources, we managed access to and monitored:

- wild capture commercial fisheries, in which 1384 commercial fishing boat licence holders may operate in a variety of fisheries (including trawl, net, crab, line and lobster fisheries)
- harvest fisheries, in which 320 licence holders may operate in a variety of fisheries (including aquarium, bait, shell, sea cucumber and trochus).

To support freshwater recreational fishing, fishing-related business and tourism opportunities in Queensland’s regional communities, we:

- continued to support the Stocked Impoundment Permit Scheme, providing recreational fishing opportunities in areas where they would otherwise be lacking, supporting regional communities and related jobs—there are currently 68 active stocking groups that release more than 3 million juvenile fish or fingerlings annually into 150 waterways across Queensland
- expanded the annual grants process, allowing stocking groups to apply for grants not limited to stocking fish and to enhance the recreational fishing experience at Stocked Impoundment Permit Scheme impoundments, including restoring and improving fish habitats, undertaking promotional activities for recreational fishing, improving facilities and undertaking monitoring and research.

## TrackMapper—providing high-resolution spatial data on the Queensland trawl fishery

Queensland has the largest trawl fleet in Australia, producing 7000–8000 tonnes of wild-caught prawns, bugs, crabs, squid and cuttlefish annually and valued at approximately \$80 million–\$90 million.

TrackerMapper software allows fishery managers and scientists to examine fishery data at high spatial resolution. Under the Agri-Science Queensland Innovation Opportunity project, DAF scientists identified the need to update the software originally developed in 2007. As a result, DAF staff collaborated with the Department of Science, Information Technology and Innovation to develop an update. The new version is a faster, more user-friendly, web-based application that can be accessed simultaneously by multiple users.

Marrying data on catch with vessel location, it allows examination of the distribution of catches, fishing effort and catch rates at a spatial resolution

that is 10–50 times higher than the previous method based on 30-minute logbook grids.

TrackMapper is limited to the Queensland trawl fishery, much of which is located within the Great Barrier Reef Marine Park, where its use also assists with the conservation of this World Heritage site. As more commercial fishing sectors adopt vessel monitoring system technology (i.e. reef line fishery, crab fishery, etc.), there is potential to expand its application.

Figure 11 provides a comparison of the spatial distribution of catch in the eastern king prawn fishery in South East Queensland for 2011–2015. The figure on the top is based on the 30-minute (i.e. 0.5 degree) logbook grids, which have been commonly used in the past. The figure on the bottom is derived by TrackMapper and reveals much finer spatial resolution of the catch data based on 0.01 degree (~1.1 kilometres). The dotted line is the 100 metre depth contour.)

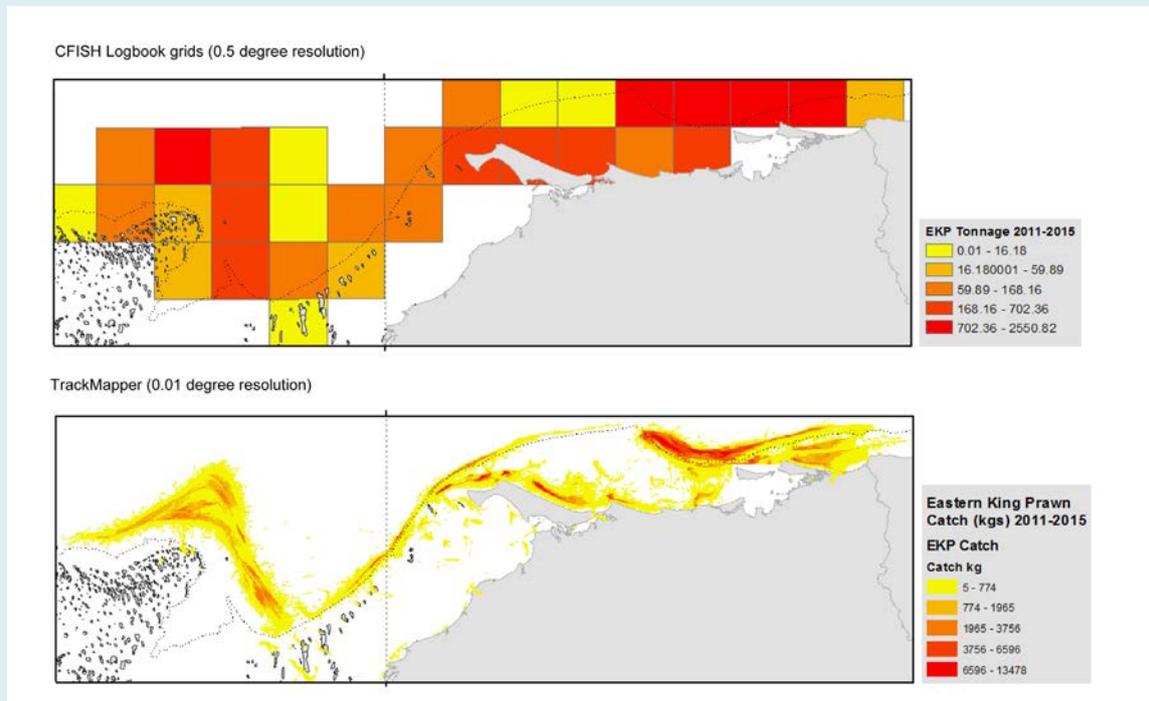


Figure 11: Updated TrackMapper software provides a better picture of Queensland trawl fishery's data

## Queensland Boating and Fisheries Patrol

The Queensland Boating and Fisheries Patrol (QBFP) plays a critical role in protecting our fish stocks from illegal activities that can lead to overexploitation. It monitors boating and fishing activities and investigates alleged illegal activity along 7000 kilometres of coastline and hundreds of freshwater rivers and impoundments. In 2016–17, \$15.6 million was invested in the state’s fisheries and maritime safety compliance programs, including the Shark Control Program. QBFP currently has 89 authorised officers stationed across the state. These officers achieved over 52 000 patrol hours in the last year.

Compliance with fisheries laws has remained consistently high over the last 5 years. The effectiveness and efficiency of the compliance service is measured by the following DAF service standards.

Table 13: Service standards for QBFP

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
<b>Service standard (effectiveness)</b>	Fisheries inspections that are compliant with fisheries laws	93%	Not measured	93%	92%	92%
<b>Service standard (efficiency)</b>	Fisheries inspections that are compliant with fisheries laws	Not measured	Not measured	Not measured	\$456	\$487
<b>Service standard (efficiency)</b>	Average number of inspections per full-time equivalent (FTE)	Not measured	Not measured	Not measured	295	286

**Note:** The average number of inspections shows a decrease in 2016–17 due to the adoption of a more intensive, targeted, intelligence-driven patrol compliance model.

QBFP educational activities ensure that industry forums, community groups and schools are aware and understand Queensland’s fishing and boating regulations. Knowledge of fishing rules and size and possession limits is supported by the free Qld Fishing app (which has been downloaded over 45 886 times since its launch in August 2014), our website and the annually printed *Queensland recreational boating and fishing guide*. The Fisheries Queensland Facebook page has also been hugely successful and has over 30 000 followers. The community is able to help identify suspected illegal fishing activity through the successful 24-hour, toll-free Fishwatch Hotline (1800 017 116), with over 1700 fisheries-related calls received in 2016–17.

Specific targeting of non-compliance by QBFP has moved towards more intelligence-based compliance, which may see changes in compliance targets and rates due to increased precision in detecting non-compliance. Efficiency is driven by better targeting and ‘cross decking’ or joint patrols with compliance partners. In 2016–17, QBFP officers were involved in 295 joint patrols, including joint enforcement operations with partner agencies (Queensland Police and Maritime Safety Queensland) and other organisations.

A total of 30 305 inspections were undertaken, detecting a total of 2625 offences and issuing 1453 caution notices and 1012 fisheries infringement notices. Fisheries infringement notice fines exceeded \$515 000 and 49 court prosecutions resulted in fines in excess of \$250 000.

As outlined in the *Queensland sustainable fisheries strategy 2017–2027*, fisheries compliance resources have been boosted with an additional 20 frontline QBFP officers in Queensland to help protect our fish stocks. Vessel tracking units are to be installed on all commercial fishing vessels by 2020, with a priority to install units on net, line and crab vessels by 2018. The future use of this technology will help modernise fisheries management in Queensland, leading to more evidence-based and responsive decision-making to protect our fish stocks and the Great Barrier Reef.

## Shark Control Program

Queensland's Shark Control Program protects 85 beaches at 10 centres along Queensland's east coast, from the Gold Coast to Cairns. It provides a safer swimming and surfing environment at popular beaches in Queensland.

From 1 July 2016 to 30 June 2017, the program removed 476 potentially dangerous sharks, including 9 great whites, 188 tiger sharks, 80 bull sharks and 117 whaler sharks. DAF is continuing to monitor the progress of alternative shark deterrent technology trials being conducted in New South Wales. Current evidence indicates that traditional capture methods remain the most effective measures to reduce the risk of shark attack.

Shark control nets were removed from the Great Barrier Reef Marine Park in February 2017 to reduce the impact on the World Heritage-listed marine park. This decision complemented the long-standing position of the Great Barrier Reef Marine Park Authority that nets should be replaced with drumlines where possible, to reduce bycatch of non-target species without compromising swimmer safety.

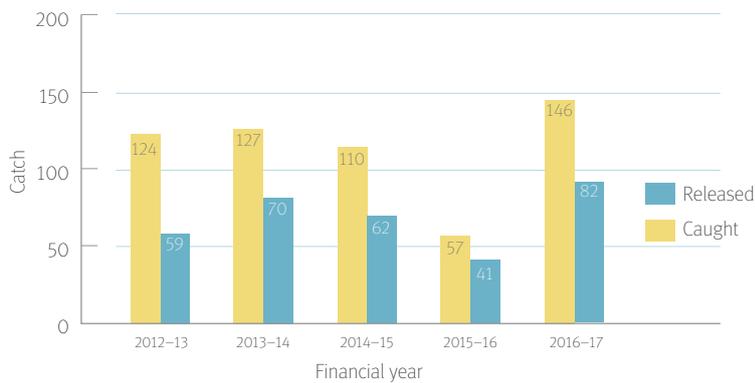


Figure 12: Non-target species catch by the Shark Control Program (source: DAF open data and 2016–17 Shark Control Program statistics)

## KPI Accreditation of our forestry management systems

Performance monitored by a DAF service standard

Table 14: Service standard—accreditation of our forestry management systems

Indicator	Measure	Results				
		2012-13	2013-14	2014-15	2015-16	2016-17
<b>Service standard (effectiveness)</b>	Percentage of findings from previous third-party audit confirmed as satisfactorily addressed in order to maintain certification to the <i>Australian standard: sustainable forest management (AS4708:2013)</i>	Not measured	Not measured	Not measured	100%	100%

Table 15: Service standard—forest product sales

Indicator	Measure	Results				
		2012–13	2013–14	2014–15	2015–16	2016–17
Service standard (efficiency)	Total of forest product sales, quantities per total forest product full-time equivalent (FTE):					
	• native forest timber (m <sup>3</sup> /FTE)	2 600	3 000	3 210	2 665	2 747
	• quarry material (m <sup>3</sup> /FTE)	69 340	66 950	49 790	41 935	42 167

**Note:** The measures illustrate the efficiency of management and administration of state-owned forest and related resources. The results reflect DAF’s success in meeting industry demand for both log timber and quarry material, combined with the effective management of staffing levels.

## Strategy

### Balance economic fisheries resource use with environmental and social values

#### Contributing impact areas

forestry

horticulture and forestry science

#### *Forestry management system*

DAF’s forest certification ensures that state-owned forests continue to deliver a range of benefits to the community—including conservation, recreational opportunities and protection of cultural heritage, as well as the production of timber and other forest products.

Our forest management system is independently audited and certified as compliant with the requirements of the internationally recognised *Australian standard: sustainable forest management (AS4708:2013)*. Certification allows our customers to be certified under an associated chain-of-custody program, permitting them to promote, market and sell their timber products as being sourced from sustainably managed native forests.

The most recent independent surveillance audit of our forest management system, conducted in June 2017, confirmed that DAF had responded to the findings of the July 2016 audit, and that the system continues to meet the requirements of the Australian standard (AS4708:2013). A comprehensive, independent recertification audit of our forest management system is scheduled for late 2017.

Although sales of state-owned forest products are continuing at relatively high levels, demand for quarry material is lower due to reduced mining and infrastructure investment. Despite the recent withdrawal of a major purchaser from the hardwood pole market, industry demand for state-owned log timber remains strong.

## Priorities for 2017–18

- Provide evidence-based policy advice on issues affecting primary industries such as energy, water, communication and transport.
- Partner with government and industry to realise opportunities in northern Australia for the intensification and diversification of agricultural production, including the Cooperative Research Centre for Developing Northern Australia.
- Implement the one-stop service for developing water and land resources in North Queensland.
- Continue to improve the practices of producers and agricultural industries impacting on the Great Barrier Reef.
- Identify areas where aquaculture development can be planned for, impacts on the environment minimised and approval processes streamlined.
- Implement the *Queensland sustainable fisheries strategy 2017–2027* and finalise a charter fishing action plan to identify ways to help grow a world-class charter fishing industry.
- Continue to fulfil and effectively manage the state's contracted supply commitments for native forest log timber, other forest products and quarry material.