



FRDC

FISHERIES RESEARCH &
DEVELOPMENT CORPORATION

Annual Operational Plan 2017-18

Knowledge for fishing and aquaculture into the future

FRDC Vision

The FRDC's vision is for Australia to have vibrant fishing and aquaculture sectors which adopt world-class research to achieve sustainability and prosperity.

The planned outcome for the corporation

Increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in knowledge, innovation, and marketing.

The Corporation

FRDC is a statutory corporation within the Australian Government's Agriculture and Water Resources portfolio and is accountable to the Parliament of Australia through the Minister for Agriculture and Water Resources. Revenue for Research, Development and Extension (RD&E) investment is based on a co-funding model between the Australian Government and the commercial fishing and aquaculture industries.

The Corporation was formed on 2 July 1991 and operates under two key pieces of legislation the *Primary Industries Research and Development Act 1989* (PIRD Act) and *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

Portfolio Minister

The portfolio Minister for Agriculture and Water Resources is the Deputy Prime Minister, the Hon. Barnaby Joyce MP. The Assistant Minister to the Minister for Agriculture and Water Resources is Senator the Hon. Anne Ruston.

Stakeholders

FRDC works to a diverse and geographically dispersed group of stakeholders across fishing and aquaculture which are not mutually exclusive. For example, Indigenous fishers may participate in customary fishing, conduct aquaculture and commercial fishing, and fish recreationally.

Representative Organisations

The FRDC has four ministerially declared representative organisations.

- National Seafood Industry Alliance (representing the seafood industry);
 - Australian Recreational and Sport Fishing Industry Confederation Inc., trading as Recfish Australia (representing recreational and sport fishers);
 - Commonwealth Fisheries Association (representing commercial fishers operating in Commonwealth waters); and
 - National Aquaculture Council (representing the aquaculture industry).
- The FRDC also involves the Indigenous Reference Group and the Seafood Industry Australia in all representational organisation activities.

Operating environment

The operating environment looking forward in 2017-18 for both the FRDC and fishing and aquaculture stakeholders remains positive despite a number of challenges.

At the macro level, Australia's economic forecast remains positive. The Australian fishing industry continue to see strong financial growth with the gross value of production rising to \$2.9 billion at the end of 2016-17. The seafood industry will continue to see growth in the coming financial year, driven primarily by aquaculture. A number of sectors – Atlantic Salmon, Yellowtail Kingfish and Barramundi – are set to increase production volumes starting in 2017-18.

The stable Australian dollar has helped seafood exporters remain competitive in most markets. As recent free trade agreements with South Korea and China enter their final phase of implementation and final round of tariff reductions, sectors looking to those markets are likely to benefit further.

The outbreak of White Spot Disease in South Queensland means biosecurity will continue to be a major focus. Other outbreaks, including Pacific Oyster Mortality Syndrome and the discovery of the invasive Asian green mussel detected near Weipa will see biosecurity controls pre and post border under review.

There will also be increased focus on marine noise following a number of Australian research findings demonstrating impacts from seismic testing. Further research scheduled for the coming year will extend this knowledge. The seafood and oil and gas sectors will continue to negotiate a path to work together into the future.

A broader environmental debate on the management of non-seafood specific resources will continue. This is being driven not only by the management of marine areas and marine parks but also by the increasing numbers of some previously protected species (sharks, whales, seabirds and sea lions) that are well on the path to recovery – with some populations recovering almost to pre-settlement levels. The question of changing their status and how they are treated and managed will need to be addressed.

In a similar vein, both inland and marine habitats across the country are recovering; or are being improved through investment led primarily by the recreational sector who are putting in artificial reefs, re-snagging rivers or restocking native species. These improvements show ways forward for other sectors to improve the health of fisheries elsewhere.

The Commonwealth will release its new harvest strategy and bycatch policy. This will provide greater consistency for management across the country. State and territory management agencies are also starting to base their management on harvest strategies.

A number of sectors and companies are starting to focus on marketing and promotion. A number of them are expected to commence delivery during the year.

The coming year will see a new national peak body – Seafood Industry Australia (SIA). SIA will enhance the sector's ability to develop national policy and programs, address collective risks and seize opportunities.

FRDC Focus for 2017-18

New investments in 2017–18 will build on existing projects to deliver RD&E all along the seafood value chain and focus on the three national priorities, outlined by stakeholders as part of their specific RD&E Plans – priorities and performance indicators are outlined in the Performance measures – Planned Outputs for 2017-18 section.

The FRDC will continue to develop a secure national data hub – fishery, economic, trade and social – that can be interrogated to assist industry and management to assist them with planning, implementing or evaluating strategies.

The biennial Seafood Directions conference will be held in Sydney in September. The conference will be a major event for industry, researcher and government (fisheries managers) to come together and discuss the major issues facing the seafood industry. As a major sponsor, the FRDC will be there to engage with stakeholders.

A bill to amend the PIRD Act is before Parliament to allow the FRDC to use voluntary payments to carryout marketing activities. If passed, the FRDC will be able to take over the management of the Love Australian Prawn Campaign in partnership with the Australian Council of Prawn Fisheries and Australian Prawn Farmers Association. This is a key milestone for the FRDC and the seafood industry.

Another major project for the FRDC is the National Carp Control Plan, which will underpin risk assessment advice to government(s) and stakeholders on the potential release of the carp virus.

To continue addressing priorities the FRDC will run two planning processes for 2017-18 – one with the Board looking at national strategic issues and one with stakeholders, namely the Industry Partnership Agreements (IPA) Sectors and Regional Research Advisory Committees (RAC).

Financial Targets 2017-18

FRDC financial income and expenditure planning 2015–20.

REVENUE	2016–17	2017–18	2018–19	2019–20
	\$m	\$m	\$m	\$m
<i>Australian Government 0.5% AGVP</i>	14.45	14.91	15.17	15.43
<i>Matching of industry contributions</i>	7.22	7.46	7.58	7.71
Total revenues from the Australian Government	21.67	22.37	22.75	23.14
Contributions revenue from Industry	8.00	7.59	8.20	8.46
Projects revenue from other parties	4.90	5.50	2.40	0.40
Other revenue	1.57	0.26	0.95	0.95
Marketing and promotion		0.50	0.50	0.50
TOTAL REVENUE	36.14	36.23	34.80	33.46

EXPENDITURE	2016–17	2017–18	2018–19	2019–20
	\$m	\$m	\$m	\$m
Total programs expenditure	26.00	30.20	27.95	26.75
Management and accountability	5.06	5.67	6.08	5.90
TOTAL EXPENDITURE	31.06	35.87	34.03	32.65

RD&E expenditure percentages by program

Programs	2016–17 /%	2017–18 /%	2018–19 /%	2019–20 /%
Environment	29	33	40	40
Industry	51	42	41	40
Communities	4	6	4	4
People	6	8	7	7
Adoption	10	11	8	9
Total programs expenditure	100	100	100	100

Total RD&E Expenditure by Activity

Activities	2016–17 /%	2017–18 /%	2018–19 /%	2019–20 /%
National priorities	18	18	18	18
National infrastructure	12	12	12	12
Response fund	6	6	6	6
Partnership agreements (industry sectors)	37	37	37	37
Partnership agreements (jurisdictions)	27	27	27	27
Total activities expenditure	100	100	100	100

* Note the percentages from year to year may vary depending on changes to priorities and the funding of differing size projects to meet the FRDC's balanced portfolio – long/short – big/small.

PIRD Act requirements

	2016–17 /\$,000	2017–18 /\$,000	2018–19 /\$,000	2019–20 /\$,000
Remuneration and allowances to directors and committee members	330	347	361	375
Cost recovery expenses to pay to the Commonwealth	15	15	15	15
Selection committee expenses and liabilities (if applicable)	NIL	60	10	NIL

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Our Role

We invest in knowledge, innovation, and marketing to deliver increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community.

The FRDC is Australia's national fisheries research and development agency. It is the lead authority on fishing and aquaculture in Australia, a position that has been built on 25 years of working with stakeholders to deliver effective research, development and extension.

The FRDC's primary role is to plan and invest in fisheries research, development and extension (RD&E) activities across Australia. This includes providing leadership and coordination of the monitoring, evaluating and reporting on RD&E activities, facilitating dissemination, extension and commercialisation.

FRDC sits amongst a broader science ecosystem that encompasses all avenues of science and primary industries. And while the FRDC's focus is firstly on Australia's fishing and aquaculture, a broad view is taken in regard to knowledge development – looking at research, policy and practice – and establishing links with stakeholders globally.

The FRDC has a responsibility to make sure that the public and the industry get the most value for their money. This means directly investing in research, but also seizing opportunities to encourage partnerships, encourage investment from elsewhere and promote research adoption. It is the FRDC's role to anticipate knowledge gaps that threaten the sustainability and value of Australia's fisheries and aquaculture before they become a problem.

Central to FRDC's role, is assisting the coordination of RD&E planning and prioritisation across stakeholder groups – including government (Australian Fisheries Management Forum and National Marine Science Committee) and fishing (Indigenous, recreational and wild-catch), and aquaculture. In addition, the FRDC is one of the fifteen Rural R&D Corporations that is responsible for delivering on the National Primary Industries RD&E Framework.

The FRDC works closely with its four representative organisations and the Indigenous Reference Group to address their investment priorities. These five bodies operate across environments that range from the northern tropics through to the southern temperate seas and icy Antarctic waters, across the country's freshwater rivers and lakes (natural and man-made), through the estuaries and to the depths of the ocean.

The FRDC is unique among the rural research and development corporations (RDCs) because it must balance its investment between natural resource management (environmental sustainability), and industry productivity and development. In the case of the recreational fishing sector and indigenous customary fishing, valuation is not purely market based, rather these include societal dividends as well. To this end the FRDC's strategic investments in RD&E activities aim to benefit all stakeholders in the fishing and aquaculture (commercial (wild catch and aquaculture), recreational, Indigenous) across Australia, as well the broader community, balancing economic, social, environmental and cultural needs.

Since inception, the FRDC has evolved from being a body that simply approves money for research, to an organisation that strategically guides how public and industry money is spent to improve and better understand Australian fisheries and aquaculture. More recently, following changes to the Primary Industries Research and Development Act 1989 the range of activities the FRDC can undertake has broadened to include the direct delivery of research and extension.

Following changes to the PIRD Act in 2013, has also transitioned from not doing research itself, to taking a more hands on approach, where necessary, to maximise research outcomes. Its activities are underpinned by the goal of sustainability and profitability for fishing and aquaculture across Australia.

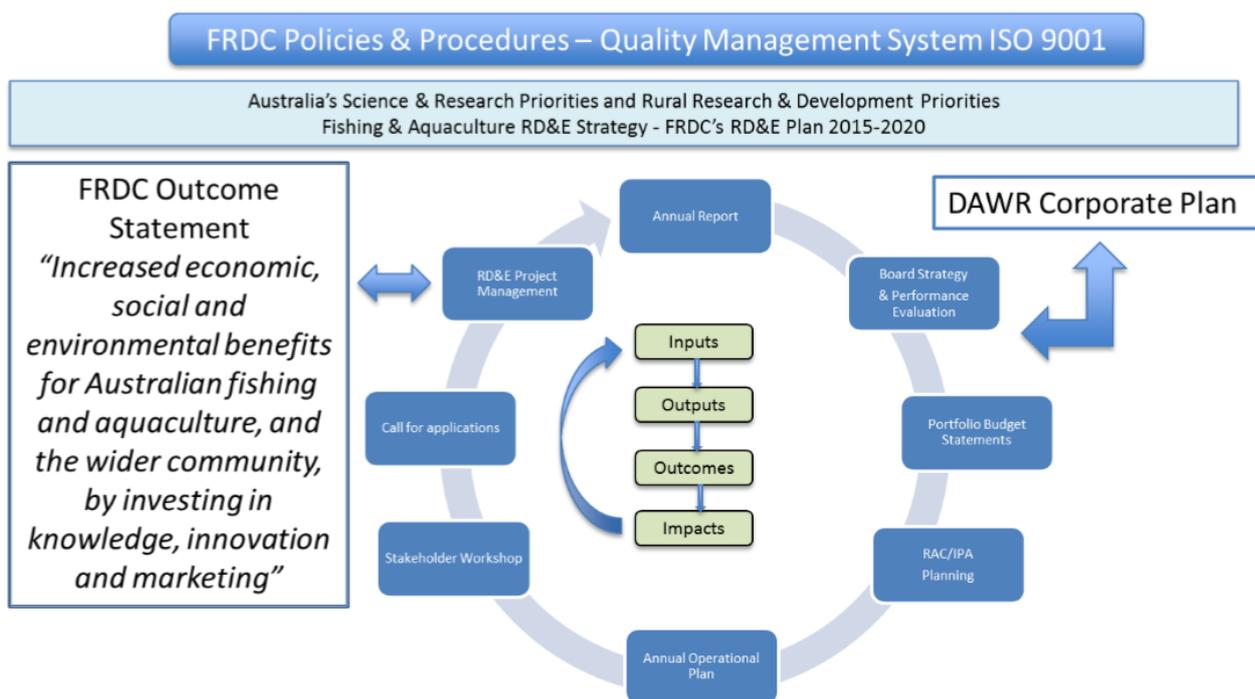
Fish stocks are a valuable, community-owned, renewable resource. But they are also limited and vulnerable. So, it is important they are managed using the best possible science information. The research FRDC invests in is used to manage and utilise Australia's marine and freshwater resources sustainably.

How we plan

Planning environment

The FRDC aligns its planning to the National Marine Science Plan and the Fishing and Aquaculture RD&E Strategy to build cohesion and establish common goals between sectors. The diagram below highlights the linkages between planning processes. Partner priorities (industry and government) and previous RD&E are considered in planning and investment processes, to maximise leverage and reduce duplication.

On 1 July 2015 the FRDC RD&E Plan 2015-20 commenced. The Plan was developed through a comprehensive process of environmental scanning, consultation and analysis. Consultation included the Assistant Minister to the Minister for Agriculture and Water Resources, the Department of Agriculture and Water Resources, those involved in aquaculture, commercial fishers, Indigenous fishers, recreational fishers, research providers, post-harvest processors and fisheries managers from federal, state and territory governments.



Stakeholder research priorities

One of the primary challenges for the FRDC is to gain a solid understanding of the needs and priorities of its stakeholders – who come from a diverse range of sectors and operations. Government is a key stakeholder in establishing RD&E priorities, in particular the Commonwealth Government as the FRDC's major investor. FRDC is assisting with developing the National RD&E Strategy and has consulted widely with these groups in developing its FRDC RD&E Plan. In addition, the FRDC has undertaken research to build on this knowledge. While there are common, national issues, each sector faces unique challenges and has specific research, development and extension needs, and these vary around Australia.

FRDC undertakes research and development (R&D) and partners with other organisations that have the necessary capabilities to undertake the varied and sometimes specialised activities. With a focus on the end users and markets, FRDC invests and facilitates extension of the R&D that will lead to adoption and commercialisation. Results and outcomes of both the undertaking and extension of R&D are evaluated to measure and inform future investment.

How we invest

The FRDC RD&E Plan 2015-20 brought significant change to the way planning and investment is undertaken. It is now focused on achieving results and outcomes against both the plans targets and industry priorities.

To achieve this the plan directs investment into projects addressing the three Strategic National Priorities – see diagram below. While the remainder of funding is allocated to the FRDC’s five broad programs (which also align with the Primary Industry Research and Development Act 1989 (PIRD Act)) and industry priorities – these are either addressed via Industry Partnership Agreements (IPAs) or jurisdictional funding processes.

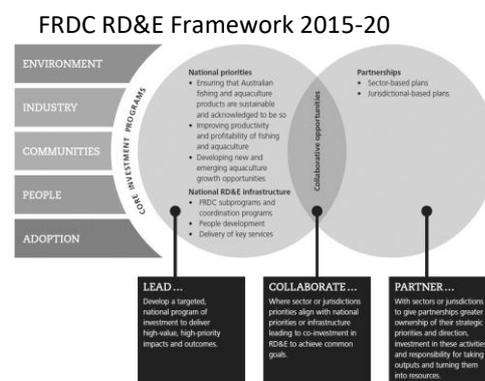
The FRDC has also improved the way it will plan, prioritise and invest in RD&E through industry partnership agreements. These provide greater control and freedom of the RD&E investment processes for the sectors with an IPA and have better aligned these priorities with end-user needs. The FRDC is using this template for jurisdictional Research Advisory Committees. This will see individual work plans developed and investment focused on their priorities.

The investment aims to address the spectrum of stakeholder need (priority) right along the whole value-chain. Ultimately all FRDC investment in RD&E is driven by the needs of its stakeholders.

Budget allocations

The FRDC will maintain a five-year budget that outlines existing commitments and forecasts remaining investment. This will inform the decision making of the FRDC board and staff. The Annual Operational Plan budget gives effect to the five-year budget, and provides an annual review and update process.

The FRDC will be committed to proportionate investment of public and private contributions to meet public good and private benefit. Note that investment can be a mix of public and private benefit containing a mix of public and private investment. The major source of income for the FRDC is from the federal government (public good, industry matching), industry, state and territory governments and some third party contributions.



RD&E procurement

The FRDC uses a combination of investment – competitive selection, sponsorship and direct purchase of services and activities to deliver these results. These are outlined in the FRDC policies – namely Investment in Research, Development and Extension (RD&E) and http://frdc.com.au/about_frdc/corporate-documents/Pages/corp_policies.aspx

A risk based approach to investment

The FRDC will apply a risk based approach to its investment. The FRDC will set its risk appetite so as to deliver a balanced portfolio, with a mix of low and high risk investments. Investment proposals will be assessed on their feasibility and attractiveness, with attractiveness being given a higher weighting.

The FRDC balanced research investment approach

The FRDC’s RD&E investments look to deliver a balanced portfolio that meets the short- and long-term needs of its stakeholders, including the Australian Government and the Australian community. To, the FRDC will deliver a balanced RD&E portfolio by investing in:

1. the FRDC’s five programs
2. national jurisdictional (lead); regional and sector-focussed projects (partner); and these working together for similar priorities (collaborate)
3. long and short-term projects (an indicator of adaptive versus strategic research)
4. high and low risk projects (percentage chance of success)
5. strategic and adaptive research projects

All RD&E Plans (FRDC, sector, and jurisdictional) will demonstrate how they will achieve a balanced portfolio of RD&E investment. Note that each of these may not achieve a balanced approach individually, but in aggregate the FRDC’s investment through its partners, will aim to achieve a balanced portfolio.

How we measure performance

Performance evaluation

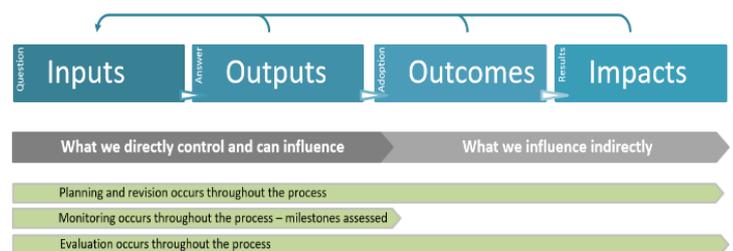
A monitoring and evaluation (M&E) framework has been implemented to assess the progress of the FRDC RD&E Plan. The M&E guides the gathering of information to measure the progress in achieving delivering the outputs and outcomes. See http://frdc.com.au/about_frdc/corporate-documents/Documents/FRDC%20Program%20and%20Evaluation%20Frameworks%20November%202016%20V2.pdf

The program logic model below outlines the four key areas (inputs, outputs through to outcomes and impact) that underpin the M&E framework. This model will also be used as the M&E framework for the FRDC Annual Report and the RD&E Plan 2015-20. Central to this will be a series of benefit cost analysis (BCA) evaluations undertaken against each of the FRDC programs.

The Public Governance, Performance and Accountability Act 2013 (PGPA Act) specifies requirements for good governance, performance and accountability. As a result the FRDC has adopted the Commonwealth input, output, outcome reporting framework policy. The Department of Finance has determined that the FRDC’s outcome is “increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in knowledge, innovation, and marketing”. The FRDC’s performance is measured against its ability to deliver this outcome.

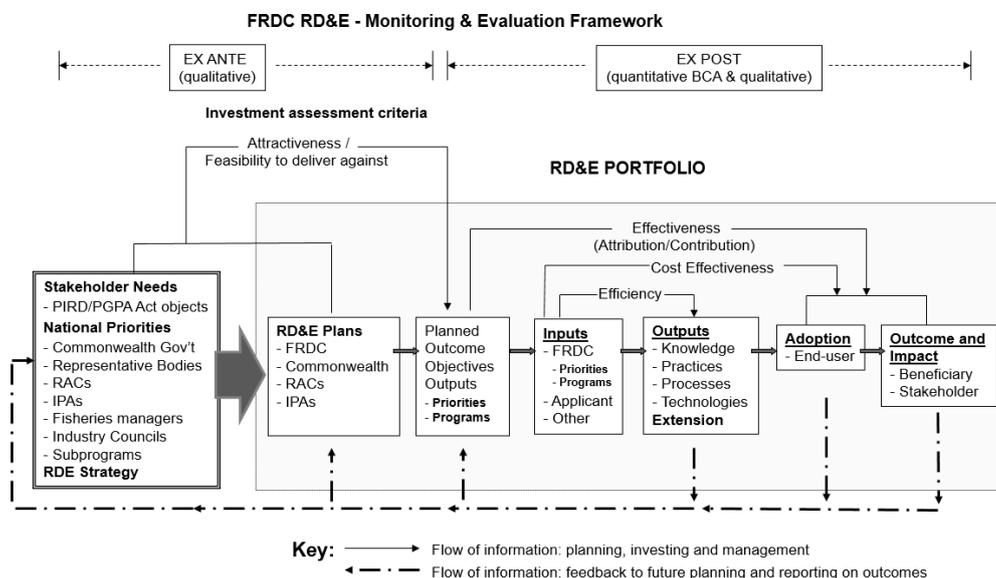
Our performance measures are designed to assess the effectiveness, efficiency and quality of our activities to meet our strategic objectives over the five years of the RD&E Plan and the coming year for this Annual Operating Plan. These include measures also published in the Portfolio Budget Statements.

The success of the FRDC’s investment policy (https://frdc.com.au/about_frdc/corporate-documents/Pages/corp_policies.aspx) is measured by an evaluation process that ensures the framework is based on adaptive management. The investment evaluation framework has the following structure:



- evaluation of the FRDC’s performance against its priorities in its RD&E Plan
- evaluation of the Partnership Agreements performance against their priorities in its RD&E plan
- a balanced approach to investment
- total portfolio evaluation based on the rural RDC evaluation methodology (<http://www.ruralrdc.com.au/impact-assessment-performance/>)
- regular review of investment policy by the board against the FRDC’s and partners’ plans and priorities.

The FRDC reports each year on performance (achievements of specified targets and overall performance) to the Department of Agriculture and Water Resources and to the Parliament via Annual Report. The annual Portfolio Budget Statements and Funding Agreement requirement provides the template and performance indicators for the Annual Report.



Relationships with stakeholders

FRDC works to a diverse and geographically dispersed group of stakeholders and the four main sectors (aquaculture, commercial fishing, Indigenous fishing and recreational fishing) are not mutually exclusive. For example, Indigenous fishers may participate in customary fishing, conduct aquaculture and commercial fishing, and fish recreationally.

FRDC's stakeholders include:

- Commonwealth, state and territory governments, including fisheries and natural resources managers,
- all fishing and aquaculture sectors,
- the Australian community, on whose behalf aquatic natural resources are managed,
- seafood consumers,
- the research community, including universities, government fisheries organisations, further education organisations (e.g. TAFE), international research organisations and private-sector research providers,
- four ministerially declared representative organisations to which FRDC is accountable

The FRDC works with its stakeholders and partners to only undertake program management in an effective manner, and to disseminate the results and assist with their adoption, including when appropriate, commercialisation. Over the course of the year, the FRDC regularly engages with its stakeholders through a range of mechanisms including:

- regular meetings with FRDC's four representative organisations and the Indigenous Reference Group,
- biannual meetings with Department of Agriculture and Water Resources to discuss progress on implementing the Funding Agreement,
- the Governance Committee that supports the National Fishing and Aquaculture RD&E Strategy and the National Research Providers Network which represents fisheries researchers (FRDC is a member of both groups),
- Research Advisory Committees (RACs),
- partnerships between FRDC, industry sectors and jurisdictions,
- the Australian Fisheries Management Forum, representing government agencies responsible for fisheries management (FRDC is an observer),
- FRDC subprograms and coordination programs,
- membership of the Council of Rural Research and Development Corporations and its sub-committees and working groups, and
- membership of the National Marine Science Committee.

The FRDC board regularly meets at locations where it can engage with those involved in fishing and aquaculture and see issues first hand. In developing the projects that address the five programs, priorities are established in association with the FRDC's stakeholders.

Research Advisory Committees (RACs)

The FRDC supports a network of RACs – one covering Commonwealth fisheries and one in each state and the Northern Territory. The RACs play an important role in delivering on efficient, effective planning and investment processes; and the development of project applications. The FRDC works to ensure a majority of research funding applications are submitted through, reviewed and prioritised by the RACs.

The RACs represent the fishing industry, fisheries managers and researchers; and most also have environmental and other community interest representation. RACs are a new approach for FRDC, but represent the next evolutionary step from the jurisdictionally based Fisheries Research Advisory Boards (FRABs) which have served the FRDC well since its inception.

Australian Government

The Minister for Agriculture and Water Resources and his Department provide the key priorities that need to be addressed from a government perspective. The Department acts as the day to day policy intermediary between the office of Minister, Assistant Minister and the FRDC. The Australian Fisheries Management Authority (AFMA) and the Department of the Environment also play an important role in contributing to research priorities.

Australian Fisheries Management Forum (AFMF)

AFMF is attended by the heads of the Commonwealth, state and territory government agencies responsible for management of fisheries and aquaculture. AFMF discusses issues relating to fisheries and aquaculture management. The FRDC understands that adoption of research outputs by management agencies is a key to optimising management outcomes. It will continue to work with AFMF, participating as an invited representative to its meetings, providing advice and ensuring AFMF priorities are incorporated into planning processes.

Representative Organisations

The FRDC has four representative organisations with which it will consult during 2016-17.

- Australian Recreational and Sport Fishing Industry Confederation Inc. (trading as Recfish Australia)
- National Aquaculture Council Inc. (NAC).
- Commonwealth Fisheries Association Inc. (CFA).
- National Seafood Industry Alliance (NSIA).

Under section 6.6 of the FRDC Funding Agreement, the FRDC may meet travel and other expenses incurred in connection with consultation between the FRDC and each of its representative organisations. These meetings are often held in Canberra with these organisations associated meetings with other government agencies. While the FRDC has budgeted up to \$30,000 to facilitate consultation in 2016-17, payments are only made to reimburse for costs associated with this consultation.

The consultation with the representative organisations allows the FRDC to gain valuable insight and views on the RD&E priorities for their associated industry sectors. It also provides a mechanism for the FRDC to report the outcomes from the associated RD&E investment.

Seafood Industry Australia (SIA) will be operational in the coming year. The FRDC will work engage with SIA in a similar capacity to the representative organisation.

The FRDC also involves the Indigenous Reference Group in all representational organisation activities. While they are not formally recognised they play an important part in gaining feedback and input from the Indigenous communities.

Sector industry bodies

The FRDC continues its close relationship with the National Seafood Industry Alliance (NSIA). The NSIA represents the commercial fishing, pearling and aquaculture industries through state industry councils and peak sector associations. Additionally in the future Seafood Industry Australia, the new national peak body will take on a greater role as it forms and capacity is put in place.

The FRDC will build upon the partnerships established with individual industry sectors, such as Southern Rocklobster Ltd, Australian Southern Bluefin Tuna Industry Association, Tasmanian Salmonid Growers' Association, Australian Pearl Producers, Oysters Australia, Western Rock Lobster Council and both the Prawn and Barramundi Farmers' Associations in funding research priorities that is required and co-funded by their sectors. Agreements are being negotiated with the Australian Abalone Growers Association and Australian Council of Prawn Fishers.

Rural research and development corporations

The FRDC will continue to partner with other RDCs on a range of activities to enhance joint strategic outcomes. Most significant of these include environmental change, evaluation of RD&E, and the "Appetite for Excellence" primary producer's tour – a chef, waiter and restaurateur competition. Not only will the FRDC partner other RDCs at the project level, but it will also work more broadly to collaborate in functional areas. The FRDC will continue to attend meetings of the Council of Rural Research and Development Corporations (CRRDC), as well as meetings of Executive Directors, Business Managers and Communications Managers. In conjunction with other RDCs, the FRDC will assist in coordinating sponsorship and participate in events such as the Outlook and producer conferences. Additionally, the FRDC will continue to provide advice and services in relation to project management and the FRDC project management software.

The FRDC actively partners with the other RDC's in the Rural R&D for Program on a range of collaborative projects such China Insights and Precision too Decision.

Research Partners

Investment in research is the FRDC's core business. As a result, it is vital to the FRDC's success that good relationships are built and maintained with its research partners. In any given year FRDC will have under management around 300 active projects. The key research partners are:

- Industry;
- Department of Agriculture and Water Resources;
- Australian Fisheries Management Authority;
- State/Territory fisheries governments;
- Universities;
- Commonwealth Scientific and Industrial Research Organisation (CSIRO);
- Cooperative Research Centres (CRCs);
- Other Rural RDCs and companies; and
- Private sector.

Australian Prawn Farmers Association – FRDC levy payers

The FRDC's investments in prawn farming research and development is driven by the APFA's RD&E Plan. FRDC and the APFA enjoy a very close working relationship. The APFA has a lead role with FRDC in ensuring its priorities are met.

The FRDC administers its only research and development levy on behalf of the Australian Prawn Farmers' Association (APFA). The levy is collected by the Department of Agriculture and Water Resources. An administration cost is charged by the department to manage the levy. In the coming year it is not expected that any overpayments will occur.

Year	2016-17*	2017-18*	2018-19*	2019-20*
APFA contribution	\$190,000	\$200,000	\$200,000	\$200,000
FRDC expenditure on projects	\$400,000	\$400,000	\$400,000	\$400,000

* Approximate investment in coming year. Also subject to uncertainty due to White Spot Disease outbreak.

Priorities for 2017-18:

- Development of a marketing levy;
- Biosecurity enhancements that will reduce disease impacts on farmed prawns;
- Minimise nutrient discharge from prawn farms;
- Apply advanced technologies to improve production and profitability of prawn farms;
- Prawn breeding hub and industry breeding program
- Increase early survival of post larvae; and
- Assess the prevalence of chemical contaminants in incoming waterways, and assess their potential impact on larval prawn production.

Improving engagement with Indigenous communities

FRDC's Indigenous Reference Group (IRG) Subprogram has the lead on improving engagement with Indigenous Australians. The IRG has identified improved engagement as one of its priority principles. Building networks and facilitating broader stakeholder workshops are central to improving engagement. Indigenous engagement has been embedded in all FRDC policies, processes and procedures. Priorities for 2017-18:

- Indigenous business development opportunities and impediments in the fishing and seafood industry.

Recreational Fishing Research

Through the FRDC Recfishing Research Subprogram, FRDC is participating in the methodological development for social and economic data being led by ABARES. Priorities for 2017-18:

- Development of a national funding model for Australia's recreational fishing sector.
- Development of future leaders within Australia's recreational fishing community.
- Developing a methodology to estimate the social and economic value of recreational fishing.

Fisheries Management

The Australian Fisheries Management Forum have outlined in their statement of intent a range of issues to focus on during 2017-18. These include:

- **Australia's fisheries and aquaculture industries are managed, and acknowledged, to be ecologically sustainable.** Building broad community awareness, recognition and understanding of the status of Australia's fish stocks, and of the management structures in place for Australian fisheries and aquaculture.
- **Secure access to fisheries and aquaculture resources.** Lack of long term certainty, and limited progress, around access to and allocation within the fisheries and aquaculture sectors. Need for efficiency and fairness in allocation processes with outcomes providing 'optimal' benefit to the community
- **Profitable and viable fisheries and aquaculture businesses.** Impact of increasing costs on the profitability and viability of fisheries and aquaculture industries. Streamlining and reduction of "red tape" and more efficient delivery of management.
- **Integrated aquatic resource management programs.** Recognition of all users (commercial, recreational and indigenous) in fisheries management programs to deliver sustainable and equitable outcomes.
- **Supporting the health of habitats, and the broader environment, important to fisheries and aquaculture.** Recognising and understanding the broader impacts of external factors on fish stocks, and ensuring adequate protection of habitats and environments on which fisheries and aquaculture depend.

Performance measures – Planned Outputs for 2017-18

National Priority 1 – Australian fishing and aquaculture products are sustainable and acknowledged to be so

Consumers and communities are empowered by information and are increasingly scrutinising the use of natural resources. Many are becoming choosier about the food they eat, where it comes from, how it is produced or caught, and its sustainability. The FRDC's sector overview of fishing and aquaculture, coupled with stakeholder feedback, shows this situation is very apparent in Australian fishing and aquaculture, and it is both a challenge and opportunity for all sectors.

Aim: By 2020, the community has effective access to, and understanding of, RD&E that supports fishing and aquaculture sustainability and improves perceptions of Australian seafood.

Strategy: Continue to prioritise investment in RD&E that contributes to the sustainability of fishing and aquaculture, including consideration of target species, bycatch species, threatened species and species of conservation significance, and the broader marine environment.

Build understanding of the drivers of the “social licence” to operate and respond to community concerns and needs for information with evidence based research.

Deliverables and services for 2017-20

- Increased knowledge about how community values align with the values of Australian fishing and aquaculture sectors, with the aim of improving community perceptions.
- An Australian fisheries management and/or technical standard that addresses all fisheries and can be adopted by any management agency in Australia
- A scheme for responsible fisheries management that can specifically be applied to small-scale, data-poor Australian fisheries
- Bycatch performance metrics
- Community net benefit metrics
- Increased number of commercial species assessed in the national Status of Australian Fish Stocks Reports
- Expand the report to include bycatch, fisheries management and habitat metrics
- Reduction in the percentage of species classified as undefined in the national Status of Australian Fish Stocks Reports
- Expanded capacity to connect with seafood consumers and markets in Australia and abroad, and use of these channels to understand community perceptions and to tell the Australian fishing and aquaculture story across the sectors.

Measure ↓ Targets →	2016–17	2017–18	2018–19	2019–20
Information on the performance and value of Australia's fisheries is available.	114 species included in Status of Australian Fish Stocks Reports.	Perception of industry increases to 30 per cent.	160 species included in Status of Australian Fish Stocks Reports.	Perception of industry increases to 36 per cent.
The number of species in the national Status of Australian Fish Stocks Reports increases to include 200 species	Perception of industry increases to 28 per cent.		Undefined species is less than 20 percent.	
RD&E has provided a basis to reduce the number of species classified as 'undefined' is from the approximately 30 per cent currently to less than 10 per cent			Perception of industry increases to 34 per cent.	
Positive perceptions of the commercial fishing industry increase from 28 per cent to 40 per cent by 2020 as measured through the independently-commissioned FRDC stakeholder survey.				

National Priority 2 – Improved productivity and profitability

The Australian fishing and aquaculture industry is in a good position to capitalise on increasing global demand for seafood.

Productivity and profitability are consistently a top priority for those in aquaculture and commercial fishing. It is increasingly becoming a priority in the Indigenous and recreational sectors. It will be important for each sector to understand what it wants to achieve in this area and what its strengths and weakness are in terms of opportunities and threats.

Aim: By 2020, delivery of RD&E for fishing and aquaculture to increase productivity and profitability consistent with economic, social and environmental sustainability.

Strategy: Invest in RD&E to understand the drivers of and impediments to productivity and profitability growth in all fishing and aquaculture sectors; research means of increasing sustainable production and profitability; link these to business education; encompass the needs of Indigenous communities.

Deliverables and services for 2017-20

- RD&E on the entire supply chain to investigate efficiency improvements that could influence profitability including: strategic market intelligence and knowledge to improve market access
- RD&E that demonstrates how to use underutilised and undervalued species sustainably and more profitably
- Understand where technology can improve productivity and profitability and where it can be feasibly implemented
- RD&E on habitat rehabilitation to increase productivity and profitability
- RD&E to support the social contribution from fishing and aquaculture and to capture the non-monetary value of these activities across sectors.
- RD&E to support an increase in the Gross Value of Production of Australia's fishing and aquaculture resources

Measure ↓ Targets →	2016–17	2017–18	2018–19	2019–20
<p>Volume of aquaculture rises to above 100,000 tonnes.</p> <p>The value of Australia's fishing and aquaculture increases by 20 per cent</p> <p>Provide RD&E to support increased trade of fishing and aquaculture products into countries with free trade agreements by 300 per cent by 2020.</p> <p>Understand the quantity of potential production from Australia's fishing and aquaculture resources.</p> <p>Increase knowledge to improve the utilisation of fisheries resources by Indigenous Australians.</p>	<p>Annual aquaculture production exceeds 85,000.</p> <p>Value increases to \$2.4 billion.</p>	<p>One report completed on quantity of potential production from Australia's fishing and aquaculture resources.</p> <p>Report detailing non-tariff barriers to trade</p>		<p>Two reports completed that assist increase knowledge to improve the utilisation of fisheries resources by Indigenous Australians</p> <p>Two reports that increase industries knowledge and ability to identify obstacles and opportunities to increase productivity through habitat.</p>

National Priority 3 – Development of new and emerging aquaculture growth opportunities

Aquaculture has seen a steady growth over the past 30 years, with some sectors (such as Atlantic salmon) having unprecedented growth over a much shorter period. There is still considerable potential within the aquaculture sector, especially with diversification in finfish species. There are a number of aquaculture ventures that could be expanded with the addition of RD&E in Australia, as has been proven from overseas examples.

Aim: By 2020, deliver RD&E sufficient for significant commercialisation of at least two emerging aquaculture growth opportunities with demonstrated potential for profitable business operations.

Strategy: Identify research constraints to industry growth—such as potential markets, cost of production, survival, deformities and uniformity of growth—and invest in RD&E to identify opportunities for successful and competitive commercial activity.

Deliverables and services for 2017-20

- A nationally-coordinated strategy for new aquaculture industry growth
- RD&E to address barriers to aquaculture development including improved:
 - hatchery production technologies,
 - breeds,
 - feeds and feeding systems,
 - husbandry,
 - health systems, and
 - market access and/or value add.

Measure ↓ Targets →	2016–17	2017–18	2018–19	2019–20
<p>There are 2–3 new aquaculture species that are seeing good productivity and profitability growth as measured by an increase in tonnage from other species.</p> <p>Advance two or more new or emerging aquaculture opportunities/species for which RD&E has identified clear opportunities and technologies for good production and profitability growth, as measured by increases in harvest tonnages.</p>	<p>Production of new aquaculture species increases to 2,000 tonnes.</p> <p>500 tonnes of additional production from previous year.</p>	1000 tonnes of additional production.	1,500 tonnes of additional production.	2,000 tonnes of additional production.

National RD&E infrastructure

The FRDC has five subprograms (Aquatic Animal Health and Biosecurity, People Development, Recfishing Research, Human Dimensions and the Indigenous Reference Group). These groups have been created to deal with RD&E issues that have a national and/or public good focus or serve to address a market failure. They develop and monitoring RD&E in the specific area, and are provided with a budget to invest against. The FRDC will continue use the system of nationwide groups and lead in these areas of RD&E. It will also lead in the areas of people development and service delivery.

The FRDC has invested in services that support fishing and aquaculture on important issues such as data to facilitate international trade and the creation of relevant fisheries-based Australian Standards. The FRDC will continue to provide these services with new cost-effective operating models being developed to allow for expanded services.

Strategies

- Continue to invest in leadership and capacity building.
- Maintain FRDC's accreditation to develop Australian Standards.
- Continue to supply of data including trade and fisheries data and statistical analysis.
- Encourage transition of stakeholders to a more innovation based culture.
- Continue the SafeFish program to ensure food safety.

Measure ↓ Targets →	Targets 2016-17	Targets 2017-18	2018-19	2019-20
People Development				
Continue to invest in people development and leadership	See – FRDC People Development Program (refer to section below page 27)			
Recfishing Research				
Provide investment capacity for the recreational fishing sector	Nationally co-ordinated plan detailing recreational fishing priorities	National recreational fishing survey on economic and social values.		
Deliver on identified recreational RD&E needs		Young recreational fishers take part in leadership program		
Invest data collection on social and economic impacts which is comparable with other sectors				
Invest in People Development activities for this sector				
Human Dimensions				
Continue to encourage stakeholders to use Human Dimensions expert group to aid investment in this area	See – FRDC Communities Program (refer to section page 26 below)			
Aquatic Animal Health and Biosecurity Subprogram				
Maintain the AAHBS, ensure adequate investment in risk areas and this expert group is used by FRDC stakeholders when required.	One project to develop positive control materials for exotic pathogens.	Two projects to address White Spot Virus One project to fast track vaccine development.	Procedures for operating in presence of disease Research towards resistant stock to enable enhanced disease resistance in industry	Reduce number of disease events Aquatic animal health training scheme is well aligned with and addresses industry needs.
Indigenous Fishing and Aquaculture Subprogram				
Maintain the Indigenous Fishing and Aquaculture Subprogram and ensure extension of priorities to all FRDC stakeholders		Three projects relating to fishery and product development for Torres Straight fisheries	Waves to Plate project (indigenous business development and impediments) completed	

KEY SERVICES				
Maintain FRDC’s accreditation for standards development	Accreditation maintained	As for 2016-17	As for 2016-17	As for 2016-17
Supply trade and market access data and Fisheries Statistics	Export trade data portal developed.	Domestic trade data portal developed.	Data analysis tools developed.	
SafeFish				
Provide technical advice in regards to food safety and hygiene to resolve barriers to trade	Identify stakeholder priorities and develop targeted research plan to see SafeFish through to end of funding		Implement new mode of operation, align research with industry priorities in food safety and hygiene space	

Partner

The FRDC will provide a vehicle so that sectors or jurisdictions may leverage funding where there is alignment between their RD&E priorities and those at the national level. This will encourage sectors to collaborate.

Collaboration in specific areas of RD&E such as people development, service functions and social sciences will be actively encouraged by the FRDC.

The FRDC will enter into Industry Partnership Agreements (IPAs) with specific sectors and jurisdictions Research Advisory Committees (RACs) to jointly develop and implement their RD&E priorities. These agreements will set out guidelines, timelines and evaluation processes, from funding applications to the adoption of RD&E outputs. This will help link sector-based or jurisdictional plans with the FRDC RD&E Plan, and ensure they incorporate the objects of the PIRD Act. Further information on partnership agreements is in the

Aim: By 2020, provide an investment framework that gives partnerships (specific sectors and jurisdictions) greater ownership of their strategic priorities and direction, investment in these activities and responsibility for taking outputs and turning them into outcomes.

Strategy: Enter into partnership agreements with specific sectors and jurisdictions to jointly develop and invest against RD&E priorities.

Deliverables and services for 2017-18

- Where sector or jurisdictions priorities align with national priorities or infrastructure leading to co-investment in RD&E to achieve common goals.
- Give partnerships greater ownership of their strategic priorities and direction. It will be their responsibility to ensure investments are outcome focused.

Generic IPA Targets

- Projects funded against all of the nominated relevant IPA Priorities (refer to RD&E Plan) for 2017-18.
- Invest at least 80% of the IPA's 2017-18 annual budget in priority RD&E.

Industry Partnership Agreements

Activity	Targets 2016-17	Targets 2017-18	2018-19	2019-20
IPA-AAGA	Maintain the AAGA IPA and work with AAGA to develop their RD&E Plan.	Implement RD&E Plan - See plan for KPI's		
IPA-ABFA	Maintain the ABFA IPA and work with ABFA to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's		
IPA-ACA	Maintain the ACA IPA and work with ACA to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's	Prioritise and begin investment in AWA marketing activity	
IPA-ACPF	Develop the ACPF IPA and work with ACPF to develop their RD&E Plan	Implement RD&E Plan See plan for KPI's Supply chain efficiency gains documented for wild catch prawns Continual improvement in the environmental performance of Australia's wild capture prawn fisheries	Traceability systems (eg boat to plate) implemented to identify provenance Increased understanding and adoption of energy efficiency options Continual improvement in the environmental performance of Australia's wild capture prawn fisheries	Adoption of available technologies (eg new boat designs, electronics, trawl gear) to improve harvesting efficiency 3 new products developed Reductions in bycatch achieved Continual improvement in the environmental performance of Australia's wild capture prawn fisheries
IPA-APFA	Maintain the APFA IPA and work with APFA to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's	Same as 2017-18	Same as 2017-18

IPA-ASBTIA	Maintain the ASBTIA IPA and work with ASBTIA to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's	Same as 2017-18	Same as 2017-18
IPA-OA	Maintain the OA IPA and work with OA to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's Invest in enhancing Pacific oyster breeding; accelerated Sydney rock oyster breeding research; new technologies to improve Sydney rock oyster breeding and production	Oysters diversification – examine species diversification to provide alternatives for commercial production Healthy Oysters - better understanding and ability to respond to aquatic diseases.	
IPA-Pearls	Maintain the Pearls IPA and work with Pearls to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's	Same as 2017-18	Same as 2017-18
IPA-SRL	Maintain the SRL IPA and work with SRL to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's Invest in improved pot design, risk assessment of biotoxin events, Conduct a risk assessment on current bait supplies, traceability systems Establish a formal relationship with the seafood processing sector. Investigate marketing development opportunities.	Implement market strategies Implement a traceability system. Trial and implement improved market management techniques (harvest strategies), further market development and investment in marketing.	Implement improved market management techniques (harvest strategies), further market development and investment in marketing.
IPA-TSGA	Maintain the TSGA IPA and work with TSGA and the individual entities to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's	Same as 2017-18	Same as 2017-18
IPA-WRLC	Maintain the WRLC IPA and work with WRLC to deliver on their identified priorities	Implement RD&E Plan See plan for KPI's Demonstrate the WRL fishery's value to WA economy and regional communities with evidence based information. Invest in building human capacity, improving professionalism, developing future leadership to sustain industry advocacy and leadership.	Improve sustainability performance via changes to survey and modelling inputs and techniques	Better understand changes to the availability and abundance of lobsters through such things as fishing, habitat and environmental variability

Research Advisory Committees

Generic RAC Targets

- Projects funded against all of the nominated RAC Priorities for 2017-18.
- Invest 100% of the 2017-18 RAC annual budget in RD&E.
- Identify and co-invest in projects that draw from the FRDC's 'Collaboration Fund'.

Activity	Targets 2016-17	Targets 2017-18	2018-19	2019-20
RAC-COM	Establish new RAC structure and produce new RD&E Plan	Identify opportunities for investment in People Development. Develop mechanisms for stakeholder engagement and priority setting that are independent of and augment the AFMA MAC/RAG & ARC processes.	Implement stakeholder engagement mechanisms from 2017-18.	Same as 2018-19.
RAC-SA	Establish new RAC structure and produce new RD&E Plan	Develop mechanisms for regular and improved stakeholder engagement and priority setting – likely through the SARAC Executive Officer establishing a fixed role in the PIRSA and Fisheries Industry Executive Officers meetings. Determine whether the SARAC has a role in planning the 2020 World Fisheries Congress in Adelaide.	Implement stakeholder engagement mechanisms identified from 2017-18.	Same as 2018-19.
RAC-TAS	Establish new RAC structure and produce new RD&E Plan	Establish new RAC structure. Produce the new TASRAC RD&E Plan. Develop formal processes to ensure continued linkage between the Tasmanian FRAC & RAG priority setting structures and TASRAC. These are to be defined in the TASRAC RD&E Plan.	Implement processes to ensure linkage between FRACs & RAGs and TASRAC – as identified in 2017-18.	Same as 2018-19.
RAC-VIC	Establish new RAC structure and produce new RD&E Plan	Develop mechanisms for regular and improved stakeholder engagement and priority setting.	Implement stakeholder engagement mechanisms identified in 2017-18.	Same as 2018-19.
WA RAC	Establish new RAC structure and produce new RD&E Plan	Identify opportunities for investment in People Development. Continuing implementing mechanisms for stakeholder engagement and priority setting that are independent of representative bodies		Same as 2018-19.
NT RAC	Establish new RAC structure and produce new RD&E Plan	Identify opportunities for investment in People Development. Develop mechanisms for regular and improved stakeholder engagement and priority setting – starting with a call for Expressions of Interest from selected consultants Produce 5 year NT RAC RD&E plan	Implement stakeholder engagement mechanisms identified. Finalisation of the NT RAC RD&E plan	Same as 2018-19.
QLD RAC	Establish new RAC structure and produce new RD&E Plan	Identify opportunities for investment in People Development. Develop mechanisms for regular and improved stakeholder engagement and priority setting	Implement stakeholder engagement mechanisms identified in Point 5.	Same as 2018-19.
NSW RAC	Establish new RAC structure and produce new RD&E Plan	Identify opportunities for investment in People Development. Develop mechanisms for regular and improved stakeholder engagement and priority setting Produce the new 5 year NSW RAC RD&E plan	Implement stakeholder engagement mechanisms identified in Point 5. Finalisation of the NSW RAC RD&E plan	Same as 2018-19.

FRDC Programs

Program 1: Environment

Australia has a broad range of freshwater and marine habitats that support a diverse range of aquatic species. Australia's maritime zone is one of the largest in the world covering about 13.6 million square kilometres: about twice the area of Australia's land mass. This zone contains about 4500 known species of finfish (and perhaps tens of thousands of invertebrate species) — most in relatively small numbers.

Federal, state and territory government agencies have legislative responsibility under fisheries legislation and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for managing the fisheries and aquaculture activities within their jurisdictions.

Program 1 Strategic challenges

Performance indicators	Targets 2016-17	Targets 2017-18	2018-19	2019-20
1. Demonstrate improved sustainability performance from the use of RD&E outputs. Development of innovative technologies to reduce fishery take and interaction with bycatch and with threatened, endangered and protected (TEP) species.	One project to develop techniques to mitigate whale interactions with fishing gear. Workshop to address priorities in developing low impact, fuel efficient gear	Conduct field trials to assess gear development that may reduce TEPS interactions (with pots)	Delivery of expanded Status of Australian Fish Stocks Reports	One project considering spatial measures to mitigate bycatch and increase yield
2. Improvement in understanding of the impacts of climate change that leads to adaptation by fisheries management and industry. Development of mitigation methods to reduce greenhouse gas emissions of industry.	Report on completion of Fishing and Aquaculture Climate Change Program.	One report on alternate energy sources in aquaculture	Conduct risk assessment on the ability of fisheries to adapt to climate change	
3. Development of mechanisms and technologies to collect economic, environmental and social data to inform management processes. Improvement in knowledge of the relationship between environmental processes and known biological processes. Development of techniques for incorporation of ecosystem-based fisheries management in fisheries. Development of knowledge to help the industry to meet environmental standards.	Pilot project to assess potential for reporting on social economic and environmental parameters for individual fisheries. Third Status of Australian Fish Stocks Reports completed.	Establish framework regarding data provision for SAFS, facilitating data provision to public. Invest in improved scientific methodologies to support biomass assessments (DEPM, close-kin)	Fourth Status of Australian Fish Stock report complete reporting structure more comprehensive with broader consideration (i.e. bycatch, habitat, management),	Two reports addressing spawning dynamics, supporting population knowledge to better inform management (KGW, Calamari)

Program 2: Industry

Demand for high-quality seafood is predicted to outstrip supply in both domestic and export markets. Similarly in the recreational and customary sectors the demand for high-quality fishing experiences will outstrip supply. There is a need to increase both the production and the value of the catch, and to take advantage of future opportunities. For the commercial sector, business profitability and international competitiveness is an overriding concern. This program aims to assist all sectors improve their overall performance. The following pages provide examples of the R&D currently underway. For a full listing of projects visit the FRDC website — www.frdc.com.au

Program 2 Strategic challenges

Performance indicators	Targets 2016-17	Targets 2017-18	2018-19	2019-20
1. Development of processes and technologies to improve the efficiency of governance and regulatory systems for fishing and aquaculture. Development of methods to incorporate economic knowledge into fisheries management.	Extension of National Harvest Strategy Guidelines undertaken. Methods for setting economic target reference points multi-species fisheries completed.	Fisheries management standards Case study regarding considering economics in fisheries decision making	Triple bottom line harvest strategies	Enhanced adoptions of harvest strategies by jurisdictions
2. Development of processes for efficient, transparent allocation of shares and associated property rights for all aquatic resource users.	One report on Indigenous cultural fishing and fisheries governance.	Nationally co-ordinated plan detailing recreational fishing priorities Map livelihoods of customary fishing	Waves to Plate project (indigenous business development and impediments)	

Program 3: Communities

The fishing industry forms an integral part of many rural and regional communities. For the long-term sustainability of the fishing industry, it is important the interactions and co-dependence between the community and industry understood. For a full listing of projects visit — www.frdc.com.au

Program 3 Strategic challenge

Performance indicators	Targets 2016-17	Targets 2017-18	2018-19	2019-20
<p>1. Development of knowledge to better inform the community's perceptions of the industry and to increase support for the industry.</p> <p>Development of knowledge that can help the industry to adapt to change.</p>	<p>One report that develops and tests social objectives for fisheries management completed.</p> <p>Workshop regarding community supported fisheries</p>	<p>Understanding the social importance of fisheries to communities</p>		<p>Positive perceptions of industry increased by 40% (informed by FRDC stakeholder surveys)</p> <p>One report evaluating and optimising biological, social and economic returns of small-scale fisheries (Golden Fish)</p>

Program 4: People development

People are the cornerstone of any industry. For the fishing industry, it is vital that it continues to attract and develop people who will take the industry forward towards a sustainable and profitable future. The FRDC has taken a strong role in supporting people development, from employing and developing young researchers, through to facilitating access to leadership development for all levels of industry.

Projects funded under Program 4 primarily address the FRDC’s People development program. However, this is also addressed, as a secondary but very important element, by projects within programs 1 and 2. For a full listing of projects visit the FRDC website — www.frdc.com.au

Program 4 Strategic challenges

Performance indicators	Targets 2016-17	Targets 2017-18	2018-19	2019-20
1. Provision of knowledge and opportunities to develop leadership skills Development of knowledge, skills and processes to support industry to engage in debate, adapt to change, and move toward co-management of fisheries.			One project that targets increased diversity across all sectors of industry	
2. Development of knowledge and tools to meet future workforce and skill needs. Collect and analyse data to better understand training needs	Second capability audit completed for research capacity.	Identify training and education programs desired by industry Catch the Drift-Leadership and development training for the next generation	Engagement with industry associations (such as ASFB) to identify and support early career researchers	
3. Co-invest with partners to capacity building around innovation and commercialisation.	Fifteen participants complete bursary program. Seventeen participants complete leadership courses.	Partner with service providers to develop commercialisation IP opportunities (i.e. TechMAC, X-Lab) Identify key areas of research that would benefit from training or mentoring from commercialisation IP provider	One project successfully “incubated” to enhance commercialisation potential of project	FRDC income diversified by a range of commercialisation ventures Individuals trained in regards to commercialisation prospects of research Nuffield/NSILP graduates able to apply training for benefit of sector

Program 5: Extension and Adoption

Knowledge arising from R&D will be used and transformed into appropriate mediums to support stakeholder decision making, assist with achieving their objectives, and inform the broader community. For a full listing of projects visit the FRDC website — www.frdc.com.au

Program 5 Strategic challenge

Performance indicator	Targets 2016-17	Targets 2017-18	2018-19	2019-20
1. Increase in rates of adoption.	Eighty per cent of projects complete extension strategies at start of project.	FRDC stakeholder survey indicates 50% using R&D to improve their business. Benefit cost analysis shows a positive return on investment.	Fish Magazine survey indicates more than 90% see as source of RD&E information and 60% follow up on articles. Benefit cost analysis shows a positive return on investment.	Increased adoption of FRDC research (i.e. apply research to business plan) - as informed by stakeholder survey Benefit cost analysis shows a positive return on investment.

Management and accountability

The FRDC delivers and promotes the proper use and management of RD&E services that are ethical, efficiently and cost effectively delivered. FRDC's ISO-certified quality management system encompasses all these activities. As a quality organisation the FRDC recognises the importance of reporting on the efficiency with which its research investments are delivered, as well as on their effectiveness. The FRDC will work with the Department of Agriculture and Water Resources and the other RDCs to develop an approach to measuring efficiency that will be incorporated into its performance measurement framework.

Deliverables and services for 2017-18

- Meet statutory and Australian Government requirements.
- Undertake benefit cost analyses to quantify the effectiveness of the FRDC's investments.
- Provide access to information through website, publications and reports.
- Support workshops, forums and conferences to encourage debate, discussion and adoption of research funded by the FRDC.

Measure ↓ Targets →	2016–17	2017–18	2018–19	2019–20
<p>Projects focus on the FRDC Board's assessment of priority research and development issues.</p> <p>Projects are assessed as meeting high standards/peer review requirements for improvements in performance and likely adoption.</p> <p>Maintain ISO9001:2008 accreditation.</p> <p>Submit planning and reporting documents in accordance with legislative and Australian Government requirements and timeframes.</p> <p>Implement best practice governance arrangements to promote transparency, good business performance and unqualified audits.</p> <p>Demonstrate the benefits of RD&E investments by positive benefit cost analysis results.</p>	<p>95 per cent are a priority.</p> <p>95 per cent are a high priority.</p> <p>FRDC maintains Certification.</p> <p>100 per cent met Government requirements.</p> <p>Achieve unqualified audit result.</p> <p>Benefit analysis undertaken on one investment area.</p>	<p>95 per cent are a priority.</p> <p>95 per cent are a high priority.</p> <p>FRDC maintains Certification.</p> <p>100 per cent met Government requirements.</p> <p>Achieve unqualified audit result.</p> <p>Benefit analysis undertaken on one investment area.</p>	As per 2017–18.	As per 2017–18.

Marketing

On 13 December 2013 the *Rural Research and Development Legislation Amendment Act 2013* amended the FRDC enabling legislation, the PIRD Act. These amendments extended the scope and range of activities the FRDC can undertake to include marketing for all its stakeholders provided a statutory marketing levy was in place.

As noted previously, if amendments to the PIRD Act currently before the Parliament pass, the FRDC will also be able to carry out marketing activities using voluntary contributions or where a statutory marketing levy has been implemented.

FRDC will work with industry stakeholders to develop and undertake marketing activities as required. If industry agrees to marketing activities FRDC will develop and publish a separate marketing plan in addition to this RD&E Plan. The two plans will be closely linked as RD&E will play a key role in underpinning and informing the development of any marketing activity. It will also provide the mechanism by which marketing activities will be evaluated.

Deliverables and services for 2017-18

- A key focus for the FRDC is to establish a robust industry marketing collection processes – whether voluntary of levy based. The FRDC will establish policies and procedures to ensure good governance of marketing funds.

Measure ↓ Targets →	2016–17	2017–18	2018–19	2019–20
Establish funding mechanisms for marketing activities. Partnering with Wine Australia to facilitate Australian seafood companies participate in joint trade marketing activities. Establish a process to utilise the Export Market Development Grants Scheme to undertake seafood specific activities Investigate the development of seafood specific trade events in key markets.	Establish and promote Export market database Establish a mechanism to collect voluntary marketing funds Establish full statutory marketing levy collection with industry sectors. Facilitate seafood and aquaculture businesses to participate in two 'in-country' Wine Australia events	Collect voluntary funds and deliver the Love Australian Prawns campaign – pending legislative changes. Establish full statutory marketing levy collection with industry sectors for sectors – where requested.	Establish statutory marketing levy collection with industry sectors.	

The Australian fishing and aquaculture sectors

The fishing and aquaculture industry is one of the most complex of Australia's primary industries in terms of both its structure and the natural resources on which it depends. The business environment is made more complex by their dependence on access to natural resources that are publicly managed in the interests of present and future generations. Australian fishing and aquaculture comprises five sector groupings:

- Aquaculture;
- Commercial;
- Indigenous;
- Post-harvest; and
- Recreational.

The FRDC has a significant responsibility in ensuring, on behalf of the Australian Government, that research is undertaken to assist in the management of the fisheries resource for ongoing sustainability. This means a significant proportion of funding is directed at research that has a public good benefit.

The commercial sector comprises approximately 120 wild catch fisheries and 70 aquaculture species. Commercial seafood and products (e.g. pearls) were valued at \$2.4 billion in 2012–13. The recreational sector has 3.4 million participants, who were estimated in 2013, to provide a combined economic value of around \$2.56 billion.

The aquaculture sector can generally be described as having business 'smart', value-adding ventures, with larger operators processing, packaging and branding their own produce. The sector is currently dominated by the Atlantic Salmon subsector, with significant contributions from oyster producers and ranching of Southern Bluefin Tuna.

The wild-catch industry is made up of about 15,000 licence holders. A small number of operators take a large portion of the harvest (by value and volume). These are diverse operations that may hold multiple licences. They may operate in a range of fisheries and, in some instances, are integrated along the supply chain. The remainder of the wild-catch sector is made up of a large number of small owner-operator businesses. They are vital to sustaining small coastal communities, contribute substantially to regional employment and regional identity, and are passionate about what they do—supplying Australia with seafood.

Recreational fishing provides for millions of Australians a variety of opportunities from exercising and relaxing, socialising with friends and family, meeting new people, seeing new places, engaging with nature, and providing a source of fresh individually sourced food.

Australia's commercial seafood production only accounts for around 28 per cent of domestic consumption. Combined with the relative strength of the Australian dollar, the commercial sector is re-orienting its market portfolio towards better serving the Australian market. Increasingly, value chains will encompass both domestic and imported product. Other factors, such as further improvements in fisheries management and better utilisation of catch, will become more important. But it is not only seafood for consumption that Australia produces. Australian pearls are high value items that are produced at the highest level of quality through leading edge technology by a long standing and iconic industry.

Aboriginal and Torres Strait Islander people participate in commercial and recreational fishing, as well as customary fishing. The legal rights around Indigenous fishing are being refined over time and some aspects are now part of existing legislation and court decisions.

Table 1: Gross value of production and production for Australian fishing and aquaculture results 2014–15*

Australian Fisheries Statistics *	2012-13	2013-14	2014-15
The wild catch sector	\$1.4 b from 157 252 t	\$1.5 b from 152 210 t	\$1.6 b from 151 439 t
The aquaculture sector	\$1.0 b from 80 066 t	\$0.99 b from 74 913 t	\$1.2 b from 89 217 t
Overall production	\$2.4 b from 237,318	\$2.5 b from 227 123 t	\$2.8 b from 235 710 t

* The figures quoted from 2016 *Australian Fisheries Statistics* (published December 2015), and are from the latest edition that can be downloaded from the FRDC website — www.frdc.com.au

The FRDC Governance framework

The Board

The FRDC Board oversees corporate governance of the corporation and sets its strategic direction. The key areas for focus in 2017-18 are:

- Implementation of the FRDC RD&E Plan for 2015-20;
- Investigation of opportunities to commercialise assets 2015-19;
- Implementation of the Funding Agreement;
- Implementation of the National Framework for Primary Industries Research, Development and Extension; and,
- Monitor legislative and corporate requirements as set out in the *Public Governance and Performance Accountability Act 2013* and 2015-2019 funding agreement.

The Board will meet five times during the year and will conduct a number of meetings in regional fishing ports around the country. The board considers it essential to visit the key fishing regions to gain a firsthand feedback and an appreciation of the key issues facing the commercial and recreational fishing sectors.

Element	Scope
Enabling legislation	The PIRD Act which sets out the legislative framework and rules for the establishment and operation of the FRDC.
Governance legislation	The <i>Public Governance, Performance and Accountability Act 2013</i> (PGPA Act) which specifies requirements for good governance, performance and accountability.
Board governance	Key functions include overseeing corporate governance, including the systems and processes used to direct and control its operations and investment decisions. This is enhanced by the Board's spread of skills and experience and ongoing development in directorship.
Funding agreement	The Australian Government enters into funding agreements with the individual RDCs as a means to define and govern aspects of their relationship. This is to ensure the performance of all RDCs as it is important to ensure accountability and help foster a culture of continuous improvement. The agreement between the government and FRDC establishes a framework for periodic, independent reviews.
Priorities of key stakeholders	Australian Government national Science and Research Priorities and Rural Research, Development and Extension (RD&E) Priorities. The RD&E priorities of representative organisations: National Seafood Industry Alliance, Recfish Australia, Commonwealth Fisheries Association and National Aquaculture Council.
Annual report	Requirement of various legislation; Reports to the Australian Parliament and FRDC stakeholders on RD&E activities during the financial year and on measures to ensure good governance.
Quality management system	Systematic, ISO-certified processes CAS/NZS ISO 9001:2008 designed to meet or exceed the expectations of stakeholders and other people and organisations with which FRDC does business. Incorporates management of FRDC policies.
Strategic planning and priority-setting	FRDC works with nation-wide Research Advisory Committees (RACs) to undertake planning for RD&E in consultation with governments, AFMF, industry, stakeholders and research partners. Priorities for RD&E at state, regional or fishery level are significantly determined by the RACs, managed subprograms and other priority-setting structures, with the FRDC determining the balance between projects funded within the RD&E programs.
Performance monitoring	Includes monitoring and measuring of performance to continually improve the FRDC's effectiveness and efficiency.
Reporting to stakeholders	Includes consultation with, and formal reporting to the three representative organisations; reporting of RD&E investment activities via FISH; and participation in conferences, workshops and other activities.

How we manage risk

The FRDC has embedded risk management into its culture, to deliver better decision making. The FRDC has adopted and applied systematic processes to identify, analyse, manage, monitor, report and control threats (mitigate) and opportunities (maximise). This leads to risks being reduced to a level acceptable to the FRDC, and opportunities being maximised.

Risk management is incorporated into everything the FRDC does, being deeply embedded in the FRDC's Quality Management System (QMS) that covers all of the FRDC's policies and procedures. The FRDC's [Risk policy](#) and [Risk framework](#) have been developed in line with the requirements of the Commonwealth Risk Management Policy and the Public Governance, Performance and Accountability (PGPA) Act 2013.

FRDC's strategic and financial risks

The board is responsible for considering strategic risks and mitigating their impact on the strategic direction and priorities of the FRDC. The board has a Finance, Audit and Risk Management Committee charged with monitoring risk management, with particular carriage for the management of any financial risks.

The board regularly monitors the FRDC's [Risk policy](#) and [Risk framework](#); and undertakes an in-depth annual review of all risks in November of each year.

FRDC's risk appetite statement

Risk appetite refers to the amount of risk an entity is willing to accept or retain in order to achieve its objectives; that is; it is a statement or series of statements that describes the entity's attitude toward risk taking. The FRDC's risk appetite by category is as follows:

Risk Category	Appetite
Strategic	<ul style="list-style-type: none"> There is a low appetite for risks arising from failure to meet stakeholder commitments or expectations FRDC has a low appetite for risks that threaten the integrity of science
Operational	<ul style="list-style-type: none"> FRDC has considerable appetite for improvements to service delivery and improved efficiency FRDC has a low appetite for risks that could lead to environmental harm FRDC has a considerable appetite in relation to RD&E investment FRDC has a medium appetite in terms of the operational risk associated with the implementation of change and key strategic plans FRDC has no appetite for non-compliance with legal, professional and legislative requirements
Financial	<ul style="list-style-type: none"> FRDC has no appetite for fraud, collusion, theft and associated reputational risk FRDC has a low appetite for decisions that have a significant negative impact on FRDC's long term financial sustainability
People	<ul style="list-style-type: none"> FRDC has no appetite for comprising employee safety and welfare FRDC has a low appetite for risks arising from inadequately trained employees or failed internal processes
ICT	<ul style="list-style-type: none"> FRDC has a low appetite for system failures or information and data security breaches

Our assurance processes

FRDC is a quality certified organization (AS/NZS ISO 9001:2015) and its RD&E investment is supported by a rigorous, quality management system which includes a framework of policies, procedures and mechanisms for reviewing performance implementing changes to ensure continuous improvement.

Our fraud control

The FRDC fosters and encourages the highest standards of ethical behaviour. It applies the Commonwealth's Fraud Control Framework as a matter of best practice. The FRDC aims to minimise the likelihood and impact of fraud by implementing policy that is consistent with the requirements of the Framework. Additionally the FRDC aims to mitigate the risk of fraud through ensuring elements within the financial, management and operating systems support and align to the policy and put in place mechanisms identify and reduce fraud opportunity.

Government Research Priorities

Australian Government research priorities

The FRDC will work closely with the Minister for Agriculture and Water Resources, the Assistant Minister to the Minister and the Department of Agriculture and Water Resources to ensure it delivers results in line with the Australian Government's Science and Rural RD&E priorities – see *Australian Government Science and Research Priorities* section at Attachment 1. The FRDC invests in targeted projects that will assist in the delivery of the Australian Government priorities. The Government's priorities are consistent with the FRDC's four legislated objects (section 3 of the PIRD Act) as shown in Figure 1: FRDC's framework for integrating legislative, government and

In May 2015 the Australian Government announced a new set of strategic research priorities (SRPs) which updated the previous Strategic Research Priorities and complement the rural research priorities.

As part of implementing the Actions in the National Research Investment Plan (Investment Plan), the Australian Research Committee (ARCom) developed the SRPs to drive investment in areas that are of immediate and critical importance to Australia and its place in the world.

The SRPs will complement the broad base of support for research provided by the Australian Government and will foster a more coordinated and strategic approach within the identified areas.

Government Research Priorities attributed to each RD&E Program (\$ and %) 2017-18

Rural Research Priorities

RD&E Priorities	Total expenditure	
	\$	%
Adoption of R&D	4,170,830	19.65%
Advanced technology	4,771,680	22.48%
Biosecurity	2,651,732	12.49%
Soil, water and managing natural resources	9,631,758	45.38%
TOTAL	21,226,001	100.00%

Strategic Research Priorities

	Total expenditure	
	\$	%
Cybersecurity	0	0.00%
Advanced manufacturing	1,859,747	8.37%
Energy	37,019	0.17%
Environmental change	3,815,538	17.17%
Food	6,639,428	29.87%
Health	1,222,476	5.50%
Resources	1,946,919	8.76%
Soil and water	6,673,344	30.02%
Transport	32,863	0.15%
Total	22,227,334	100.00%

Portfolio Budget Statements 2017-18

Tables from the 2017-18 Portfolio Budget Statements

Table 1.1: Corporate entity FRDC resource statement - Budget estimates for 2017-18 as at Budget May 2017

	2016–17 estimated actual \$'000	2017–18 estimate \$'000
Opening balance/cash reserves at 1 July	5,956	11,496
Funds from Government		
Amounts received from related entities		
Amounts from portfolio department ^(a)	4,291	3,905
<i>Total amounts received from related entities</i>	4,291	3,905
Special appropriations^(b)		
<i>Primary Industries Research and Development Act 1989, s. 30A(3) & s. 30B(9) – Fisheries R&D Corporation</i>	22,667	23,501
<i>Total special appropriations</i>	22,667	23,501
Total funds from Government	26,958	27,406
Funds from industry sources		
Levies ^(c)	1,000	1,125
<i>less amounts paid to the CRF</i>	(1,000)	(1,125)
Industry contributions	8,139	8,314
Total funds from industry sources	8,139	8,314
Funds from industry sources		
Interest	275	250
Sale of goods and services	11	3
Other	1,402	1,366
Total funds from industry sources	1,688	1,619
Total net resourcing for FRDC	42,741	48,835

	2016–17	2017–18
Average staffing level (number)	20	21

(a). The FRDC a grant agreement with the Department of Agriculture Water and Resources to develop the National Carp Control Plan.

(b) The FRDC is not directly appropriated as it is a Corporate Entity. Appropriations are made to the Department of Agriculture which are then paid to FRDC and are considered 'departmental' for all purposes.

(c) The levies are collected under the Primary Industries Research and Development Act 1989 (PIRD Act) and the Fishing Levy Regulations and are remitted to the Department of Agriculture and Water Resources and transferred to the CRF. An equivalent amount of FRDC management levy is paid by the Department of Agriculture and Water Resources to the FRDC under a special appropriation under the PIRD Act.

Table 2.1.1: Budgeted expenses for Outcome 1

Outcome 1: Increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in knowledge, innovation, and marketing.

	2016–17 Estimated actual \$'000	2017–18 Budget \$'000	2018–19 Forward estimate \$'000	2019–20 Forward estimate \$'000	2020–21 Forward estimate \$'000

Program 1.1: Fisheries Research and Development Corporation					
Revenue from Government					
Payment from related entities	3,688	3,866	1,970	-	-
Special appropriations					
<i>Primary industries Research and Development Act 1989, s. 30A(3) & s. 30B(9) – Fisheries R&D Corporation</i>					
	19,482	23,270	23,349	23,705	24,296
Revenues from industry sources	6,019	5,814	6,909	7,129	7,146
Revenues from other independent sources	1,877	2,922	1,800	1,811	2,122
Total expenses for program 1.1	31,066	35,872	34,028	32,645	33,564
Outcome 1 totals by resource type					
Revenue from Government					
Payment from related entities	3,688	3,866	1,970	-	-
Special appropriations	19,482	23,270	23,349	23,705	24,296
Revenues from industry sources	6,019	5,814	6,909	7,129	7,146
Revenues from other independent sources	1,877	2,922	1,800	1,811	2,122
Total expenses for Outcome 1	31,066	35,872	34,028	32,645	33,564
	2016–17	2017–18			
Average staffing level (number)	20	21			

Corporate Entity - General Government Sector Not-For-Profit

Table 3.1 Comprehensive Income Statement (Showing Net Cost of Services) for the period ended 30 June

	2016–17 Estimated actual \$'000	2017–18 Budget \$'000	2018–19 Forward estimate \$'000	2019–20 Forward estimate \$'000	2020–21 Forward estimate \$'000
EXPENSES					
Employee benefits	3,316	3,566	3,708	3,413	3,549
Supplier expenses	1,520	1,496	1,700	1,800	1,800
Grants	26,000	30,200	27,950	26,750	27,510
Depreciation and amortisation	230	200	210	222	245
Other	-	410	460	460	460
Total expenses	31,066	35,872	34,028	32,645	33,564
LESS:					
OWN-SOURCE INCOME					
Own-source revenue					
Sale of goods and rendering of services	3	3	5	5	5
Interest	275	250	250	250	250
Contributions	7,002	5,871	7,066	7,306	7,260
Other	1,906	2,697	1,587	1,602	1,902
Total own-source revenue	9,186	8,821	8,908	9,163	9,417
Total own-source income	9,186	8,821	8,908	9,163	9,417
Net cost of (contribution by) services	21,880	27,051	25,120	23,482	24,147
Revenue from Government^(a)					
Commonwealth contribution	26,958	27,406	25,896	24,293	24,686
Total revenue from Government	26,958	27,406	25,896	24,293	24,686
Surplus/(deficit) attributable to the Australian Government	5,078	355	776	811	539
Total comprehensive income/(loss) attributable to the Australian Government	5,078	355	776	811	539

(a) Revenue from government includes a Commonwealth contribution under the *PIRD Act* and levies collected from industry by the Department of Agriculture for R&D activities.

Prepared on Australian Accounting Standards basis.

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